

**ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT FOR 2020
Coal Combustion Residuals Rule Groundwater Monitoring System Compliance
Four Corners Power Plant
Fruitland, New Mexico**

Submitted to:

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List of Acronyms and Abbreviations

§	Section
ACM	Assessment of Corrective Measures
AECOM	AECOM Technical Services, Inc.
Annual Report	Annual Groundwater Monitoring and Corrective Action Report
Amec Foster Wheeler	Amec Foster Wheeler, Environment & Infrastructure, Inc.
amsl	above mean sea level
APS	Arizona Public Service
BTV(s)	background threshold value(s)
CCR	coal combustion residuals
CCR units	CCR landfills and surface impoundments
CFR	Code of Federal Regulations
CSM	Conceptual Site Model
CWTP	Combined Waste Treatment Pond
DFADA	Dry Fly Ash Disposal Area
F CPP	Four Corners Power Plant
ft	foot, feet
GWPS(s)	groundwater protection standard(s)
LAI	Lined Ash Impoundment
LDWP	Lined Decant Water Pond
mg/L	milligrams per liter
Multiunit 1	CCR multiunit comprised of the LAI and LDWP
Radiation Safety	Radiation Safety Engineering, Inc.
RWP	Return Water Pond
SAP	Sampling and Analysis Plan
SDAWP	Statistical Data Analysis Work Plan
SIT	Southern Intercept Trench
SSI(s)	statistically significant increase(s)
SSL(s)	statistically significant level(s)
TestAmerica	Eurofins TestAmerica Laboratories, Inc.
URS	Upper Retention Sump
USEPA	United States Environmental Protection Agency
Wood	Wood Environment & Infrastructure Solutions, Inc.

GROUNDWATER MONITORING AND CORRECTIVE ACTION PROGRAM OVERVIEW				
Facility Name:	Arizona Public Service Company Four Corners Power Plant	Annual Report Date:	1/31/2021	
Location:	Fruitland, New Mexico	Reporting Period:	1/1/2020 – 12/31/2020	
Groundwater Monitoring Program Status				
CCR Unit	Status at Beginning of Reporting Period	Status at End of Reporting Period	Date(s) of Any Program Transitions	Comments
Combined Waste Treatment Pond (CWTP)	Detection Monitoring	Detection Monitoring	NA	-
Dry Fly Ash Disposal Area (DFADA)	Detection Monitoring	Detection Monitoring	NA	-
Return Water Pond (RWP)	Detection Monitoring	Detection Monitoring	NA	RWP Placed into Service on 11/6/2020
Multiunit 1	Assessment Monitoring	Assessment Monitoring	2/12/2018	Progressing Activities Supporting Remedy Selection
Upper Retention Sump (URS)	Assessment Monitoring	Assessment Monitoring	2/12/2018	Progressing Activities Supporting Remedy Selection
Groundwater Monitoring Statistical Analysis Summary				
CCR Unit	Appendix III Constituent(s) with SSIs over Background	Monitoring Wells where SSIs over Background have been Observed	Appendix IV Constituent(s) Present at SSL(s) above GWPSs	Monitoring Wells where SSLs above GWPSs have been Observed [‡]
Combined Waste Treatment Pond (CWTP)	None	None	None	None
Dry Fly Ash Disposal Area (DFADA)	None	None	None	None
Return Water Pond (RWP)	None	None	None	None
Multiunit 1	B, Ca, Cl, F	MW-7, MW-8, MW-61, MW-75	Co, Mo	MW-61, MW-75
Upper Retention Sump (URS)	B, Ca, Cl, F, pH	MW-66, MW-67, MW-68, MW-69, MW-70	F	MW-66, MW-67, MW-68, MW-69
Corrective Action Summary				
CCR Unit	Dates when the ACM was Initiated and Completed	Date of Public Meeting Discussing the ACM	Date when Remedy was Selected	Dates when Remedy was Initiated and Completed
Multiunit 1	2/13/2019; 6/14/2019	N/A	N/A	N/A
Upper Retention Sump (URS)	2/13/2019; 6/14/2019	N/A	N/A	N/A
<p>Abbreviations: ACM – Assessment of Corrective Measures CCR – Coal Combustion Residuals GWPS – Groundwater Protection Standard N/A – Not Applicable SSI – statistically significant increase SSL – statistically significant level</p> <p style="text-align: right;">[‡] Only includes wells where statistical analyses have been performed (i.e., CCR Monitoring Wells)</p>				

1.0 INTRODUCTION

This Annual Groundwater Monitoring and Corrective Action Report for 2020 (Annual Report) was prepared on behalf of Arizona Public Service Company (APS) by Wood Environment & Infrastructure Solutions, Inc. (Wood) for the Four Corners Power Plant (FCPP) located in Fruitland, New Mexico. The Annual Report summarizes groundwater monitoring and corrective action activities conducted in 2020 to support compliance with coal combustion residuals (CCR) groundwater monitoring and corrective action requirements detailed in 40 Code of Federal Regulations (CFR) Sections (§) 257.90 through 257.98 (herein referred to as the CCR Rule) (Federal Register, 2020).

The CCR Rule became effective on October 19, 2015 and established standards for the disposal of CCR in landfills and surface impoundments (CCR units). In particular, the CCR Rule set forth groundwater monitoring and corrective action requirements for CCR units. The CCR Rule includes the requirement that an “annual groundwater monitoring and corrective action report” be prepared by January 31 for the preceding calendar year (the reporting period). This Annual Report prepared for the 2020 calendar year is intended to document the status of the groundwater monitoring and corrective action programs for each CCR unit, summarize key actions completed, and forecast key activities for 2021. APS additionally considers this report to meet the semiannual reporting requirements of 40 CFR §257.97(a) for selecting and designing remedies pursuant to the CCR Rule during the last half of 2020.

The remainder of this section (Section 1.0) provides a summary description of the power generating facility, the CCR units present at the facility, and the facility’s environmental setting which forms the basis for assessment of underlying groundwater conditions. Sections 2.0 and 3.0 present groundwater monitoring and corrective action activities performed during the reporting period, respectively. Key activities identified for the upcoming year are presented in Section 4.0, and Section 5.0 presents report references.

1.1 Site Background

1.1.1 Facility and CCR Unit Description

Facility Description. FCPP is an operating power plant owned by APS and four other utilities. The plant burns low sulfur coal in two electrical generating units (Units 4 and 5) and has a net generating capacity of 1,540 megawatts. FCPP formerly had five generating units and a capacity of 2,040 megawatts; Units 1, 2, and 3 were retired in December 2013 and decommissioned between 2014 and 2016. Coal burned at the plant is generally sourced from the nearby Navajo Mine (Navajo Transitional Energy Company, 2016).

Facility Location. The plant and associated infrastructure are located approximately 20 miles southwest of the city of Farmington in the Colorado Plateau physiographic province of northwestern New Mexico (Figure 1-1). The land on which the plant resides is leased from the Navajo Nation and is primarily located in Section 36, Township 29 North, and Range 16 West of the northwest quadrant of the New Mexico Principal Meridian and Base Line.

CCR Unit Description. Plant infrastructure includes four single CCR units and one CCR multiunit (referred to as Multiunit 1) which are located in the main plant area and to the west of the plant within the FCPP lease boundary (also known as the disposal area) (Figure 1-2). Table 1-1 summarizes the location, function,

operation, size/construction, and history of each unit. The boundaries of CCR units depicted in Figure 1-2 are based on available historical plans for the units.

1.1.2 Environmental Setting

Unless otherwise noted, the following information is abstracted from AECOM Technical Services, Inc. (AECOM), 2017.

Climate. The plant is located in a semi-arid climate on the western flank of the San Juan Basin. The area receives an average of 8.6 inches of precipitation and 12.6 inches of snow per year.

Topography. The main plant area of the FCPP is located at an elevation of approximately 5,340 to 5,360 feet (ft) above mean sea level (amsl). The topography of the FCPP area is characterized by rolling terrain, steep escarpments, and incised drainages/arroyos. In the vicinity of the plant, the ground surface is relatively flat, sloping to the west at approximately 20 ft per mile; however, surface drainage immediately near Morgan Lake flows towards the lake. About one mile west of the plant, the level ground surface drops rapidly to 5,200 ft amsl. Chaco Wash (a.k.a. Chaco River) is located west of this abrupt change in elevation and ephemerally flows north to the San Juan River.

Surface Water Hydrology. FCPP is situated on the southern bank of Morgan Lake, an approximately 1,300-acre man-made lake that has a maximum storage capacity of 39,000 acre-ft of water and supplies cooling water to the plant. Morgan Lake was formed by damming a westerly flowing stream (now known as 'No Name Wash') and is replenished by an underground pipeline (i.e., aqueduct) that routes flow from the San Juan River located approximately 3 miles north of the FCPP. The typical water surface elevation of the lake is 5,330 ft amsl. Morgan Dam discharges in accordance with National Pollutant Discharge Elimination System Permit No. NN0000019 to 'No Name Wash' which flows west of the lake to Chaco Wash.

Site Geology. The San Juan Basin is a structural depression that lies at the eastern edge of the Colorado Plateau (Dames & Moore, 1988). The dominant geographic feature in the vicinity of FCPP is the Hogback Monocline located to the west of the plant; this monocline is a steep (38 degree) eastward-dipping flank composed of Cretaceous sedimentary rock (Dames & Moore, 1988).

There are two 'uppermost geologic units' that underlie the FCPP site and immediate vicinity. These units are expected to influence groundwater flow and result in variations in naturally occurring constituent concentrations across the site. The units are as follows:

- Pictured Cliffs Sandstone: The Pictured Cliffs Sandstone is the uppermost geologic unit beneath the plant and the CCR units located in this vicinity (i.e., the Upper Retention Sump [URS], the Combined Waste Treatment Pond [CWTP], and the Return Water Pond [RWP] as depicted in Figure 1-2). This unit is a fine- to medium-grained marine sandstone. The lower portions of the Pictured Cliffs Sandstone represent a transitional sequence between this formation and the underlying Lewis Shale as indicated by alternating thin beds of very fine-grained sandstone and silty shale. The Pictured Cliffs Sandstone forms a capstone on an exposed cliff face located between the plant site and the CCR units located to the west (i.e., the Lined Ash Impoundment [LAI], Lined Decant Water Pond [LDWP] and the Dry Fly Ash Disposal Area [DFADA]).

- **Lewis Shale:** The Lewis Shale is a marine shale that contains evaporite deposits resulting in naturally occurring saline groundwater conditions. The Lewis Shale is the uppermost geologic unit that underlies the LAI, LDWP, and DFADA and spans west of the Pictured Cliffs Sandstone cliff face approximately 1.5 miles westward to the base of the Hogback Monocline. The regional thickness of the Lewis Shale is approximately 500 ft and is underlain by the Cliff House Sandstone. The Lewis Shale consists of a weathered shale subunit overlying a hard, unweathered shale subunit. The thickness of the weathered shale varies between 11 and 47 ft with an average thickness of 30 ft within the vicinity of the site (Dames & Moore, 1988). The weathered shale is not as thick when overlain by the Pictured Cliffs Sandstone in the vicinity of the plant site. This subunit contains thin sandstone lenses that vary in thickness from 1 to 7 ft; the sandstone is fine to very fine-grained and cemented by calcium carbonate (Dames & Moore, 1988). The unweathered shale is significantly less permeable than the weathered shale. The unweathered shale is very fine-grained to silty and contains periodic siltstone and sandstone lenses (Dames & Moore, 1988). The surface of the unweathered shale slopes towards the Chaco Wash at approximately the same slope as land surface (Dames & Moore, 1988) but displays some irregularity resulting in varying levels of saturated thickness in the weathered shale. The Lewis Shale is variably saturated and hydraulically interconnected with alluvial deposits of Chaco Wash. The low-permeability unweathered shale underlying the Pictured Cliffs Sandstone results in a perched saturated zone beneath the plant area.

Applicable Hydrostratigraphy. Three general hydrostratigraphic units are conceptualized beneath the FCPP and associated CCR units. These units form the basis for the Conceptual Site Model (CSM) developed by AECOM (2017) for the purpose of designing the site CCR groundwater monitoring system and establish the working basis for statistically evaluating groundwater conditions underlying the site.

The first hydrostratigraphic unit (Pictured Cliffs Sandstone) is dominant under the plant area, which is located in an elevated area south of Morgan Lake (Figure 1-2). Three CCR units (i.e., the URS, the CWTP, and the RWP) reside within this area. While the Pictured Cliffs Sandstone is unsaturated beneath the RWP, this hydrostratigraphic unit is the uppermost water bearing unit underlying the URS and CWTP and would become saturated under the RWP if a leak from this unit occurred. The Pictured Cliffs Sandstone extends from ground surface (between approximately 5,340 to 5,360 ft amsl) to approximately 5,300 ft amsl in the plant area. Groundwater underlying the URS and CWTP is strongly influenced by Morgan Lake (at a surface elevation of approximately 5,330 ft amsl) and generally flows northward towards the lake. However, construction and operations of the plant have resulted in disturbed ground conditions and associated impacts are not well understood.

The second hydrostratigraphic unit (Weathered Lewis Shale/Alluvium) underlies the Pictured Cliffs Sandstone in the plant area and the Multiunit 1/DFADA CCR units in the disposal area, approximately 1 mile west of the plant (Figure 1-2). The Weathered Lewis Shale and the hydraulically connected alluvial deposits along Chaco Wash are designated as the uppermost water bearing unit in the disposal area. Although the Lewis Shale is geologically continuous in this area, it is unsaturated in the vicinity of the DFADA. The water table in the Weathered Lewis Shale can exhibit local seasonal fluctuations that are attributed to interactions between rates of groundwater recharge and discharge (Dames & Moore, 1988) from/to Morgan Lake, historical unlined ponds, and Chaco Wash. Groundwater flow generally follows the surface topography and descends to the west-southwest in the disposal area, mainly in the weathered shale and in local alluvial channels that drain toward the Chaco Wash (APS, 2013).

The third hydrostratigraphic unit (Unweathered Lewis Shale) consists of the Unweathered Lewis Shale and is a regionally extensive confining unit that forms the base of the uppermost aquifers in the plant and disposal areas.

1.2 CCR Groundwater Monitoring System

Multiple monitoring wells are in place at FCPP to monitor groundwater conditions beneath the five site CCR units and support ongoing assessment of impacts from potential leakage. Table 1-2 identifies each well with associated CCR unit information, the date of well installation, and summary well construction details. Figure 1-2 presents a map of the well locations.

Installation of the FCPP CCR groundwater monitoring system is summarized in the *CCR Monitoring Well Network Report and Certification* (AECOM, 2017) and the *Groundwater Monitoring Network Certification Report for the Return Water Pond* (Wood, 2020c). These reports certify the CCR groundwater monitoring system as compliant with 40 CFR §257.91(a) through (e). Per the CCR Rule, site monitoring systems are required to evaluate groundwater quality that is representative of background (i.e., groundwater that has not been affected by leakage from a CCR unit) and groundwater passing the downgradient boundary of each CCR unit, in the uppermost water bearing hydrostratigraphic unit underlying the CCR unit.

1.2.1 Monitoring System Description

Background Groundwater Monitoring Wells. Background water quality at the site can be established by a single monitoring well or a group of monitoring wells. If a group of monitoring wells is used, these wells should be screened within the same lithologic unit, exhibit similar groundwater chemistry, illustrate similar statistical merits, and be supported by the CSM. The grouping and adequacy of background wells identified for FCPP to assess background water quality are assumed adequate until proven otherwise.

Per the *CCR Monitoring Well Network Report and Certification* and the *Groundwater Monitoring Network Certification Report for the Return Water Pond*, the following monitoring wells are designated as "background monitoring wells" for the respective geologic and hydrostratigraphic conditions underlying the FCPP (AECOM, 2017) (Wood, 2020c):

- Background Wells for the Pictured Cliffs Sandstone: Three wells (MW-71, MW-72, and MW-73) are used to determine background groundwater quality for the URS, the CWTP, and the RWP in the Pictured Cliffs Sandstone.
- Background Wells for the Weathered Lewis Shale/Alluvium: Seven wells upgradient to sidegradient of Multiunit 1 and the DFADA, including MW-12R1, MW-49A, MW-51, MW-50A, MW-43, MW-55R, and MW-74, are designated to assess background groundwater quality for the Weathered Lewis Shale/Alluvium. Many of these wells are routinely either dry or have a limited saturated thickness which precludes sampling; the wells are included in the program in case conditions change in the future.

Due to the natural heterogeneity of the geologic and hydrostratigraphic conditions underlying the FCPP, background constituent concentrations are expected to be spatially heterogeneous across the site. The site is also expected to exhibit temporal heterogeneity due to local climatic regimes, potential leakage from

Morgan Lake, and potential operational activity at the site. The adequacy of designated background monitoring wells will be assessed on an ongoing basis using groundwater elevation data, boron data, a working understanding of the spatial heterogeneity of geochemistry underlying the FCPP, and the statistical merits of the constituents of concern. Historical groundwater chemistry data may be consulted during this evaluation, but data preceding December 2011 will not be considered due to noted “matrix interference issues associated with saline waters” in samples analyzed prior to this date (APS, 2013).

Downgradient CCR Monitoring Well Networks. A total of 27 CCR compliance wells are in place at the site to monitor groundwater conditions downgradient of each CCR unit (Table 1-2; Figure 1-2). Sixteen of these monitoring wells are installed in the Pictured Cliffs Sandstone. The remaining eleven other wells are completed in the Weathered Lewis Shale/Alluvium. The grouping of monitoring wells, spatial density, and coverage of the monitoring well network are assumed representative and adequate until proven otherwise. These wells are identified by respective CCR unit, as described below:

- URS Downgradient Wells (Pictured Cliffs Sandstone): The groundwater flow direction underlying the URS has historically been radially outward from the CCR unit. On this basis, nine wells, MW-66, MW-67, MW-68, MW-69, MW-70, MW-83, MW-84, MW-85 and MW-86 were installed around the perimeter and downgradient of the URS. The URS downgradient wells are screened within the Pictured Cliffs Sandstone hydrostratigraphic unit.
- CWTP Downgradient Wells (Pictured Cliffs Sandstone): Similar to the URS, the groundwater flow direction underlying the CWTP was inferred to be radially outward from the CCR unit at the time the monitoring system was designed. Four monitoring wells, including MW-62, MW-63, MW-64, and MW-65, were installed around the perimeter of the CWTP. The *CCR Monitoring Well Network Report and Certification* identifies these wells as screened within the Pictured Cliffs Sandstone hydrostratigraphic unit. However, additional review of boring logs conducted as part of an Alternative Source Demonstration (ASD) for the unit (see Section 2.1.4) indicates that MW-62 and MW-63 are screened in non-native embankment fill materials.
- RWP Downgradient Wells (Pictured Cliffs Sandstone): Three CCR compliance wells are installed within the Pictured Cliffs Sandstone hydrostratigraphic unit on the northeastern edge of the RWP: MW-88, MW-89, and MW-90. The Pictured Cliffs Sandstone is unsaturated beneath the RWP, and the wells are installed directly above the aquitard created by the underlying Unweathered Lewis Shale, which dips towards the northeast beneath the RWP. This groundwater monitoring system is designed to detect releases from the RWP, as a release would likely migrate vertically downward through the relatively permeable Pictured Cliffs Sandstone to the underlying Unweathered Lewis Shale, then migrate laterally along the surface of the aquitard. The next underlying aquifer (in the Cliff House Sandstone) is separated from the CCR unit by several hundred ft of the Unweathered Lewis Shale.
- Multiunit 1 Downgradient Wells (Weathered Lewis Shale/Alluvium): Seven downgradient monitoring wells are in place below the toe of the western to southwestern edge of Multiunit 1: MW-7, MW 8, MW-40R, MW-61, MW-75, MW-76 and MW-87. Two wells, MW-40R and MW-76, are routinely either dry or have a limited saturated thickness which precludes sampling; the wells are included in the program in case conditions change in the future. The screened interval for each

Multiunit 1 downgradient well resides within the Weathered Lewis Shale/Alluvium hydrostratigraphic unit.

- DFADA Downgradient Wells (Weathered Lewis Shale/Alluvium): Four existing wells are identified downgradient of the DFADA: MW-13, MW-44, MW-10 and MW-48. Each well, except MW-48, is screened within the Weathered Lewis Shale/Alluvium hydrostratigraphic unit. The screened interval for MW-48 resides within the Unweathered Lewis Shale hydrostratigraphic unit. The downgradient DFADA wells are known to be dry; this groundwater monitoring system was designed to detect releases since the next underlying aquifer (in the Cliff House Sandstone) is separated from the CCR unit by several hundred ft of Lewis Shale.

Supplementary Site Monitoring Wells. There are many groundwater monitoring wells at the site that are not part of the CCR groundwater monitoring system but may provide useful information to the program. Table 1-2 and Figure 1-2 identify these wells.

1.2.2 Implemented Changes to Monitoring System

Most of the wells that comprise the site CCR groundwater monitoring system were installed prior to or during 2017 (Table 1-2). During the reporting period, implemented changes to the monitoring system included:

- Addition of CCR Wells at the RWP – The three downgradient wells which comprise the RWP groundwater monitoring network were incorporated into the site CCR groundwater monitoring system during the reporting period. The RWP monitoring network was certified as compliant with groundwater monitoring system requirements specified in 40 CFR §257.91 by a qualified professional engineer during the reporting period (Wood, 2020b).
- Installation of Pre-Design Wells at the URS – Although not identified as monitoring wells, four new extraction wells were installed at the URS in December 2019 that will provide additional groundwater quality information in this vicinity. The new extraction wells are discussed further in Section 3.3.

2.0 GROUNDWATER MONITORING PROGRAM

The groundwater monitoring and corrective action process defined in the CCR Rule includes a phased approach to groundwater monitoring, leading (if applicable) to the establishment of groundwater protection standards (GWPSs) for each CCR unit. Exceedances of the GWPSs that are determined to be statistically significant can trigger requirements for additional groundwater characterization and corrective measures assessment followed by implementation.

The first phase of groundwater monitoring is the detection monitoring phase. This phase focuses on a set of constituents (listed in Appendix III of the CCR Rule) that are the more mobile constituents associated with CCR and therefore represent indicators of possible impacts from CCR in groundwater. If statistically significant increases (SSIs) over Appendix III constituent background threshold values (BTVs) are detected in the downgradient waste boundary wells and cannot be demonstrated to be associated with a source

other than the CCR unit, then groundwater monitoring moves into the second phase, assessment monitoring. Table 2-1 summarizes BTVs for site CCR units.

The second phase of groundwater monitoring focuses on the constituents listed in Appendix IV of the CCR Rule. The Appendix IV constituents are generally less mobile and occur at lower concentrations in groundwater than the Appendix III constituents. Concentrations of Appendix IV constituents in downgradient wells are compared to GWPSs. The GWPSs, established for Appendix IV constituents only, are the higher of either the federal Safe Drinking Water Act Maximum Contaminant Level, alternative risk-based GWPSs established in the CCR Rule, or the background concentration for each constituent. Table 2-1 summarizes GWPSs for site CCR units.

If exceedances of the GWPSs are determined to be occurring in the downgradient boundary wells at statistically significant levels (SSLs) and no alternative sources for the exceedances can be demonstrated, then both additional groundwater characterization and assessment of corrective actions are initiated. Following assessment of corrective measures, a remedy (or set of remedial activities) is selected and implemented as the groundwater corrective action program for the CCR unit. According to the CCR Rule, groundwater corrective action will continue until compliance with the GWPSs has been attained in all impacted wells and sustained for a period of three consecutive years.

2.1 Program Status

2.1.1 Summary of Key Actions Completed

A summary of key actions conducted at the site during 2020 to address CCR Rule requirements is as follows:

- Documentation of Groundwater Monitoring Activities Conducted in 2019 - 40 CFR §257.90(e) requires that an Annual Groundwater Monitoring and Corrective Action Report for applicable sites be prepared for existing CCR units annually on January 31 of the following year. During the reporting period, APS prepared the *Annual Groundwater Monitoring and Corrective Action Report for 2019* (2019 Annual Report, Wood, 2020a), placed the report in the facility's operating record, and posted the report to the APS CCR information webpage in accordance with 40 CFR §257.105(h)(1) and 40 CFR §257.106(h)(1).
- Continuation of the Detection Monitoring Program at the CWTP, DFADA, and RWP – 40 CFR §257.94(b) requires the continuation of detection monitoring at a semiannual frequency for Appendix III constituents at CCR units where statistical analysis of Appendix III constituent data do not indicate an SSI over background. Section 2.2 presents the results of detection monitoring data collected on a semiannual basis from the CWTP, DFADA, and RWP in 2020.
- Certification of the RWP Groundwater Monitoring Network and Activation of the RWP – The RWP is a multi-celled CCR surface impoundment constructed in 2019 to temporarily store flue gas desulfurization (FGD) system waste and leachate from the disposal area seepage intercept system in anticipation of LAI and LDWP (Multiunit 1) closure. Detection monitoring began at the RWP on December 20, 2019, and the RWP monitoring network was certified as compliant with 40 CFR §257.91 during the reporting period (Wood, 2020c). Pursuant to 40 CFR §257.90 (b)(2), eight initial

monitoring rounds were conducted at the RWP before CCR was initially placed into the unit on November 6, 2020.

- Update to the Statistical Data Analysis Work Plan (SDAWP) – For new CCR units, 40 CFR §257.90 (b)(1)(ii) requires the selection of statistical procedures for evaluating groundwater quality data collected from the CCR unit’s monitoring system. Prior to activating the RWP, the existing SDAWP for the site was updated to include statistical evaluation procedures for the RWP and statistical considerations for unsaturated zones (Wood, 2020d).
- Completion of Statistical Analyses for Collected Appendix III Constituents at the CWTP – 40 CFR §257.93(h) requires routine statistical analysis of Appendix III constituent data from CCR units in the detection monitoring program. During the reporting period, APS performed two statistical analyses using updated Appendix III constituent data collected from CWTP monitoring wells. The statistical analyses are summarized in Section 2.3.1.
- Conduct of an ASD for Appendix III constituents at the CWTP – 40 CFR §257.94(e)(2) allows owners to evaluate whether a source other than the subject CCR unit resulted in declaring an SSI over BTVs during a statistical analysis conducted pursuant to the CCR Rule. In response to BTV exceedances declared at wells downgradient of the CWTP, an ASD was prepared during the reporting period, which is summarized in Section 2.1.4.
- Characterization of the Nature and Extent of Potential Releases Indicated at the URS and Multiunit 1 – 40 CFR §257.95(g)(1) requires characterization of the nature and extent of releases from CCR units where one or more Appendix IV constituents exceed GWPSs at SSLs. Section 3.1 summarizes activities completed during the reporting period to meet this requirement.
- Preparation of a Semiannual Progress Report on Remedy Selection for Multiunit 1 and the URS – 40 CFR §257.97(a) requires the preparation of semiannual reports which document the progress of remedy selection for CCR units that have impacted groundwater. During the reporting period, APS prepared the third semiannual report to fulfill this requirement in July 2020 (Section 3.4). Activities supporting remedy selection conducted during the second semiannual reporting period of 2020 are summarized in Section 3.3.
- Pre-Design Activities Conducted to Progress Remedy Selection – During the reporting period, APS performed several site investigations necessary for the selection and design of remedies for Multiunit 1 and the URS. The corrective measures pre-design studies are summarized in Section 3.3.
- Preparation for a Public Meeting to Discuss the Assessment of Corrective Measures (ACM) for Multiunit 1 and the URS – 40 CFR §257.96(e) requires the conduct of a public meeting prior to the selection of remedies for CCR units that have impacted groundwater. APS planned to hold a public meeting with interested and affected parties during the reporting period to discuss the results of the ACM for Multiunit 1 and the URS. However, the COVID-19 pandemic prevented the conduct of a public meeting during the reporting period (Section 2.1.2).
- Initiation of Closure Activities at the CWTP – APS initiated closure activities at the CWTP during the reporting period in accordance with 40 CFR §257.101(a)(1) and §257.101(b)(1). The closure activities are discussed in Section 3.5.

2.1.2 Problems Encountered and Resolutions to Problems

Problems encountered during the reporting period were related to the COVID-19 Pandemic and are summarized below.

- Conduct of Public Meeting to Review the ACM – APS had planned to conduct a public meeting in mid-2020 to discuss the ACM for Multiunit 1 and the URS. However, the Navajo Nation implemented restrictions on travel and non-essential activities due to COVID-19, and a virtual presentation was not considered sufficient to adequately allow participation by interested and affected parties. The public meeting is delayed until tribal restrictions are removed.
- Delayed Groundwater Sampling and Data Validation – Although scheduled for April/May, the first semiannual CCR groundwater monitoring event was delayed until mid-June when case numbers declined at FCPP and San Juan County. The analytical data for the monitoring event was received on the last day of the associated 90-day sampling timeframe (7/31/20) and data validation was completed by 8/5/20.

2.1.3 Groundwater Monitoring Program Transitions

Detection monitoring began at the RWP groundwater monitoring network during the previous reporting period on December 20, 2019. Pursuant to 40 CFR §257.94(b)(2), APS conducted eight initial monitoring rounds at the RWP wells prior to initially discharging CCR into the unit on November 6, 2020. As of November 2020, the RWP downgradient wells have remained dry since their installation in December 2019.

2.1.4 Alternative Source Demonstrations

A statistical analysis performed during the reporting period declared SSIs over the calcium BTV at CWTP monitoring wells MW-62 and MW-63 (Section 2.3.1). In accordance with 40 CFR §257.94(e)(2), APS prepared an ASD during the reporting period to evaluate the calcium BTV exceedances (Appendix A). The ASD concluded that the exceedances were not indicative of a release from the CWTP based on the following lines of evidence:

- Spatial heterogeneity caused by the presence of non-native fill materials in the subsurface where MW-62 and MW-63 are completed;
- CWTP surface water quality data, which indicate low calcium concentrations relative to calcium concentrations detected at MW-62 and MW-63;
- The calcium BTV was recalculated and updated in October 2019; however, it did not incorporate a statistical resampling strategy recommended by the United States Environmental Protection Agency (USEPA) Unified Guidance (USEPA, 2009).

Recommendations from the ASD include:

- Calculating two separate calcium BTVs for the CWTP using a grouped well approach, where MW-73 serves as the background well for MW-62 and MW-63, and MW-71 and MW-72 serve as the background wells for MW-64 and MW-65. This approach is intended to account for the spatially heterogeneous conditions at the CWTP.

These recommendations were incorporated into the October 2020 statistical analysis for the CWTP, which is summarized in Section 2.3.1.

2.2 Monitoring Data Collected

During 2020, APS conducted CCR groundwater monitoring at FCPP in accordance with the site Sampling and Analysis Plan (SAP) presented in the *Annual Groundwater Monitoring and Corrective Action Report for 2017* (Amec Foster Wheeler, 2018). The SAP documents the methods and procedures used to conduct groundwater sampling, analyze collected samples for CCR constituents, and assess associated analytical data for quality assurance purposes.

The following sections summarize groundwater monitoring activities conducted in 2020. Table 2-2 identifies when monitoring occurred, and which units were monitored. Unless otherwise noted, detection monitoring included evaluation of samples for Appendix III constituents on a semiannual basis (40 CFR §257.94[b]) and assessment monitoring included evaluation of samples for all Appendix IV constituents on an annual basis (40 CFR §257.95[b]) and detected Appendix IV constituents as well as all Appendix III constituents on a semiannual basis (40 CFR §257.95[d][1]).

The DFADA wells are completed in either the Weathered Lewis Shale/Alluvium or Unweathered Lewis Shale while the RWP wells are completed in the Pictured Cliffs Sandstone. These hydrostratigraphic units are known to be dry downgradient of the DFADA and the RWP. Thus, the DFADA and RWP groundwater monitoring systems are designed to detect releases by the presence of water (insignificant amounts of condensate are known to accumulate in wells). During the June and November monitoring events, these wells were found to be dry or have less than 4 inches of water present, which is consistent with previous readings and indicates that releases from the DFADA and RWP did not occur in 2020.

2.2.1 Water Level Monitoring

Appendix B presents hydrographs depicting groundwater elevations measured at downgradient monitoring wells over time. Groundwater elevations in the Pictured Cliffs Sandstone (i.e., plant area) and the Weathered Lewis Shale/Alluvium (i.e., disposal area) are graphed independently based on assessment of the data during initial CSM development; review of the data suggests that the two groundwater systems are likely not in direct communication. As shown in monitoring well hydrographs, groundwater elevations were relatively stable over the period. Significant water level trends are discussed below.

- MW-08 and MW-76 (downgradient wells for Multiunit 1): Water levels at MW-08 have increased over 11 feet since May 2019, while water levels at MW-76 increased approximately 3.4 feet in November 2019, then declined by approximately the same amount during the reporting period. As of November 2020, groundwater elevations at MW-76 and MW-08 are 5088.81 and 5088.02 ft amsl, respectively. While the cause of the water level increase at the two wells is unknown, APS installed pressure transducers at these wells in July 2020 to monitor water level changes. The pressure transducer data will be evaluated in 2021 to assess the observed water level fluctuations at these wells.
- URS monitoring wells: The steadily decreasing water levels at the wells surrounding the URS suggest that decommissioning of the URS (which occurred from June to December 2018) has reduced

groundwater elevations in this area. The greatest decrease in groundwater elevations occurred from May to November 2018 at MW-68, MW-69, and MW-70; these wells are located upgradient of the URS.

- MW-74 (background well for Multiunit 1 and the DFADA): Seasonal variations in groundwater elevations are apparent at this well (located downstream of Morgan Lake), with highest elevations occurring in early spring and lowest elevations occurring in late summer to late fall.

Figures 2-1 and 2-2 present potentiometric surface maps that are representative of groundwater elevations prior to groundwater sampling in June and November 2020, respectively. The estimated direction and gradient of groundwater flow derived from collected groundwater elevation data are noted in the figures. As indicated, groundwater appears to flow towards Morgan Lake in the plant area and towards Chaco Wash in the disposal area.

2.2.2 Groundwater Flow Rate Estimation

The CCR Rule requires that groundwater flow rates beneath CCR units be estimated during each monitoring event. To meet this requirement, water levels measured at the time of sampling were used to calculate the direction and magnitude of the hydraulic gradient in the vicinity of each unit using a spreadsheet tool available on the USEPA website (USEPA, 2014). Darcy's Equation for flow through porous media was then used with site data (where available) and/or literature-based hydraulic conductivity and effective porosity values for hydrogeologic units to estimate groundwater flow rates. Table 2-3 summarizes the results of these calculations.

For the Pictured Cliffs Sandstone underlying the URS and CWTP, the hydraulic gradient and flow direction were relatively consistent during the reporting period. The magnitude of the hydraulic gradient ranged from 0.0006 to 0.0007 ft per ft and the direction of groundwater flow was northwest towards Morgan Lake (323 to 325 degrees from north). Corresponding groundwater flow rates ranged from 0.01 to 0.02 ft per day. It is notable that the hydraulic gradient observed during the reporting period was an order of magnitude lower than the gradient observed before the URS was replaced by the URT. The data collected during the reporting period suggest that the water table in the plant area is relatively flat and in hydraulic communication with Morgan Lake.

For the Lewis Shale underlying Multiunit 1, the hydraulic gradient and flow direction were relatively stable. The magnitude of the hydraulic gradient was 0.03 ft per ft during each monitored round and the direction of groundwater flow was southwest towards Chaco Wash (253 to 258 degrees from north). The corresponding groundwater flow rates for June and November were 0.0002 ft per day, which is comparable to rates indicated by 2019 data.

2.2.3 Sample Collection

APS collected, labeled, preserved, and shipped groundwater samples per the SAP. In some instances, the wells were assessed as dry upon monitoring or did not have enough water and could not be sampled (Table 2-2). In accordance with 40 CFR §257.93(i), collected groundwater samples were not field filtered prior to analysis. Pursuant to the SAP, quality control samples (i.e., field duplicates, field blanks and extra sample

volume for matrix spike samples) were collected during each groundwater monitoring event. These samples are noted on associated chain-of-custody documentation.

2.2.4 Sample Analysis and Data Validation

APS submitted groundwater samples to Eurofins TestAmerica Laboratories, Inc. (TestAmerica) and Radiation Safety Engineering, Inc. (Radiation Safety) located in Phoenix, Arizona for analysis. TestAmerica evaluated samples for all constituents other than radium. Radiation Safety performed radium analyses. Both TestAmerica and Radiation Safety are Arizona Department of Health Services-licensed laboratories (AZ0728 and AZ0462, respectively). Appendix C presents the associated Laboratory Reports of Analysis organized by CCR unit.

Table 2-2 identifies the analytes evaluated during each monitoring event. Analytes varied based on the monitoring program (i.e., detection vs. assessment monitoring) and the need for supplementary information useful in evaluating groundwater quality across the site. The SAP identifies Appendix III and Appendix IV constituents with associated analytical methods.

Following receipt of final laboratory reports of analysis, the reports and associated sample data collected during detection and assessment monitoring were evaluated for quality assurance purposes. The scope of the review was a USEPA Stage 2A validation. Appendix D presents the *2020 Data Validation Report* which documents these reviews. There were no notable data validation qualifiers or reason codes added to the 2020 data. All data qualifiers and reason codes are included in *2020 Data Validation Report* (Appendix D).

2.2.5 Sample Results

Appendix E presents the groundwater sampling results for 2020 along with historical groundwater quality data for the site. The groundwater quality data are discussed further in Section 3.1. The sampling coverage and frequency of the groundwater monitoring system is assumed representative and adequate of spatial and temporal heterogeneity until proven otherwise.

2.3 Statistical Analysis of Monitoring Data

During the reporting period, APS conducted two statistical analyses of groundwater data to evaluate whether site CCR units have adversely impacted underlying groundwater. The first statistical analysis for the reporting period was completed on April 13, 2020 and was performed according to the SDAWP developed in 2018 (Wood, 2018). The SDAWP was updated on June 10, 2020 to include statistical evaluation procedures for the RWP monitoring network and statistical considerations for unsaturated zones (Wood, 2020d). The second statistical analysis was conducted according to the updated SDAWP and was finalized on October 13, 2020. The statistical analyses performed during the reporting period are summarized in the following section.

2.3.1 Evaluation of Appendix III Constituent Data

Three CCR units remained in detection monitoring as of the end of 2019: the CWTP, the DFADA, and the RWP. There were no groundwater samples collected from the DFADA and RWP groundwater monitoring

networks during the reporting period due to unsaturated conditions, and thus no statistical analyses were performed using data collected from these units.

On April 13, 2020, an initial exceedance over the boron BTV was declared at MW-62 and SSI declarations were made for calcium at MW-62 and MW-63 (Appendix F). The declarations were based on data collected in December 2019. To evaluate the calcium exceedances, APS conducted an ASD for the CWTP, which indicated that the calcium exceedances could not definitively be attributed to a leak from the CWTP (Section 2.1.4). Rather, the exceedances appear to be associated with spatial heterogeneity caused by the presence of non-native fill materials in the subsurface and an updated calcium BTV which did not incorporate a statistical resampling strategy outlined in the USEPA Unified Guidance (USEPA, 2009). The ASD recommended the continuation of detection monitoring at the CWTP, recalculating the calcium BTV using a grouped well approach and the recommended resampling strategy, and implementing the 1 of 3 resampling strategy to evaluate the initial boron exceedance.

On October 13, 2020, APS documented a statistical analysis of detection monitoring data collected at the CWTP through June 2020 (Appendix G). The analysis incorporates the recommendations put forth by the ASD for the CWTP noted above and includes updated calcium BTVs, which are presented in Table 2-1. The statistical analysis declared an initial exceedance for fluoride at MW-62 and recommended evaluating the exceedance using the 1 of 3 resampling strategy in place for this constituent. The statistical analysis also declared the initial boron exceedance at MW-62 declared on April 13, 2020 to be statistically insignificant.

2.3.2 Evaluation of Appendix IV Constituent Data

No statistical evaluations of Appendix IV constituent data were conducted during the reporting period.

3.0 CORRECTIVE ACTION PROGRAM

Based on the declaration that one or more Appendix IV constituents are present at SSLs above GWPSs downgradient of Multiunit 1 and the URS, these units are currently in the corrective action program. Notification of the exceedances occurred on November 14, 2018 and were documented in the 2018 Annual Report (Wood, 2019a).

A summary of corrective action program activities is presented in the following sections.

3.1 Characterization of Potential Releases from CCR Units

To characterize releases from CCR units, 40 CFR §257.95(g)(1) requires: (i) the installation of wells to define the extent of contaminant plumes, (ii) collection of data on the nature and estimated quantity of material released, (iii) installation of at least one well at the facility boundary in the direction of contaminant migration, and (iv) sampling of these wells to characterize the nature and extent of the release.

APS documented initial efforts to address the requirements of 40 CFR §257.95(g)(1) in the Hydrogeologic Investigation of Multiunit 1 and the Upper Retention Sump (Wood, 2020b). However, due to the duration required to adequately characterize complex groundwater impacts, work supporting characterization of potential releases from CCR units is ongoing.

During the reporting period, activities conducted to address CCR Rule release characterization requirements downgradient of Multiunit 1 and the URS included:

- The collection of groundwater quality data throughout 2020 (Section 2.2);
- Additional delineation of the nature and extent of the release from Multiunit 1 and the URS in the form of plume maps derived from the groundwater quality data from an expanded network of groundwater monitoring wells.

Findings from these characterization activities are summarized as follows and further discussed in Section 3.3.

- Multiunit 1: Molybdenum and cobalt are present at concentrations above their respective GWPSs in groundwater downgradient of Multiunit 1, including a region upgradient of MW-60 which is a potential past CCR conveyance corridor to former ash ponds. The extent of the molybdenum release appears to be limited to the area directly downgradient of the LDWP (Figures 3-1 and 3-2). The cobalt release generally extends up to the Southern Intercept Trench (SIT) (Figures 3-3 and 3-4). However, cobalt was detected at concentrations above the GWPS at three wells downgradient of the SIT during the reporting period (MW-18, DMX-03, and MW-87). The exceedances at MW-18 and DMX-03 indicate that impacted groundwater has migrated beyond the SIT at select locations. MW-18 and DMX-03 are located near surface water drainages, and infiltration of ephemeral surface water into the subsurface may increase weathering and permeability of the Weathered Lewis Shale along drainage channels, thereby creating preferential flow paths for impacted groundwater. A site investigation to evaluate the observed cobalt exceedances is discussed in Section 4.0. The exceedance at MW-87 has been noted intermittently since installation of this well in 2018. The elevated cobalt concentration appears to be isolated and unrelated to groundwater impacts from Multiunit 1 (see Section 3.3).
- URS: Fluoride is present at concentrations above the GWPS in groundwater downgradient of the URS. The extent of the release is limited to roughly the footprint of the former unit (Figure 3-5).

3.2 Notification to Landowners of Groundwater Impacts

40 CFR §257.95(g)(2) requires owners/operators of CCR units to notify downgradient landowners or residents of any off-site migration of contamination from CCR units. As indicated by groundwater monitoring data, no off-site impacts due to CCR releases have been identified and thus no property owner notifications have been required.

3.3 Corrective Measures Pre-Design Studies and Update on Remedy Selection

In response to GWPS exceedances at Multiunit 1 and the URS and pursuant to 40 CFR §257.96(a), APS prepared an ACM in 2019 (Wood, 2019b) to evaluate the performance of several combined corrective measures to address groundwater impacts resulting from Multiunit 1 and the URS. Since completing the ACM, APS has conducted various pre-design studies necessary to support the selection and design of remedies for Multiunit 1 and the URS. The pre-design studies completed during the reporting period are described below.

- *Expansion of Groundwater Monitoring Network in the Multiunit 1 Ash Disposal Area* – An expanded list of supplementary wells across the site were monitored during the reporting period. The water

quality data from these wells has helped refine the delineation of elevated concentrations of cobalt and molybdenum in groundwater downgradient of Multiunit 1 (Section 3.1).

- *Installation and Aquifer Testing of Pre-Design Wells at the URS* – APS installed four 6-inch diameter wells at the URS in 2019 and performed aquifer testing at two of the wells in July 2020. The wells were installed and tested to evaluate the effectiveness of an extraction well network as a potential remedy for the URS. The well installation activities and aquifer test results are documented in a Well Completion Report included as Appendix H.
- *Assessment of Appendix IV Exceedances at MW-87* – Groundwater samples collected from CCR monitoring well MW-87 have intermittently indicated exceedances of the cobalt and molybdenum GWPS since the well's installation in November 2018. During the reporting period, APS evaluated potential causes for the cobalt and molybdenum exceedances, which include unsuccessful well development caused by poor water production and potential groundwater impacts resulting from the infiltration of Chaco Wash surface water. The evaluation, which is included as Appendix I, recommended collecting groundwater samples from several supplementary monitoring wells near MW-87 to better understand groundwater quality near the well. The supplemental groundwater quality data was collected in November 2020 and will be evaluated in the first quarter of 2021.
- *Operations Inspection of Disposal Area Extraction Wells* – An extraction well system located downgradient of the disposal area and installed prior to construction of the intercept trench system was inspected in October 2019. The inspection findings were documented during the reporting period and are included as Appendix J. In general, the system appears to have limited operational capability.
- *Improvements to Northern Intercept Trench* – To improve groundwater containment near the Northern Intercept Trench (NIT), APS converted monitoring well MW-82S into an extraction well and installed a new extraction well (EW-17) near the NIT. The extraction wells were being configured to extract and convey captured water to the site's existing seepage collection system at the time this Annual Report was prepared. A technical memorandum documenting the installation of EW-17 will be prepared in 2021.

3.4 Semiannual Progress Report on Remedy Selection for Multiunit 1 and the URS

40 CFR §257.97(a) requires the preparation of semiannual reports which document the progress of remedy selection for CCR units that have potentially impacted groundwater until the remedy is selected. Accordingly, APS prepared the third semiannual report during the reporting period on July 15, 2020 which describes the progress of remedy selection for Multiunit 1 and the URS. This semiannual report is included as Appendix K.

This Annual Groundwater Monitoring and Corrective Action Report for 2020 fulfills the requirements of 40 CFR §257.97(a) for a subsequent semiannual progress report by providing updates on remedy selection for Multiunit 1 and the URS (Section 3.3). Future planned activities related to remedy selection for Multiunit 1 and the URS are documented in Section 4.0.

3.5 CCR Unit Closure Activities

As documented in previous annual reports, APS published a notice of intent to cease discharges to the URS on December 10, 2018 and close the unit pursuant to 40 CFR §257.101(a)(1). This CCR unit is currently in the closure process. The URS has been demolished and both CCR and visually impacted soil underlying the unit were removed as of December 14, 2018. A new concrete tank (referred to as the Upper Retention Tank [URT]) was constructed to serve the function of the URS and was placed in service on December 10, 2018. In accordance with 40 CFR §257.102(c), closure of the URS will not be complete until concentrations of fluoride in groundwater downgradient of the unit decline to less than the GWPS for this constituent.

During the reporting period, APS published a notice of intent to cease discharges to the CWTP on November 23, 2020 and close the unit pursuant to 40 CFR §257.101(a)(1) and §257.101(b)(1) (Appendix L). The unit had not triggered corrective action and was in detection monitoring at the time discharges to the unit ceased. Upon suspension of discharges to the CWTP, flows were directed to a new Bottom Ash Sluice Water sedimentation tank system constructed to serve the function of the CWTP (i.e., treatment of ash-impacted wastewater prior to discharge to Morgan Lake through a National Pollutant Discharge Elimination System [NPDES] permitted outfall). The CWTP will be closed in accordance with the closure plan for this unit (AECOM, 2016) which includes closure by removal of CCR solids through both mechanical excavation and hydraulic dredging with the likely repurposing of the impoundment as a non-CCR low volume wastewater pond.

Multiunit 1 remained in service as of the end of 2020. Although progress was made with the installation and commissioning of unit processes to enable blending of FGD waste (which is currently discharged to the LAI) with fly ash for disposal in the DFADA, these activities were ongoing as of December 31, 2020 due principally to delays associated with the COVID-19 pandemic.

4.0 KEY ACTIVITIES FOR UPCOMING YEAR

During 2021, the following key activities will likely be conducted to support CCR groundwater monitoring and corrective action compliance at the site:

- Preparation of an Annual Groundwater Monitoring and Corrective Action Report for 2021 – Per 40 CFR §257.90(e), an annual report must be prepared no later than January 31 of the year following the calendar year documented in the report.
- Continued Detection Monitoring at the CWTP, DFADA, and RWP with Evaluation for SSIs Over Background – Per 40 CFR §257.94(b), detection monitoring (including analysis of collected samples for Appendix III constituents) must continue on a semiannual basis. On an ongoing basis, APS must determine whether there has been an SSI over background at the CCR units undergoing detection monitoring within 90 days of sampling and analysis (40 CFR §257.93[h][2]). APS will also update the BTVs for the CWTP in 2021.
- Initiation of Assessment Monitoring for CCR Units with an SSI over Background (as applicable) – Per 40 CFR §257.94(e)(1), within 90 days of detecting an SSI over background levels for any Appendix III constituent, an assessment monitoring program must be established.
- Continued Assessment Monitoring at Multiunit 1 and the URS – While corrective action evaluation progresses, assessment monitoring (including analysis of collected samples for Appendix III and

Appendix IV constituents) must be conducted on a semiannual basis per 40 CFR §257.95(b) and (d)(1).

- Conversion of URS Pre-Design Wells into Extraction Wells – APS will convert two of the Pre-Design wells installed at the URS in 2019 into extraction wells as an interim response measure to evaluate the effectiveness of an extraction well network as a potential corrective measure for the URS. The extraction wells will also help to capture impacted groundwater before the final remedy for the URS is selected, designed, and implemented.
- Continued Evaluation of Groundwater Quality near MW-87 – APS will evaluate the supplemental water quality data collected in November 2020 from select wells near MW-87 to evaluate potential causes of the cobalt and molybdenum exceedances at the well.
- Investigation of Groundwater Quality Downgradient of the SIT – APS will conduct a site investigation in 2021 to evaluate the cobalt exceedances observed during the reporting period at two monitoring wells downgradient of the SIT.
- Public Meeting – Per 40 CFR §257.96(e), APS will conduct a public meeting with interested and affected parties to present the results of the ACM for Multiunit 1 and the URS at least 30 days prior to selecting remedies for each CCR unit.
- Remedy Selection – APS will select remedies for Multiunit 1 and the URS that meet the requirements of 40 CFR §257.97(b). Additionally, APS will prepare a remedy selection report for each unit per 40 CFR §257.97(a).
- Initiation of Remedial Activities – Per 40 CFR §257.91(f), APS will begin remedial activities at Multiunit 1 and the URS within 90 days of selecting a remedy for each unit.
- Closure Activities at Multiunit 1 and the CWTP – closure activities at Multiunit 1 will be initiated and continue at the CWTP in 2021 in accordance with the individual unit closure plans.

Since the CCR Rule is implemented in phases based on analysis of data collected during the groundwater monitoring program, the foregoing list is subject to change and only includes reasonably probable activities that will occur in 2021; this list is not comprehensive.

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TABLES



**Table 1-1
Description of Coal Combustion Residual Units**

CCR Unit	Location	Function	Operation	Size/Construction	History
Upper Retention Sump (URS)	<i>Plant Area</i> NW1/4 of Section 36, T29N, R16W	<i>Single CCR unit</i> . Impoundment. Surge pond for FGD system.	FGD system discharge is discharged into the sump via 10 plus controlled/monitored lines. Pond contents are recirculated back into the FGD process via a pump chamber located on the south end of the pond. Solids are periodically removed from the sump.	- 1.07 acres in areal extent - Soil-cement liner on bottom and inside slopes	Placed in service around 1983. Discharges to the unit ceased as of December 10, 2018 and were thereafter directed to a new concrete tank (i.e., the Upper Retention Tank) that is located within the former footprint of the URS and serves the function of the former unit. Closure activities included removal of CCR and associated impacted materials from the URS with placement in the DFADA prior to backfilling the area with clean fill.
Combined Waste Treatment Pond (CWTP)	<i>East of Plant, Adjacent to Morgan Lake</i> SE1/4 of Section 25, T29N, R16W	<i>Single CCR Unit</i> . Impoundment. Detention pond used for NPDES treatment; settling and stabilization basin for ash-impacted and other Plant wastewater flows prior to discharge to Morgan Lake in accordance with an NPDES permit.	The primary source of water to the CWTP is from hydrobins which separate transport water from bottom ash generated in plant Units 4 and 5. Seven earthen basins in the western edge of the CWTP promote sediment settling prior to the water decanting into the main portion of the CWTP and then overflowing into the cooling water discharge canal at the northeast corner of the pond.	- 13.4 acres in areal extent	Constructed in 1978. Discharges to the unit ceased as of November 23, 2020 and were thereafter directed to a new concrete tank (i.e., the Bottom Ash Sluice Water Recycle Tank) that is located northeast of the coal storage area.
Lined Ash Impoundment (LAI)	<i>Disposal Area</i> E1/2 of Section 34, T29N, R16W	<i>Part of a CCR multiunit with the LDWP</i> that receives fly ash, flue gas desulfurization (FGD) waste and associated residuals as a slurry from the plant.	Waste is discharged into the pond in the northeast portion of the pond. Decanted flow discharges via a vertical drop inlet structure and through a toe drain into the LDWP.	- 126.8 acres in areal extent (high water line) - 60 mil HDPE liner - 5,364 acre-ft design capacity - 5,275.2 ft AMSL maximum working level	Constructed on top of closed Ash Ponds 4 and 5 and placed in service in 2004.
Lined Decant Water Pond (LDWP)	<i>Disposal Area</i> E1/2 of Section 34, T29N, R16W	<i>Part of a CCR multiunit with the LAI</i> that receives decanted water from the LAI. Impoundment.	Decanted water is discharged into the pond from the LAI via gravity; the water is pumped from the LDWP back to the plant for reuse in operations.	- 45 acres in areal extent - Two 60 mil HDPE liners separated by a leak detection layer - 435 acre-ft design capacity - 5,213.2 ft AMSL maximum working level	Constructed on top of closed Ash Pond 3 and placed in service in 2004.
Dry Fly Ash Disposal Area (DFADA)	<i>Disposal Area</i> SE1/4 of Section 34, T29N, R16W	<i>Single CCR unit</i> . Landfill. Disposal of dry fly ash, bottom ash, and construction debris. In the future, FGD solids will be mixed with fly ash at the plant and landfilled in the DFADA.	The DFADA is filled in general accordance with a stacking plan. Leachate generated from the DFADA cells is pumped into trucks and used for dust control or can be transferred to the LDWP.	- 3 conjoined cells (DFADA 1, 2, and 3) with an areal extent of 94.8 acres total - 3,125 acre-ft design capacity - DFADA 1: compacted clay overlain by 60 mil HDPE liner and drainage layer - DFADA 2 and 3: geosynthetic clay liner overlain by 60 mil HDPE liner and drainage layer - Leachate collection system drains each DFADA cell - DFADA 4 is planned and under construction in 2020	Constructed in 2007 (DFADA 1), 2012 (DFADA 2), and 2014 (DFADA 3).

**Table 1-1
Description of Coal Combustion Residual Units**

CCR Unit	Location	Function	Operation	Size/Construction	History
Return Water Pond (RWP)	Plant Area NW1/4 of Section 36, T29N, R16W	Single CCR unit. Lined impoundment for the temporary storage of FGD system waste, drain down from the LAI, treated sewage wastewater flow, and water pumped from the site seepage collection system.	The RWP consists of two cells; FGD system waste generated at the plant can be discharged into an FGD cell while all other liquids are discharged into a liquid cell. A spillway between the two cells allows liquid in the FGD system waste to decant into the liquid cell. Liquids from the liquid cell are pumped back to the plant for reuse in plant operations.	<ul style="list-style-type: none"> - 5.1 acres in areal extent - Composite liner system and associated LCRS comprised of a primary 60 mil HDPE liner, a geosynthetic drainage layer, a secondary 60 mil HDPE liner, and an underlying geosynthetic clay liner - 38.6 acre-ft design capacity - 5379 ft AMSL maximum working level 	Constructed in 2019 and placed into service November 2020.

Abbreviations:

AMSL - above mean sea level

CCR - Coal combustion residuals

CWTP - Combined Waste Treatment Pond

DFADA - Dry Fly Ash Disposal Area

FGD - flue gas desulfurization

ft - feet

HDPE - high density polyethylene

LAI - Lined Ash Impoundment

LCRS - leak collection and removal system

LDWP - Lined Decant Water Pond

NPDES - National Pollutant Discharge Elimination System

RWP - Return Water Pond

URS - Upper Retention Sump

**Table 1-2
CCR Groundwater Monitoring System Summary**

Well	CCR Unit	Well Designation	Hydrogeologic Unit	Date Installed	Borehole Depth [ft bgs]	Top of Casing Elevation [ft AMSL]	Ground Surface Elevation [ft AMSL]	Top of Screen [ft bgs]	Bottom of Screen [ft bgs]	Screen Length [ft]	Top Screen Elevation [ft AMSL]	Bottom Screen Elevation [ft AMSL]	Bottom Borehole Elevation [ft AMSL]
MW-12R1	DFADA	Background	Lewis Shale	4/10/2018	40	5,270.12	5,268.23	22	32	10	5,246.20	5,236.20	5,228.23
MW-55R	DFADA	Background	Lewis Shale	9/13/2015	95	5,243.96	5,241.36	73	93	20	5,168.46	5,148.46	5,146.36
MW-10	DFADA	Downgradient	Lewis Shale	3/12/1987	35	5,150.71	5,149.65	13	33	20	5,136.65	5,116.65	5,114.65
MW-13	DFADA	Downgradient	Lewis Shale	8/31/1987	60	5,150.75	5,149.52	35	55	20	5,114.62	5,094.62	5,089.52
MW-44	DFADA	Downgradient	Lewis Shale	3/28/2012	40	5,146.89	5,145.15	14	24	10	5,131.65	5,121.65	5,105.15
MW-48	DFADA	Downgradient	Lewis Shale	5/14/2013	60	5,165.96	5,163.43	35	60	25	5,128.43	5,103.43	5,103.43
MW-11	DFADA	Supplementary	Lewis Shale	3/13/1987	50	5,111.96	5,110.48	30	50	20	5,080.58	5,060.58	5,060.58
MW-43	Multiunit 1	Background	Lewis Shale	3/24/2012	60	5,271.58	5,269.42	16	26	10	5,253.42	5,243.42	5,209.42
MW-49A	Multiunit 1	Background	Lewis Shale	5/18/2013	68	5,288.62 ^(b)	5,285.29 ^(b)	50	65	15	5,231.38	5,216.38	5,213.38
MW-50A	Multiunit 1	Background	Lewis Shale	5/7/2013	63	5,335.67	5,333.20	28	43	15	5,305.20	5,290.20	5,270.20
MW-51	Multiunit 1	Background	Lewis Shale	4/28/2013	80	5,288.14	5,285.14	20	30	10	5,265.14	5,255.14	5,205.14
MW-74	Multiunit 1	Background	Lewis Shale	1/18/2017	40	5,219.09	5,216.70	8	18	10	5,208.60	5,198.60	5,176.70
MW-07	Multiunit 1	Downgradient	Lewis Shale	3/11/1987 ^(a)	60	5,149.32	5,148.29	15	35	20	5,133.59	5,113.59	5,088.29
MW-08	Multiunit 1	Downgradient	Lewis Shale	3/11/1987 ^(a)	74	5,122.56	5,120.85	28	48	20	5,093.15	5,073.15	5,046.85
MW-40R	Multiunit 1	Downgradient	Lewis Shale	9/17/2015	25	5,137.43	5,134.83	14	24	10	5,120.53	5,110.53	5,109.83
MW-61	Multiunit 1	Downgradient	Lewis Shale	9/16/2015	35	5,129.19	5,126.59	24	34	10	5,102.39	5,092.39	5,091.59
MW-75	Multiunit 1	Downgradient	Lewis Shale	3/15/2017	41	5,126.80	5,124.80	29	39	10	5,095.80	5,085.80	5,083.80
MW-76	Multiunit 1	Downgradient	Lewis Shale	3/16/2017	33	5,116.23	5,114.30	12	27	15	5,102.50	5,087.50	5,081.30
MW-87	Multiunit 1	Downgradient	Lewis Shale	11/28/2018	50	5,076.53	5,074.29	15	45	30	5,059.29	5,029.29	5,024.29
DMX-03	Multiunit 1	Supplementary	Lewis Shale	4/14/1992	38	5,085.50	5,084.85	18	38	20	5,066.85	5,046.85	5,046.85
DMX-04	Multiunit 1	Supplementary	Lewis Shale	4/15/1992	51	5,073.00	5,072.11	31	51	20	5,041.11	5,021.11	5,021.11
DMX-06	Multiunit 1	Supplementary	Lewis Shale	4/16/1992	35	5,077.40	5,076.42	15	35	20	5,061.42	5,041.42	5,041.42
MW-05	Multiunit 1	Supplementary	Lewis Shale	3/12/1987	49	5,088.50	5,087.31	29	49	20	5,058.21	5,038.21	5,038.21
MW-06	Multiunit 1	Supplementary	Lewis Shale	3/12/1987	49	5,082.71	5,080.19	29	49	20	5,051.39	5,031.39	5,031.39
MW-15	Multiunit 1	Supplementary	Lewis Shale	9/1/1987	53	5,093.93	5,092.28	22	52	30	5,070.08	5,040.08	5,039.58
MW-16	Multiunit 1	Supplementary	Lewis Shale	9/2/1987	55	5,101.32	5,100.42	36	55	19	5,064.92	5,045.62	5,045.62
MW-17R	Multiunit 1	Supplementary	Lewis Shale	12/12/2013	32	5,093.09	5,090.43	17	32	15	5,073.93	5,058.93	5,058.43
MW-18	Multiunit 1	Supplementary	Lewis Shale	9/3/1987	55	5,089.10	5,088.06	26	55	30	5,062.56	5,033.06	5,033.06
MW-23R	Multiunit 1	Supplementary	Lewis Shale	12/6/2013	42	5,101.53	5,099.08	21	41	20	5,078.08	5,058.08	5,057.58
MW-24	Multiunit 1	Supplementary	Lewis Shale	9/05/1987	70	5,081.65	5,080.41	60	70	10	5,020.71	5,010.71	5,010.71
MW-34	Multiunit 1	Supplementary	Lewis Shale	6/9/2010	49	5,078.33	5,077.34	24	49	25	5,053.34	5,028.34	5,028.34
MW-36R	Multiunit 1	Supplementary	Lewis Shale	12/12/2013	34	5,093.33	5,090.76	14	34	20	5,077.26	5,057.26	5,056.76
MW-38R	Multiunit 1	Supplementary	Lewis Shale	12/13/2013	39	5,094.12	5,091.41	14	39	25	5,077.91	5,052.91	5,052.41
MW-45	Multiunit 1	Supplementary	Lewis Shale	5/19/2013	39	5,089.56	5,087.13	24	39	15	5,063.13	5,048.13	5,048.13
MW-46	Multiunit 1	Supplementary	Lewis Shale	4/26/2013	26	5,064.30	5,061.91	16	26	10	5,045.91	5,035.91	5,035.91
MW-52	Multiunit 1	Supplementary	Lewis Shale	5/10/2013	82	5,210.41	5,208.06	67	82	15	5,141.06	5,126.06	5,126.06
MW-54	Multiunit 1	Supplementary	Lewis Shale	5/20/2013	91	5,217.82	5,218.38	76	91	15	5,142.38	5,127.38	5,127.38
MW-56	Multiunit 1	Supplementary	Lewis Shale	12/4/2013	37	5,091.49	5,089.14	26	36	10	5,063.14	5,053.14	5,052.64
MW-57	Multiunit 1	Supplementary	Lewis Shale	12/8/2013	43	5,088.30	5,085.70	22	42	20	5,063.70	5,043.70	5,043.20
MW-60	Multiunit 1	Supplementary	Lewis Shale	9/16/2015	25	5,144.10	5,141.50	14	24	10	5,127.16	5,117.16	5,116.50
EW-14	Multiunit 1	Supplementary	Lewis Shale	10/26/2010	48	5,079.65	5,078.85	18	48	30	5,060.85	5,030.85	5,030.65
EW-15	Multiunit 1	Supplementary	Lewis Shale	10/26/2010	50	5,077.73	5,076.82	19	49	30	5,057.82	5,027.82	5,027.20
MW-62	CWTP	Downgradient	Pictured Cliffs Sandstone	9/28/2015	20	5,341.87	5,339.37	10	20	10	5,329.37	5,319.37	5,319.37
MW-63	CWTP	Downgradient	Pictured Cliffs Sandstone	9/25/2015	20	5,337.02	5,337.02	9	19	10	5,328.02	5,318.02	5,317.02
MW-64	CWTP	Downgradient	Pictured Cliffs Sandstone	9/26/2015	25	5,337.66	5,337.66	10	20	10	5,327.66	5,317.66	5,312.66
MW-65	CWTP	Downgradient	Pictured Cliffs Sandstone	9/27/2015	20	5,339.74	5,337.24	8	18	10	5,329.24	5,319.24	5,317.24

**Table 1-2
CCR Groundwater Monitoring System Summary**

Well	CCR Unit	Well Designation	Hydrogeologic Unit	Date Installed	Borehole Depth [ft bgs]	Top of Casing Elevation [ft AMSL]	Ground Surface Elevation [ft AMSL]	Top of Screen [ft bgs]	Bottom of Screen [ft bgs]	Screen Length [ft]	Top Screen Elevation [ft AMSL]	Bottom Screen Elevation [ft AMSL]	Bottom Borehole Elevation [ft AMSL]
MW-66	URS	Downgradient	Pictured Cliffs Sandstone	9/27/2015	33	5,344.69	5,344.70	15	25	10	5,329.70	5,319.70	5,311.70
MW-67	URS	Downgradient	Pictured Cliffs Sandstone	9/11/2015	31	5,352.76 ^(b)	5,353.80 ^(b)	20	30	10	5,334.42	5,324.42	5,323.02
MW-68	URS	Downgradient	Pictured Cliffs Sandstone	9/10/2015	30	5,353.58	5,353.95	19	29	10	5,334.95	5,324.95	5,323.95
MW-69	URS	Downgradient	Pictured Cliffs Sandstone	9/9/2015	35	5,357.66	5,355.26	24	34	10	5,330.96	5,320.96	5,320.26
MW-70	URS	Downgradient	Pictured Cliffs Sandstone	9/30/2015	53	5,371.12	5,368.62	40	50	10	5,328.62	5,318.62	5,315.62
MW-83	URS	Downgradient	Pictured Cliffs Sandstone	11/29/2018	35	5,343.15	5,341.51	14	29	15	5,327.51	5,312.51	5,306.51
MW-84	URS	Downgradient	Pictured Cliffs Sandstone	11/18/2018	35	5,338.23	5,339.34	10	30	20	5,329.34	5,309.34	5,304.34
MW-85	URS	Downgradient	Pictured Cliffs Sandstone	11/18/2018	35	5,352.78	5,353.69	15	30	15	5,338.69	5,323.69	5,318.69
MW-86	URS	Downgradient	Pictured Cliffs Sandstone	11/17/2018	35	5,338.76	5,338.74	10	30	20	5,328.74	5,308.74	5,303.74
CM-01	URS	Extraction	Pictured Cliffs Sandstone	12/13/2019	37	5,353.42	5,351.19	20	30	10	5,331.19	5,321.19	5,314.19
CM-02	URS	Extraction	Pictured Cliffs Sandstone	12/13/2019	37	5,348.50	5,346.54	20	30	10	5,326.54	5,316.54	5,309.54
CM-03	URS	Extraction	Pictured Cliffs Sandstone	12/12/2019	37	5,354.85	5,352.32	20	30	10	5,332.32	5,322.32	5,315.32
CM-04	URS	Extraction	Pictured Cliffs Sandstone	12/12/2019	36	5,353.94	5,351.81	20	30	10	5,331.81	5,321.81	5,315.81
MW-71	URS/CWTP	Background	Pictured Cliffs Sandstone	3/1/2016	50	5,362.91	5,363.62	23	43	20	5,341.12	5,321.12	5,313.62
MW-72	URS/CWTP	Background	Pictured Cliffs Sandstone	3/2/2016	61	5,381.62	5,379.09	51	61	10	5,328.39	5,318.39	5,318.09
MW-73	URS/CWTP	Background	Pictured Cliffs Sandstone	1/18/2017	45	5,353.95	5,351.90	29	44	15	5,323.00	5,308.00	5,306.90
MW-88	RWP	Downgradient	Pictured Cliffs Sandstone	12/6/2019	31	5365.25	5362.71	20	30	10	5,342.71	5,332.71	5,331.71
MW-89	RWP	Downgradient	Pictured Cliffs Sandstone	12/6/2019	35	5370.21	5367.51	24	34	10	5,343.51	5,333.51	5,332.51
MW-90	RWP	Downgradient	Pictured Cliffs Sandstone	12/7/2019	40	5374.08	5372.93	29	39	10	5,343.93	5,333.93	5,332.93
DMX-01	Other Disposal Areas	Supplementary	Lewis Shale	4/15/1992	39	5,098.02	5,097.49	19	39	20	5,078.49	5,058.49	5,058.49
IP-01	Other Disposal Areas	Supplementary	Lewis Shale	12/3/2013	39	5,101.81	5,099.39	14	39	20	5,085.89	5,060.89	5,060.89
IP-02	Other Disposal Areas	Supplementary	Lewis Shale	December 2013	28	5,090.79	5,088.27	17	27	10	5,071.27	5,061.27	5,060.77
IP-03	Other Disposal Areas	Supplementary	Lewis Shale	December 2013	35	5,091.08	5,088.68	24	34	10	5,064.68	5,054.68	5,054.18
IP-04	Other Disposal Areas	Supplementary	Lewis Shale	December 2013	33	5,095.92	5,093.46	22	32	10	5,071.46	5,061.46	5,060.96
IP-05	Other Disposal Areas	Supplementary	Lewis Shale	December 2013	41	5,094.43	5,091.88	21	41	20	5,071.38	5,051.38	5,050.88
MW-01	Other Disposal Areas	Supplementary	Lewis Shale	9/06/1987	22	5,140.43	5,138.48	12	22	10	5,126.88	5,116.88	5,116.88
MW-03	Other Disposal Areas	Supplementary	Lewis Shale	3/13/1987	44	5,126.73	5,125.52	14	44	30	5,111.27	5,081.27	5,081.27
MW-19	Other Disposal Areas	Supplementary	Lewis Shale	9/3/1987	50	5,127.40	5,126.34	29	50	21	5,097.14	5,076.64	5,076.64
MW-21	Other Disposal Areas	Supplementary	Lewis Shale	9/4/1987	30	5,155.04	5,154.47	11	30	19	5,143.87	5,124.47	5,124.47
MW-22	Other Disposal Areas	Supplementary	Lewis Shale	9/4/1987	30	5,156.51	5,156.30	10	30	20	5,145.90	5,125.90	5,125.90
MW-26	Other Disposal Areas	Supplementary	Lewis Shale	9/06/1987	51	5,139.26	5,138.36	41	51	10	5,097.86	5,087.86	5,087.86
MW-30	Other Disposal Areas	Supplementary	Lewis Shale	6/7/2010	23	5,091.67	5,092.06	13	23	10	5,079.06	5,069.06	5,069.06
MW-31	Other Disposal Areas	Supplementary	Lewis Shale	6/7/2010	24	5,092.59	5,089.96	14	24	10	5,075.96	5,065.96	5,065.96
MW-32	Other Disposal Areas	Supplementary	Lewis Shale	6/7/2010	20	5,087.65	5,084.94	10	20	10	5,074.94	5,064.94	5,064.94
MW-77S	Other Disposal Areas	Supplementary	Lewis Shale	11/8/2018	80	5094.94	5092.35	24	44	20	5,068.35	5,048.35	5,012.35
MW-78S	Other Disposal Areas	Supplementary	Lewis Shale	11/13/2018	80	5,088.79	5,086.51	24	44	20	5,062.51	5,042.51	5,006.51
MW-79S	Other Disposal Areas	Supplementary	Lewis Shale	11/20/2018	58	5,086.90	5,084.35	16	36	20	5,068.35	5,048.35	5,026.35
MW-80S	Other Disposal Areas	Supplementary	Lewis Shale	11/16/2018	81	5,086.80	5,084.29	35	55	20	5,049.29	5,029.29	5,003.29
MW-81	Other Disposal Areas	Supplementary	Lewis Shale	11/26/2018	36	5,086.41	5,084.07	13	33	20	5,071.07	5,051.07	5,048.07
MW-82S	Other Disposal Areas	Supplementary	Lewis Shale	11/27/2018	65	5,093.37	5,091.02	17	37	20	5,074.02	5,054.02	5,026.02

Notes and Abbreviations:

Source of presented information is AECOM, 2017 and Sakura Engineering & Surveying, 2017, 2019, and 2020.

Vertical datum is NAVD 88

^(a) - Estimated^(b) - New surveyed elevation after wellhead modifications

AMSL - Above mean sea level

bgs - below ground surface

CCR - coal combustion residual(s)

CWTP - Combined Waste Treatment Pond

DFADA - Dry Fly Ash Disposal Area

ft - feet

RWP - Return Water Pond

URS - Upper Retention Sump

**Table 2-1
BTVs and GWPSs for Site CCR Units**

	CWTP		URS				Multiunit 1				
	Constituent	BTV [mg/L]	Reference	BTV [mg/L]	Reference	GWPS [mg/L]	Reference	BTV [mg/L]	Reference	GWPS [mg/L]	Reference
Appendix III Constituents	Boron	2.0 (MW-62, MW-63) 0.69 (MW-64, MW-65)	5	1.9	1	N/A	1.3	1	N/A		
	Calcium	563 (MW-62, MW-63) 498 (MW-64, MW-65)	6	540	1		740	1			
	Chloride	710	1	710	1		5,700	1			
	Fluoride	1.6 (MW-62) 2.3 (MW-63) 1.5 (MW-64) 2.0 (MW-65)	5	>RL	1		0.8	1			
	pH ¹	6.33 - 7.04 (MW-62, MW-63) 7.25 - 7.68 (MW-64) 6.96 - 8.27 (MW-65)	2,5	<LPL or >UPL	1		7.4	1			
	Sulfate	13,000	1	13,000	1		5,100	1			
	TDS	20,000	1	20,000	1		15,000	1			
Appendix IV Constituents	Antimony	N/A		0.01	4	0.01	4	0.01	3	0.01	3
	Arsenic		0.013	4	0.013	4	0.0086	3	0.01	3	
	Barium		0.05	4	2	4	0.04	3	2	3	
	Beryllium		0.001	4	0.004	4	0.001	3	0.004	3	
	Cadmium		0.001	4	0.005	4	0.002	3	0.005	3	
	Chromium		0.01	4	0.1	4	0.02	3	0.1	3	
	Cobalt		0.016	4	0.016	4	0.01	3	0.01	3	
	Fluoride		4	4	4	4	5	3	5	3	
	Lead		0.005	4	0.015	4	0.01	3	0.015	3	
	Lithium		0.8	4	0.8	4	1.8	3	1.8	3	
	Mercury		0.0002	4	0.002	4	0.0002	3	0.002	3	
	Molybdenum		0.011	4	0.1	4	0.12	3	0.1	3	
	Selenium		0.45	4	0.45	4	0.092	3	0.092	3	
	Thallium		0.0014	4	0.002	4	0.017	3	0.017	3	
	Combined Radium ²		5.4	4	5.4	4	4.4	3	5	3	

Notes:

¹Units are standard units

²Units are picocuries per liter

Abbreviations:

BTV - Background Threshold Value

CWTP - Combined Waste Treatment Pond

GWPS - Groundwater Protection Standard

LPL - lower prediction limit

mg/L - milligrams per liter

N/A - not applicable

RL - reporting limit

UPL - upper prediction limit

URS - Upper Retention Sump

References:

1 - *Statistical Analysis of Initial Detection Monitoring Appendix III Constituent Data*. Arizona Public Service Four Corners Power Plant - Fruitland, New Mexico. Wood Technical Memorandum dated January 12, 2018 and revised August 20, 2018.

2 - *CCR Groundwater Detection Monitoring Evaluation of June 2018 Data Collected from the CWTP*. Arizona Public Service Four Corners Power Plant - Fruitland, New Mexico. Wood Technical Memorandum dated October 15, 2018.

3 - *CCR Groundwater Assessment Monitoring Statistical Analysis and Results for Multiunit 1*. Arizona Public Service Four Corners Power Plant - Fruitland, New Mexico. Wood Technical Memorandum dated October 15, 2018.

4 - *CCR Groundwater Assessment Monitoring Statistical Analysis and Results for the Upper Retention Sump*. Arizona Public Service Four Corners Power Plant - Fruitland, New Mexico. Wood Technical Memorandum dated October 15, 2018.

5 - *CCR Groundwater Detection Monitoring Evaluation of May 2019 Data Collected from the CWTP*. Arizona Public Service Four Corners Power Plant - Fruitland, New Mexico. Wood Technical Memorandum dated October 15, 2019.

6 - *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the CWTP Appendix III Constituent Data Collected Through June 2020*. Arizona Public Service Four Corners Power Plant - Fruitland, New Mexico. Wood Technical Memorandum dated October 13, 2020.

**Table 2-2
CCR Groundwater Monitoring Event Summary for 2020**

CCR UNIT	Well ID	Monitoring System Well Type	Sample Date(s) (Monitoring Program)					Number of Field Original Samples Collected in 2020 ^(b)
			June 17 - 20, 2020 (Detection)	June 18 - 23, 2020 (Assessment)	November 2-5, 2020 (Detection)	November 6-8, 2020 (Assessment)	November 4, 2020 (Characterization)	
CWTP	MW-62	CCR	X	---	X	---	---	2
	MW-63	CCR	X	---	X	---	---	2
	MW-64	CCR	X	---	X	---	---	2
	MW-65	CCR	X	---	X	---	---	2
DFADA	MW-10	CCR	Dry	---	Dry	---	---	0
	MW-12R1	CCR	Dry	---	Dry	---	---	0
	MW-13	CCR	Dry	---	Dry	---	---	0
	MW-44	CCR	Dry	---	Dry	---	---	0
	MW-48	CCR	Dry	---	Dry	---	---	0
	MW-55R	CCR	Dry	---	Dry	---	---	0
Multiunit 1	MW-1	Supplementary	---	X	---	X	---	2
	MW-3	Supplementary	---	X	---	X	---	2
	MW-5	Supplementary	---	X	---	X	---	2
	MW-6	Supplementary	---	X	---	X	---	2
	MW-7	CCR	---	X	---	X	---	2
	MW-8	CCR	---	X	---	X	---	2
	MW-15	Supplementary	---	X	---	X	---	2
	MW-16	Supplementary	---	X	---	X	---	2
	MW-17R	Supplementary	---	X	---	X	---	2
	MW-18	Supplementary	---	X	---	X	---	2
	MW-19	Supplementary	---	X	---	X	---	2
	MW-21	Supplementary	---	X	---	X	---	2
	MW-23R	Supplementary	---	X	---	X	---	2
	MW-36R	Supplementary	---	X	---	X	---	2
	MW-38R	Supplementary	---	X	---	X	---	2
	MW-40R	CCR	---	NS	---	NS	---	0
	MW-43	CCR	---	NS	---	NS	---	0
	MW-49A	CCR	---	X	---	X	---	2
	MW-50A	CCR	---	NS	---	NS	---	0
	MW-51	CCR	---	Dry	---	Dry	---	0
	MW-52	Supplementary	---	X	---	X	---	2
	MW-56	Supplementary	---	X	---	X	---	2
	MW-57	Supplementary	---	X	---	X	---	2
	MW-60	Supplementary	---	X	---	X	---	2
	MW-61	CCR	---	X	---	X	---	2
	MW-74	CCR	---	X	---	NS	---	1
	MW-75	CCR	---	X	---	X	---	2
	MW-76	CCR	---	NS	---	NS	---	0
	MW-78S	Supplementary	---	X	---	NS	---	1
	MW-81	Supplementary	---	X	---	X	---	2
MW-82S	Supplementary	---	X	---	X	---	2	
MW-87	CCR	---	X	---	X	---	2	
DMX-3	Supplementary	---	X	---	X	---	2	
DMX-4	Supplementary	---	X	---	X	---	2	
DMX-6	Supplementary	---	X	---	X	---	2	

**Table 2-2
CCR Groundwater Monitoring Event Summary for 2020**

CCR UNIT	Well ID	Monitoring System Well Type	Sample Date(s) (Monitoring Program)					Number of Field Original Samples Collected in 2020 ^(b)
			June 17 - 20, 2020 (Detection)	June 18 - 23, 2020 (Assessment)	November 2-5, 2020 (Detection)	November 6-8, 2020 (Assessment)	November 4, 2020 (Characterization)	
RWP	MW-88	CCR	Dry	---	Dry	---	---	0
	MW-89	CCR	Dry	---	Dry	---	---	0
	MW-90	CCR	Dry	---	Dry	---	---	0
URS	MW-66	CCR	---	X	---	X	---	2
	MW-67	CCR	---	X	---	X	---	2
	MW-68	CCR	---	X	---	X	---	2
	MW-69	CCR	---	X	---	X	---	2
	MW-70	CCR	---	X	---	X	---	2
	MW-71 ^(a)	CCR	---	X	---	X	---	2
	MW-72 ^(a)	CCR	---	X	---	X	---	2
	MW-73 ^(a)	CCR	---	X	---	X	---	2
	MW-83	CCR	---	X	---	X	---	2
	MW-84	CCR	---	X	---	X	---	2
	MW-85	CCR	---	X	---	X	---	2
	MW-86	CCR	---	---	---	---	---	2
	CM-01	Extraction	---	---	---	---	X	1
	CM-02	Extraction	---	---	---	---	X	1
	CM-03	Extraction	---	---	---	---	X	1
CM-04	Extraction	---	---	---	---	X	1	
<i>Analyzed Constituents</i>			<i>App III</i>	<i>App III, Detected App IV, Supplementary Analytes</i>	<i>App III</i>	<i>App III, App IV, Supplementary Analytes</i>	<i>App IV, Supplementary Analytes</i>	94

Notes:

^(a) Background wells for both the CWTP and URS.

^(b) Totals exclude field duplicate samples.

X - Well Monitored

NS - Not Enough Water to Sample

--- - Well Not Monitored

Abbreviations:

App - Appendix

CCR - coal combustion residuals

CWTP - Combined Waste Treatment Pond

DFADA - Dry Fly Ash Disposal Area

RWP - Return Water Pond

URS - Upper Retention Sump

**Table 2-3
Aquifer Properties and Groundwater Flow Calculations**

Hydrogeologic Unit (CCR Unit)	Estimated Hydraulic Conductivity [ft/d]	Estimated Effective Porosity [Vol/Vol]	Sampling Event	Calculated Hydraulic Gradient [ft/ft]	Calculated Groundwater Flow Direction [degrees from North]	Estimated Groundwater Flow Rate [ft/d]
Pictured Cliffs Sandstone (URS and CWTP)	6.0 ^(a)	0.25 ^(b)	June 2020	0.0007	325	0.02
			November 2020	0.0006	323	0.01
Lewis Shale (Multiunit 1)	0.00028 ^(b)	0.05 ^(b)	June 2020	0.03	253	0.0002
			November 2020	0.03	258	0.0002

Notes:

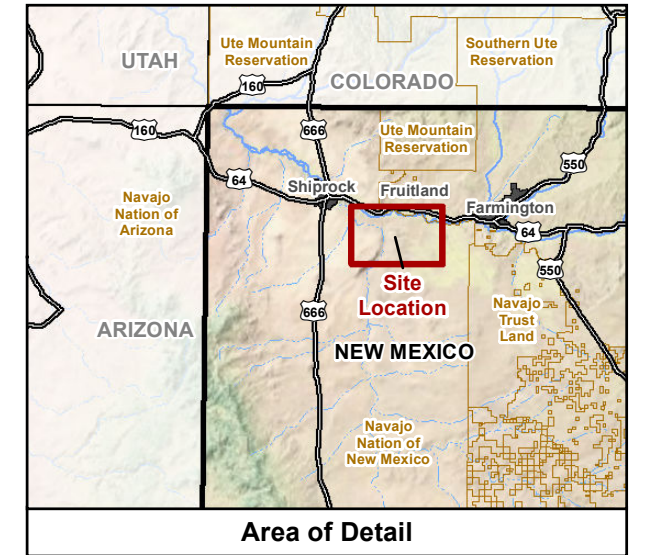
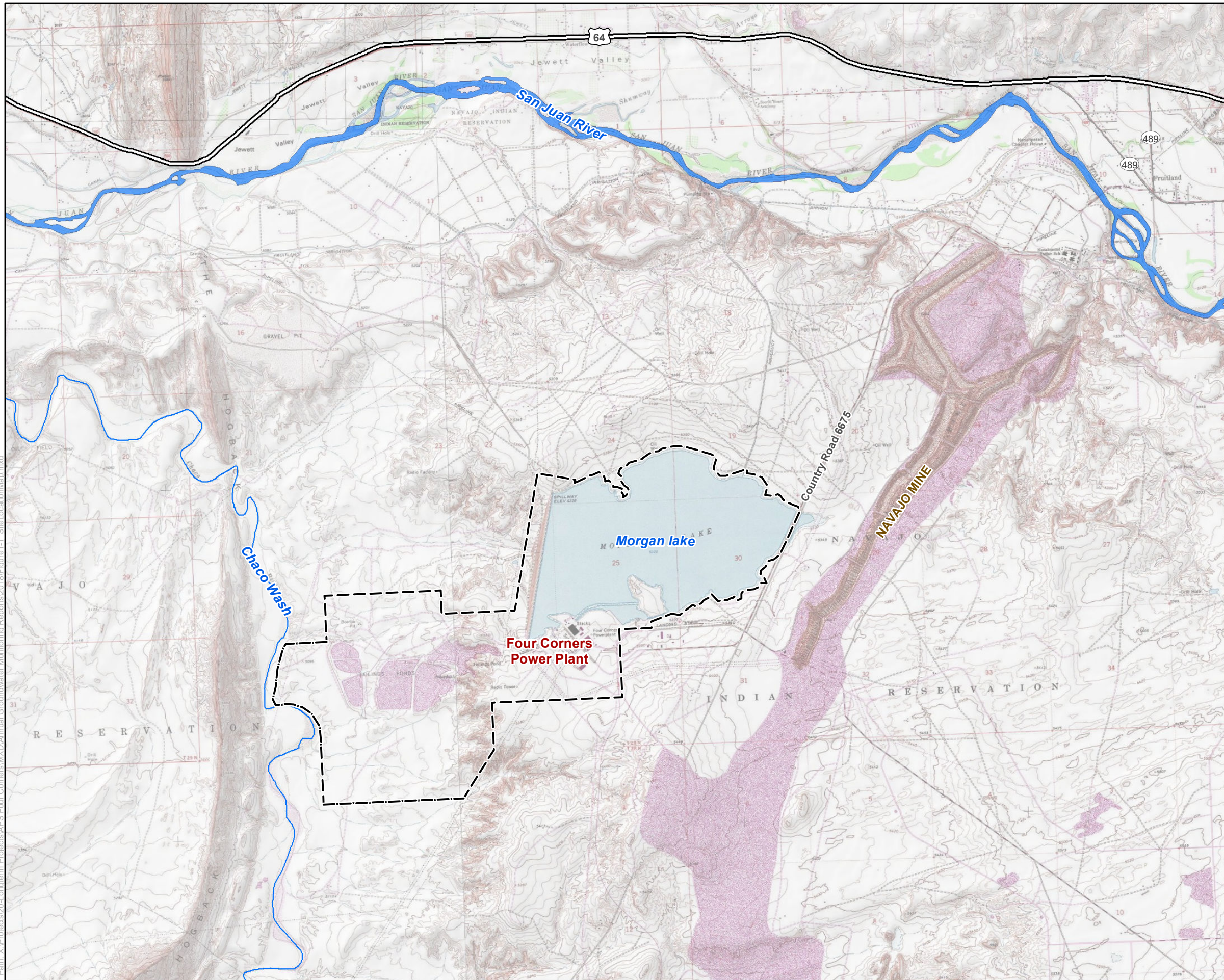
CCR - Coal Combustion Residuals
 CWTP - Combined Waste Treatment Pond
 d - day
 ft - feet
 URS - Upper Retention Sump
 Vol/Vol - volume per volume

References:

^(a) AECOM, 2017
^(b) Freeze, R.A. and Cherry, J.A., 1979.

FIGURES





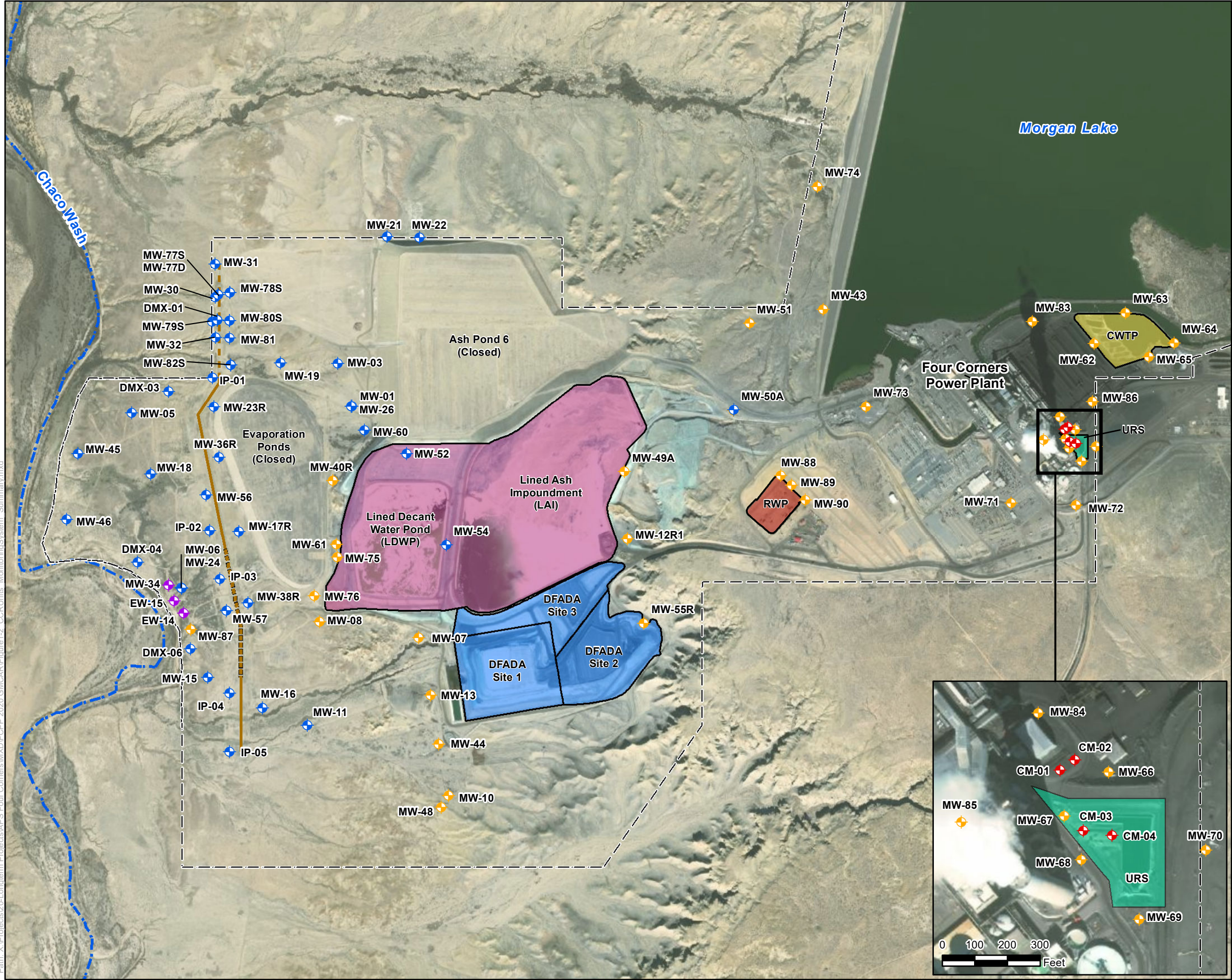
Legend

--- Four Corners Power Plant Lease Boundary



Arizona Public Service Four Corners Power Plant Fruitland, New Mexico	
FIGURE 1-1	Site Location Map
Job No. 14-2016-2024 PM: MBH Date: 1/15/2021 Scale: 1" = 0.8 miles	
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Path: X:\Projects\2016\comterm\Projects\APS\Four Corners\MXD\Annual Groundwater Monitoring Reports\2016\Figure 1-1_Site Location Map.mxd



Legend

- ◆ CCR Monitoring Well Location
- ◆ Supplementary Site Monitoring Well Location
- ◆ Extraction Well
- ◆ CM Pre-Design Wells
- FCPP Lease Boundary
- - - North Intercept Trench
- South Intercept Trench
- ▬▬▬ Approximate Extent of High Flow Zone
- - - Ephemeral Surface Water Feature

CCR Units

- Multiunit 1 (LAI and LDWP)
- Dry Fly Ash Disposal Area (DFADA)
- Combined Waste Treatment Pond (CWTP)
- Upper Retention Sump (URS)
- Return Water Pond (RWP)

- Notes:**
- CCR Coal Combustion Residuals
 - CM Corrective Measures
 - CWTP Combined Waste Treatment Pond
 - DFADA Dry Fly Ash Disposal Area
 - FCPP Four Corners Power Plant
 - LAI Lined Ash Impoundment
 - LDWP Lined Decant Water Pond
 - URS Upper Retention Sump
 - RWP Return Water Pond



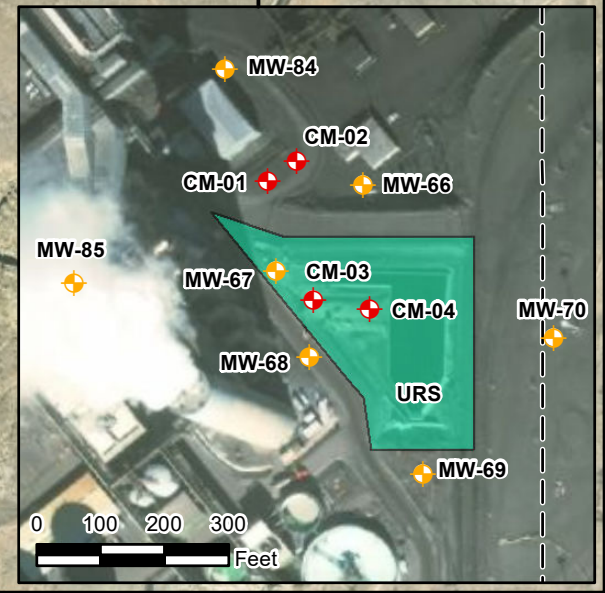
Arizona Public Service
Four Corners Power Plant
Fruitland, New Mexico

FIGURE 1-2 CCR Units and Monitoring System Summary

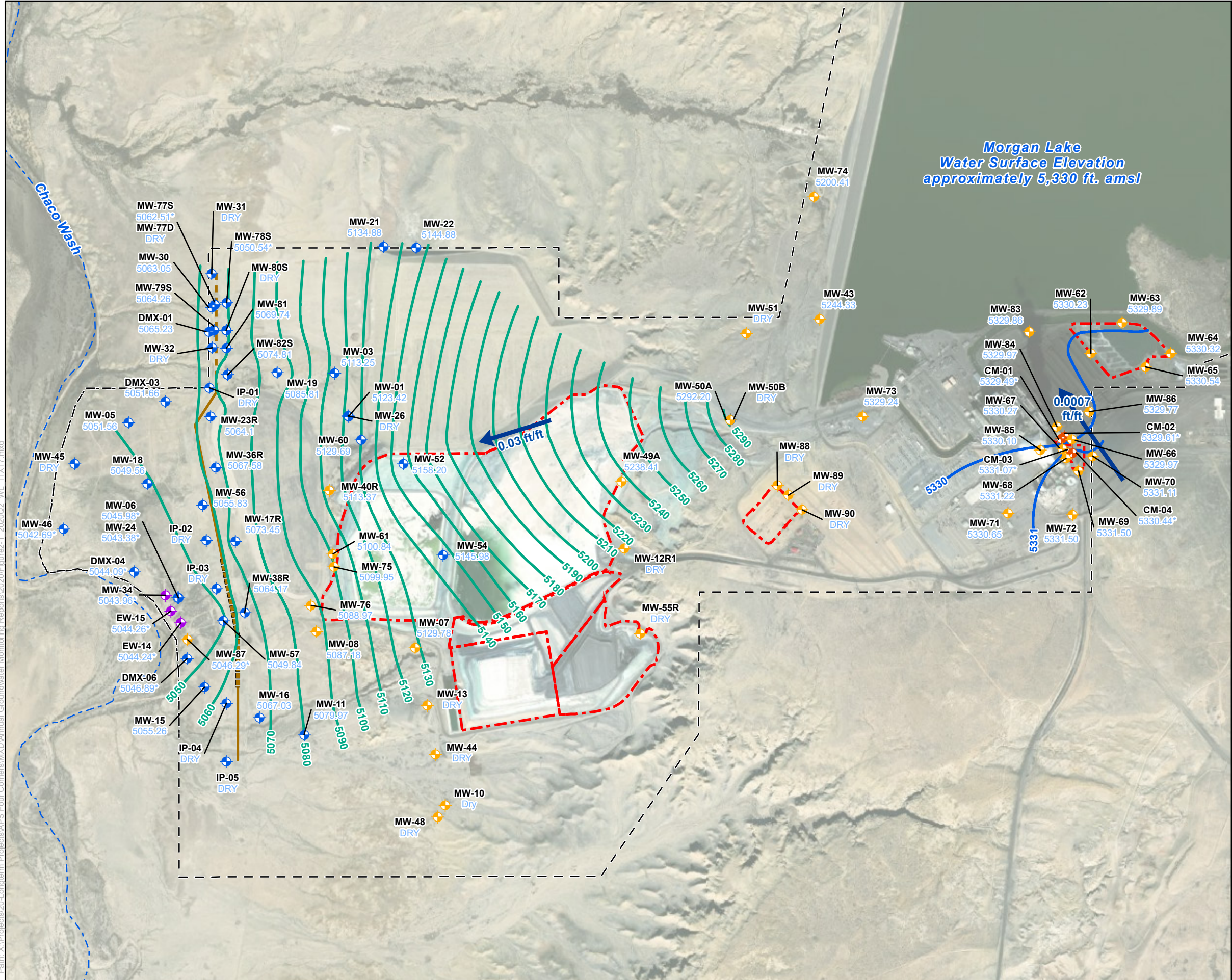
Job No. 14-2018-2068
PM: MBH
Date: 1/18/2021
Scale: 1" = 1400'



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Path: X:\Projects\2018\Longterm Projects\APS Four Corners\MXD\Figure1-2_CCRUnits_MonitoringSystem_Summary.mxd



Legend

- ◆ CCR Monitoring Well Location
- ◆ Supplementary Site Monitoring Well Location
- ◆ Extraction Well Location
- ◆ CM Pre-Design Well Location
- Groundwater Elevation Contour (ft amsl)
10-Foot Contour Interval
- Groundwater Elevation Contour (ft amsl)
1-Foot Contour Interval
- Groundwater Flow Direction with Gradient (ft/ft)
- CCR Unit Boundary
- North Intercept Trench
- South Intercept Trench
- Approximate Extent of High Flow Zone
- Four Corners Power Plant Lease Boundary
- Ephemeral Surface Water Feature

- Notes and Abbreviations:**
- MW-07** Well Identification
 - 5129.78** Groundwater Elevation (ft amsl)
 - *** Well not used in groundwater contouring
 - CCR** Coal Combustion Residuals
 - FCPP** Four Corners Power Plant
 - ft amsl** Feet above mean sea level



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Four Corners Power Plant
Fruitland, New Mexico

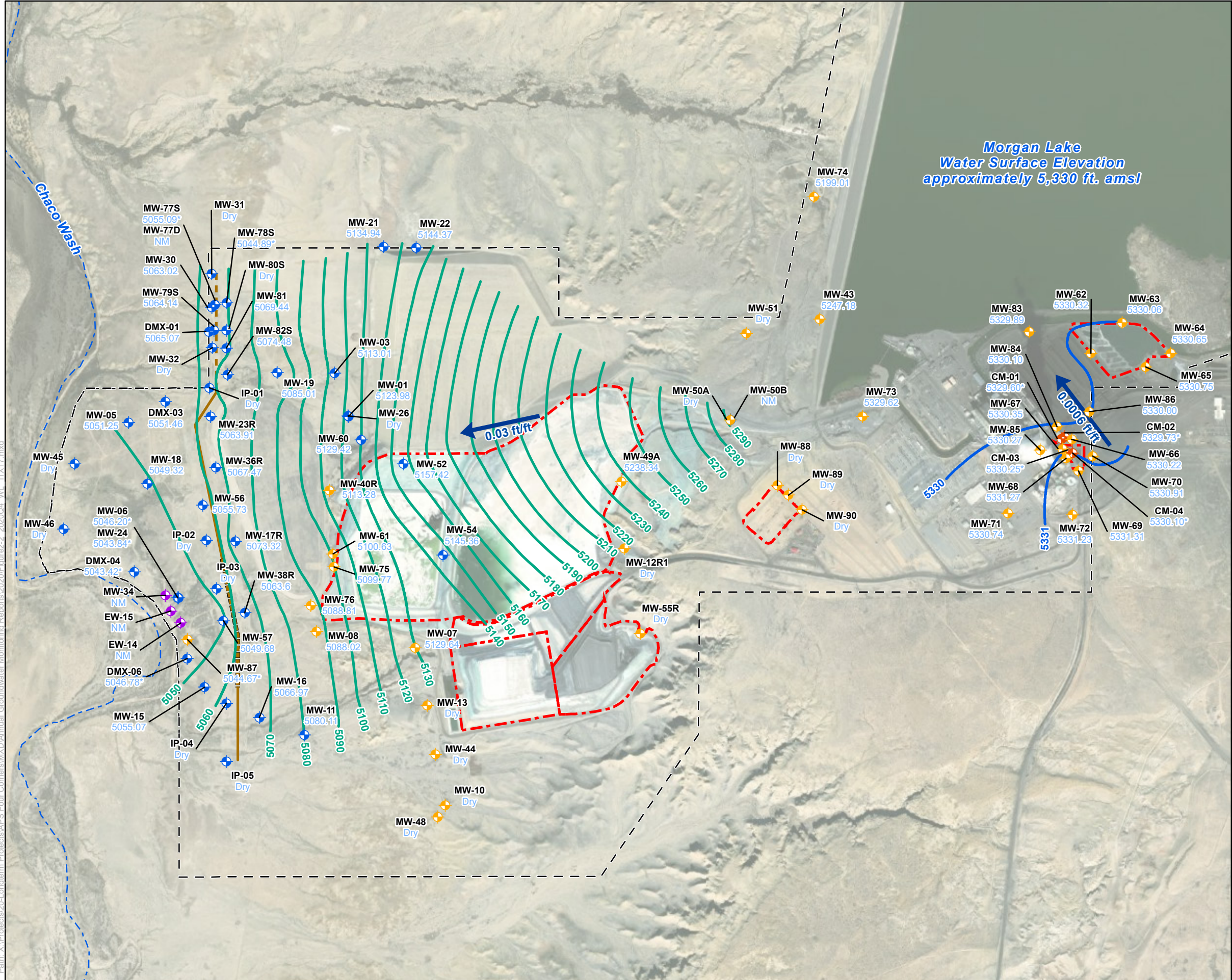
FIGURE 2-1 Potentiometric Surface Map June 2020

Job No. 14-2020-2015
 PM: MBH
 Date: 1/29/2021
 Scale: 1" = 1,400'



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Path: X:\Projects\20-Longterm Projects\APS Four Corners\MXD\Annual Groundwater Monitoring Reports\2020\Figure2-1_202002_WL_11X17.mxd



Legend

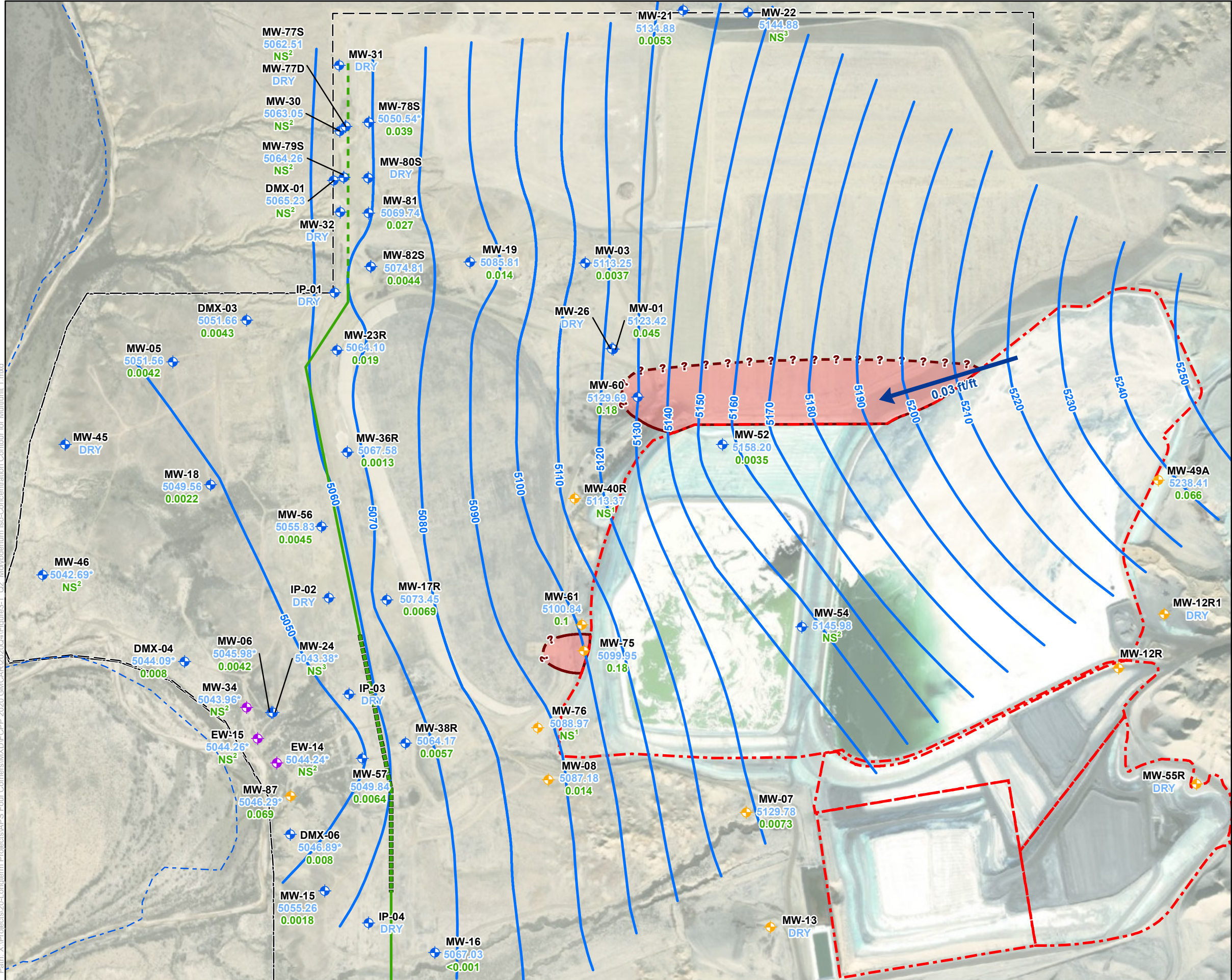
- CCR Monitoring Well Location
- Supplementary Site Monitoring Well Location
- Extraction Well Location
- CM Pre-Design Well Location
- Groundwater Elevation Contour (ft amsl) 10-Foot Contour Interval
- Groundwater Elevation Contour (ft amsl) 1-Foot Contour Interval
- Groundwater Flow Direction with Gradient (ft/ft)
- CCR Unit Boundary
- North Intercept Trench
- South Intercept Trench
- Approximate Extent of High Flow Zone
- Four Corners Power Plant Lease Boundary
- Ephemeral Surface Water Feature

- Notes and Abbreviations:**
- MW-07** Well Identification
 - 5129.64 Groundwater Elevation (ft amsl)
 - NM Not Measured
 - * Well not used in groundwater contouring
 - CCR Coal Combustion Residuals
 - FCPP Four Corners Power Plant
 - ft amsl Feet above mean sea level



Arizona Public Service Four Corners Power Plant Fruitland, New Mexico	
FIGURE 2-2	Potentiometric Surface Map November 2020
Job No. 14-2020-2015 PM: MBH Date: 1/29/2021 Scale: 1" = 1,400'	
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Path: X:\Projects\20-L-Longterm Projects\APS\Four Corners\MXD\Annual Groundwater Monitoring Reports\2020\Figure2-2_202004_WL_11X17.mxd



Legend

- ◆ CCR Monitoring Well Location
- ◆ Supplementary Site Monitoring Well Location
- ◆ Extraction Well
- Four Corners Power Plant Lease Boundary
- North Intercept Trench
- South Intercept Trench
- Approximate Extent of High Flow Zone
- - - Ephemeral Surface Water Feature
- ▭ CCR Unit Boundary

Potentiometric Surface

- (Dashed Where Inferred)
- ➔ Groundwater Flow Direction with Gradient (ft/ft)

Molybdenum Concentration (June 2020)

- ▭ >0.1 mg/L
- ▭ GWPS (0.01 mg/L; Dashed Where Inferred)

Notes:

- MW-57** Well identification
- 5049.84** Groundwater Elevation (ft amsl) measured in June 2020
- *** Well not used in groundwater contouring
- 0.0064** Molybdenum concentration (mg/L)
- NS** Not Sampled
- 1** Not enough water to sample
- 2** No pump in well
- 3** Well not selected for sampling
- GWPS** Groundwater Protection Standard
- CCR** Coal Combustion Residuals
- ft amsl** Feet above mean sea level
- mg/L** milligram per liter

0 350 700 1,400 Feet

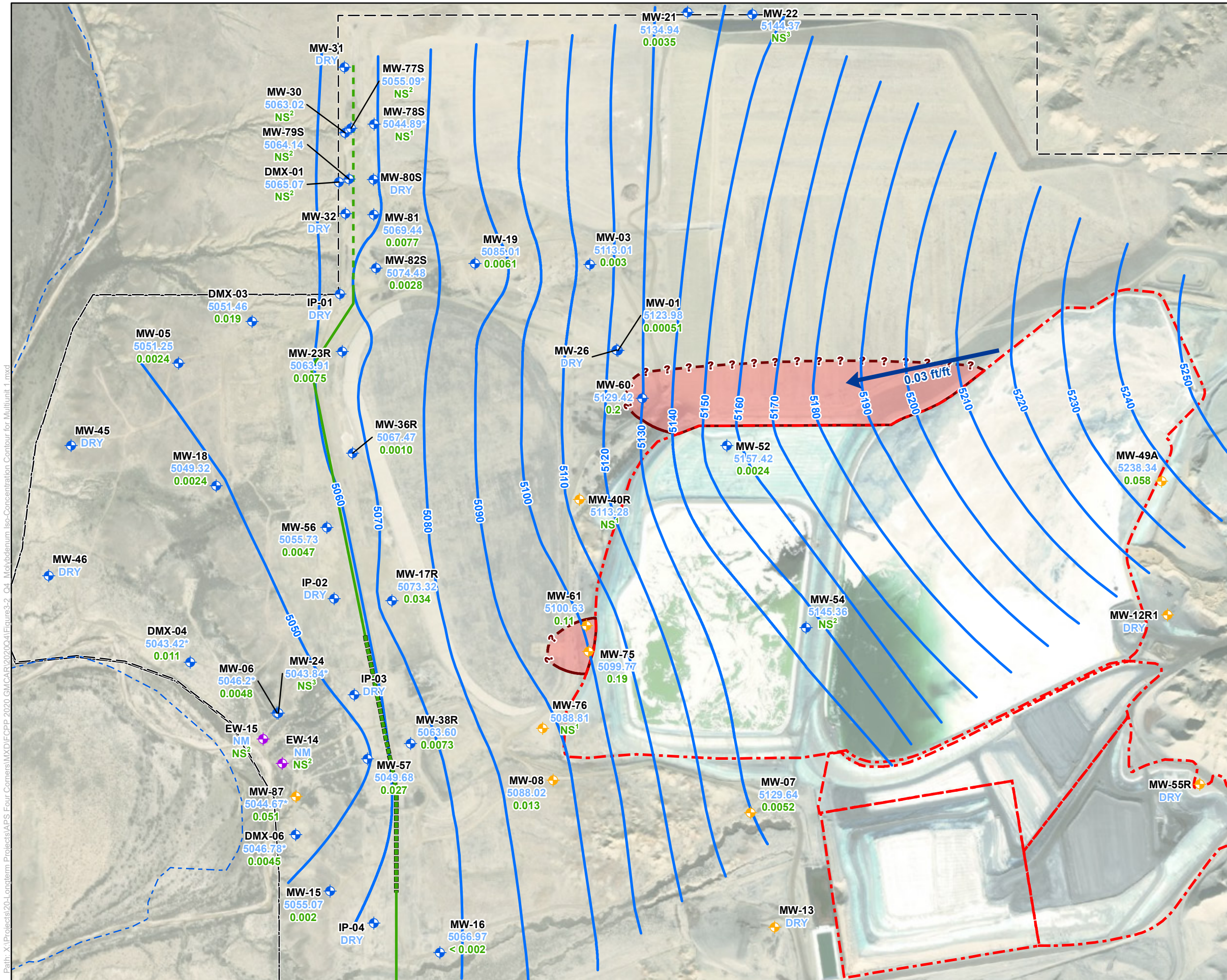
Arizona Public Service
Four Corners Power Plant
Fruitland, New Mexico

FIGURE 3-1 Molybdenum Iso-Concentration Map for Multiunit 1 - June 2020

Job No. 14-2020-2015 PM: MBH Date: 1/29/2021 Scale: 1" = 700'	
--	--

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Path: X:\Projects\20-Longterm Projects\APS Four Corners\MXD\FECP2020\04\Figure3-1_02_Molybdenum_Iso-Concentration_Contour_for_Multiunit_1.mxd



Legend

- ◆ CCR Monitoring Well Location
- ◆ Supplementary Site Monitoring Well Location
- ◆ Extraction Well
- Four Corners Power Plant Lease Boundary
- North Intercept Trench
- South Intercept Trench
- Approximate Extent of High Flow Zone
- Ephemeral Surface Water Feature
- CCR Unit Boundary

Potentiometric Surface

- (Dashed Where Inferred)
- Groundwater Flow Direction with Gradient (ft/ft)

Molybdenum Concentration (November 2020)

- Red shaded area: >0.1 mg/L
- Red dashed line: GWPS (0.01 mg/L; Dashed Where Inferred)


- Notes:**
- MW-57** Well identification
 - 5049.84** Groundwater Elevation (ft amsl) measured in November 2020
 - *** Well not used in groundwater contouring
 - 0.058** Molybdenum concentration (mg/L)
 - NS** Not Sampled
 - 1** Not enough water to sample
 - 2** No pump in well
 - 3** Well not selected for sampling
 - GWPS** Groundwater Protection Standard
 - CCR** Coal Combustion Residuals
 - ft amsl** Feet above mean sea level
 - mg/L** milligram per liter



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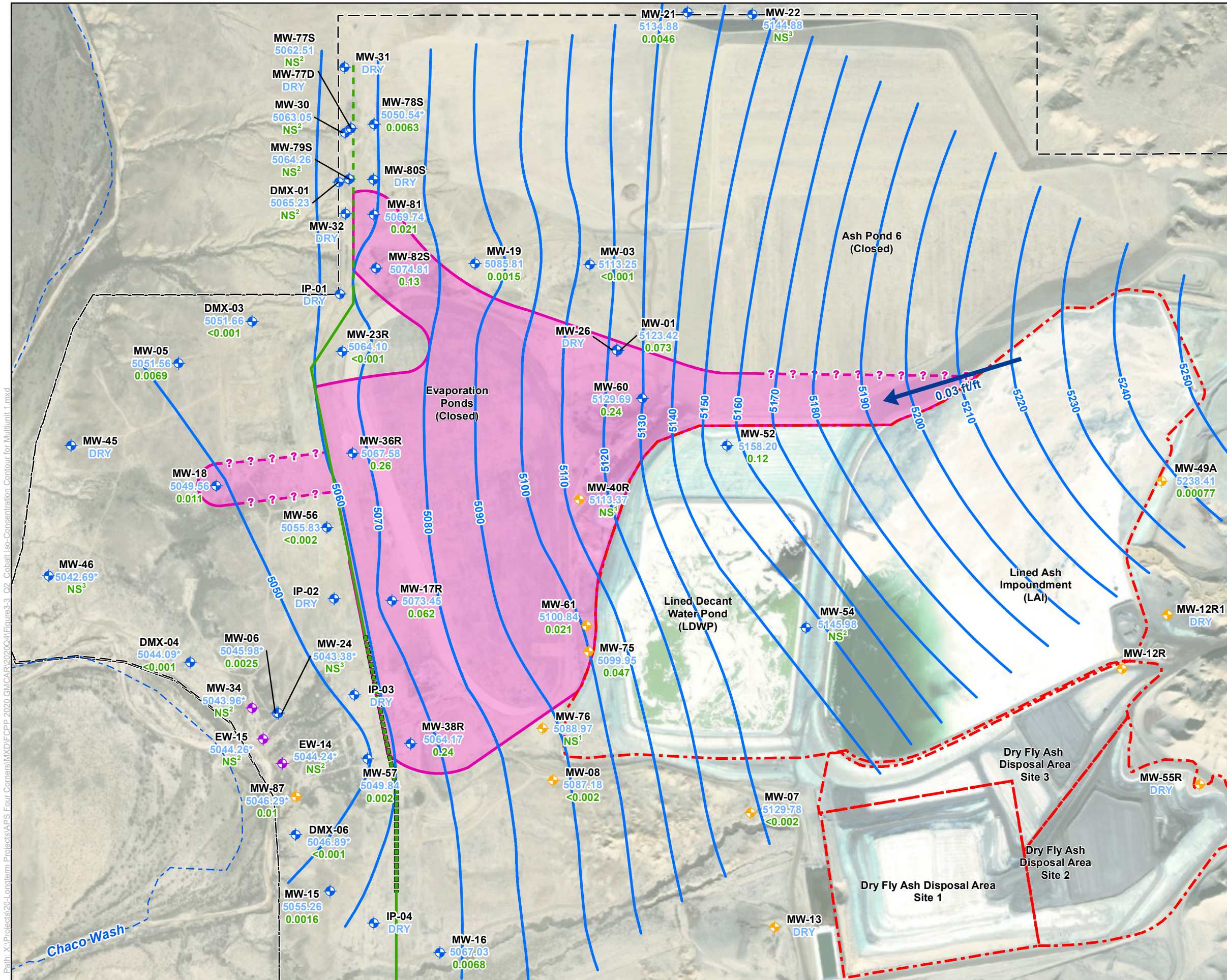
FIGURE 3-2 Molybdenum Iso-Concentration Map for Multiunit 1 - November 2020

Job No.	14-2020-2015
PM:	MBH
Date:	1/29/2021
Scale:	1" = 700'



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Path: X:\Projects\20-L Longterm Projects\APS Four Corners\MXD\FECP 2020 GWCAR\202004\Figure3-2_04_Molybdenum Iso-Concentration Contour for Multiunit 1.mxd



Legend

- ◆ CCR Monitoring Well Location
- ◆ Supplementary Site Monitoring Well Location
- ◆ Extraction Well
- Four Corners Power Plant Lease Boundary
- North Intercept Trench
- South Intercept Trench
- Approximate Extent of High Flow Zone
- Ephemeral Surface Water Feature
- CCR Unit Boundary

Potentiometric Surface

- (Dashed Where Inferred)
- Groundwater Flow Direction with Gradient (ft/ft)

Cobalt Concentration (June 2020)

- █ >0.01 mg/L
- █ GWPS (0.01 mg/L; Dashed Where Inferred)

Notes:

- MW-57** Well identification
- 5049.84** Groundwater Elevation (ft amsl) measured in June 2020
- ◆ Well not used in groundwater contouring
- 0.0020** Cobalt concentration (mg/L)
- NS** Not Sampled
- 1** Not enough water to sample
- 2** No pump in well
- 3** Well not selected for sampling
- GWPS Groundwater Protection Standard
- CCR Coal Combustion Residuals
- ft amsl Feet above mean sea level
- mg/L milligram per liter

0 350 700 1,400 Feet

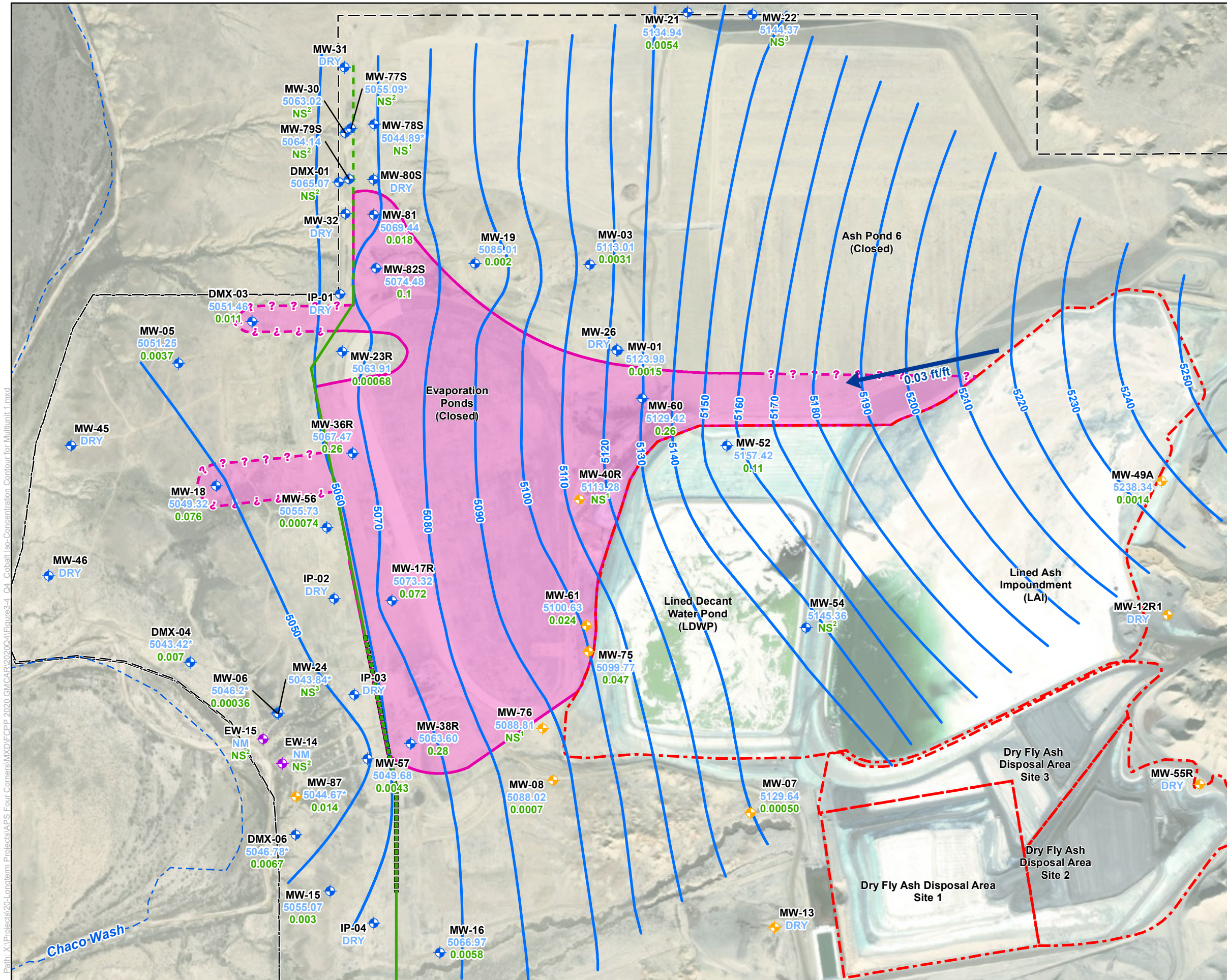
Arizona Public Service
Four Corners Power Plant
Fruitland, New Mexico

FIGURE 3-3 **Cobalt Iso-Concentration Map for Multiunit 1 - June 2020**

Job No. 14-2020-2015 PM: MBH Date: 1/29/2021 Scale: 1" = 700'	
--	--

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Path: X:\Projects\20-L\Longterm Projects\APS Four Corners\MXD\FECP 2020\GMCAR\202004\Figure3-3_02_Cobalt Iso-Concentration Contour for Multiunit 1.mxd



Legend

- ◆ CCR Monitoring Well Location
- ◆ Supplementary Site Monitoring Well Location
- ◆ Extraction Well
- Four Corners Power Plant Lease Boundary
- North Intercept Trench
- South Intercept Trench
- Approximate Extent of High Flow Zone
- Ephemeral Surface Water Feature
- CCR Unit Boundary

Potentiometric Surface

- (Dashed Where Inferred)
- Groundwater Flow Direction with Gradient (ft/ft)

Cobalt Concentration (November 2020)

- █ >0.01 mg/L
- GWPS (0.01 mg/L; Dashed Where Inferred)

Notes:

- MW-57** Well identification
- 5049.84** Groundwater Elevation (ft amsl) measured in November 2020
- ◆ Well not used in groundwater contouring
- 0.0020** Cobalt concentration (mg/L)
- NS** Not Sampled
- 1** Not enough water to sample
- 2** No pump in well
- 3** Well not selected for sampling
- GWPS Groundwater Protection Standard
- CCR Coal Combustion Residuals
- ft amsl Feet above mean sea level
- mg/L milligram per liter

0 350 700 1,400 Feet

Arizona Public Service
Four Corners Power Plant
Fruitland, New Mexico

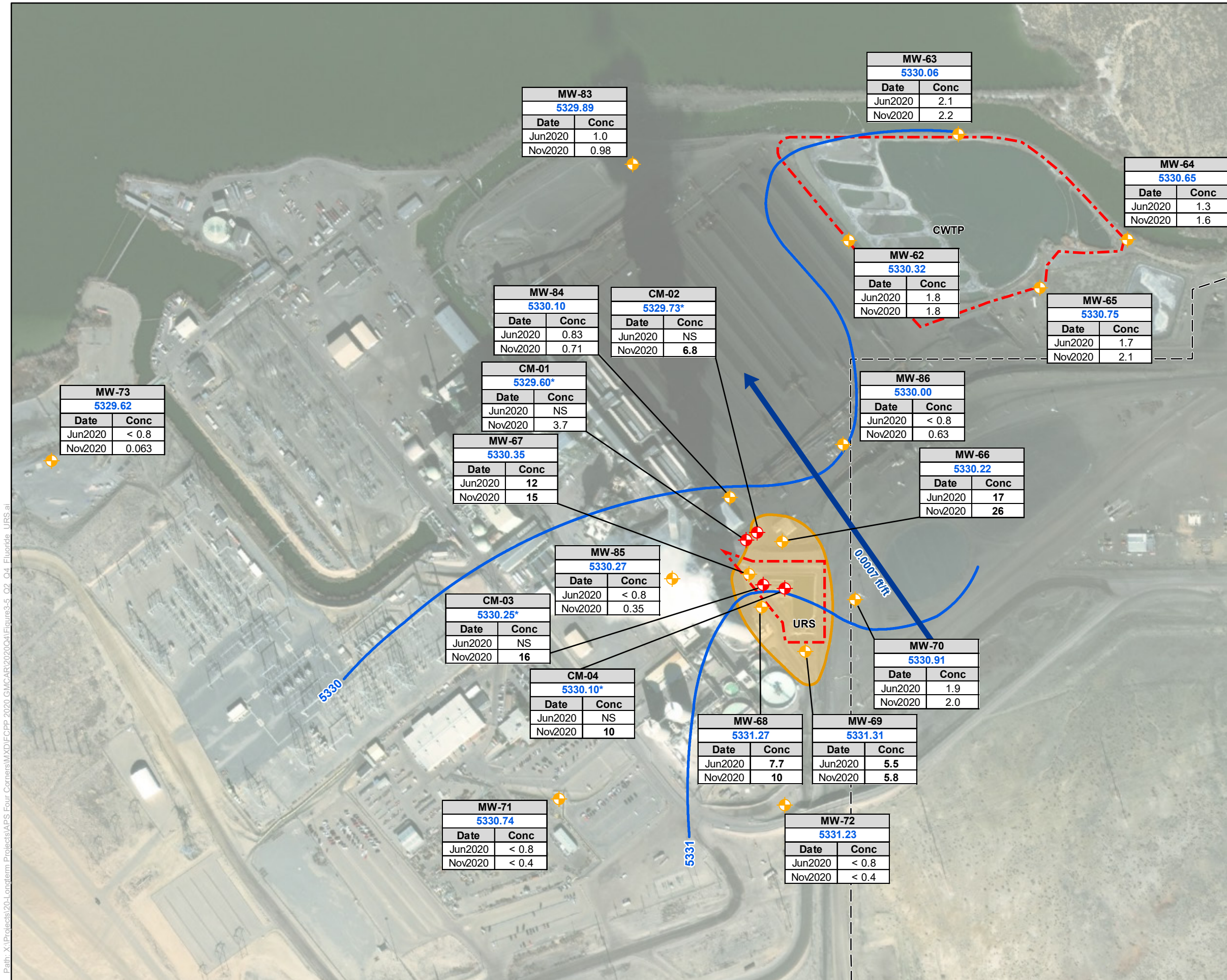
FIGURE 3-4 Cobalt Iso-Concentration Map for Multiunit 1 - November 2020

Job No.	14-2020-2015
PM:	MBH
Date:	1/29/2021
Scale:	1" = 700'

wood.

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Path: X:\Projects\20-L Longterm Projects\APS Four Corners\MXD\FECP 2020\GMCAR\202004\Figure3-4_04_Cobalt Iso-Concentration Contour for Multiunit 1.mxd



Legend

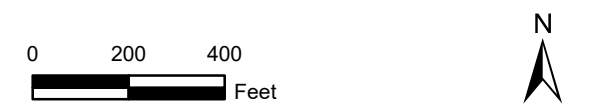
- CCR Monitoring Well Location
- CM Pre-Design Well Location
- CCR Unit Boundary
- FCPP Lease Boundary
- Groundwater Flow Direction with Gradient (ft/ft)
- Potentiometric Surface - November 2020

Fluoride Concentration In Groundwater

- >4 mg/L
- GWPS (4 mg/L)

Notes:

- MW-86** Well identification
- 5329.77** Groundwater Elevation (ft amsl) measured in November 2020
- *** Well not used in groundwater contouring
- 0.83 Fluoride concentration (mg/L) sampled in 2020
- NS Not Sampled – Well not selected for sampling
- CCR Coal Combustion Residuals
- CM Corrective Measures
- FCPP Four Corners Power Plant
- CWTP Combined Waste Treatment Pond
- URS Upper Retention Sump
- ft Feet
- ft amsl Feet above mean sea level
- GWPS Groundwater Protection Standard
- mg/L milligram per liter



**Arizona Public Service
Four Corners Power Plant
Fruitland, New Mexico**

FIGURE 3-5 Fluoride Iso-Concentration Contours for the URS - June and November 2020

Job No.	14-2020-2015
PM:	MBH
Date:	1/29/2021
Scale:	1" = 400'

wood.

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Path: X:\Projects\20-Longterm Projects\APS Four Corners\MXD\FCPP 2020\GMCAR\202004\Figures\3-5_02_04_Fluoride_URS.ai

APPENDIX A

**WOOD TECHNICAL MEMORANDUM DOCUMENTING AN ALTERNATIVE SOURCE
DEMONSTRATION FOR THE CWTP**



Technical Memorandum

To:	Arizona Public Service	File No:	14-2020-2015
From:	Dane Andersen, GIT	Reviewed by:	Tim Glover Maren Henley, PE Dan Kwiecinski, PE
Date:	July 12, 2020		

**Subject: ALTERNATIVE SOURCE DEMONSTRATION
FOR CALCIUM AT THE CWTP
Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico**

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents an Alternative Source Demonstration (ASD) for the Combined Waste Treatment Pond (CWTP) located at the Arizona Public Service Company (APS) Four Corners Power Plant (FCPP) in Fruitland, New Mexico (the Site). This ASD was prepared pursuant to Coal Combustion Residuals (CCR) Rule requirements for groundwater monitoring and corrective action detailed in 40 Code of Federal Regulations (CFR) Sections (§) 257.90 through 257.98 (Federal Register, 2018).

Site background, CCR groundwater monitoring system, and historical operational information is presented in the *Annual Groundwater Monitoring and Corrective Action Report for 2019* (Wood Environment & Infrastructure Solutions, Inc. [Wood], 2020a). The CWTP is one of five CCR units at the Site. The CWTP is used as a detention pond for settling and stabilizing ash-impacted and other wastewater flows from the plant prior to discharge to Morgan Lake in accordance with a National Pollutant Discharge Elimination System permit. It was placed into service in 1978.

A statistical evaluation of CCR Rule Appendix III constituent data collected from CWTP monitoring wells in November 2019 indicated statistically significant increases (SSI) over the calcium background threshold value (BTV) at CWTP monitoring wells MW-62 and MW-63 (Wood, 2020b). Pursuant to 40 CFR §257.94(e)(2) of the CCR Rule, the owner/operator of a CCR unit can demonstrate that a source, other than the CCR unit, caused the apparent SSI within 90 days of the official SSI declaration. The ASD documented herein was performed by Wood and its subcontractor, Formation Environmental, LLC (Formation Environmental), to address the calcium BTV exceedances declared on April 13, 2020.

Prior to the statistical evaluation described above, Wood finalized an ASD for the CWTP in July 2019 to address SSIs over the fluoride and pH BTVs and initial exceedances over the calcium and boron BTVs (Wood, 2019a). The previous ASD indicated that the SSIs and initial exceedances were not indicative of a release from the CWTP and were instead caused by spatially inconsistent groundwater chemistry resulting from several factors, including past anthropogenic activities impacting subsurface conditions, surface water-groundwater interactions, and natural spatial variations in groundwater quality (Wood, 2019a). The previous ASD also recommended recalculating the calcium BTV using groundwater monitoring data collected at a semi-annual frequency since October 2017 (Wood, 2019a). Accordingly, Wood recalculated the calcium BTV in October 2019; the revised calcium BTV is 525 mg/L, which is lower than originally calculated calcium BTV



of 540 mg/L (Wood, 2019b). The calcium concentrations which have triggered the SSIs declared in April 2020 are above the revised calcium BTV of 525 mg/L.

2.0 EVALUATION OF POTENTIAL ALTERNATIVE SOURCES

Attachment A presents an evaluation of several potential alternative sources for the calcium exceedances conducted by Formation Environmental. The evaluation, which relied significantly on analyses presented in the previous ASD, raises reasonable uncertainty that the April 2020 calcium SSI declaration was caused by a release from the CWTP, as supported by the following lines of evidence:

- **Spatial heterogeneity.** Geochemical data analyses and statistical analyses conducted to date indicate significant spatial variations in groundwater quality at the CWTP. The spatial variations are understood to be caused by the presence of non-native fill materials in the subsurface where the MW-62 and MW-63 wells are screened and by interactions between surface water and groundwater at MW-64 and MW-65. Water quality data indicate that CWTP background well MW-73 is representative of background groundwater quality for CCR wells MW-62 and MW-63, while CWTP background wells MW-71 and MW-72 are representative of background groundwater quality for MW-64 and MW-65 (Attachment A). Because the current calcium BTV for the MW-62 and MW-63 was calculated using groundwater data collected from MW-71, MW-72, and MW-73, it may not be representative of intrinsic groundwater conditions specific to these compliance wells.
- **CWTP surface water quality data.** Concentrations of calcium measured in surface water samples collected from the CWTP and nearby surface water are relatively low in comparison to calcium concentrations measured in groundwater samples collected from MW-62 and MW-63. The lower calcium concentrations measured in CWTP water suggest that the April 2020 exceedances are not related to a release from the CWTP.
- **Updated BTV for calcium.** As indicated in Attachment A, the revised calcium BTV calculated in October 2019 did not incorporate a statistical resampling strategy recommended by the United States Environmental Protection Agency's (USEPA) Unified Guidance (USEPA, 2009) and the Site's Statistical Data Analysis Work Plan (SDAWP) (Wood, 2018). As such, the revised calcium BTV of 525 mg/L is inadequate for comparison to calcium concentrations measured in CWTP monitoring wells.
- **Historic calcium concentrations at MW-62 and MW-63.** Calcium concentrations measured in the 2019 groundwater samples are similar to concentrations measured in groundwater samples collected from the CWTP and are not statistical outliers ($p < 0.05$), further indicating that the revised calcium BTV of 525 mg/L is not likely representative of background groundwater quality at MW-62 and MW-63.

As noted in Attachment A, MW-63 has shown an increasing temporal trend with respect to calcium. While the cause of the trend is currently unknown, the relatively low calcium concentrations measured in CWTP surface water samples suggest that the increasing calcium trend at MW-63 is not indicative of a release from the CWTP. An alternative cause for the increasing temporal trend may be the leaching of calcium from the Weathered Lewis Shale, which comprises a portion of the fill material in which MW-63 is installed.

3.0 CONCLUSIONS AND RECOMMENDATIONS

The lines of evidence presented in this ASD suggest that the SSI over the calcium BTV declared on April 13, 2020 is not due to a release from the CWTP and is instead the result of spatial variations in groundwater

quality and an unrepresentative calcium BTV for CWTP monitoring wells MW-62 and MW-63. To address the observed variations in groundwater quality at the CWTP, Wood and Formation Environmental recommend calculating two separate calcium BTVs as follows:

- A new calcium BTV using data collected from background well MW-73 for interwell comparison to data collected from CCR wells MW-62 and MW-63; and,
- A new calcium BTV using data collected from background wells MW-71 and MW-72 for interwell comparison to data collected from CCR wells MW-64 and MW-65.

This grouped-well approach is currently employed for interwell comparisons for boron at the CWTP. Additionally, Wood and Formation Environmental recommend recalculating the calcium BTVs using appropriate resampling strategy adjustments in accordance with the USEPA Unified Guidance and the SDAWP. Attachment A presents preliminary calcium BTVs for the CWTP using this approach.

4.0 CERTIFICATION

By means of this certification, I certify that I have reviewed this ASD and find the information presented herein accurate and appropriate and meet the requirements of 40 CFR §257.95(g)(3)(ii).



Daniel A. Kwiecinski
Printed Name of Registered Professional Engineer

Daniel A. Kwiecinski

Signature

13496 New Mexico 12 July 2020
Registration No. Registration State Date

5.0 REFERENCES

- Federal Register, 2018. *40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.*
- United States Environmental Protection Agency (USEPA), 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance.* EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.
- Wood Environment and Infrastructure Solutions, Inc. (Wood), 2018. *Statistical Data Analysis Work Plan.* Coal Combustion Residual Rule Groundwater Monitoring System Compliance. Four Corners Power Plant, Fruitland, New Mexico. Report prepared for Arizona Public Service. Updated October 15, 2018.
- Wood, 2019a. *Alternative Source Demonstration for Boron, Calcium, Fluoride and pH at the CWTP.* Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated July 15, 2019.
- Wood, 2019b. *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the CWTP Appendix III Constituent Data Collected Through May 2019.* Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated October 15, 2019.
- Wood, 2020a. *Annual Groundwater Monitoring and Corrective Action Report for 2019. Coal Combustion Residual Rule Groundwater Monitoring System Compliance.* Prepared on behalf of Arizona Public Service. January 31, 2020.
- Wood, 2020b. *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the CWTP Appendix III Constituent Data Collected through December 2019.* Arizona Public Service Four Corners Power Plant, Fruitland, New Mexico. Technical Memorandum dated April 13, 2020.

ATTACHMENT A



Technical Memorandum

To: Arizona Public Service

From: Carla Landrum, PhD
Formation Environmental

Date: June 29, 2020

Reviewed by: Wood Environment and Infrastructure Solutions, Inc.

Project No: 106-003

Subject: **Alternative Source Demonstration for Calcium at the CWTP
Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico**

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) is prepared by Formation Environmental, LLC and presents a data-driven and objective foundation for documenting an Alternative Source Demonstration (ASD) at the Four Corners Combined Waste Treatment Pond (CWTP). This Tech Memo is in response to calcium groundwater concentrations at CWTP compliance monitoring wells (MW) MW-62 and MW-63 exhibiting statistically significant increases (SSI) over the calcium background threshold value (BTV) for sampling year 2019, as put forth in the *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the CWSTP Appendix III Constituent Data Collected Through December 2019 Technical Memorandum* dated April 13th 2020 (Wood, 2020a).

The CWTP underwent an ASD in July 2019 (2019 ASD) in response to SSI declarations for fluoride and pH in November 2018 (Wood, 2019a; Wood, 2019b). The 2019 ASD also addresses initial exceedances for calcium and boron at the CWTP; initial exceedances indicate that sample concentrations randomly fluctuate around the respective BTV but are not statistically significant in terms of declaring an SSI (Wood, 2019a; Wood, 2019b). The 2019 ASD identifies surface-groundwater interactions, in addition to *in situ* spatial and temporal heterogeneity within the groundwater system, as underlying sources to the 2018 SSI declarations for fluoride and pH in addition to the initial exceedances for boron and calcium (Wood, 2019a).

The following sections: 1) summarize key geochemical and statistical findings from the 2019 ASD that suggest the CWTP is not the source of calcium exceedances in MW-62 and MW-63 and 2) present summary of findings and considerations for future statistical evaluations at the CWTP.

2.0 2019 ASD Key Findings and Relevance

This section summarizes key findings from the 2019 ASD Technical Memorandum that demonstrate alternative sources to the aforementioned calcium SSI declaration at the CWTP:

- **Spatial heterogeneity.** The 2019 ASD indicates that there is spatial heterogeneity in groundwater conditions between monitoring well locations at the CWTP (i.e., background and compliance monitoring wells). Spatial heterogeneity means that local groundwater conditions (e.g., lithology, geochemistry, hydrogeologic properties, etc.) naturally vary between one sampling location and the next. Spatial heterogeneity can cause inadequacies when performing statistical comparisons between non-representative background monitoring well locations and compliance well locations to assess CCR groundwater compliance, which can lead to false positive SSI declarations. Spatial heterogeneity is present at the CWTP on account of the following factors (Wood, 2019a):
 - **Historic site activity and construction:** Monitoring wells MW-62 and MW-63 are adjacent to and/or located within the embankment that separates the CWTP from the cooling water canal. Boring logs indicate the screened intervals for MW-62 and MW-63 are completed in embankment backfill materials that have a higher presence of alluvium, Weathered Lewis Shale and/or bottom ash relative to other CWTP monitoring wells. Previous leachate analysis indicates that the Weathered Lewis Shale contains higher levels of leachable calcium relative to the Pictured Cliffs Sandstone. This leachability might help explain the higher presence of calcium in MW-62 and MW-63 relative to the remaining two CWTP compliance monitoring wells (MW-64 and MW-65). Both MW-64 and MW-65 appear to be completed primarily in the Pictured Cliff Sandstone with a lower presence of backfill materials. Details regarding the boring log interpretations and leachate analysis are put forth in the 2019 ASD Technical Memorandum (Wood, 2019a).
 - **Groundwater geochemistry.** The stiff diagrams Wood Environment and Infrastructure Solutions, Inc. (Wood) shows in Figure 1 present reasonable evidence that geochemical aquifer conditions are spatially heterogeneous between CWTP monitoring well locations for multiple analytes, including calcium. In general, the stiff diagrams for MW-64 and MW-65 best resemble that of surface water samples, suggesting the source of spatial heterogeneity at these locations is surface-groundwater interactions. Background monitoring locations exhibit more distinct signatures, especially with a higher relative presence of magnesium and sulfate, which are thought to be unique to the lithologic material these wells are observing (i.e., the Pictured Cliff Sandstone). The stiff diagrams for MW-62 and MW-63 exhibit intermediate geochemical signatures that more closely resemble background (e.g. MW-71, MW-72 and MW-73) as it relates to calcium concentrations.

The 2019 ASD discusses Principal Component Analysis (PCA) results (Wood, 2019a), which illustrate geochemical interactions between Appendix III constituents sampled at all CWTP groundwater monitoring locations, including background and compliance wells. In general, the clustering patterns in the PCA results suggest that calcium and boron interact synergistically and exhibit higher relative concentrations in MW-62, MW-63 and, to a degree, MW-73, relative to other monitoring well locations. The PCA clustering between different sample locations for different constituents is an indication of spatial geochemical heterogeneity within the local groundwater system. Furthermore, the PCA results generally concur with the boron isotope analysis put forth in the 2019 ASD, which suggests that MW-62 and MW-63 observe unique groundwater conditions relative to other compliance well locations. Please refer to the 2019 ASD Technical Memorandum for a more thorough explanation of PCA and boron isotope analysis results (Wood, 2019a).

Furthermore, the 2019 ASD Technical Memorandum includes basic statistics (Table 4) and box and whisker plots (Figure 8) that indicate, on average, MW-62, MW-63 and MW-73 exhibit higher calcium concentrations relative to MW-64, MW-65, MW-71 and MW-72 (Wood, 2019a). Both statistical summaries provide lines of evidence that calcium concentrations vary between monitoring well locations and that calcium concentration in MW-62 and MW-63 better associate with calcium concentrations in MW-73.

- **Lower calcium concentrations in CWTP surface water samples.** The surface water samples collected in the CWTP show measurably lower calcium concentrations in comparison to the 2019 groundwater samples exceeding the calcium BTVs in MW-62 and MW-63. This is another line of evidence supporting that the CWTP is not the source to the SSI declaration for calcium in these monitoring wells for the 2019 groundwater sampling events.
- **Temporal heterogeneity.** Prior to 2019, the calcium concentrations at the CWTP fluctuated randomly around the calcium BTV, thereby causing irregular exceedances (i.e., initial exceedances) over time that were not statistically significant ($p < 0.05$). The calcium exceedances are thought to primarily result from temporal sampling inadequacies in the background wells (MW-71, MW-72 and MW-73). Sampling inadequacies result, in part, from the high frequency sampling events prior to October 2017 (i.e. biweekly sampling frequency) that fail to capture intrinsic long-term temporal trends and seasonal variations in groundwater calcium concentrations over time. The high frequency sampling events were in direct effort to meet the minimum sampling requirements put forth by the CCR Rule. High sampling frequencies tend to result in a lower sample variance and standard deviation. The sample standard deviation is incorporated into the calcium BTV calculation, resulting in a BTV that is biased low. This bias increases the likelihood of false positive exceedances over background. Temporal heterogeneity was the basis for updating calcium BTVs for assessing CCR groundwater monitoring compliance at the CWTP in 2019.

Notably, there is a consistent increasing temporal trend in calcium concentrations at MW-63 and the cause of this trend is currently unknown. There is no evidence supporting that the CWTP is causing this trend, in part, because the CWTP surface water samples show lower calcium concentrations.

- **2019 calcium concentrations are representative of historic sampling events.** The exceedances in MW-62 and MW-63 are not statistical outliers ($p < 0.05$) relative to historic sampling events for calcium in MW-62 and MW-63, respectively; suggesting the 2019 calcium concentrations are typical for these wells.
- **Statistical method inadequacy for 2019 calcium BTV calculations.** The 2019 ASD made several recommendations, including updating the calcium BTV that results in a new BTV (525 mg/L) that is lower than its preceding BTV (540 mg/L) (Wood, 2019c). This new BTV triggered the 2019 SSI declaration for calcium even though the 2019 groundwater samples are representative of historic sampling events at MW-62 and MW-63, respectively (Wood, 2020a). Notably, the new BTV fails to account for a statistical resampling strategy, pursuant to recommendations put forth in the USEPA's Unified Guidance (USEPA, 2009) and the Site's Statistical Data Analysis Workplan (Wood, 2020b). Failing to account for a statistical resampling strategy results in an artificially lower BTV value for calcium, which results in a higher proportion of false positive exceedances.

3.0 CONCLUSIONS

This ASD results in the following summary of findings for the calcium SSI declaration at the CWTP:

- The lines of evidence put forth in this Tech Memo raise reasonable uncertainty in identifying the CWTP as the source to the calcium SSI declaration.
- Similar to boron concentrations at the CWTP, calcium concentrations do exhibit spatial heterogeneity as made evident by the various statistical data analyses and geochemical data analyses put forth in Section 2.0. Therefore, the same well-grouping approach used for boron is likely appropriate for calculating the calcium BTV at the CWTP, where MW-73 establishes the calcium BTV for MW-62 and MW-63 and MW-71 and MW-72 establishes the calcium BTV for MW-64 and MW-65 (Wood, 2019c).

Preliminary calculations using this recommendation are shown in the table below and final calculations should include all background sample data collected to date. Please reference the Site’s Statistical Data Analysis Workplan for specifics regarding the statistical method and calculation (Wood, 2020b). The BTVs below reflect sampling events between March 2016 and May 2019.

BTV History	BTV	Statistical Method	Background Well Data Inputs
Pre-2019	540 mg/L	Parametric Upper Prediction Limit (P-UPL) with 1 of 2 Resampling	MWs 71, 72 & 73
2019 BTV Update	525 mg/L	P-UPL (<i>fails to recognize resampling</i>)	MWs 71, 72 & 73
Preliminary BTV for MWs 62 & 63	562 mg/L	P-UPL with 1 of 2 Resampling	MW 73
Preliminary BTV for MWs 64 & 65	500 mg/L	Non-Parametric Upper Prediction Limit (NP-UPL) with 1 of 2 Resampling	MWs 71 & 72

- The surface water calcium concentrations provide reasonable evidence that the calcium SSI exceedances at MW-62 and MW-63 are not attributable to a leak at the CWTP.
- The 2019 groundwater samples at MW-62 and MW-63 that are in exceedance of the current calcium BTV are representative of historic sampling events at these monitoring locations, respectively (i.e., the 2019 calcium concentrations at these wells are not statistical outliers ($p < 0.05$) relative to historic sampling events) (Wood, 2020a). Suggesting that the current BTV is not representative of groundwater conditions at these monitoring well locations and this inadequacy is likely causing a false positive SSI declaration at the CWTP for calcium.
- The temporal trend for calcium in MW-63 is unique among compliance wells at the CWTP. The CWTP’s conceptual site model, sample data and associated data analyses might help understand

the source of this trend. The temporal trend might warrant an intrawell statistical comparison for this monitoring location (Wood, 2020b).

4.0 REFERENCES

Federal Register, 2018. 40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.

United States Environmental Protection Agency (USEPA), 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance*. EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.

Wood, 2020a. *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the CWTP Appendix III Constituent Data Collected through December 2019*. Arizona Public Service Four Corners Power Plant, Fruitland, New Mexico. Report prepared for Arizona Public Service. April 13, 2020.

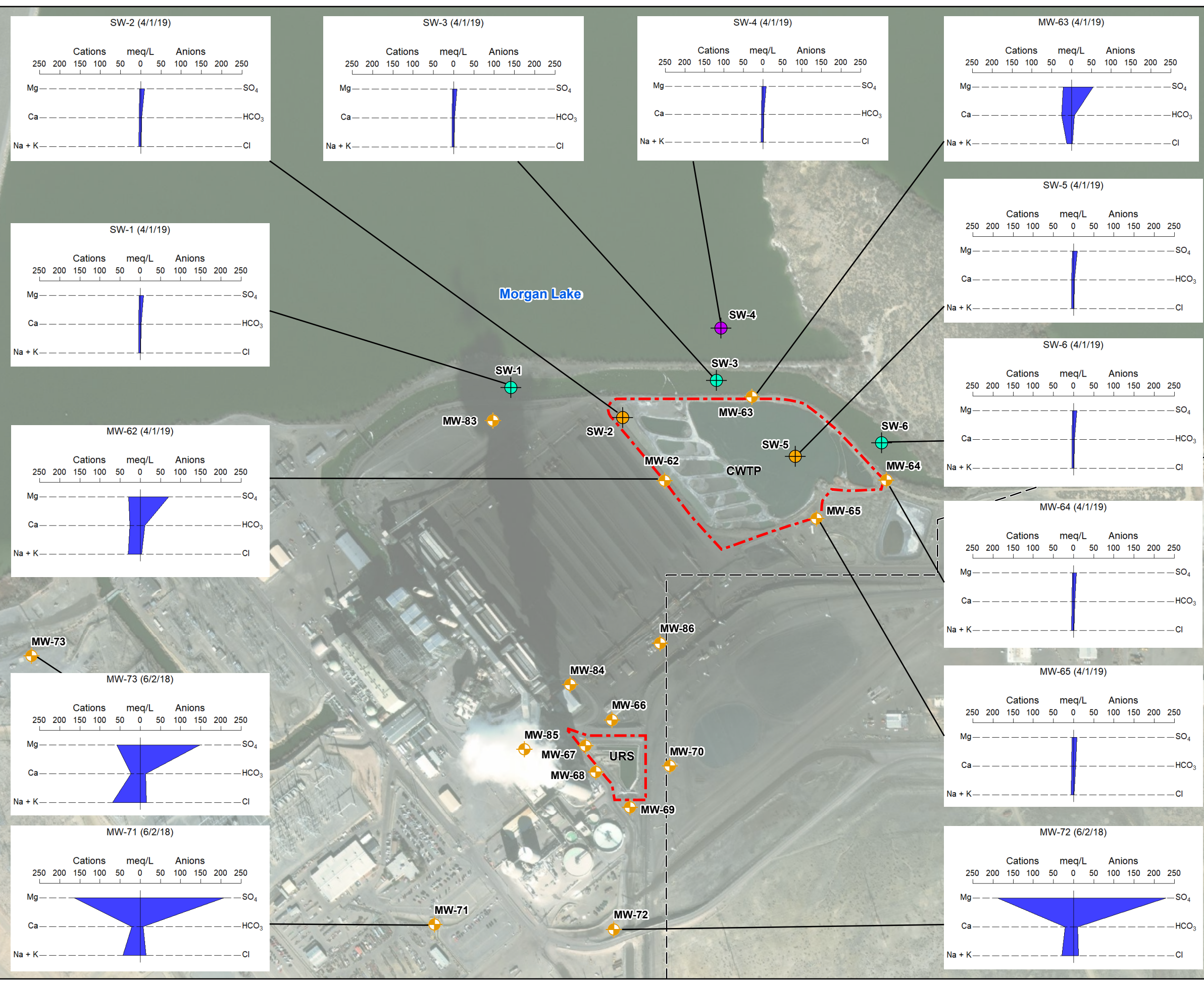
Wood, 2020b. *Statistical Data Analysis Work Plan*. Coal Combustion Residual Rule Groundwater Monitoring System Compliance, Four Corners Power Plant, Fruitland, New Mexico. Report prepared for Arizona Public Service. Report dated October 13, 2017 and updated June 10, 2020.

Wood, 2019a. *Alternative Source Demonstration for Boron, Calcium, Fluoride and pH at the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated July 15, 2019.

Wood, 2019b. *CCR Groundwater Detection Monitoring Evaluation of November 2018 Data Collected from the CWTP*. Arizona Public Service Four Corners Power Plant. Technical Memorandum. Prepared on behalf of the Arizona Public Service. April 15, 2019.

Wood, 2019c. *CCR Groundwater Detection Monitoring Evaluation of May 2019 Data Collected from the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated, October 15, 2019.

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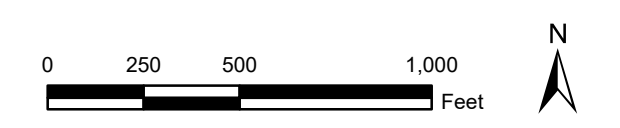


Legend

- CCR Monitoring Well Location
- Surface Water Sample Location by Water Source**
- CWTP
- Cooling Water
- Morgan Lake
- Four Corners Power Plant Lease Boundary
- CCR Unit Boundary

Notes:

- MW-64** Well identification
- CCR** Coal Combustion Residuals
- CWTP** Combined Waste Treatment Pond
- URS** Upper Retention Sump



Arizona Public Service
Four Corners Power Plant
Fruitland, New Mexico

FIGURE 1 Stiff Diagrams Depicting General Water Quality at CWTP Monitoring Locations

Job No.	14-2018-2068
PM:	MH
Date:	7/7/2020
Scale:	1" = 500'

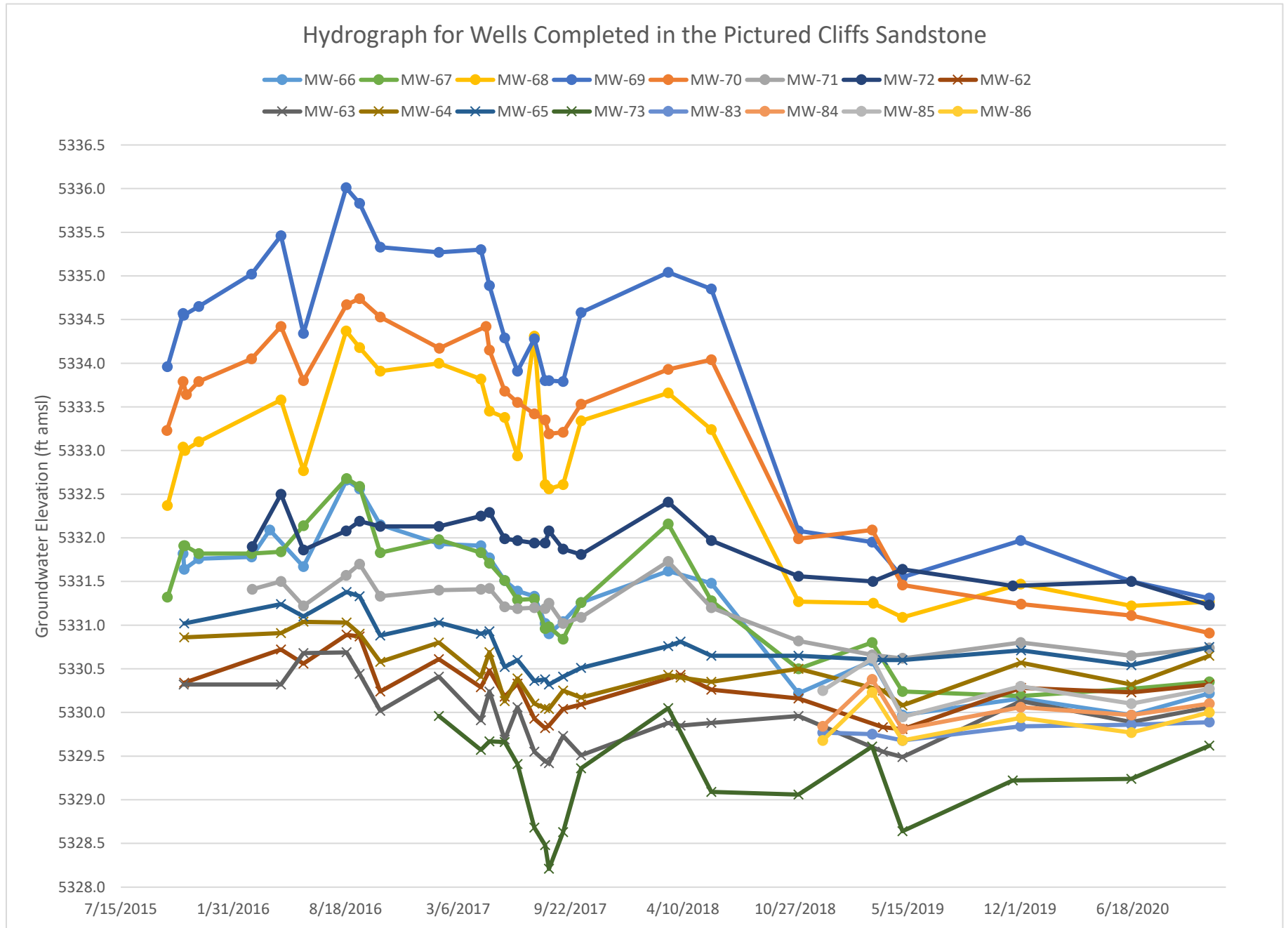
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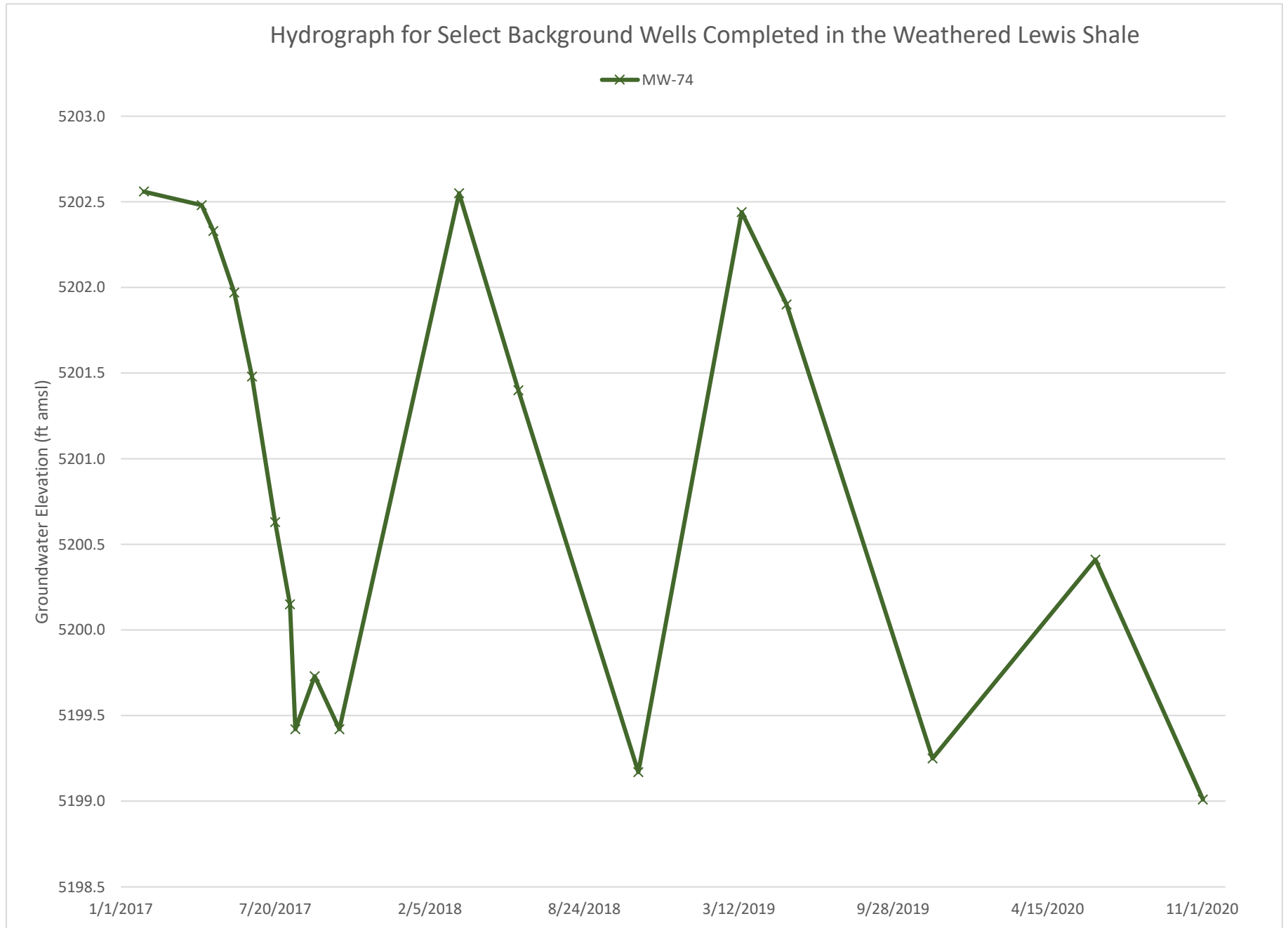
The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 14-2018-2068. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

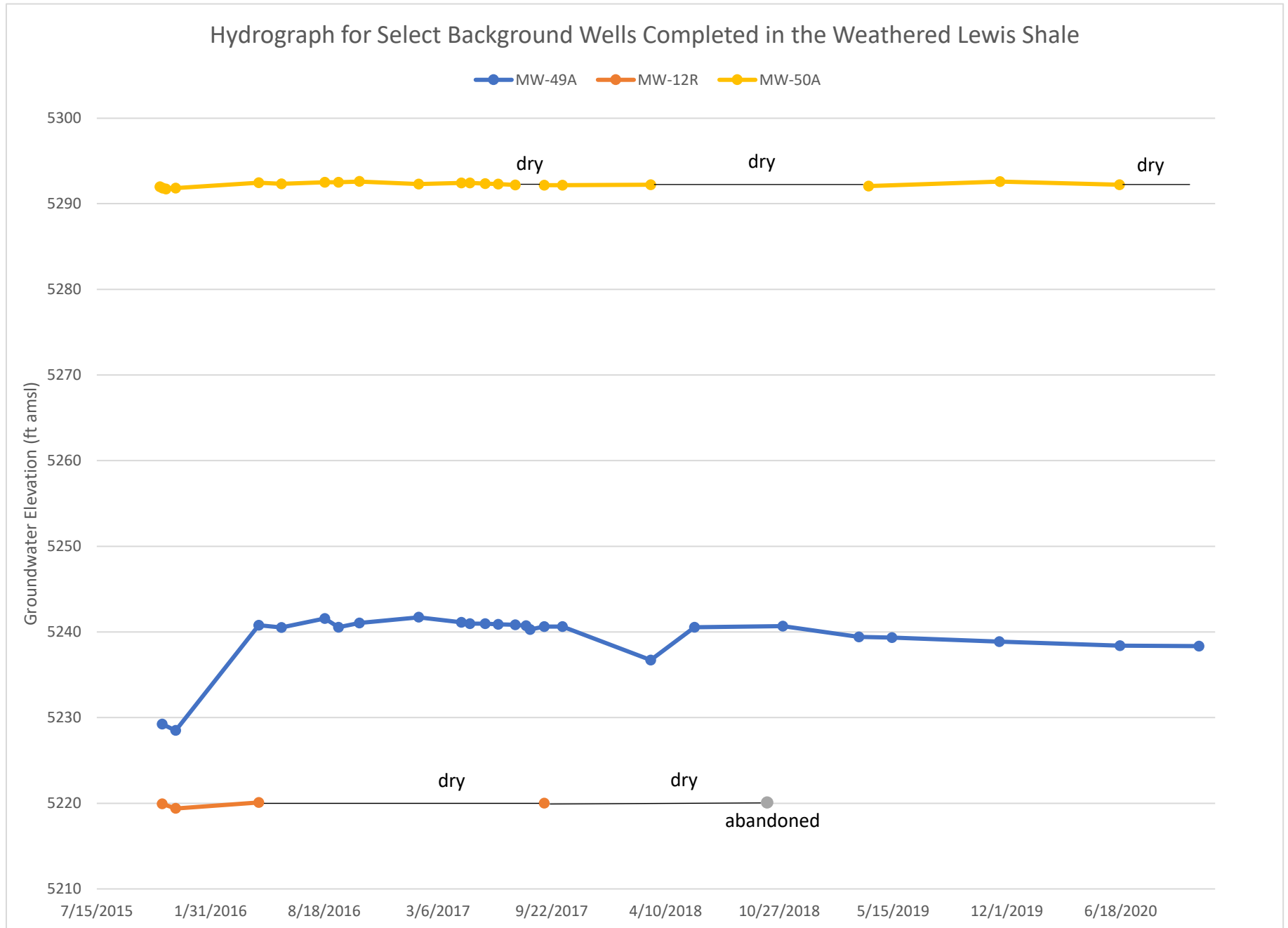
APPENDIX B

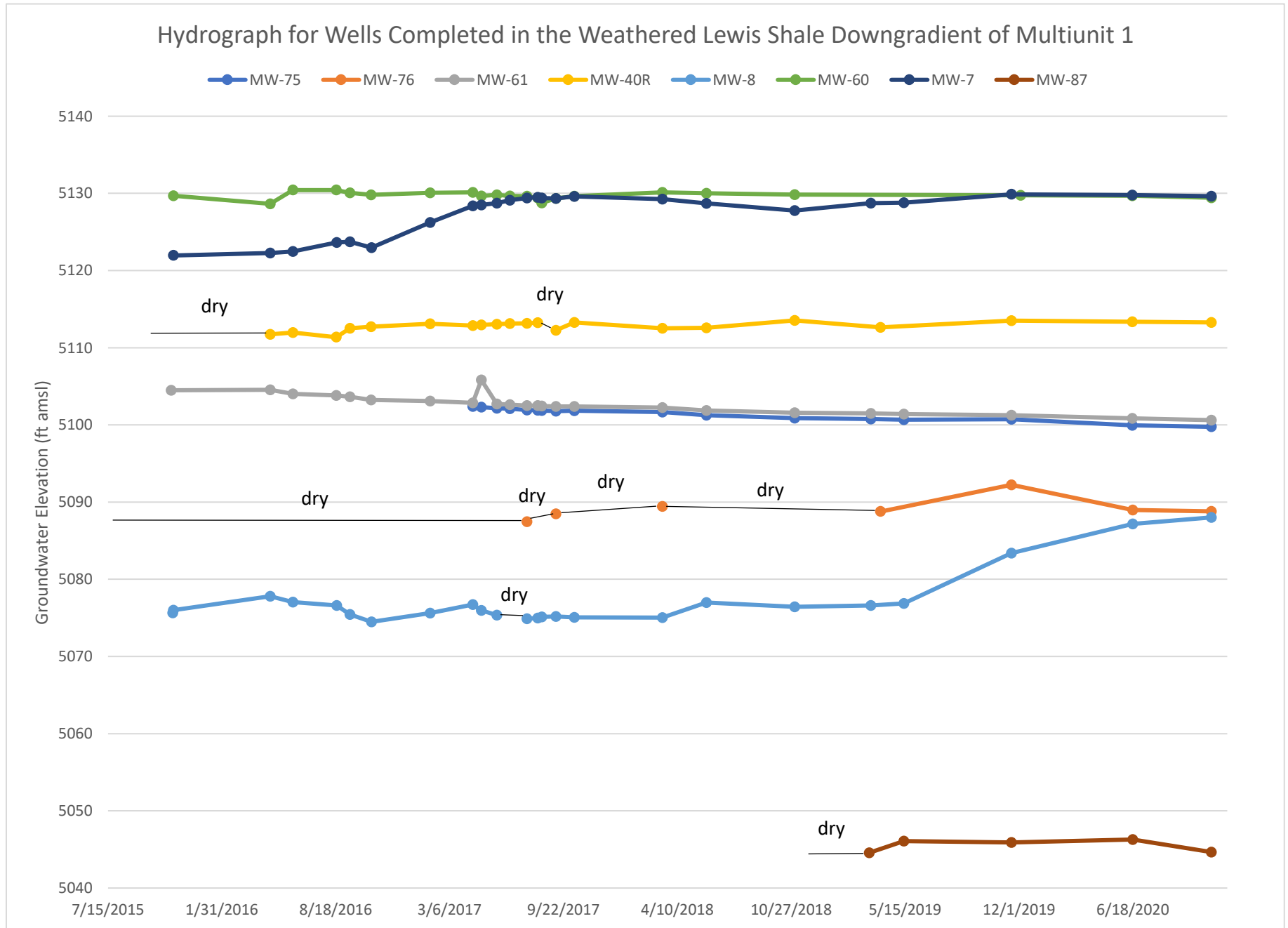
GROUNDWATER ELEVATION DATA AND HYDROGRAPHS











Appendix B - Groundwater Elevations and Hydrographs

MW-7				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/7/2015	5149.32	27.35	5121.97	
4/25/2016	5149.32	27.04	5122.28	
6/4/2016	5149.32	26.85	5122.47	
8/20/2016	5149.32	25.68	5123.64	
9/12/2016	5149.32	25.61	5123.71	
10/20/2016	5149.32	26.36	5122.96	
1/31/2017	5149.32	23.08	5126.24	36.04
4/16/2017	5149.32	20.95	5128.37	
5/1/2017	5149.32	20.83	5128.49	
5/28/2017	5149.32	20.59	5128.73	
6/20/2017	5149.32	20.21	5129.11	
7/20/2017	5149.32	19.93	5129.39	
8/8/2017	5149.32	19.83	5129.49	
8/15/2017	5149.32	19.91	5129.41	
9/9/2017	5149.32	19.97	5129.35	
10/11/2017	5149.32	19.72	5129.6	
3/15/2018	5149.32	20.07	5129.25	
5/31/2018	5149.32	20.62	5128.7	
11/2/2018	5149.32	21.55	5127.77	
3/16/2019	5149.32	20.59	5128.73	
5/13/2019	5149.32	20.54	5128.78	
11/18/2019	5149.32	19.43	5129.89	
6/17/2020	5149.32	19.54	5129.78	35.7
11/3/2020	5149.32	19.68	5129.64	

Appendix B - Groundwater Elevations and Hydrographs

MW-8				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/6/2015	5122.56	46.9	5075.66	
11/7/2015	5122.56	46.56	5076.00	
4/25/2016	5122.56	44.76	5077.80	
6/4/2016	5122.56	45.52	5077.04	
8/20/2016	5122.56	45.95	5076.61	
9/12/2016	5122.56	47.11	5075.45	
10/20/2016	5122.56	48.07	5074.49	
1/31/2017	5122.56	46.94	5075.62	
4/16/2017	5122.56	45.82	5076.74	
5/1/2017	5122.56	46.59	5075.97	
5/28/2017	5122.56	47.19	5075.37	
6/20/2017	5122.56	Dry		
7/20/2017	5122.56	47.68	5074.88	
8/8/2017	5122.56	47.57	5074.99	
8/15/2017	5122.56	47.44	5075.12	
9/9/2017	5122.56	47.39	5075.17	
10/11/2017	5122.56	47.49	5075.07	
3/15/2018	5122.56	47.51	5075.05	
5/31/2018	5122.56	45.56	5077.00	
11/2/2018	5122.56	46.12	5076.44	
3/16/2019	5122.56	45.96	5076.60	
5/13/2019	5122.56	45.68	5076.88	
11/18/2019	5122.56	39.18	5083.38	
6/18/2020	5122.56	35.38	5087.18	49.4
11/3/2020	5122.56	34.54	5088.02	

Appendix B - Groundwater Elevations and Hydrographs

MW-12R				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/7/2015	5264.70	44.75	5219.95	
12/1/2015	5264.70	45.29	5219.41	
4/25/2016	5264.70	44.6	5220.10	
6/4/2016	5264.70	Dry		
8/20/2016	5264.70	Dry		
9/12/2016	5264.70	Dry		
10/19/2016	5264.70	Dry		
1/31/2017	5264.70	Dry		
4/16/2017	5264.70	Dry		
5/1/2017	5264.70	Dry		
5/28/2017	5264.70	Dry		
6/20/2017	5264.70	Dry		
7/20/2017	5264.70	Dry		
8/8/2017	5264.70	Dry		
8/15/2017	5264.70	Dry		
9/9/2017	5264.70	44.68	5220.02	
10/11/2017	5264.70	Dry		
3/15/2018	5264.70	Dry		
ABANDONED ON 4/9/2018				

Appendix B - Groundwater Elevations and Hydrographs

MW-40R				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/7/2015	5137.43	Dry		
4/25/2016	5137.43	25.70	5111.73	
6/4/2016	5137.43	25.46	5111.97	
8/19/2016	5137.43	26.05	5111.38	
9/12/2016	5137.43	24.90	5112.53	
10/19/2016	5137.43	24.72	5112.71	
1/31/2017	5137.43	24.34	5113.09	
4/16/2017	5137.43	24.56	5112.87	
5/1/2017	5137.43	24.47	5112.96	
5/28/2017	5137.43	24.38	5113.05	
6/20/2017	5137.43	24.29	5113.14	
7/20/2017	5137.43	24.26	5113.17	
8/8/2017	5137.43	24.19	5113.24	
8/15/2017	5137.43	Dry		
9/9/2017	5137.43	25.18	5112.25	
10/11/2017	5137.43	24.14	5113.29	
3/15/2018	5137.43	24.92	5112.51	
5/31/2018	5137.43	24.86	5112.57	
11/2/2018	5137.43	23.89	5113.54	
4/2/2019	5137.43	24.78	5112.65	
11/18/2019	5137.43	23.91	5113.52	
6/17/2020	5137.43	24.06	5113.37	26.9
11/3/2020	5137.43	24.15	5113.28	

Appendix B - Groundwater Elevations and Hydrographs

MW-49A				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/7/2015	5285.96	56.71	5229.25	
12/1/2015	5285.96	57.45	5228.51	
4/25/2016	5285.96	45.17	5240.79	
6/4/2016	5285.96	45.44	5240.52	
8/19/2016	5285.96	44.38	5241.58	
9/12/2016	5285.96	45.40	5240.56	
10/19/2016	5285.96	44.90	5241.06	
1/31/2017	5285.96	44.23	5241.73	
4/16/2017	5285.96	44.82	5241.14	
5/1/2017	5285.96	44.98	5240.98	
5/28/2017	5285.96	44.98	5240.98	
6/20/2017	5285.96	45.06	5240.90	
7/20/2017	5285.96	45.13	5240.83	
8/8/2017	5285.96	45.22	5240.74	
8/15/2017	5285.96	45.68	5240.28	
9/9/2017	5285.96	45.32	5240.64	
10/11/2017	5285.96	45.34	5240.62	
3/15/2018	5285.96	49.23	5236.73	
5/31/2018	5285.96	45.42	5240.54	
11/2/2018	5285.96	45.29	5240.67	
3/16/2019	5288.62	49.20	5239.42	
5/13/2019	5288.62	49.28	5239.34	
11/18/2019	5288.62	49.74	5238.88	
6/17/2020	5288.62	50.21	5238.41	69.5
11/3/2020	5288.62	50.28	5238.34	

Appendix B - Groundwater Elevations and Hydrographs

MW-50A				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/3/2015	5335.67	43.69	5291.98	
11/8/2015	5335.67	43.84	5291.83	
11/14/2015	5335.67	43.95	5291.72	
12/1/2015	5335.67	43.85	5291.82	
4/25/2016	5335.67	43.23	5292.44	
6/4/2016	5335.67	43.36	5292.31	
8/19/2016	5335.67	43.16	5292.51	
9/12/2016	5335.67	43.18	5292.49	
10/19/2016	5335.67	43.07	5292.6	
1/31/2017	5335.67	43.38	5292.29	
4/16/2017	5335.67	43.25	5292.42	
5/1/2017	5335.67	43.24	5292.43	
5/28/2017	5335.67	43.33	5292.34	
6/20/2017	5335.67	43.39	5292.28	
7/20/2017	5335.67	43.49	5292.18	
8/8/2017	5335.67	Dry		
8/15/2017	5335.67	Dry		
9/9/2017	5335.67	43.51	5292.16	
10/11/2017	5335.67	43.52	5292.15	
3/15/2018	5335.67	43.46	5292.21	
5/31/2018	5335.67	Dry		
11/2/2018	5335.67	Dry		
4/2/2019	5335.67	43.62	5292.05	
11/19/2019	5335.97	43.39	5292.58	
6/16/2020	5335.67	43.47	5292.2	45.1
11/3/2020	5335.67	Dry		

Appendix B - Groundwater Elevations and Hydrographs

MW-60				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/7/2015	5144.10	14.41	5129.69	
4/25/2016	5144.10	15.45	5128.65	
6/4/2016	5144.10	13.66	5130.44	
8/19/2016	5144.10	13.66	5130.44	
9/12/2016	5144.10	14.02	5130.08	
10/19/2016	5144.10	14.28	5129.82	
1/31/2017	5144.10	14.03	5130.07	
4/16/2017	5144.10	13.96	5130.14	
5/1/2017	5144.10	14.43	5129.67	
5/28/2017	5144.10	14.30	5129.80	
6/20/2017	5144.10	14.45	5129.65	
7/20/2017	5144.10	14.47	5129.63	
8/8/2017	5144.10	14.69	5129.41	
8/15/2017	5144.10	15.33	5128.77	
9/9/2017	5144.10	14.76	5129.34	
10/11/2017	5144.10	14.47	5129.63	
3/15/2018	5144.10	13.98	5130.12	
5/31/2018	5144.10	14.08	5130.02	
11/2/2018	5144.10	14.26	5129.84	
12/4/2019	5144.10	14.35	5129.75	
6/17/2020	5144.1	14.41	5129.69	27.6
11/3/2020	5144.10	14.68	5129.42	

Appendix B - Groundwater Elevations and Hydrographs

MW-61				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/3/2015	5129.19	24.70	5104.49	
4/25/2016	5129.19	24.64	5104.55	
6/4/2016	5129.19	25.18	5104.01	
8/19/2016	5129.19	25.38	5103.81	
9/12/2016	5129.19	25.55	5103.64	
10/19/2016	5129.19	25.94	5103.25	
1/31/2017	5129.19	26.10	5103.09	
4/16/2017	5129.19	26.32	5102.87	
5/1/2017	5129.19	23.36	5105.83	
5/28/2017	5129.19	26.48	5102.71	
6/20/2017	5129.19	26.56	5102.63	
7/20/2017	5129.19	26.67	5102.52	
8/8/2017	5129.19	26.69	5102.50	
8/15/2017	5129.19	26.75	5102.44	
9/9/2017	5129.19	26.81	5102.38	
10/11/2017	5129.19	26.79	5102.40	
3/15/2018	5129.19	26.93	5102.26	
5/31/2018	5129.19	27.31	5101.88	
11/2/2018	5129.19	27.61	5101.58	
3/16/2019	5129.19	27.70	5101.49	
5/13/2019	5129.19	27.78	5101.41	
11/18/2019	5129.19	27.92	5101.27	
6/17/2020	5129.19	28.35	5100.84	34.2
11/3/2020	5129.19	28.56	5100.63	

Appendix B - Groundwater Elevations and Hydrographs

MW-62				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/5/2015	5341.87	11.53	5330.34	
4/25/2016	5341.87	11.15	5330.72	
6/4/2016	5341.87	11.31	5330.56	
8/20/2016	5341.87	10.98	5330.89	
9/12/2016	5341.87	11.00	5330.87	
10/19/2016	5341.87	11.63	5330.24	
1/31/2017	5341.87	11.26	5330.61	
4/16/2017	5341.87	11.58	5330.29	
5/1/2017	5341.87	11.39	5330.48	
5/28/2017	5341.87	11.69	5330.18	
6/20/2017	5341.87	11.54	5330.33	
7/20/2017	5341.87	11.94	5329.93	
8/8/2017	5341.87	12.05	5329.82	
8/15/2017	5341.87	12.02	5329.85	
9/9/2017	5341.87	11.83	5330.04	
10/11/2017	5341.87	11.78	5330.09	
4/6/2018	5341.87	11.44	5330.43	
5/31/2018	5341.87	11.61	5330.26	
11/2/2018	5341.87	11.71	5330.16	
4/1/2019	5341.87	12.04	5329.83	
5/6/2019	5341.87	12.06	5329.81	
12/3/2019	5341.87	11.59	5330.28	
6/16/2020	5341.87	11.64	5330.23	22.9
11/2/2020	5341.87	11.55	5330.32	

Appendix B - Groundwater Elevations and Hydrographs

MW-63				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/4/2015	5337.02	6.70	5330.32	
4/25/2016	5337.02	6.70	5330.32	
6/4/2016	5337.02	6.34	5330.68	
8/20/2016	5337.02	6.33	5330.69	
9/12/2016	5337.02	6.58	5330.44	
10/19/2016	5337.02	7.00	5330.02	
1/31/2017	5337.02	6.61	5330.41	
4/16/2017	5337.02	7.11	5329.91	
5/1/2017	5337.02	6.78	5330.24	
5/28/2017	5337.02	7.33	5329.69	
6/20/2017	5337.02	6.96	5330.06	
7/20/2017	5337.02	7.47	5329.55	
8/8/2017	5337.02	7.58	5329.44	
8/15/2017	5337.02	7.60	5329.42	
9/9/2017	5337.02	7.29	5329.73	
10/11/2017	5337.02	7.51	5329.51	
3/15/2018	5337.02	7.14	5329.88	
4/6/2018	5337.02	7.17	5329.85	
5/31/2018	5337.02	7.14	5329.88	
11/2/2018	5337.02	7.06	5329.96	
4/1/2019	5337.02	7.47	5329.55	
5/6/2019	5337.02	7.53	5329.49	
12/3/2019	5337.02	6.89	5330.13	
6/16/2020	5337.02	7.13	5329.89	18.9
11/2/2020	5337.02	6.96	5330.06	

Appendix B - Groundwater Elevations and Hydrographs

MW-64				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/5/2015	5337.66	6.80	5330.86	
4/25/2016	5337.66	6.75	5330.91	
6/4/2016	5337.66	6.62	5331.04	
8/20/2016	5337.66	6.63	5331.03	
9/12/2016	5337.66	6.76	5330.90	
10/19/2016	5337.66	7.08	5330.58	
1/31/2017	5337.66	6.86	5330.80	
4/16/2017	5337.66	7.25	5330.41	
5/1/2017	5337.66	6.97	5330.69	
5/28/2017	5337.66	7.53	5330.13	
6/20/2017	5337.66	7.27	5330.39	
7/20/2017	5337.66	7.56	5330.10	
8/8/2017	5337.66	7.61	5330.05	
8/15/2017	5337.66	7.62	5330.04	
9/9/2017	5337.66	7.41	5330.25	
10/11/2017	5337.66	7.49	5330.17	
3/15/2018	5337.66	7.23	5330.43	
4/6/2018	5337.66	7.26	5330.40	
5/31/2018	5337.66	7.31	5330.35	
11/2/2018	5337.66	7.16	5330.50	
4/1/2019	5337.66	7.41	5330.25	
5/6/2019	5337.66	7.58	5330.08	
12/3/2019	5337.66	7.09	5330.57	
6/16/2020	5337.66	7.34	5330.32	20
11/2/2020	5337.66	7.01	5330.65	

Appendix B - Groundwater Elevations and Hydrographs

MW-65				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/5/2015	5339.74	8.72	5331.02	
4/25/2016	5339.74	8.5	5331.24	
6/4/2016	5339.74	8.64	5331.10	
8/20/2016	5339.74	8.36	5331.38	
9/12/2016	5339.74	8.41	5331.33	
10/19/2016	5339.74	8.86	5330.88	
1/31/2017	5339.74	8.71	5331.03	
4/16/2017	5339.74	8.84	5330.90	
5/1/2017	5339.74	8.81	5330.93	
5/28/2017	5339.74	9.22	5330.52	
6/20/2017	5339.74	9.14	5330.60	
7/20/2017	5339.74	9.38	5330.36	
8/8/2017	5339.74	9.36	5330.38	
8/15/2017	5339.74	9.42	5330.32	
9/9/2017	5339.74	9.33	5330.41	
10/11/2017	5339.74	9.23	5330.51	
3/15/2018	5339.74	8.98	5330.76	
4/6/2018	5339.74	8.93	5330.81	
5/31/2018	5339.74	9.09	5330.65	
11/2/2018	5339.74	9.09	5330.65	
4/1/2019	5339.74	9.14	5330.60	
5/6/2019	5339.74	9.14	5330.60	
12/3/2019	5339.74	9.03	5330.71	
6/16/2020	5339.74	9.2	5330.54	20.6
11/2/2020	5339.74	8.99	5330.75	

Appendix B - Groundwater Elevations and Hydrographs

MW-66				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
11/3/2015	5344.69	12.87	5331.82	
11/5/2015	5344.69	13.05	5331.64	
12/1/2015	5344.69	12.93	5331.76	
3/4/2016	5344.69	12.91	5331.78	
4/5/2016	5344.69	12.6	5332.09	
6/4/2016	5344.69	13.02	5331.67	
8/20/2016	5344.69	12.03	5332.66	
9/12/2016	5344.69	12.13	5332.56	
10/19/2016	5344.69	12.54	5332.15	
2/1/2017	5344.69	12.76	5331.93	
4/16/2017	5344.69	12.78	5331.91	
5/1/2017	5344.69	12.92	5331.77	
5/28/2017	5344.69	13.18	5331.51	
6/20/2017	5344.69	13.3	5331.39	
7/20/2017	5344.69	13.36	5331.33	
8/8/2017	5344.69	13.67	5331.02	
8/15/2017	5344.69	13.79	5330.90	
9/9/2017	5344.69	13.65	5331.04	
10/11/2017	5344.69	13.43	5331.26	
3/15/2018	5344.69	13.07	5331.62	
5/31/2018	5344.69	13.21	5331.48	
11/2/2018	5344.69	14.47	5330.22	
3/13/2019	5344.69	14.1	5330.59	
5/6/2019	5344.69	14.72	5329.97	
12/3/2019	5344.69	14.53	5330.16	
6/16/2020	5344.69	14.72	5329.97	33
11/2/2020	5344.69	14.47	5330.22	

Appendix B - Groundwater Elevations and Hydrographs

MW-67				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
10/6/2015	5356.42	25.10	5331.32	
11/4/2015	5356.42	24.51	5331.91	
11/6/2015	5356.42	24.51	5331.91	
12/1/2015	5356.42	24.60	5331.82	
3/4/2016	5356.42	24.60	5331.82	
4/25/2016	5356.42	24.58	5331.84	
6/4/2016	5356.42	24.28	5332.14	
8/20/2016	5356.42	23.74	5332.68	
9/12/2016	5356.42	23.83	5332.59	
10/19/2016	5356.42	24.59	5331.83	
1/31/2017	5356.42	24.44	5331.98	
4/16/2017	5356.42	24.59	5331.83	
5/1/2017	5356.42	24.71	5331.71	
5/28/2017	5356.42	24.91	5331.51	
6/20/2017	5356.42	25.13	5331.29	
7/20/2017	5356.42	25.12	5331.30	
8/8/2017	5356.42	25.46	5330.96	
8/15/2017	5356.42	25.44	5330.98	
9/9/2017	5356.42	25.58	5330.84	
10/11/2017	5356.42	25.16	5331.26	
3/15/2018	5356.42	24.26	5332.16	
5/31/2018	5356.42	25.14	5331.28	
11/2/2018	5352.76	22.26	5330.50	
3/13/2019	5352.76	21.96	5330.80	
5/6/2019	5352.76	22.52	5330.24	
12/2/2019	5352.76	22.57	5330.19	
6/16/2020	5352.76	22.49	5330.27	32.7
11/2/2020	5352.76	22.41	5330.35	

Appendix B - Groundwater Elevations and Hydrographs

MW-68				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
10/6/2015	5353.58	21.21	5332.37	
11/3/2015	5353.58	20.54	5333.04	
11/6/2015	5353.58	20.58	5333.00	
12/1/2015	5353.58	20.48	5333.10	
4/25/2016	5353.58	20.00	5333.58	
6/4/2016	5353.58	20.81	5332.77	
8/19/2016	5353.58	19.21	5334.37	
9/12/2016	5353.58	19.40	5334.18	
10/19/2016	5353.58	19.67	5333.91	
1/31/2017	5353.58	19.58	5334.00	
4/16/2017	5353.58	19.76	5333.82	
5/1/2017	5353.58	20.13	5333.45	
5/28/2017	5353.58	20.20	5333.38	
6/20/2017	5353.58	20.64	5332.94	
7/20/2017	5353.58	19.27	5334.31	
8/8/2017	5353.58	20.97	5332.61	
8/15/2017	5353.58	21.02	5332.56	
9/9/2017	5353.58	20.97	5332.61	
10/11/2017	5353.58	20.24	5333.34	
3/15/2018	5353.58	19.92	5333.66	
5/31/2018	5353.58	20.34	5333.24	
11/2/2018	5353.58	22.31	5331.27	
3/15/2019	5353.58	22.33	5331.25	
5/6/2019	5353.58	22.49	5331.09	
12/2/2019	5353.58	22.11	5331.47	
6/16/2020	5353.58	22.36	5331.22	29.7
11/2/2020	5353.58	22.31	5331.27	

Appendix B - Groundwater Elevations and Hydrographs

MW-69				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
10/6/2015	5357.66	23.70	5333.96	
11/3/2015	5357.66	23.09	5334.57	
11/4/2015	5357.66	23.11	5334.55	
12/1/2015	5357.66	23.01	5334.65	
3/4/2016	5357.66	22.64	5335.02	
4/25/2016	5357.66	22.20	5335.46	
6/4/2016	5357.66	23.32	5334.34	
8/19/2016	5357.66	21.65	5336.01	
9/12/2016	5357.66	21.83	5335.83	
10/19/2016	5357.66	22.33	5335.33	
1/31/2017	5357.66	22.39	5335.27	
4/16/2017	5357.66	22.36	5335.30	
5/1/2017	5357.66	22.77	5334.89	
5/28/2017	5357.66	23.37	5334.29	
6/20/2017	5357.66	23.75	5333.91	
7/20/2017	5357.66	23.38	5334.28	
8/8/2017	5357.66	23.86	5333.80	
8/15/2017	5357.66	23.86	5333.80	
9/9/2017	5357.66	23.87	5333.79	
10/11/2017	5357.66	23.08	5334.58	
3/15/2018	5357.66	22.62	5335.04	
5/31/2018	5357.66	22.81	5334.85	
11/2/2018	5357.66	25.58	5332.08	
3/13/2019	5357.66	25.71	5331.95	
5/6/2019	5357.66	26.11	5331.55	
12/2/2019	5357.66	25.69	5331.97	
6/16/2020	5357.66	26.16	5331.50	37.4
11/2/2020	5357.66	26.35	5331.31	

Appendix B - Groundwater Elevations and Hydrographs

MW-70				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
10/5/2015	5371.12	37.89	5333.23	
11/3/2015	5371.12	37.33	5333.79	
11/9/2015	5371.12	37.48	5333.64	
12/1/2015	5371.12	37.33	5333.79	
3/4/2016	5371.12	37.07	5334.05	
4/25/2016	5371.12	36.70	5334.42	
6/4/2016	5371.12	37.32	5333.80	
8/20/2016	5371.12	36.45	5334.67	
9/12/2016	5371.12	36.38	5334.74	
10/19/2016	5371.12	36.59	5334.53	
2/1/2017	5371.12	36.95	5334.17	
4/25/2017	5371.12	36.70	5334.42	
5/1/2017	5371.12	36.97	5334.15	
5/28/2017	5371.12	37.44	5333.68	
6/20/2017	5371.12	37.57	5333.55	
7/20/2017	5371.12	37.70	5333.42	
8/8/2017	5371.12	37.77	5333.35	
8/15/2017	5371.12	37.93	5333.19	
9/9/2017	5371.12	37.91	5333.21	
10/11/2017	5371.12	37.59	5333.53	
3/15/2018	5371.12	37.19	5333.93	
5/31/2018	5371.12	37.08	5334.04	
11/2/2018	5371.12	39.13	5331.99	
3/13/2019	5371.12	39.03	5332.09	
5/6/2019	5371.12	39.66	5331.46	
12/3/2019	5371.12	39.88	5331.24	
6/16/2020	5371.12	40.01	5331.11	52
11/2/2020	5371.12	40.21	5330.91	

Appendix B - Groundwater Elevations and Hydrographs

MW-71				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
3/5/2016	5362.91	31.50	5331.41	
4/25/2016	5362.91	31.41	5331.50	
6/4/2016	5362.91	31.69	5331.22	
8/19/2016	5362.91	31.34	5331.57	
9/12/2016	5362.91	31.21	5331.70	
10/19/2016	5362.91	31.58	5331.33	
1/31/2017	5362.91	31.51	5331.40	
4/16/2017	5362.91	31.50	5331.41	
5/1/2017	5362.91	31.49	5331.42	
5/28/2017	5362.91	31.70	5331.21	
6/20/2017	5362.91	31.72	5331.19	
7/20/2017	5362.91	31.71	5331.20	
8/8/2017	5362.91	31.72	5331.19	
8/15/2017	5362.91	31.66	5331.25	
9/9/2017	5362.91	31.89	5331.02	
10/11/2017	5362.91	31.82	5331.09	
3/15/2018	5362.91	31.18	5331.73	
5/31/2018	5362.91	31.71	5331.20	
11/2/2018	5362.91	32.09	5330.82	
3/13/2019	5362.91	32.25	5330.66	
5/6/2019	5362.91	32.29	5330.62	
12/2/2019	5362.91	32.11	5330.80	
6/16/2020	5362.91	32.26	5330.65	49.29
11/2/2020	5362.91	32.17	5330.74	

Appendix B - Groundwater Elevations and Hydrographs

MW-72				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
3/5/2016	5381.62	49.72	5331.90	
4/25/2016	5381.62	49.12	5332.50	
6/4/2016	5381.62	49.76	5331.86	
8/19/2016	5381.62	49.54	5332.08	
9/12/2016	5381.62	49.43	5332.19	
10/19/2016	5381.62	49.49	5332.13	
1/31/2017	5381.62	49.49	5332.13	
4/16/2017	5381.62	49.37	5332.25	
5/1/2017	5381.62	49.33	5332.29	
5/28/2017	5381.62	49.63	5331.99	
6/20/2017	5381.62	49.65	5331.97	
7/20/2017	5381.62	49.68	5331.94	
8/8/2017	5381.62	49.68	5331.94	
8/15/2017	5381.62	49.54	5332.08	
9/9/2017	5381.62	49.75	5331.87	
10/11/2017	5381.62	49.81	5331.81	
3/15/2018	5381.62	49.21	5332.41	
5/31/2018	5381.62	49.65	5331.97	
11/2/2018	5381.62	50.06	5331.56	
3/14/2019	5381.62	50.12	5331.50	
5/6/2019	5381.62	49.98	5331.64	
11/18/2019	5381.62	50.17	5331.45	
6/16/2020	5381.62	50.12	5331.50	63.53
11/2/2020	5381.62	50.39	5331.23	

Appendix B - Groundwater Elevations and Hydrographs

MW-73				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
1/31/2017	5353.95	23.99	5329.96	
4/16/2017	5353.95	24.38	5329.57	
5/1/2017	5353.95	24.28	5329.67	
5/28/2017	5353.95	24.29	5329.66	
6/20/2017	5353.95	24.54	5329.41	
7/20/2017	5353.95	25.27	5328.68	
8/8/2017	5353.95	25.47	5328.48	
8/15/2017	5353.95	25.74	5328.21	
9/9/2017	5353.95	25.32	5328.63	
10/11/2017	5353.95	24.59	5329.36	
3/15/2018	5353.95	23.90	5330.05	
5/31/2018	5353.95	24.86	5329.09	
11/2/2018	5353.95	24.89	5329.06	
3/13/2019	5353.95	24.34	5329.61	
5/6/2019	5353.95	25.31	5328.64	
11/18/2019	5353.95	24.73	5329.22	
6/16/2020	5353.95	24.71	5329.24	47.05
11/2/2020	5353.95	24.33	5329.62	

Appendix B - Groundwater Elevations and Hydrographs

MW-74				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
1/31/2017	5219.09	16.53	5202.56	
4/16/2017	5219.09	16.61	5202.48	20.86
5/1/2017	5219.09	16.76	5202.33	
5/28/2017	5219.09	17.12	5201.97	
6/20/2017	5219.09	17.61	5201.48	
7/20/2017	5219.09	18.46	5200.63	
8/8/2017	5219.09	18.94	5200.15	
8/15/2017	5219.09	19.67	5199.42	
9/9/2017	5219.09	19.36	5199.73	
10/11/2017	5219.09	19.67	5199.42	
3/15/2018	5219.09	16.54	5202.55	
5/31/2018	5219.09	17.69	5201.40	
11/2/2018	5219.09	19.92	5199.17	
3/16/2019	5219.09	16.65	5202.44	
5/13/2019	5219.09	17.19	5201.90	
11/18/2019	5219.09	19.84	5199.25	
6/16/2020	5219.09	18.68	5200.41	42.39
11/2/2020	5219.09	20.08	5199.01	

Appendix B - Groundwater Elevations and Hydrographs

MW-75				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
4/16/2017	5126.80	24.42	5102.38	41.85
5/1/2017	5126.80	24.48	5102.32	
5/28/2017	5126.80	24.64	5102.16	
6/20/2017	5126.80	24.71	5102.09	
7/20/2017	5126.80	24.88	5101.92	
8/8/2017	5126.80	24.89	5101.91	
8/15/2017	5126.80	24.93	5101.87	
9/9/2017	5126.80	25.02	5101.78	
10/11/2017	5126.80	24.95	5101.85	
3/15/2018	5126.80	25.13	5101.67	
5/31/2018	5126.80	25.54	5101.26	
11/2/2018	5126.80	25.92	5100.88	
3/16/2019	5126.80	26.04	5100.76	
5/13/2019	5126.80	26.11	5100.69	
11/18/2019	5126.80	26.08	5100.72	
6/17/2020	5126.80	26.85	5099.95	43
11/3/2020	5126.80	27.03	5099.77	

Appendix B - Groundwater Elevations and Hydrographs

MW-76				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
4/16/2017	5116.23	Dry		29.34
5/1/2017	5116.23	Dry		
5/28/2017	5116.23	Dry		
6/20/2017	5116.23	Dry		
7/20/2017	5116.23	28.78	5087.45	
8/8/2017	5116.23	Dry		
8/15/2017	5116.23	Dry		
9/9/2017	5116.23	27.76	5088.47	
10/11/2017	5116.23	Dry		
3/15/2018	5116.23	26.79	5089.44	
5/31/2018	5116.23	Dry		
11/2/2018	5116.23	Dry		
4/2/2019	5116.23	27.44	5088.79	
11/18/2019	5116.23	23.98	5092.25	
6/18/2020	5116.23	27.26	5088.97	34.93
11/3/2020	5116.23	27.42	5088.81	

Appendix B - Groundwater Elevations and Hydrographs

MW-83				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
12/15/2018	5343.15	13.38	5329.77	
3/13/2019	5343.15	13.40	5329.75	
5/6/2019	5343.15	13.47	5329.68	
12/2/2019	5343.15	13.31	5329.84	
6/16/2020	5343.15	13.29	5329.86	30.64
11/2/2020	5343.15	13.26	5329.89	

Appendix B - Groundwater Elevations and Hydrographs

MW-84				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
12/15/2018	5338.23	8.39	5329.84	
3/13/2019	5338.23	7.85	5330.38	
5/6/2019	5338.23	8.42	5329.81	
12/2/2019	5338.23	8.17	5330.06	
6/16/2020	5338.23	8.26	5329.97	28.89
11/2/2020	5338.23	8.13	5330.1	

Appendix B - Groundwater Elevations and Hydrographs

MW-85				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
12/15/2018	5352.78	22.53	5330.25	
3/13/2019	5352.78	22.16	5330.62	
5/6/2019	5352.78	22.83	5329.95	
12/2/2019	5352.78	22.48	5330.30	
6/16/2020	5352.78	22.68	5330.1	29.09
11/2/2020	5352.78	22.51	5330.27	

Appendix B - Groundwater Elevations and Hydrographs

MW-86				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
12/15/2018	5338.76	9.08	5329.68	
3/13/2019	5338.76	8.53	5330.23	
5/6/2019	5338.76	9.08	5329.68	
12/3/2019	5338.76	8.82	5329.94	
6/16/2020	5338.76	8.99	5329.77	30.02
11/2/2020	5338.76	8.76	5330	

Appendix B - Groundwater Elevations and Hydrographs

MW-87				
Date of Measurement	Measuring Pt Elevation	Water Level	GW Elevation	Well TD
12/15/2018	5076.53	Dry		
3/13/2019	5076.53	31.95	5044.58	
5/13/2019	5076.53	30.46	5046.07	
11/18/2019	5076.53	30.62	5045.91	
6/18/2020	5076.53	30.24	5046.29	47.24
11/3/2020	5076.53	31.86	5044.67	

APPENDIX C
ANALYTICAL LABORATORY REPORTS



ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-143999-1

Laboratory SDG: APS Four Corners Power Plant (CWTP)
Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
7/30/2020 12:37:37 PM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
SDG: APS Four Corners Power Plant (CWTP)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.

Metals

Qualifier	Qualifier Description
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the blank.
D2	Sample required dilution due to high concentration of analyte.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
SDG: APS Four Corners Power Plant (CWTP)

Job ID: 550-143999-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative
550-143999-1

Comments

No additional comments.

Receipt

The samples were received on 6/24/2020 3:08 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Method SM 2540C: The method blank for 550-213528 contained Total Dissolved Solids (TDS) above the reporting limit (RL). Associated samples were not re-analyzed because results were greater than 10X the value found in the method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
SDG: APS Four Corners Power Plant (CWTP)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-143999-1	FC-CCR-MW62-0620	Water	06/19/20 15:43	06/24/20 15:08	
550-143999-2	FC-CCR-MW63-0620	Water	06/19/20 16:49	06/24/20 15:08	
550-143999-3	FC-CCR-MW64-0620	Water	06/19/20 16:10	06/24/20 15:08	
550-143999-4	FC-CCR-MW65-0620	Water	06/19/20 09:11	06/24/20 15:08	

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- 12
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Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Client Sample ID: FC-CCR-MW62-0620

Lab Sample ID: 550-143999-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	82	D1	4.0	mg/L	2		300.0	Total/NA
Fluoride	1.8	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	2800	D2	400	mg/L	200		300.0	Total/NA
Boron	1.9		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	490		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	4700	B7 D2	100	mg/L	1		SM 2540C	Total/NA
pH	6.9	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	4.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW63-0620

Lab Sample ID: 550-143999-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	77	D1	4.0	mg/L	2		300.0	Total/NA
Fluoride	2.1	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	2400	D1	400	mg/L	200		300.0	Total/NA
Boron	1.5		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	540		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	4200	B7 D2	40	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	4.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW64-0620

Lab Sample ID: 550-143999-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	49	D1	4.0	mg/L	2		300.0	Total/NA
Fluoride	1.3	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	300	D2	40	mg/L	20		300.0	Total/NA
Boron	0.47		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	77		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	790	B7	20	mg/L	1		SM 2540C	Total/NA
pH	7.9	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	5.0	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW65-0620

Lab Sample ID: 550-143999-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	48	D1	4.0	mg/L	2		300.0	Total/NA
Fluoride	1.7	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	380	D2	40	mg/L	20		300.0	Total/NA
Boron	0.57		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	88		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	940	B7	20	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Client Sample ID: FC-CCR-MW62-0620

Lab Sample ID: 550-143999-1

Date Collected: 06/19/20 15:43

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	82	D1	4.0	mg/L			06/29/20 17:41	2
Fluoride	1.8	D1	0.80	mg/L			06/29/20 17:41	2
Sulfate	2800	D2	400	mg/L			06/29/20 18:00	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.9		0.050	mg/L		06/25/20 08:46	07/26/20 04:08	1
Calcium	490		2.0	mg/L		06/25/20 08:46	07/29/20 22:26	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4700	B7 D2	100	mg/L			06/25/20 12:11	1
pH	6.9	H5	1.7	SU			06/27/20 15:05	1
Temperature	4.6	H5	0.1	Degrees C			06/27/20 15:05	1

Client Sample ID: FC-CCR-MW63-0620

Lab Sample ID: 550-143999-2

Date Collected: 06/19/20 16:49

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	77	D1	4.0	mg/L			06/29/20 18:18	2
Fluoride	2.1	D1	0.80	mg/L			06/29/20 18:18	2
Sulfate	2400	D1	400	mg/L			06/29/20 18:36	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.5		0.050	mg/L		06/25/20 08:46	07/26/20 04:12	1
Calcium	540		2.0	mg/L		06/25/20 08:46	07/29/20 22:39	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4200	B7 D2	40	mg/L			06/25/20 12:11	1
pH	7.2	H5	1.7	SU			06/27/20 15:05	1
Temperature	4.3	H5	0.1	Degrees C			06/27/20 15:05	1

Client Sample ID: FC-CCR-MW64-0620

Lab Sample ID: 550-143999-3

Date Collected: 06/19/20 16:10

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	49	D1	4.0	mg/L			06/29/20 18:55	2
Fluoride	1.3	D1	0.80	mg/L			06/29/20 18:55	2
Sulfate	300	D2	40	mg/L			06/30/20 20:12	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.47		0.050	mg/L		06/25/20 08:46	07/26/20 04:24	1
Calcium	77		2.0	mg/L		06/25/20 08:46	07/29/20 22:43	1

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Client Sample ID: FC-CCR-MW64-0620

Lab Sample ID: 550-143999-3

Date Collected: 06/19/20 16:10

Matrix: Water

Date Received: 06/24/20 15:08

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	790	B7	20	mg/L			06/25/20 12:11	1
pH	7.9	H5	1.7	SU			06/27/20 15:05	1
Temperature	5.0	H5	0.1	Degrees C			06/27/20 15:05	1

Client Sample ID: FC-CCR-MW65-0620

Lab Sample ID: 550-143999-4

Date Collected: 06/19/20 09:11

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	48	D1	4.0	mg/L			06/29/20 20:08	2
Fluoride	1.7	D1	0.80	mg/L			06/29/20 20:08	2
Sulfate	380	D2	40	mg/L			06/30/20 21:34	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.57		0.050	mg/L		06/25/20 08:46	07/26/20 04:28	1
Calcium	88		2.0	mg/L		06/25/20 08:46	07/29/20 22:47	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	940	B7	20	mg/L			06/25/20 12:11	1
pH	7.4	H5	1.7	SU			06/30/20 18:11	1
Temperature	9.4	H5	0.1	Degrees C			06/30/20 18:11	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-213829/2
Matrix: Water
Analysis Batch: 213829

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			06/29/20 14:56	1
Fluoride	ND		0.40	mg/L			06/29/20 14:56	1
Sulfate	ND		2.0	mg/L			06/29/20 14:56	1

Lab Sample ID: LCS 550-213829/5
Matrix: Water
Analysis Batch: 213829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.6		mg/L		103	90 - 110
Fluoride	4.00	4.04		mg/L		101	90 - 110
Sulfate	20.0	20.4		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-213829/6
Matrix: Water
Analysis Batch: 213829

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.7		mg/L		103	90 - 110	0	20
Fluoride	4.00	4.05		mg/L		101	90 - 110	0	20
Sulfate	20.0	20.4		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-144093-A-1 MS ^10
Matrix: Water
Analysis Batch: 213829

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	42	D2	200	257	D2	mg/L		108	80 - 120
Fluoride	150	D2	40.0	191	D2	mg/L		91	80 - 120
Sulfate	120	D2	200	335	D2	mg/L		106	80 - 120

Lab Sample ID: 550-144093-A-1 MSD ^10
Matrix: Water
Analysis Batch: 213829

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	42	D2	200	257	D2	mg/L		108	80 - 120	0	20
Fluoride	150	D2	40.0	188	D2	mg/L		82	80 - 120	2	20
Sulfate	120	D2	200	335	D2	mg/L		106	80 - 120	0	20

Lab Sample ID: MB 550-213933/2
Matrix: Water
Analysis Batch: 213933

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			06/30/20 15:10	1
Fluoride	ND		0.40	mg/L			06/30/20 15:10	1
Sulfate	ND		2.0	mg/L			06/30/20 15:10	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-213933/5
Matrix: Water
Analysis Batch: 213933

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.0		mg/L		105	90 - 110
Fluoride	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	20.9		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-213933/6
Matrix: Water
Analysis Batch: 213933

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.0		mg/L		105	90 - 110	0	20
Fluoride	4.00	4.17		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.9		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-143999-3 MS
Matrix: Water
Analysis Batch: 213933

Client Sample ID: FC-CCR-MW64-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	43		400	473	D2	mg/L		107	80 - 120
Fluoride	ND		80.0	85.0	D1	mg/L		105	80 - 120
Sulfate	300	D2	400	728	D2	mg/L		107	80 - 120

Lab Sample ID: 550-143999-3 MSD
Matrix: Water
Analysis Batch: 213933

Client Sample ID: FC-CCR-MW64-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	43		400	472	D2	mg/L		107	80 - 120	0	20
Fluoride	ND		80.0	84.8	D1	mg/L		104	80 - 120	0	20
Sulfate	300	D2	400	727	D2	mg/L		107	80 - 120	0	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-213492/1-A
Matrix: Water
Analysis Batch: 215899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213492

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	mg/L		06/25/20 08:46	07/26/20 03:24	1

Lab Sample ID: MB 550-213492/1-A
Matrix: Water
Analysis Batch: 216256

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213492

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		2.0	mg/L		06/25/20 08:46	07/29/20 21:42	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-213492/2-A
Matrix: Water
Analysis Batch: 215899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213492
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	0.961		mg/L		96	85 - 115

Lab Sample ID: LCS 550-213492/2-A
Matrix: Water
Analysis Batch: 216256

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213492
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Calcium	21.0	20.4		mg/L		97	85 - 115

Lab Sample ID: LCSD 550-213492/3-A
Matrix: Water
Analysis Batch: 215899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213492
 %Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	1.00	1.00		mg/L		100	85 - 115	4	20

Lab Sample ID: LCSD 550-213492/3-A
Matrix: Water
Analysis Batch: 216256

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213492
 %Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Calcium	21.0	20.9		mg/L		99	85 - 115	2	20

Lab Sample ID: 550-143982-A-1-A MS
Matrix: Water
Analysis Batch: 215899

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213492
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	0.18		1.00	1.18		mg/L		101	70 - 130

Lab Sample ID: 550-143982-A-1-A MS
Matrix: Water
Analysis Batch: 216256

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213492
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Calcium	92		21.0	108	M3	mg/L		77	70 - 130

Lab Sample ID: 550-143982-A-1-B MSD
Matrix: Water
Analysis Batch: 215899

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213492
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	0.18		1.00	1.21		mg/L		104	70 - 130	3	20

Lab Sample ID: 550-143982-A-1-B MSD
Matrix: Water
Analysis Batch: 216256

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213492
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Calcium	92		21.0	108	M3	mg/L		75	70 - 130	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-213528/1
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	40.8	B1	20	mg/L			06/25/20 12:11	1

Lab Sample ID: LCS 550-213528/2
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1030		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-213528/3
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	90 - 110	1	10

Lab Sample ID: 550-143999-1 DU
Matrix: Water
Analysis Batch: 213528

Client Sample ID: FC-CCR-MW62-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	4700	D2 B7	4690	B7 D2	mg/L		0.5	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-213723/1
Matrix: Water
Analysis Batch: 213723

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.3	98.5 - 101.5

Lab Sample ID: LCSSRM 550-213723/15
Matrix: Water
Analysis Batch: 213723

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.4	98.5 - 101.5

Lab Sample ID: 550-143998-A-5 DU
Matrix: Water
Analysis Batch: 213723

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.0	H5	6.0	H5	SU		0.2	5
Temperature	7.4	H5	7.5	H5	Degrees C		1	

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: LCSSRM 550-213932/1
Matrix: Water
Analysis Batch: 213932

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.1	98.5 - 101.5

Lab Sample ID: LCSSRM 550-213932/13
Matrix: Water
Analysis Batch: 213932

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.1	98.5 - 101.5

Lab Sample ID: 550-144004-A-1 DU
Matrix: Water
Analysis Batch: 213932

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.9	H5	7.9	H5	SU		0	5
Temperature	5.3	H5	5.4	H5	Degrees C		2	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
SDG: APS Four Corners Power Plant (CWTP)

HPLC/IC

Analysis Batch: 213829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-143999-1	FC-CCR-MW62-0620	Total/NA	Water	300.0	
550-143999-1	FC-CCR-MW62-0620	Total/NA	Water	300.0	
550-143999-2	FC-CCR-MW63-0620	Total/NA	Water	300.0	
550-143999-2	FC-CCR-MW63-0620	Total/NA	Water	300.0	
550-143999-3	FC-CCR-MW64-0620	Total/NA	Water	300.0	
550-143999-4	FC-CCR-MW65-0620	Total/NA	Water	300.0	
MB 550-213829/2	Method Blank	Total/NA	Water	300.0	
LCS 550-213829/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-213829/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-144093-A-1 MS ^10	Matrix Spike	Total/NA	Water	300.0	
550-144093-A-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 213933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-143999-3	FC-CCR-MW64-0620	Total/NA	Water	300.0	
550-143999-4	FC-CCR-MW65-0620	Total/NA	Water	300.0	
MB 550-213933/2	Method Blank	Total/NA	Water	300.0	
LCS 550-213933/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-213933/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-143999-3 MS	FC-CCR-MW64-0620	Total/NA	Water	300.0	
550-143999-3 MSD	FC-CCR-MW64-0620	Total/NA	Water	300.0	

Metals

Prep Batch: 213492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-143999-1	FC-CCR-MW62-0620	Total/NA	Water	200.7	
550-143999-2	FC-CCR-MW63-0620	Total/NA	Water	200.7	
550-143999-3	FC-CCR-MW64-0620	Total/NA	Water	200.7	
550-143999-4	FC-CCR-MW65-0620	Total/NA	Water	200.7	
MB 550-213492/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-213492/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-213492/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-143982-A-1-A MS	Matrix Spike	Total/NA	Water	200.7	
550-143982-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Analysis Batch: 215899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-143999-1	FC-CCR-MW62-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-143999-2	FC-CCR-MW63-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-143999-3	FC-CCR-MW64-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-143999-4	FC-CCR-MW65-0620	Total/NA	Water	200.7 Rev 4.4	213492
MB 550-213492/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	213492
LCS 550-213492/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	213492
LCSD 550-213492/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	213492
550-143982-A-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	213492
550-143982-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	213492

Analysis Batch: 216256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-143999-1	FC-CCR-MW62-0620	Total/NA	Water	200.7 Rev 4.4	213492

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Metals (Continued)

Analysis Batch: 216256 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-143999-2	FC-CCR-MW63-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-143999-3	FC-CCR-MW64-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-143999-4	FC-CCR-MW65-0620	Total/NA	Water	200.7 Rev 4.4	213492
MB 550-213492/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	213492
LCS 550-213492/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	213492
LCSD 550-213492/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	213492
550-143982-A-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	213492
550-143982-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	213492

General Chemistry

Analysis Batch: 213528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-143999-1	FC-CCR-MW62-0620	Total/NA	Water	SM 2540C	
550-143999-2	FC-CCR-MW63-0620	Total/NA	Water	SM 2540C	
550-143999-3	FC-CCR-MW64-0620	Total/NA	Water	SM 2540C	
550-143999-4	FC-CCR-MW65-0620	Total/NA	Water	SM 2540C	
MB 550-213528/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-213528/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-213528/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-143999-1 DU	FC-CCR-MW62-0620	Total/NA	Water	SM 2540C	

Analysis Batch: 213723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-143999-1	FC-CCR-MW62-0620	Total/NA	Water	SM 4500 H+ B	
550-143999-2	FC-CCR-MW63-0620	Total/NA	Water	SM 4500 H+ B	
550-143999-3	FC-CCR-MW64-0620	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-213723/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-213723/15	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-143998-A-5 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 213932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-143999-4	FC-CCR-MW65-0620	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-213932/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-213932/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-144004-A-1 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Client Sample ID: FC-CCR-MW62-0620

Lab Sample ID: 550-143999-1

Date Collected: 06/19/20 15:43

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/29/20 17:41	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/29/20 18:00	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 04:08	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 22:26	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528	(Start) 06/25/20 12:11 (End) 06/28/20 07:10	CMM	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	213723	06/27/20 15:05	RLS	TAL PHX

Client Sample ID: FC-CCR-MW63-0620

Lab Sample ID: 550-143999-2

Date Collected: 06/19/20 16:49

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/29/20 18:18	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/29/20 18:36	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 04:12	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 22:39	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528	(Start) 06/25/20 12:11 (End) 06/28/20 07:10	CMM	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	213723	06/27/20 15:05	RLS	TAL PHX

Client Sample ID: FC-CCR-MW64-0620

Lab Sample ID: 550-143999-3

Date Collected: 06/19/20 16:10

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/29/20 18:55	RDC	TAL PHX
Total/NA	Analysis	300.0		20	213933	06/30/20 20:12	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 04:24	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 22:43	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528	(Start) 06/25/20 12:11 (End) 06/28/20 07:10	CMM	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	213723	06/27/20 15:05	RLS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
 SDG: APS Four Corners Power Plant (CWTP)

Client Sample ID: FC-CCR-MW65-0620

Lab Sample ID: 550-143999-4

Date Collected: 06/19/20 09:11

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/29/20 20:08	RDC	TAL PHX
Total/NA	Analysis	300.0		20	213933	06/30/20 21:34	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 04:28	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 22:47	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340



Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
SDG: APS Four Corners Power Plant (CWTP)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	Temperature



Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-143999-1
SDG: APS Four Corners Power Plant (CWTP)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Chain of Custody Record

TestAmerica Phoenix

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: DW NPDES RCRA Other-CCR

143499

TestAmerica Laboratories, Inc.

Client Contact: **Natalie Chrisman** 602-250-3608
Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
TAT if different from Below: 2 weeks 1 week 2 days 1 day

Arizona Public Service PO Box 355, MS 4915
Fruitland, NM 87416
Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (CWTP)
Project # 1420202015.****02

Lab Contact: **Ken Baker** Date: **06/24/20**
Carrier: **1112 cdo**

COC No: 1 of 1 COCs

Sampler: Walk-in Client: Lab Sampling: Job / SDG No.:

For Lab Use Only: Low Flow

Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (G-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca)	SM 4500-HB (pH)	SM 2540C (TDS)
1 FC-CCR-MW62-0620	6/19/2020	15:43	G	W	2	N	N	X	X	X	X
2 FC-CCR-MW63-0620	6/19/2020	16:49	G	W	2	N	N	X	X	X	X
3 FC-CCR-MW64-0620	6/19/2020	16:10	G	W	2	N	N	X	X	X	X
4 FC-CCR-MW65-0620	6/19/2020	9:11	G	W	2	N	N	X	X	X	X



Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:
 Non-Hazard Flammable Skin Irritant Poison B Unknown
 Return to Client Dispose by Lab Archive for _____ Months

Method 200.8 with collision cell
Custody Seal Intact: Yes No
Custody Seal No.:

Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: *6/24/20 15:08*

Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: *6/24/20 15:08*

Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: *6/24/20 15:08*

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-143999-1
SDG Number: APS Four Corners Power Plant (CWTP)

Login Number: 143999

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-144000-1

Laboratory SDG: APS Four Corners Power Plant (URS)
Client Project/Site: CCR Groundwater Monitoring
Revision: 1

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Jim Edwards



Authorized for release by:
8/6/2020 11:36:53 AM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.

Metals

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the blank.
D2	Sample required dilution due to high concentration of analyte.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Eurofins TestAmerica, Phoenix

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Job ID: 550-144000-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-144000-1

Comments

This report contains the ICP Metals reported to the MDL.

Receipt

The samples were received on 6/24/2020 3:08 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.1° C, 1.3° C and 1.6° C.

HPLC/IC

Method 300.0: The following samples were diluted for Fluoride by method EPA 300.0 due to the nature of the sample matrix: FC-CCR-MW71-0620 (550-144000-6), FC-CCR-MW72-0620 (550-144000-7), FC-CCR-MW73-0620 (550-144000-8), FC-CCR-MW85-0620 (550-144000-12) and FC-CCR-MW86-0620 (550-144000-13). These analytes were not detected in the diluted sample. As such, elevated reporting limits have been provided and these data have been qualified with D1 and D5 flags.

Method 300.0: The following sample was diluted for Fluoride by method EPA 300.0 due to the nature of the sample matrix: (550-143999-A-3 ^20). This analyte was not detected in the diluted sample. Elevated reporting limits (RLs) have been provided and the data has been qualified with D1 and D5 flags.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.7 Rev 4.4: The following sample was diluted due to the nature of the sample matrix: FC-CCR-MW86-0620 (550-144000-13). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-216256 contained Boron above the reporting limit (RL). All reported samples associated with this CCB contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method SM 2540C: The method blank for 550-213528 contained Total Dissolved Solids (TDS) above the reporting limit (RL). Associated samples were not re-analyzed because results were greater than 10X the value found in the method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-144000-1	FC-CCR-MW66-0620	Water	06/18/20 16:35	06/24/20 15:08	
550-144000-2	FC-CCR-MW67-0620	Water	06/19/20 13:46	06/24/20 15:08	
550-144000-3	FC-CCR-MW68-0620	Water	06/19/20 14:32	06/24/20 15:08	
550-144000-4	FC-CCR-MW69-0620	Water	06/19/20 11:40	06/24/20 15:08	
550-144000-5	FC-CCR-MW70-0620	Water	06/19/20 09:53	06/24/20 15:08	
550-144000-6	FC-CCR-MW71-0620	Water	06/20/20 09:18	06/24/20 15:08	
550-144000-7	FC-CCR-MW72-0620	Water	06/19/20 14:50	06/24/20 15:08	
550-144000-8	FC-CCR-MW73-0620	Water	06/20/20 10:12	06/24/20 15:08	
550-144000-9	FC-CCR-MW83-0620	Water	06/19/20 15:32	06/24/20 15:08	
550-144000-10	FC-CCR-MW84-0620	Water	06/20/20 08:07	06/24/20 15:08	
550-144000-11	FC-CCR-FD01-0620	Water	06/19/20 15:32	06/24/20 15:08	
550-144000-12	FC-CCR-MW85-0620	Water	06/19/20 13:03	06/24/20 15:08	
550-144000-13	FC-CCR-MW86-0620	Water	06/19/20 08:17	06/24/20 15:08	
550-144000-14	FC-CCR-FD02-0620	Water	06/20/20 08:07	06/24/20 15:08	

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW66-0620

Lab Sample ID: 550-144000-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1700	D2	400		mg/L	200		300.0	Total/NA
Fluoride	17	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	12000	D2	400		mg/L	200		300.0	Total/NA
Boron	140	D2	0.20	0.012	mg/L	4		200.7 Rev 4.4	Total/NA
Calcium	450		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.81		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0016	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Barium	0.019	D1 M1	0.0010		mg/L	2		200.8 LL	Total/NA
Cobalt	0.011	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.019	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Selenium	0.0019	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Thallium	0.00094		0.00020		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	20000	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	7.6	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW67-0620

Lab Sample ID: 550-144000-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1900	D2	400		mg/L	200		300.0	Total/NA
Fluoride	12	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	13000	D2	400		mg/L	200		300.0	Total/NA
Boron	160	D2	0.20	0.012	mg/L	4		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.90		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0017	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Barium	0.012	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Cobalt	0.0052	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.039	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Selenium	0.0040	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Thallium	0.00098		0.00020		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	20000	B7 D2	200		mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.6	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW68-0620

Lab Sample ID: 550-144000-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5000	D2	400		mg/L	200		300.0	Total/NA
Fluoride	7.7	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	9000	D2	1000		mg/L	500		300.0	Total/NA
Boron	110	D2	0.20	0.012	mg/L	4		200.7 Rev 4.4	Total/NA
Calcium	460		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.85		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0048	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Barium	0.0093	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Cobalt	0.0053	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0063	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Selenium	0.13	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Thallium	0.0015		0.00020		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	16000	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW68-0620 (Continued)

Lab Sample ID: 550-144000-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature	10.2	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW69-0620

Lab Sample ID: 550-144000-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	830	D2	400		mg/L	200		300.0	Total/NA
Fluoride	5.5	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	5500	D2	400		mg/L	200		300.0	Total/NA
Boron	58		0.050	0.0030	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	500		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.55		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0040	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Barium	0.014	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Cobalt	0.0027	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0072	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Selenium	0.089	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Thallium	0.00030		0.00020		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	9700	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW70-0620

Lab Sample ID: 550-144000-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1100	D2	400		mg/L	200		300.0	Total/NA
Fluoride	1.9	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	6300	D2	400		mg/L	200		300.0	Total/NA
Boron	98	D2	0.20	0.012	mg/L	4		200.7 Rev 4.4	Total/NA
Calcium	490		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.71		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0070	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Barium	0.010	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Cobalt	0.0043	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0060	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Selenium	0.21	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Thallium	0.00023		0.00020		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	11000	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.8	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW71-0620

Lab Sample ID: 550-144000-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	480	D2	400		mg/L	200		300.0	Total/NA
Sulfate	9900	D2	400		mg/L	200		300.0	Total/NA
Boron	0.59		0.050	0.0030	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	450		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.75		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0048	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Barium	0.0045	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Selenium	0.15	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Thallium	0.00025		0.00020		mg/L	2		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW71-0620 (Continued)

Lab Sample ID: 550-144000-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	15000	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.5	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW72-0620

Lab Sample ID: 550-144000-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	400	D2	400		mg/L	200		300.0	Total/NA
Sulfate	11000	D2	400		mg/L	200		300.0	Total/NA
Boron	0.23		0.050	0.0030	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.89		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0044	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Barium	0.020	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Cobalt	0.0027	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Selenium	0.11	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Thallium	0.0011		0.00020		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	16000	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.6	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW73-0620

Lab Sample ID: 550-144000-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	520	D2	400		mg/L	200		300.0	Total/NA
Sulfate	7200	D2	400		mg/L	200		300.0	Total/NA
Boron	1.7		0.050	0.0030	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	450		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.65		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.033	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Cobalt	0.0062	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0035	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Selenium	0.0077	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	12000	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.8	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW83-0620

Lab Sample ID: 550-144000-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	83	D2	4.0		mg/L	2		300.0	Total/NA
Fluoride	1.0	D2	0.80		mg/L	2		300.0	Total/NA
Sulfate	1500	D2	400		mg/L	200		300.0	Total/NA
Boron	2.1		0.050	0.0030	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	290		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.27		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0021	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Barium	0.012	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Molybdenum	0.044	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	2800	B7	20		mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.9	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW84-0620

Lab Sample ID: 550-144000-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	590	D2	400		mg/L	200		300.0	Total/NA
Fluoride	0.83	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	6000	D2	400		mg/L	200		300.0	Total/NA
Boron	45		0.050	0.0030	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	480		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.61		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.037	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Cobalt	0.0022	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0027	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Selenium	0.024	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Thallium	0.00067	D1	0.00040		mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	9600	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	10.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD01-0620

Lab Sample ID: 550-144000-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	83	D1	4.0		mg/L	2		300.0	Total/NA
Fluoride	1.0	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	1500	D2	400		mg/L	200		300.0	Total/NA
Boron	2.2		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	340	M3	2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.30		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0020	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Barium	0.038	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Molybdenum	0.046	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	2800	B7	20		mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	10.5	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW85-0620

Lab Sample ID: 550-144000-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	620	D2	400		mg/L	200		300.0	Total/NA
Sulfate	4900	D2	400		mg/L	200		300.0	Total/NA
Boron	38		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	510		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.44		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0079	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Barium	0.015	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Chromium	0.0044	D1	0.0040		mg/L	4		200.8 LL	Total/NA
Molybdenum	0.049	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Selenium	0.22	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	8700	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	7.9	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW86-0620

Lab Sample ID: 550-144000-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1300	D2	400		mg/L	200		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW86-0620 (Continued)

Lab Sample ID: 550-144000-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	8300	D2	400		mg/L	200		300.0	Total/NA
Boron	110	D1	0.50	0.030	mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	500	D1	20	0.15	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.012	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Cobalt	0.0056	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Selenium	0.0024	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Thallium	0.00072	D1	0.00040		mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	14000	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.1	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD02-0620

Lab Sample ID: 550-144000-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	620	D2	400		mg/L	200		300.0	Total/NA
Fluoride	0.83	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	6100	D2	400		mg/L	200		300.0	Total/NA
Boron	46		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	460		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.46		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0022	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Barium	0.020		0.00050		mg/L	1		200.8 LL	Total/NA
Cobalt	0.0022	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0025	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Selenium	0.023	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Thallium	0.00069	D1	0.00040		mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	9700	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.2	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW66-0620

Lab Sample ID: 550-144000-1

Date Collected: 06/18/20 16:35

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700	D2	400		mg/L			06/29/20 21:04	200
Fluoride	17	D1	0.80		mg/L			06/29/20 20:45	2
Sulfate	12000	D2	400		mg/L			06/29/20 21:04	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	140	D2	0.20	0.012	mg/L		06/25/20 08:46	07/26/20 04:32	4
Calcium	450		2.0	0.015	mg/L		06/25/20 08:46	07/29/20 22:51	1
Lithium	0.81		0.20	0.040	mg/L		06/25/20 08:46	07/26/20 04:36	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 13:53	2
Arsenic	0.0016	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:53	2
Barium	0.019	D1 M1	0.0010		mg/L		07/06/20 10:33	07/07/20 10:38	2
Cadmium	ND		0.00020		mg/L		06/30/20 09:43	07/01/20 13:31	2
Chromium	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 13:53	2
Cobalt	0.011	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:53	2
Lead	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:31	2
Molybdenum	0.019	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:53	2
Selenium	0.0019	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:53	2
Thallium	0.00094		0.00020		mg/L		06/30/20 09:43	07/01/20 13:31	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	20000	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.3	H5	1.7		SU			06/30/20 18:11	1
Temperature	7.6	H5	0.1		Degrees C			06/30/20 18:11	1

Client Sample ID: FC-CCR-MW67-0620

Lab Sample ID: 550-144000-2

Date Collected: 06/19/20 13:46

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1900	D2	400		mg/L			06/29/20 21:40	200
Fluoride	12	D1	0.80		mg/L			06/29/20 21:22	2
Sulfate	13000	D2	400		mg/L			06/29/20 21:40	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	160	D2	0.20	0.012	mg/L		06/25/20 08:46	07/26/20 04:40	4
Calcium	440		2.0	0.015	mg/L		06/25/20 08:46	07/29/20 22:55	1
Lithium	0.90		0.20	0.040	mg/L		06/25/20 08:46	07/26/20 04:44	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 13:56	2
Arsenic	0.0017	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:56	2
Barium	0.012	D1	0.0010		mg/L		07/06/20 10:33	07/07/20 10:56	2
Cadmium	ND		0.00020		mg/L		06/30/20 09:43	07/01/20 13:33	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW67-0620

Lab Sample ID: 550-144000-2

Date Collected: 06/19/20 13:46

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 13:56	2
Cobalt	0.0052	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:56	2
Lead	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:33	2
Molybdenum	0.039	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:56	2
Selenium	0.0040	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:56	2
Thallium	0.00098		0.00020		mg/L		06/30/20 09:43	07/01/20 13:33	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	20000	B7 D2	200		mg/L			06/25/20 12:11	1
pH	7.5	H5	1.7		SU			06/30/20 18:11	1
Temperature	8.6	H5	0.1		Degrees C			06/30/20 18:11	1

Client Sample ID: FC-CCR-MW68-0620

Lab Sample ID: 550-144000-3

Date Collected: 06/19/20 14:32

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5000	D2	400		mg/L			06/29/20 22:17	200
Fluoride	7.7	D1	0.80		mg/L			06/29/20 21:59	2
Sulfate	9000	D2	1000		mg/L			06/30/20 22:56	500

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	110	D2	0.20	0.012	mg/L		06/25/20 08:46	07/26/20 04:48	4
Calcium	460		2.0	0.015	mg/L		06/25/20 08:46	07/29/20 22:59	1
Lithium	0.85		0.20	0.040	mg/L		06/25/20 08:46	07/26/20 05:00	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 13:58	2
Arsenic	0.0048	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:58	2
Barium	0.0093	D1	0.0010		mg/L		07/06/20 10:33	07/07/20 10:59	2
Cadmium	ND		0.00020		mg/L		06/30/20 09:43	07/01/20 13:36	2
Chromium	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 13:58	2
Cobalt	0.0053	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:58	2
Lead	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:36	2
Molybdenum	0.0063	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:58	2
Selenium	0.13	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 13:58	2
Thallium	0.0015		0.00020		mg/L		06/30/20 09:43	07/01/20 13:36	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	16000	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.3	H5	1.7		SU			06/30/20 18:11	1
Temperature	10.2	H5	0.1		Degrees C			06/30/20 18:11	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW69-0620

Lab Sample ID: 550-144000-4

Date Collected: 06/19/20 11:40

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	830	D2	400		mg/L			06/29/20 22:54	200
Fluoride	5.5	D1	0.80		mg/L			06/29/20 22:36	2
Sulfate	5500	D2	400		mg/L			06/29/20 22:54	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	58		0.050	0.0030	mg/L		06/25/20 08:46	07/26/20 05:04	1
Calcium	500		2.0	0.015	mg/L		06/25/20 08:46	07/29/20 23:03	1
Lithium	0.55		0.20	0.040	mg/L		06/25/20 08:46	07/26/20 05:04	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:00	2
Arsenic	0.0040	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:00	2
Barium	0.014	D1	0.0010		mg/L		07/06/20 10:33	07/07/20 11:05	2
Cadmium	ND		0.00020		mg/L		06/30/20 09:43	07/01/20 13:38	2
Chromium	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:00	2
Cobalt	0.0027	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:00	2
Lead	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:38	2
Molybdenum	0.0072	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:00	2
Selenium	0.089	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:00	2
Thallium	0.00030		0.00020		mg/L		06/30/20 09:43	07/01/20 13:38	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	9700	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.4	H5	1.7		SU			06/30/20 18:11	1
Temperature	9.0	H5	0.1		Degrees C			06/30/20 18:11	1

Client Sample ID: FC-CCR-MW70-0620

Lab Sample ID: 550-144000-5

Date Collected: 06/19/20 09:53

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100	D2	400		mg/L			06/30/20 00:08	200
Fluoride	1.9	D1	0.80		mg/L			06/29/20 23:49	2
Sulfate	6300	D2	400		mg/L			06/30/20 00:08	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	98	D2	0.20	0.012	mg/L		06/25/20 08:46	07/29/20 23:15	4
Calcium	490		2.0	0.015	mg/L		06/25/20 08:46	07/29/20 23:19	1
Lithium	0.71		0.20	0.040	mg/L		06/25/20 08:46	07/26/20 05:08	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:02	2
Arsenic	0.0070	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:02	2
Barium	0.010	D1	0.0010		mg/L		07/06/20 10:33	07/07/20 11:07	2
Cadmium	ND		0.00020		mg/L		06/30/20 09:43	07/01/20 13:40	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW70-0620

Lab Sample ID: 550-144000-5

Date Collected: 06/19/20 09:53

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:02	2
Cobalt	0.0043	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:02	2
Lead	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:40	2
Molybdenum	0.0060	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:02	2
Selenium	0.21	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:02	2
Thallium	0.00023		0.00020		mg/L		06/30/20 09:43	07/01/20 13:40	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	11000	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.1	H5	1.7		SU			06/30/20 18:11	1
Temperature	8.8	H5	0.1		Degrees C			06/30/20 18:11	1

Client Sample ID: FC-CCR-MW71-0620

Lab Sample ID: 550-144000-6

Date Collected: 06/20/20 09:18

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	480	D2	400		mg/L			06/30/20 00:45	200
Fluoride	ND	D1 D5	0.80		mg/L			06/30/20 00:26	2
Sulfate	9900	D2	400		mg/L			06/30/20 00:45	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.59		0.050	0.0030	mg/L		06/25/20 08:46	07/26/20 05:12	1
Calcium	450		2.0	0.015	mg/L		06/25/20 08:46	07/29/20 23:23	1
Lithium	0.75		0.20	0.040	mg/L		06/25/20 08:46	07/26/20 05:12	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:04	2
Arsenic	0.0048	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:04	2
Barium	0.0045	D1	0.0010		mg/L		07/06/20 10:33	07/07/20 11:09	2
Cadmium	ND		0.00020		mg/L		06/30/20 09:43	07/01/20 13:42	2
Chromium	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:04	2
Cobalt	ND	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:04	2
Lead	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:42	2
Molybdenum	ND	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:04	2
Selenium	0.15	D1	0.0010		mg/L		06/30/20 09:43	07/06/20 14:04	2
Thallium	0.00025		0.00020		mg/L		06/30/20 09:43	07/01/20 13:42	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	15000	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.3	H5	1.7		SU			06/30/20 18:11	1
Temperature	9.5	H5	0.1		Degrees C			06/30/20 18:11	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW72-0620

Lab Sample ID: 550-144000-7

Date Collected: 06/19/20 14:50

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	400	D2	400		mg/L			06/30/20 01:21	200
Fluoride	ND	D1 D5	0.80		mg/L			06/30/20 01:03	2
Sulfate	11000	D2	400		mg/L			06/30/20 01:21	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.23		0.050	0.0030	mg/L		06/25/20 08:46	07/26/20 05:16	1
Calcium	440		2.0	0.015	mg/L		06/25/20 08:46	07/29/20 23:27	1
Lithium	0.89		0.20	0.040	mg/L		06/25/20 08:46	07/26/20 05:16	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:10	4
Arsenic	0.0044	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:10	4
Barium	0.020	D1	0.0020		mg/L		07/06/20 10:33	07/07/20 11:11	4
Cadmium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:10	4
Chromium	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:10	4
Cobalt	0.0027	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:10	4
Lead	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:44	2
Molybdenum	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:10	4
Selenium	0.11	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:10	4
Thallium	0.0011		0.00020		mg/L		06/30/20 09:43	07/01/20 13:44	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	16000	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.2	H5	1.7		SU			06/30/20 18:11	1
Temperature	9.6	H5	0.1		Degrees C			06/30/20 18:11	1

Client Sample ID: FC-CCR-MW73-0620

Lab Sample ID: 550-144000-8

Date Collected: 06/20/20 10:12

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	520	D2	400		mg/L			06/30/20 01:58	200
Fluoride	ND	D1 D5	0.80		mg/L			06/30/20 01:40	2
Sulfate	7200	D2	400		mg/L			06/30/20 01:58	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7		0.050	0.0030	mg/L		06/25/20 08:46	07/26/20 05:20	1
Calcium	450		2.0	0.015	mg/L		06/25/20 08:46	07/29/20 23:31	1
Lithium	0.65		0.20	0.040	mg/L		06/25/20 08:46	07/26/20 05:20	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:12	4
Arsenic	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:12	4
Barium	0.033	D1	0.0020		mg/L		07/06/20 10:33	07/07/20 11:13	4
Cadmium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:12	4

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW73-0620

Lab Sample ID: 550-144000-8

Date Collected: 06/20/20 10:12

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:12	4
Cobalt	0.0062	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:12	4
Lead	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:12	4
Molybdenum	0.0035	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:12	4
Selenium	0.0077	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:12	4
Thallium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:12	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	12000	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.2	H5	1.7		SU			06/30/20 18:11	1
Temperature	9.8	H5	0.1		Degrees C			06/30/20 18:11	1

Client Sample ID: FC-CCR-MW83-0620

Lab Sample ID: 550-144000-9

Date Collected: 06/19/20 15:32

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	83	D2	4.0		mg/L			06/30/20 02:17	2
Fluoride	1.0	D2	0.80		mg/L			06/30/20 02:17	2
Sulfate	1500	D2	400		mg/L			06/30/20 02:35	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.1		0.050	0.0030	mg/L		06/25/20 08:46	07/26/20 05:24	1
Calcium	290		2.0	0.015	mg/L		06/25/20 08:46	07/29/20 23:35	1
Lithium	0.27		0.20	0.040	mg/L		06/25/20 08:46	07/26/20 05:24	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:14	4
Arsenic	0.0021	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:14	4
Barium	0.012	D1	0.0020		mg/L		07/06/20 10:33	07/07/20 11:15	4
Cadmium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:14	4
Chromium	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:14	4
Cobalt	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:14	4
Lead	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:48	2
Molybdenum	0.044	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:14	4
Selenium	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:14	4
Thallium	ND		0.00020		mg/L		06/30/20 09:43	07/01/20 13:48	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2800	B7	20		mg/L			06/25/20 12:11	1
pH	7.4	H5	1.7		SU			06/30/20 18:11	1
Temperature	9.9	H5	0.1		Degrees C			06/30/20 18:11	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW84-0620

Lab Sample ID: 550-144000-10

Date Collected: 06/20/20 08:07

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	590	D2	400		mg/L			06/30/20 03:49	200
Fluoride	0.83	D1	0.80		mg/L			06/30/20 03:30	2
Sulfate	6000	D2	400		mg/L			06/30/20 03:49	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	45		0.050	0.0030	mg/L		06/25/20 08:46	07/26/20 05:28	1
Calcium	480		2.0	0.015	mg/L		06/25/20 08:46	07/29/20 23:39	1
Lithium	0.61		0.20	0.040	mg/L		06/25/20 08:46	07/26/20 05:28	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:16	4
Arsenic	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:16	4
Barium	0.037	D1	0.0020		mg/L		07/06/20 10:33	07/07/20 11:17	4
Cadmium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:16	4
Chromium	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:16	4
Cobalt	0.0022	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:16	4
Lead	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:16	4
Molybdenum	0.0027	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:16	4
Selenium	0.024	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:16	4
Thallium	0.00067	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:16	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	9600	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.3	H5	1.7		SU			06/30/20 18:11	1
Temperature	10.0	H5	0.1		Degrees C			06/30/20 18:11	1

Client Sample ID: FC-CCR-FD01-0620

Lab Sample ID: 550-144000-11

Date Collected: 06/19/20 15:32

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	83	D1	4.0		mg/L			06/30/20 04:07	2
Fluoride	1.0	D1	0.80		mg/L			06/30/20 04:07	2
Sulfate	1500	D2	400		mg/L			06/30/20 04:25	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.2		0.050		mg/L		06/25/20 08:53	07/23/20 21:00	1
Calcium	340	M3	2.0	0.015	mg/L		06/25/20 08:53	07/29/20 06:13	1
Lithium	0.30		0.20	0.040	mg/L		06/25/20 08:53	07/29/20 06:13	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:18	4
Arsenic	0.0020	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:18	4
Barium	0.038	D1	0.0020		mg/L		07/06/20 10:33	07/07/20 11:19	4
Cadmium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:18	4

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-FD01-0620

Lab Sample ID: 550-144000-11

Date Collected: 06/19/20 15:32

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:18	4
Cobalt	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:18	4
Lead	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:18	4
Molybdenum	0.046	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:18	4
Selenium	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:18	4
Thallium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:18	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2800	B7	20		mg/L			06/25/20 12:11	1
pH	7.3	H5	1.7		SU			07/06/20 12:45	1
Temperature	10.5	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW85-0620

Lab Sample ID: 550-144000-12

Date Collected: 06/19/20 13:03

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	620	D2	400		mg/L			06/30/20 05:02	200
Fluoride	ND	D1 D5	0.80		mg/L			06/30/20 04:44	2
Sulfate	4900	D2	400		mg/L			06/30/20 05:02	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	38		0.050		mg/L		06/25/20 08:53	07/23/20 21:04	1
Calcium	510		2.0	0.015	mg/L		06/25/20 08:53	07/29/20 06:17	1
Lithium	0.44		0.20	0.040	mg/L		06/25/20 08:53	07/29/20 06:17	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:20	4
Arsenic	0.0079	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:20	4
Barium	0.015	D1	0.0020		mg/L		07/06/20 10:33	07/07/20 11:21	4
Cadmium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:20	4
Chromium	0.0044	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:20	4
Cobalt	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:20	4
Lead	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:20	4
Molybdenum	0.049	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:20	4
Selenium	0.22	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:20	4
Thallium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:20	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	8700	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.1	H5	1.7		SU			07/06/20 12:45	1
Temperature	7.9	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW86-0620

Lab Sample ID: 550-144000-13

Date Collected: 06/19/20 08:17

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1300	D2	400		mg/L			06/30/20 05:39	200
Fluoride	ND	D1 D5	0.80		mg/L			06/30/20 05:21	2
Sulfate	8300	D2	400		mg/L			06/30/20 05:39	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	110	D1	0.50	0.030	mg/L		06/25/20 08:53	07/29/20 05:17	10
Calcium	500	D1	20	0.15	mg/L		06/25/20 08:53	07/29/20 05:17	10
Lithium	ND	D1 E8	2.0	0.40	mg/L		06/25/20 08:53	07/29/20 05:17	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:23	4
Arsenic	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:23	4
Barium	0.012	D1	0.0020		mg/L		07/06/20 10:33	07/07/20 11:24	4
Cadmium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:23	4
Chromium	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:23	4
Cobalt	0.0056	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:23	4
Lead	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:23	4
Molybdenum	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:23	4
Selenium	0.0024	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:23	4
Thallium	0.00072	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:23	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	14000	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.1	H5	1.7		SU			07/06/20 12:45	1
Temperature	8.1	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-FD02-0620

Lab Sample ID: 550-144000-14

Date Collected: 06/20/20 08:07

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	620	D2	400		mg/L			06/30/20 06:16	200
Fluoride	0.83	D1	0.80		mg/L			06/30/20 05:57	2
Sulfate	6100	D2	400		mg/L			06/30/20 06:16	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	46		0.050		mg/L		06/25/20 08:53	07/23/20 21:12	1
Calcium	460		2.0	0.015	mg/L		06/25/20 08:53	07/29/20 06:25	1
Lithium	0.46		0.20	0.040	mg/L		06/25/20 08:53	07/29/20 06:25	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:25	4
Arsenic	0.0022	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:25	4
Barium	0.020		0.00050		mg/L		07/06/20 10:33	07/07/20 10:44	1
Cadmium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:25	4

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-FD02-0620

Lab Sample ID: 550-144000-14

Date Collected: 06/20/20 08:07

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:25	4
Cobalt	0.0022	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:25	4
Lead	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:25	4
Molybdenum	0.0025	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:25	4
Selenium	0.023	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:25	4
Thallium	0.00069	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:25	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	9700	B7 D2	100		mg/L			06/25/20 12:11	1
pH	7.1	H5	1.7		SU			07/06/20 12:45	1
Temperature	8.2	H5	0.1		Degrees C			07/06/20 12:45	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-213829/2
Matrix: Water
Analysis Batch: 213829

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0		mg/L			06/29/20 14:56	1
Fluoride	ND		0.40		mg/L			06/29/20 14:56	1
Sulfate	ND		2.0		mg/L			06/29/20 14:56	1

Lab Sample ID: LCS 550-213829/5
Matrix: Water
Analysis Batch: 213829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.6		mg/L		103	90 - 110
Fluoride	4.00	4.04		mg/L		101	90 - 110
Sulfate	20.0	20.4		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-213829/6
Matrix: Water
Analysis Batch: 213829

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.7		mg/L		103	90 - 110	0	20
Fluoride	4.00	4.05		mg/L		101	90 - 110	0	20
Sulfate	20.0	20.4		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-144093-A-1 MS ^10
Matrix: Water
Analysis Batch: 213829

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	42	D2	200	257	D2	mg/L		108	80 - 120
Fluoride	150	D2	40.0	191	D2	mg/L		91	80 - 120
Sulfate	120	D2	200	335	D2	mg/L		106	80 - 120

Lab Sample ID: 550-144093-A-1 MSD ^10
Matrix: Water
Analysis Batch: 213829

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	42	D2	200	257	D2	mg/L		108	80 - 120	0	20
Fluoride	150	D2	40.0	188	D2	mg/L		82	80 - 120	2	20
Sulfate	120	D2	200	335	D2	mg/L		106	80 - 120	0	20

Lab Sample ID: MB 550-213933/2
Matrix: Water
Analysis Batch: 213933

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0		mg/L			06/30/20 15:10	1
Fluoride	ND		0.40		mg/L			06/30/20 15:10	1
Sulfate	ND		2.0		mg/L			06/30/20 15:10	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-213933/5
Matrix: Water
Analysis Batch: 213933

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.0		mg/L		105	90 - 110
Fluoride	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	20.9		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-213933/6
Matrix: Water
Analysis Batch: 213933

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.0		mg/L		105	90 - 110	0	20
Fluoride	4.00	4.17		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.9		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-143999-A-3 MS ^20
Matrix: Water
Analysis Batch: 213933

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	43	D2	400	473	D2	mg/L		107	80 - 120
Fluoride	ND	D1 D5	80.0	85.0	D1	mg/L		105	80 - 120
Sulfate	300	D2	400	728	D2	mg/L		107	80 - 120

Lab Sample ID: 550-143999-A-3 MSD ^20
Matrix: Water
Analysis Batch: 213933

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	43	D2	400	472	D2	mg/L		107	80 - 120	0	20
Fluoride	ND	D1 D5	80.0	84.8	D1	mg/L		104	80 - 120	0	20
Sulfate	300	D2	400	727	D2	mg/L		107	80 - 120	0	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-213492/1-A
Matrix: Water
Analysis Batch: 215899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213492

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND	E8	0.050	0.0030	mg/L		06/25/20 08:46	07/26/20 03:24	1
Lithium	ND	E8	0.20	0.040	mg/L		06/25/20 08:46	07/26/20 03:24	1

Lab Sample ID: MB 550-213492/1-A
Matrix: Water
Analysis Batch: 216256

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213492

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.00432	E4	0.050	0.0030	mg/L		06/25/20 08:46	07/29/20 21:42	1
Calcium	0.0209	E4	2.0	0.015	mg/L		06/25/20 08:46	07/29/20 21:42	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-213492/2-A
Matrix: Water
Analysis Batch: 215899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213492
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	0.961		mg/L		96	85 - 115
Lithium	1.00	0.959		mg/L		96	85 - 115

Lab Sample ID: LCS 550-213492/2-A
Matrix: Water
Analysis Batch: 216256

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213492
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	0.950		mg/L		95	85 - 115
Calcium	21.0	20.4		mg/L		97	85 - 115

Lab Sample ID: LCSD 550-213492/3-A
Matrix: Water
Analysis Batch: 215899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213492
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	1.00	1.00		mg/L		100	85 - 115	4	20
Lithium	1.00	1.10		mg/L		110	85 - 115	13	20

Lab Sample ID: LCSD 550-213492/3-A
Matrix: Water
Analysis Batch: 216256

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213492
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	1.00	0.966		mg/L		97	85 - 115	2	20
Calcium	21.0	20.9		mg/L		99	85 - 115	2	20

Lab Sample ID: 550-143982-A-1-A MS
Matrix: Water
Analysis Batch: 215899

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213492
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	0.18		1.00	1.18		mg/L		101	70 - 130
Lithium	0.058	E4	1.00	1.07		mg/L		101	70 - 130

Lab Sample ID: 550-143982-A-1-A MS
Matrix: Water
Analysis Batch: 216256

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213492
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	0.17		1.00	1.15		mg/L		97	70 - 130
Calcium	92		21.0	108	M3	mg/L		77	70 - 130

Lab Sample ID: 550-143982-A-1-B MSD
Matrix: Water
Analysis Batch: 215899

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213492
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	0.18		1.00	1.21		mg/L		104	70 - 130	3	20
Lithium	0.058	E4	1.00	1.07		mg/L		102	70 - 130	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: 550-143982-A-1-B MSD
Matrix: Water
Analysis Batch: 216256

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213492

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Boron	0.17		1.00	1.15		mg/L		98		70 - 130	0	20
Calcium	92		21.0	108	M3	mg/L		75		70 - 130	0	20

Lab Sample ID: MB 550-213493/1-A
Matrix: Water
Analysis Batch: 215716

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213493

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Boron	ND		0.050		mg/L		06/25/20 08:53	07/23/20 20:40		1
Calcium	ND		2.0		mg/L		06/25/20 08:53	07/23/20 20:40		1
Lithium	ND		0.20		mg/L		06/25/20 08:53	07/23/20 20:40		1

Lab Sample ID: MB 550-213493/1-A
Matrix: Water
Analysis Batch: 216161

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213493

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Boron	ND	E8	0.050	0.0030	mg/L		06/25/20 08:53	07/29/20 05:45		1
Calcium	ND	E8	2.0	0.015	mg/L		06/25/20 08:53	07/29/20 05:45		1
Lithium	ND	E8	0.20	0.040	mg/L		06/25/20 08:53	07/29/20 05:45		1

Lab Sample ID: LCS 550-213493/2-A
Matrix: Water
Analysis Batch: 215716

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
Boron	1.00	1.05		mg/L		105		85 - 115

Lab Sample ID: LCS 550-213493/2-A
Matrix: Water
Analysis Batch: 216161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
Boron	1.00	1.10		mg/L		110		85 - 115
Calcium	21.0	23.1		mg/L		110		85 - 115
Lithium	1.00	1.08		mg/L		108		85 - 115

Lab Sample ID: LCSD 550-213493/3-A
Matrix: Water
Analysis Batch: 215716

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
Boron	1.00	1.01		mg/L		101		85 - 115	4	20
Calcium	21.0	21.7		mg/L		104		85 - 115	20	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-213493/3-A
Matrix: Water
Analysis Batch: 216161

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Boron	1.00	1.07		mg/L		107	85 - 115	3	20	
Calcium	21.0	22.2		mg/L		106	85 - 115	4	20	
Lithium	1.00	1.02		mg/L		102	85 - 115	5	20	

Lab Sample ID: 550-144000-11 MS
Matrix: Water
Analysis Batch: 215716

Client Sample ID: FC-CCR-FD01-0620
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.		Limit
									Limits	RPD	
Boron	2.2		1.00	3.23		mg/L		105	70 - 130		
Calcium	310	L3 M3	21.0	313	M3	mg/L		39	70 - 130		
Lithium	ND	L3 R6	1.00	1.18		mg/L		106	70 - 130		

Lab Sample ID: 550-144000-11 MS
Matrix: Water
Analysis Batch: 216161

Client Sample ID: FC-CCR-FD01-0620
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.		Limit
									Limits	RPD	
Boron	2.4		1.00	3.34		mg/L		99	70 - 130		
Calcium	340	M3	21.0	335	M3	mg/L		-45	70 - 130		
Lithium	0.30		1.00	1.40		mg/L		110	70 - 130		

Lab Sample ID: 550-144000-11 MSD
Matrix: Water
Analysis Batch: 215716

Client Sample ID: FC-CCR-FD01-0620
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
									Limits	RPD		
Boron	2.2		1.00	3.12		mg/L		95	70 - 130	3	20	
Calcium	310	L3 M3	21.0	309	M3	mg/L		19	70 - 130	1	20	
Lithium	ND	L3 R6	1.00	1.16		mg/L		103	70 - 130	2	20	

Lab Sample ID: 550-144000-11 MSD
Matrix: Water
Analysis Batch: 216161

Client Sample ID: FC-CCR-FD01-0620
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
									Limits	RPD		
Boron	2.4		1.00	3.36		mg/L		101	70 - 130	1	20	
Calcium	340	M3	21.0	329	M3	mg/L		-72	70 - 130	2	20	
Lithium	0.30		1.00	1.39		mg/L		109	70 - 130	1	20	

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-213871/1-A
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213871

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.00010		mg/L		06/30/20 09:43	07/01/20 13:09	1
Chromium	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:09	1

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QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-213871/1-A
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213871

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		0.00050		mg/L		06/30/20 09:43	07/01/20 13:09	1
Lead	ND		0.00050		mg/L		06/30/20 09:43	07/01/20 13:09	1
Molybdenum	ND		0.00050		mg/L		06/30/20 09:43	07/01/20 13:09	1
Thallium	ND		0.00010		mg/L		06/30/20 09:43	07/01/20 13:09	1

Lab Sample ID: MB 550-213871/1-A
Matrix: Water
Analysis Batch: 214188

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213871

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050		mg/L		06/30/20 09:43	07/06/20 12:23	1
Selenium	ND		0.00050		mg/L		06/30/20 09:43	07/06/20 12:23	1

Lab Sample ID: LCS 550-213871/2-A
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.100	0.0943		mg/L		94	85 - 115
Cadmium	0.100	0.0956		mg/L		96	85 - 115
Chromium	0.100	0.0982		mg/L		98	85 - 115
Cobalt	0.100	0.0965		mg/L		96	85 - 115
Lead	0.100	0.0959		mg/L		96	85 - 115
Molybdenum	0.100	0.0934		mg/L		93	85 - 115
Thallium	0.100	0.0955		mg/L		96	85 - 115

Lab Sample ID: LCS 550-213871/2-A
Matrix: Water
Analysis Batch: 214188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.0996		mg/L		100	85 - 115
Selenium	0.100	0.102		mg/L		102	85 - 115

Lab Sample ID: LCSD 550-213871/3-A
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.100	0.0957		mg/L		96	85 - 115	1	20
Cadmium	0.100	0.0963		mg/L		96	85 - 115	1	20
Chromium	0.100	0.0991		mg/L		99	85 - 115	1	20
Cobalt	0.100	0.0992		mg/L		99	85 - 115	3	20
Lead	0.100	0.0966		mg/L		97	85 - 115	1	20
Molybdenum	0.100	0.0951		mg/L		95	85 - 115	2	20
Thallium	0.100	0.0949		mg/L		95	85 - 115	1	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-213871/3-A
Matrix: Water
Analysis Batch: 214188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Arsenic	0.100	0.100		mg/L		100	85 - 115	0	20	
Selenium	0.100	0.102		mg/L		102	85 - 115	0	20	

Lab Sample ID: 550-143979-E-2-D MS
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
									Limits	RPD		
Antimony	ND		0.100	0.0972		mg/L		97	70 - 130			
Cadmium	ND		0.100	0.0936		mg/L		94	70 - 130			
Chromium	0.0024		0.100	0.0994		mg/L		97	70 - 130			
Cobalt	ND		0.100	0.0957		mg/L		95	70 - 130			
Lead	ND		0.100	0.0926		mg/L		92	70 - 130			
Molybdenum	0.0026		0.100	0.0998		mg/L		97	70 - 130			
Thallium	ND		0.100	0.0924		mg/L		92	70 - 130			

Lab Sample ID: 550-143979-E-2-D MS
Matrix: Water
Analysis Batch: 214188

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
									Limits	RPD		
Arsenic	0.010		0.100	0.114		mg/L		103	70 - 130			
Selenium	ND		0.100	0.103		mg/L		103	70 - 130			

Lab Sample ID: 550-143979-E-2-E MSD
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
									Limits	RPD		
Antimony	ND		0.100	0.0976		mg/L		97	70 - 130	0	20	
Cadmium	ND		0.100	0.0934		mg/L		93	70 - 130	0	20	
Chromium	0.0024		0.100	0.0998		mg/L		97	70 - 130	0	20	
Cobalt	ND		0.100	0.0949		mg/L		95	70 - 130	1	20	
Lead	ND		0.100	0.0925		mg/L		92	70 - 130	0	20	
Molybdenum	0.0026		0.100	0.101		mg/L		98	70 - 130	1	20	
Thallium	ND		0.100	0.0918		mg/L		92	70 - 130	1	20	

Lab Sample ID: 550-143979-E-2-E MSD
Matrix: Water
Analysis Batch: 214188

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
									Limits	RPD		
Arsenic	0.010		0.100	0.111		mg/L		101	70 - 130	2	20	
Selenium	ND		0.100	0.102		mg/L		102	70 - 130	1	20	

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-214168/1-A
Matrix: Water
Analysis Batch: 214261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214168

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.00050		mg/L		07/06/20 10:33	07/07/20 10:27	1

Lab Sample ID: LCS 550-214168/2-A
Matrix: Water
Analysis Batch: 214261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214168

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.100	0.113		mg/L		113	85 - 115

Lab Sample ID: LCSD 550-214168/3-A
Matrix: Water
Analysis Batch: 214261

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 214168

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.100	0.113		mg/L		113	85 - 115	0	20

Lab Sample ID: 550-144000-1 MS
Matrix: Water
Analysis Batch: 214261

Client Sample ID: FC-CCR-MW66-0620
Prep Type: Total/NA
Prep Batch: 214168

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.019	M1 D1	0.100	0.147		mg/L		127	70 - 130

Lab Sample ID: 550-144000-1 MSD
Matrix: Water
Analysis Batch: 214261

Client Sample ID: FC-CCR-MW66-0620
Prep Type: Total/NA
Prep Batch: 214168

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.019	M1 D1	0.100	0.151	M1	mg/L		132	70 - 130	3	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-213528/1
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	40.8	B1	20		mg/L			06/25/20 12:11	1

Lab Sample ID: LCS 550-213528/2
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1030		mg/L		103	90 - 110

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCSD 550-213528/3
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	90 - 110	1	10

Lab Sample ID: 550-143999-A-1 DU
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	4700	D2 B7	4690	B7 D2	mg/L		0.5	10

Lab Sample ID: 550-144000-7 DU
Matrix: Water
Analysis Batch: 213528

Client Sample ID: FC-CCR-MW72-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	16000	D2 B7	16200	B7 D2	mg/L		2	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-213932/13
Matrix: Water
Analysis Batch: 213932

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.1	98.5 - 101.5

Lab Sample ID: LCSSRM 550-213932/25
Matrix: Water
Analysis Batch: 213932

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.6	98.5 - 101.5

Lab Sample ID: 550-144000-1 DU
Matrix: Water
Analysis Batch: 213932

Client Sample ID: FC-CCR-MW66-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.3	H5	7.3	H5	SU		0.1	5
Temperature	7.6	H5	7.8	H5	Degrees C		3	

Lab Sample ID: LCSSRM 550-214191/1
Matrix: Water
Analysis Batch: 214191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.4	98.5 - 101.5

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QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: LCSSRM 550-214191/13
Matrix: Water
Analysis Batch: 214191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.0	98.5 - 101.5

Lab Sample ID: 550-144000-11 DU
Matrix: Water
Analysis Batch: 214191

Client Sample ID: FC-CCR-FD01-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.3	H5	7.3	H5	SU		0.1	5
Temperature	10.5	H5	9.8	H5	Degrees C		7	

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

HPLC/IC

Analysis Batch: 213829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	300.0	
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	300.0	
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	300.0	
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	300.0	
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	300.0	
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	300.0	
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	300.0	
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	300.0	
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	300.0	
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	300.0	
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	300.0	
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	300.0	
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	300.0	
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	300.0	
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	300.0	
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	300.0	
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	300.0	
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	300.0	
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	300.0	
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	300.0	
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	300.0	
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	300.0	
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	300.0	
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	300.0	
550-144000-13	FC-CCR-MW86-0620	Total/NA	Water	300.0	
550-144000-13	FC-CCR-MW86-0620	Total/NA	Water	300.0	
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	300.0	
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	300.0	
MB 550-213829/2	Method Blank	Total/NA	Water	300.0	
LCS 550-213829/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-213829/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-144093-A-1 MS ^10	Matrix Spike	Total/NA	Water	300.0	
550-144093-A-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 213933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	300.0	
MB 550-213933/2	Method Blank	Total/NA	Water	300.0	
LCS 550-213933/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-213933/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-143999-A-3 MS ^20	Matrix Spike	Total/NA	Water	300.0	
550-143999-A-3 MSD ^20	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 213492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	200.7	
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	200.7	
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	200.7	
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	200.7	

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QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Metals (Continued)

Prep Batch: 213492 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	200.7	
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	200.7	
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	200.7	
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	200.7	
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	200.7	
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	200.7	
MB 550-213492/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-213492/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-213492/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-143982-A-1-A MS	Matrix Spike	Total/NA	Water	200.7	
550-143982-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Prep Batch: 213493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	200.7	
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	200.7	
550-144000-13	FC-CCR-MW86-0620	Total/NA	Water	200.7	
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	200.7	
MB 550-213493/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-213493/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-213493/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-144000-11 MS	FC-CCR-FD01-0620	Total/NA	Water	200.7	
550-144000-11 MSD	FC-CCR-FD01-0620	Total/NA	Water	200.7	

Prep Batch: 213871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	200.8	
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	200.8	
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	200.8	
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	200.8	
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	200.8	
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	200.8	
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	200.8	
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	200.8	
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	200.8	
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	200.8	
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	200.8	
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	200.8	
550-144000-13	FC-CCR-MW86-0620	Total/NA	Water	200.8	
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	200.8	
MB 550-213871/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-213871/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-213871/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-143979-E-2-D MS	Matrix Spike	Total/NA	Water	200.8	
550-143979-E-2-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

Analysis Batch: 214049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	200.8 LL	213871
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	200.8 LL	213871
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	200.8 LL	213871

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Metals (Continued)

Analysis Batch: 214049 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	200.8 LL	213871
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	200.8 LL	213871
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	200.8 LL	213871
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	200.8 LL	213871
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	200.8 LL	213871
MB 550-213871/1-A	Method Blank	Total/NA	Water	200.8 LL	213871
LCS 550-213871/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	213871
LCSD 550-213871/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	213871
550-143979-E-2-D MS	Matrix Spike	Total/NA	Water	200.8 LL	213871
550-143979-E-2-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	213871

Prep Batch: 214168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	200.8	
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	200.8	
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	200.8	
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	200.8	
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	200.8	
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	200.8	
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	200.8	
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	200.8	
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	200.8	
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	200.8	
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	200.8	
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	200.8	
550-144000-13	FC-CCR-MW86-0620	Total/NA	Water	200.8	
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	200.8	
MB 550-214168/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-214168/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-214168/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-144000-1 MS	FC-CCR-MW66-0620	Total/NA	Water	200.8	
550-144000-1 MSD	FC-CCR-MW66-0620	Total/NA	Water	200.8	

Analysis Batch: 214188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-213871/1-A	Method Blank	Total/NA	Water	200.8 LL	213871
LCS 550-213871/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	213871
LCSD 550-213871/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	213871
550-143979-E-2-D MS	Matrix Spike	Total/NA	Water	200.8 LL	213871
550-143979-E-2-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	213871

Analysis Batch: 214221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	200.8 LL	213871
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	200.8 LL	213871
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	200.8 LL	213871
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	200.8 LL	213871
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	200.8 LL	213871
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	200.8 LL	213871
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	200.8 LL	213871
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	200.8 LL	213871

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Metals (Continued)

Analysis Batch: 214221 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	200.8 LL	213871
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	200.8 LL	213871
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	200.8 LL	213871
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	200.8 LL	213871
550-144000-13	FC-CCR-MW86-0620	Total/NA	Water	200.8 LL	213871
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	200.8 LL	213871

Analysis Batch: 214261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	200.8 LL	214168
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	200.8 LL	214168
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	200.8 LL	214168
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	200.8 LL	214168
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	200.8 LL	214168
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	200.8 LL	214168
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	200.8 LL	214168
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	200.8 LL	214168
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	200.8 LL	214168
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	200.8 LL	214168
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	200.8 LL	214168
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	200.8 LL	214168
550-144000-13	FC-CCR-MW86-0620	Total/NA	Water	200.8 LL	214168
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	200.8 LL	214168
MB 550-214168/1-A	Method Blank	Total/NA	Water	200.8 LL	214168
LCS 550-214168/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	214168
LCSD 550-214168/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	214168
550-144000-1 MS	FC-CCR-MW66-0620	Total/NA	Water	200.8 LL	214168
550-144000-1 MSD	FC-CCR-MW66-0620	Total/NA	Water	200.8 LL	214168

Analysis Batch: 215716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	200.7 Rev 4.4	213493
MB 550-213493/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	213493
LCS 550-213493/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	213493
LCSD 550-213493/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-11 MS	FC-CCR-FD01-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-11 MSD	FC-CCR-FD01-0620	Total/NA	Water	200.7 Rev 4.4	213493

Analysis Batch: 215899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	200.7 Rev 4.4	213492

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Metals (Continued)

Analysis Batch: 215899 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	200.7 Rev 4.4	213492
MB 550-213492/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	213492
LCS 550-213492/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	213492
LCSD 550-213492/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	213492
550-143982-A-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	213492
550-143982-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	213492

Analysis Batch: 216161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-13	FC-CCR-MW86-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	200.7 Rev 4.4	213493
MB 550-213493/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	213493
LCS 550-213493/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	213493
LCSD 550-213493/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-11 MS	FC-CCR-FD01-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-11 MSD	FC-CCR-FD01-0620	Total/NA	Water	200.7 Rev 4.4	213493

Analysis Batch: 216256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	200.7 Rev 4.4	213492
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	200.7 Rev 4.4	213492
MB 550-213492/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	213492
LCS 550-213492/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	213492
LCSD 550-213492/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	213492
550-143982-A-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	213492
550-143982-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	213492

General Chemistry

Analysis Batch: 213528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	SM 2540C	
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	SM 2540C	
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	SM 2540C	
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	SM 2540C	
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	SM 2540C	
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

General Chemistry (Continued)

Analysis Batch: 213528 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	SM 2540C	
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	SM 2540C	
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	SM 2540C	
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	SM 2540C	
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	SM 2540C	
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	SM 2540C	
550-144000-13	FC-CCR-MW86-0620	Total/NA	Water	SM 2540C	
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	SM 2540C	
MB 550-213528/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-213528/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-213528/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-143999-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	
550-144000-7 DU	FC-CCR-MW72-0620	Total/NA	Water	SM 2540C	

Analysis Batch: 213932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-1	FC-CCR-MW66-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-2	FC-CCR-MW67-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-3	FC-CCR-MW68-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-4	FC-CCR-MW69-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-5	FC-CCR-MW70-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-6	FC-CCR-MW71-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-7	FC-CCR-MW72-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-8	FC-CCR-MW73-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-9	FC-CCR-MW83-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-10	FC-CCR-MW84-0620	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-213932/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-213932/25	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-144000-1 DU	FC-CCR-MW66-0620	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 214191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144000-11	FC-CCR-FD01-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-12	FC-CCR-MW85-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-13	FC-CCR-MW86-0620	Total/NA	Water	SM 4500 H+ B	
550-144000-14	FC-CCR-FD02-0620	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-214191/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-214191/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-144000-11 DU	FC-CCR-FD01-0620	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW66-0620

Lab Sample ID: 550-144000-1

Date Collected: 06/18/20 16:35

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/29/20 20:45	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/29/20 21:04	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		4	215899	07/26/20 04:32	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 04:36	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 22:51	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214049	07/01/20 13:31	ARE	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214221	07/06/20 13:53	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214261	07/07/20 10:38	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528	(Start) 06/25/20 12:11 (End) 06/28/20 07:10	CMM	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Client Sample ID: FC-CCR-MW67-0620

Lab Sample ID: 550-144000-2

Date Collected: 06/19/20 13:46

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/29/20 21:22	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/29/20 21:40	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		4	215899	07/26/20 04:40	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 04:44	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 22:55	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214049	07/01/20 13:33	ARE	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214221	07/06/20 13:56	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214261	07/07/20 10:56	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528	(Start) 06/25/20 12:11 (End) 06/28/20 07:10	CMM	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW68-0620

Lab Sample ID: 550-144000-3

Date Collected: 06/19/20 14:32

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/29/20 21:59	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/29/20 22:17	RDC	TAL PHX
Total/NA	Analysis	300.0		500	213933	06/30/20 22:56	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		4	215899	07/26/20 04:48	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 05:00	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 22:59	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214049	07/01/20 13:36	ARE	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214221	07/06/20 13:58	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214261	07/07/20 10:59	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528	(Start) 06/25/20 12:11 (End) 06/28/20 07:10	CMM	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Client Sample ID: FC-CCR-MW69-0620

Lab Sample ID: 550-144000-4

Date Collected: 06/19/20 11:40

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/29/20 22:36	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/29/20 22:54	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 05:04	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 23:03	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214049	07/01/20 13:38	ARE	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214221	07/06/20 14:00	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214261	07/07/20 11:05	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528	(Start) 06/25/20 12:11 (End) 06/28/20 07:10	CMM	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW70-0620

Lab Sample ID: 550-144000-5

Date Collected: 06/19/20 09:53

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/29/20 23:49	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/30/20 00:08	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 05:08	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		4	216256	07/29/20 23:15	MGM	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 23:19	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214049	07/01/20 13:40	ARE	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214221	07/06/20 14:02	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214261	07/07/20 11:07	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Client Sample ID: FC-CCR-MW71-0620

Lab Sample ID: 550-144000-6

Date Collected: 06/20/20 09:18

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/30/20 00:26	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/30/20 00:45	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 05:12	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 23:23	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214049	07/01/20 13:42	ARE	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214221	07/06/20 14:04	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214261	07/07/20 11:09	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW72-0620

Lab Sample ID: 550-144000-7

Date Collected: 06/19/20 14:50

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/30/20 01:03	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/30/20 01:21	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 05:16	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 23:27	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214049	07/01/20 13:44	ARE	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214221	07/06/20 14:10	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214261	07/07/20 11:11	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Client Sample ID: FC-CCR-MW73-0620

Lab Sample ID: 550-144000-8

Date Collected: 06/20/20 10:12

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/30/20 01:40	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/30/20 01:58	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 05:20	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 23:31	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214221	07/06/20 14:12	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214261	07/07/20 11:13	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Client Sample ID: FC-CCR-MW83-0620

Lab Sample ID: 550-144000-9

Date Collected: 06/19/20 15:32

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/30/20 02:17	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/30/20 02:35	RDC	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW83-0620

Lab Sample ID: 550-144000-9

Date Collected: 06/19/20 15:32

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 05:24	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 23:35	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214049	07/01/20 13:48	ARE	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214221	07/06/20 14:14	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214261	07/07/20 11:15	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Client Sample ID: FC-CCR-MW84-0620

Lab Sample ID: 550-144000-10

Date Collected: 06/20/20 08:07

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/30/20 03:30	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/30/20 03:49	RDC	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215899	07/26/20 05:28	SRA	TAL PHX
Total/NA	Prep	200.7			213492	06/25/20 08:46	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216256	07/29/20 23:39	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214221	07/06/20 14:16	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214261	07/07/20 11:17	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	213932	06/30/20 18:11	MRR	TAL PHX

Client Sample ID: FC-CCR-FD01-0620

Lab Sample ID: 550-144000-11

Date Collected: 06/19/20 15:32

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/30/20 04:07	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/30/20 04:25	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215716	07/23/20 21:00	SRA	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-FD01-0620

Lab Sample ID: 550-144000-11

Date Collected: 06/19/20 15:32

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216161	07/29/20 06:13	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214221	07/06/20 14:18	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214261	07/07/20 11:19	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW85-0620

Lab Sample ID: 550-144000-12

Date Collected: 06/19/20 13:03

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/30/20 04:44	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/30/20 05:02	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215716	07/23/20 21:04	SRA	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216161	07/29/20 06:17	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214221	07/06/20 14:20	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214261	07/07/20 11:21	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW86-0620

Lab Sample ID: 550-144000-13

Date Collected: 06/19/20 08:17

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/30/20 05:21	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/30/20 05:39	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216161	07/29/20 05:17	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214221	07/06/20 14:23	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214261	07/07/20 11:24	ARE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
 SDG: APS Four Corners Power Plant (URS)

Client Sample ID: FC-CCR-MW86-0620

Lab Sample ID: 550-144000-13

Date Collected: 06/19/20 08:17

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-FD02-0620

Lab Sample ID: 550-144000-14

Date Collected: 06/20/20 08:07

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213829	06/30/20 05:57	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213829	06/30/20 06:16	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215716	07/23/20 21:12	SRA	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216161	07/29/20 06:25	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214221	07/06/20 14:25	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	214261	07/07/20 10:44	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528	(Start) 06/25/20 12:11 (End) 06/28/20 07:10	CMM	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 4500 H+ B		Water	Temperature

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144000-1
SDG: APS Four Corners Power Plant (URS)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040

phone 602.437.3340 fax 602.454.9303

Regulatory Program: DW NPDES RCRA Other: CCR

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc

Arizona Public Service Client Contact: Natalie Chrisman 602-250-3608
PO Box 355, MS 4915 Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
Fruitland, NM 87416
Phone: TAT if different from Below: 2 weeks
FAX: 1 week
Project Name: CCR Groundwater Monitoring 2 days
Site: APS Four Corners Power Plant (URS) 1 day
Project # 1420202015 ****.02

Lab Contact: Ken Baker
Jim Edwards / (928) 288-1241
Date: 6/24/20
Carrier: 144000
COC No: 1 of 2 COCs
Sample: 1
Client:
Sampling:
G No:
For Lab Use Only:
550-144000 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (G=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Li)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)	SM 4500-HB (pH)	SM 2540C (TDS)	Sample Specific Notes:
FC-CCR-MW66-0620	6/18/2020	16:35	G	W	2	N	N	X	X	X	X	X	Low Flow
FC-CCR-MW67-0620	6/19/2020	13:46	G	W	2	N	N	X	X	X	X	X	Low Flow
FC-CCR-MW68-0620	6/19/2020	14:32	G	W	2	N	N	X	X	X	X	X	Low Flow
FC-CCR-MW69-0620	6/19/2020	11:40	G	W	2	N	N	X	X	X	X	X	Low Flow
FC-CCR-MW70-0620	6/19/2020	9:53	G	W	2	N	N	X	X	X	X	X	Low Flow
FC-CCR-MW71-0620	6/20/2020	9:18	G	W	2	N	N	X	X	X	X	X	Low Flow
FC-CCR-MW72-0620	6/19/2020	14:50	G	W	2	N	N	X	X	X	X	X	Low Flow
FC-CCR-MW73-0620	6/20/2020	10:12	G	W	2	N	N	X	X	X	X	X	Low Flow
FC-CCR-MW83-0620	6/19/2020	15:32	G	W	2	N	N	X	X	X	X	X	Low Flow
FC-CCR-MW84-0620	6/20/2020	8:07	G	W	2	N	N	X	X	X	X	X	Low Flow
FC-CCR-FD01-0620	6/19/2020	15:32	G	W	2	N	N	X	X	X	X	X	Low Flow

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:
Method 200.8 with collision cell

Custody Seals Intact: Yes No

Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: 6/24/20 15:08
Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: 6/24/20 15:08

Received in Laboratory by: *[Signature]* Company: *[Signature]* Date/Time: 6/24/20 15:08

Therm ID No: _____

1.12, 1.33, 1.65, 1.65, 1.65

144000

6/24/20 15:08

Chain of Custody Record

TestAmerica Phoenix
4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: DW NPDES RCRA Other: CCR

Client Contact: **Natalie Chrisman** 602-250-3608
Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
TAT if different from Below: 2 weeks 1 week 2 days 1 day

Arizona Public Service
PO Box 355, MS 4915
Fruitland, NM 87416
Phone: _____ FAX: _____
Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (URS)
Project # 1420202015....02

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Li)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)	SM 4500-HB (pH)	SM 2540C (TDS)	Carrier:	Date:	COC No:	Sampler:	For Lab Use Only:	Walk-in Client:	Lab Sampling:	Job / SDG No.:	Sample Specific Notes:	
FC-CCR-MW85-0620	-12	6/19/2020	G	W	2	N	N	X	X	X	X	X										Low Flow
FC-CCR-MW86-0620	-13	6/19/2020	G	W	2	N	N	X	X	X	X	X										Low Flow
FC-CCR-FD02-0620	-14	6/20/2020	G	W	2	N	N	X	X	X	X	X										Low Flow

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other _____
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:
 Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months

Method 200.8 with pollution cell

Chain of Custody Seal Intact: Yes No
Custody Seal No.: _____
Cooler Temp. (°C): Obs'd: _____

Relinquished by: _____
Company: _____
Date/Time: _____
Received by: _____
Received in Laboratory by: _____
Company: _____
Date/Time: _____

Relinquished by: _____
Company: _____
Date/Time: _____
Received by: _____
Received in Laboratory by: _____
Company: _____
Date/Time: _____

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-144000-1
SDG Number: APS Four Corners Power Plant (URS)

Login Number: 144000

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.



ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-144001-1

Laboratory SDG: APS Four Corners Power Plant (Multiunit)
Client Project/Site: CCR Groundwater Monitoring
Revision: 1

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
8/6/2020 11:38:40 AM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

Metals

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the blank.
D2	Sample required dilution due to high concentration of analyte.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Job ID: 550-144001-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-144001-1

Comments

This report contains the ICP Metals reported to the MDL.

Receipt

The samples were received on 6/24/2020 3:08 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.3° C, 1.3° C and 1.4° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

Method 200.7 Rev 4.4: The following samples were diluted due to the nature of the sample matrix: FC-CCR-MW08-0620 (550-144001-2), FC-CCR-MW87-0620 (550-144001-8), FC-CCR-FD04-0620 (550-144001-9), FC-CCR-EW01-0620 (550-144001-10), FC-CCR-EW05-0620 (550-144001-11) and FC-CCR-EW14-0620 (550-144001-12). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: FC-CCR-MW34-0620 (550-144001-13) and FC-CCR-EW15-0620 (550-144001-14). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method SM 2540C: The method blank for 550-213528 contained Total Dissolved Solids (TDS) above the reporting limit (RL). Associated samples were not re-analyzed because results were greater than 10X the value found in the method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-144001-1	FC-CCR-MW07-0620	Water	06/23/20 10:28	06/24/20 15:08	
550-144001-2	FC-CCR-MW08-0620	Water	06/23/20 09:34	06/24/20 15:08	
550-144001-3	FC-CCR-MW49A-0620	Water	06/23/20 08:23	06/24/20 15:08	
550-144001-4	FC-CCR-MW52-0620	Water	06/20/20 13:02	06/24/20 15:08	
550-144001-5	FC-CCR-MW61-0620	Water	06/21/20 09:35	06/24/20 15:08	
550-144001-6	FC-CCR-MW74-0620	Water	06/20/20 11:51	06/24/20 15:08	
550-144001-7	FC-CCR-MW75-0620	Water	06/21/20 10:25	06/24/20 15:08	
550-144001-8	FC-CCR-MW87-0620	Water	06/23/20 15:02	06/24/20 15:08	
550-144001-9	FC-CCR-FD04-0620	Water	06/23/20 09:34	06/24/20 15:08	
550-144001-10	FC-CCR-EW01-0620	Water	06/23/20 13:00	06/24/20 15:08	
550-144001-11	FC-CCR-EW05-0620	Water	06/23/20 13:55	06/24/20 15:08	
550-144001-12	FC-CCR-EW14-0620	Water	06/23/20 15:28	06/24/20 15:08	
550-144001-13	FC-CCR-MW34-0620	Water	06/23/20 16:11	06/24/20 15:08	
550-144001-14	FC-CCR-EW15-0620	Water	06/23/20 17:00	06/24/20 15:08	

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW07-0620

Lab Sample ID: 550-144001-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	740	D2	400		mg/L	200		300.0	Total/NA
Sulfate	5600	D2	400		mg/L	200		300.0	Total/NA
Boron	9.4		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	360		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	1.3		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.0072	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0073	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Selenium	0.0041	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	8600	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW08-0620

Lab Sample ID: 550-144001-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1000	D2	400		mg/L	200		300.0	Total/NA
Sulfate	9500	D2	400		mg/L	200		300.0	Total/NA
Boron	18		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Magnesium	830	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	35	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Sodium	3100	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.0050	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.014	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Alkalinity as CaCO3	490		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	490		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	15000	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	7.8	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW49A-0620

Lab Sample ID: 550-144001-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	720	D2	100		mg/L	50		300.0	Total/NA
Sulfate	13000	D2	400		mg/L	200		300.0	Total/NA
Boron	6.3		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	430		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	1.5		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0012		0.00050		mg/L	1		200.8 LL	Total/NA
Barium	0.022	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Cadmium	0.00015		0.00010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.00077		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.066		0.00050		mg/L	1		200.8 LL	Total/NA
Selenium	0.0017		0.00050		mg/L	1		200.8 LL	Total/NA
Thallium	0.0013		0.00010		mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	17000	D2	200		mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.4	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW52-0620

Lab Sample ID: 550-144001-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.12		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0035		0.00050		mg/L	1		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW61-0620

Lab Sample ID: 550-144001-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	310	D2	100		mg/L	50		300.0	Total/NA
Fluoride	1.2	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	3500	D2	400		mg/L	200		300.0	Total/NA
Boron	41		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	540		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.68		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.00087		0.00050		mg/L	1		200.8 LL	Total/NA
Barium	0.017		0.00050		mg/L	1		200.8 LL	Total/NA
Cadmium	0.00089		0.00010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.021		0.00050		mg/L	1		200.8 LL	Total/NA
Lead	0.00060		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.10		0.00050		mg/L	1		200.8 LL	Total/NA
Selenium	0.00056		0.00050		mg/L	1		200.8 LL	Total/NA
Thallium	0.00019		0.00010		mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	5700	B7 D2	100		mg/L	1		SM 2540C	Total/NA
pH	8.6	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.3	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW74-0620

Lab Sample ID: 550-144001-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	700	D2	400		mg/L	200		300.0	Total/NA
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	18000	D2	400		mg/L	200		300.0	Total/NA
Boron	2.2		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	430	D2	20		mg/L	10		200.7 Rev 4.4	Total/NA
Lithium	1.7		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0049		0.00050		mg/L	1		200.8 LL	Total/NA
Barium	0.014	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Cadmium	0.00029		0.00010		mg/L	1		200.8 LL	Total/NA
Chromium	0.0019		0.0010		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.012		0.00050		mg/L	1		200.8 LL	Total/NA
Selenium	0.049		0.00050		mg/L	1		200.8 LL	Total/NA
Thallium	0.00022		0.00010		mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	28000	B7 D2	200		mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	7.7	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW75-0620

Lab Sample ID: 550-144001-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	270	D2	100		mg/L	50		300.0	Total/NA
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	4300	D2	400		mg/L	200		300.0	Total/NA
Boron	24	D2	0.50		mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	470	D2	20		mg/L	10		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW75-0620 (Continued)

Lab Sample ID: 550-144001-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.77		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.00071		0.00050		mg/L	1		200.8 LL	Total/NA
Barium	0.018	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Cadmium	0.0017		0.00010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.047		0.00050		mg/L	1		200.8 LL	Total/NA
Lead	0.0028		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.18		0.00050		mg/L	1		200.8 LL	Total/NA
Selenium	0.0030		0.00050		mg/L	1		200.8 LL	Total/NA
Thallium	0.00021		0.00010		mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	6700	D2	100		mg/L	1		SM 2540C	Total/NA
pH	8.4	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.5	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW87-0620

Lab Sample ID: 550-144001-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2200	D2	400		mg/L	200		300.0	Total/NA
Sulfate	19000	D2	400		mg/L	200		300.0	Total/NA
Boron	1.4	D1	0.50		mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	440	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Magnesium	1500	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	78	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Sodium	7200	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Antimony	0.0021	D1	0.0020		mg/L	2		200.8 LL	Total/NA
Arsenic	0.0030	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Barium	0.012	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Cadmium	0.00032	D1	0.00020		mg/L	2		200.8 LL	Total/NA
Cobalt	0.010	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.069	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Selenium	0.0067	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Alkalinity as CaCO3	900		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	900		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	30000	D2	200		mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.4	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD04-0620

Lab Sample ID: 550-144001-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	970	D2	400		mg/L	200		300.0	Total/NA
Sulfate	9300	D2	400		mg/L	200		300.0	Total/NA
Boron	19	D1	0.50		mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	460	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Magnesium	830	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	37	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Sodium	3100	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.00077		0.00050		mg/L	1		200.8 LL	Total/NA
Barium	0.0097	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Cadmium	0.00021		0.00010		mg/L	1		200.8 LL	Total/NA
Lead	0.00074		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.011		0.00050		mg/L	1		200.8 LL	Total/NA
Selenium	0.00080		0.00050		mg/L	1		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-FD04-0620 (Continued)

Lab Sample ID: 550-144001-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity as CaCO3	490		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	490		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	14000	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.9	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-EW01-0620

Lab Sample ID: 550-144001-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	430	D2	400		mg/L	200		300.0	Total/NA
Sulfate	5500	D2	400		mg/L	200		300.0	Total/NA
Boron	11	D1	0.50		mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	510	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Magnesium	580	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	36	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Sodium	1700	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Antimony	0.010		0.0010		mg/L	1		200.8 LL	Total/NA
Arsenic	0.00085		0.00050		mg/L	1		200.8 LL	Total/NA
Barium	0.0044		0.00050		mg/L	1		200.8 LL	Total/NA
Cadmium	0.00024		0.00010		mg/L	1		200.8 LL	Total/NA
Chromium	0.0095		0.0010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.011		0.00050		mg/L	1		200.8 LL	Total/NA
Lead	0.0011		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0032		0.00050		mg/L	1		200.8 LL	Total/NA
Thallium	0.00012		0.00010		mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	310		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	310		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8600	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.5	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-EW05-0620

Lab Sample ID: 550-144001-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	400	D2	400		mg/L	200		300.0	Total/NA
Sulfate	5600	D2	400		mg/L	200		300.0	Total/NA
Boron	6.4	D1	0.50		mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	430	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Magnesium	540	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	32	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Sodium	1700	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.00057		0.00050		mg/L	1		200.8 LL	Total/NA
Barium	0.027		0.00050		mg/L	1		200.8 LL	Total/NA
Cadmium	0.00060		0.00010		mg/L	1		200.8 LL	Total/NA
Chromium	0.0060		0.0010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.0012		0.00050		mg/L	1		200.8 LL	Total/NA
Lead	0.00071		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0020		0.00050		mg/L	1		200.8 LL	Total/NA
Thallium	0.00022		0.00010		mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	280		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	280		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8700	D2	100		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-EW05-0620 (Continued)

Lab Sample ID: 550-144001-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-EW14-0620

Lab Sample ID: 550-144001-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	360	D2	100		mg/L	50		300.0	Total/NA
Sulfate	4900	D2	400		mg/L	200		300.0	Total/NA
Boron	19	D1	0.50		mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	470	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Magnesium	420	D1	20		mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	26	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Sodium	1400	D1	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.00082		0.00050		mg/L	1		200.8 LL	Total/NA
Barium	0.018		0.00050		mg/L	1		200.8 LL	Total/NA
Cadmium	0.00077		0.00010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.023		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.012		0.00050		mg/L	1		200.8 LL	Total/NA
Selenium	0.00063		0.00050		mg/L	1		200.8 LL	Total/NA
Thallium	0.00026		0.00010		mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	140		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	140		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	7600	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW34-0620

Lab Sample ID: 550-144001-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	350	D2	100		mg/L	50		300.0	Total/NA
Sulfate	5000	D2	400		mg/L	200		300.0	Total/NA
Boron	11		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	410		2.0		mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	480		2.0		mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	28		0.50		mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1100	D2	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.00065		0.00050		mg/L	1		200.8 LL	Total/NA
Barium	0.018		0.00050		mg/L	1		200.8 LL	Total/NA
Cadmium	0.00029		0.00010		mg/L	1		200.8 LL	Total/NA
Chromium	0.0022		0.0010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.029		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0084		0.00050		mg/L	1		200.8 LL	Total/NA
Selenium	0.00086		0.00050		mg/L	1		200.8 LL	Total/NA
Thallium	0.00022		0.00010		mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	210		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	210		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	7700	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.4	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-EW15-0620

Lab Sample ID: 550-144001-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	670	D2	400		mg/L	200		300.0	Total/NA
Sulfate	4400	D2	400		mg/L	200		300.0	Total/NA
Boron	19		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	430		2.0		mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	350		2.0		mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	26		0.50		mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1200	D2	5.0		mg/L	10		200.7 Rev 4.4	Total/NA
Antimony	0.0010		0.0010		mg/L	1		200.8 LL	Total/NA
Arsenic	0.00099		0.00050		mg/L	1		200.8 LL	Total/NA
Barium	0.0089		0.00050		mg/L	1		200.8 LL	Total/NA
Cadmium	0.00048		0.00010		mg/L	1		200.8 LL	Total/NA
Chromium	0.0032		0.0010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.017		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0039		0.00050		mg/L	1		200.8 LL	Total/NA
Thallium	0.00012		0.00010		mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	140		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	140		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	7400	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	9.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW07-0620

Lab Sample ID: 550-144001-1

Date Collected: 06/23/20 10:28

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	740	D2	400		mg/L			06/25/20 19:41	200
Fluoride	ND	D1 D5	0.80		mg/L			06/25/20 19:23	2
Sulfate	5600	D2	400		mg/L			06/25/20 19:41	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	9.4		0.050		mg/L		06/25/20 08:53	07/23/20 21:16	1
Calcium	360		2.0	0.015	mg/L		06/25/20 08:53	07/29/20 06:29	1
Lithium	1.3		0.20	0.040	mg/L		06/25/20 08:53	07/29/20 06:29	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:27	4
Arsenic	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:27	4
Barium	0.0072	D1	0.0010		mg/L		07/06/20 10:22	07/07/20 14:02	2
Cadmium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:27	4
Chromium	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:27	4
Cobalt	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:27	4
Lead	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:27	4
Molybdenum	0.0073	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:27	4
Selenium	0.0041	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:27	4
Thallium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:27	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	8600	D2	100		mg/L			06/29/20 09:44	1
pH	7.5	H5	1.7		SU			07/06/20 12:45	1
Temperature	8.0	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW08-0620

Lab Sample ID: 550-144001-2

Date Collected: 06/23/20 09:34

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1000	D2	400		mg/L			06/25/20 18:28	200
Fluoride	ND	D1 D5 M2 R13	0.80		mg/L			06/25/20 17:32	2
Sulfate	9500	D2	400		mg/L			06/25/20 18:28	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	18		0.050		mg/L		06/25/20 08:53	07/23/20 21:20	1
Calcium	440	D1	20		mg/L		06/25/20 08:53	07/29/20 05:21	10
Magnesium	830	D1	20		mg/L		06/25/20 08:53	07/29/20 05:21	10
Potassium	35	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:21	10
Sodium	3100	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:21	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:29	4

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW08-0620

Lab Sample ID: 550-144001-2

Date Collected: 06/23/20 09:34

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:29	4
Barium	0.0050	D1	0.0010		mg/L		07/06/20 10:22	07/07/20 14:05	2
Cadmium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:29	4
Chromium	ND	D1	0.0040		mg/L		06/30/20 09:43	07/06/20 14:29	4
Cobalt	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:29	4
Lead	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:29	4
Molybdenum	0.014	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:29	4
Selenium	ND	D1	0.0020		mg/L		06/30/20 09:43	07/06/20 14:29	4
Thallium	ND	D1	0.00040		mg/L		06/30/20 09:43	07/06/20 14:29	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	490		6.0		mg/L			06/27/20 16:53	1
Bicarbonate Alkalinity as CaCO3	490		6.0		mg/L			06/27/20 16:53	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 16:53	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/27/20 16:53	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 16:53	1
Total Dissolved Solids	15000	D2	100		mg/L			06/29/20 09:44	1
pH	7.4	H5	1.7		SU			07/06/20 12:45	1
Temperature	7.8	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW49A-0620

Lab Sample ID: 550-144001-3

Date Collected: 06/23/20 08:23

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	720	D2	100		mg/L			06/29/20 17:58	50
Fluoride	ND	D1 D5	0.80		mg/L			06/25/20 20:00	2
Sulfate	13000	D2	400		mg/L			06/25/20 20:18	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	6.3		0.050		mg/L		06/25/20 08:53	07/23/20 21:24	1
Calcium	430		2.0	0.015	mg/L		06/25/20 08:53	07/29/20 06:37	1
Lithium	1.5		0.20	0.040	mg/L		06/25/20 08:53	07/29/20 06:37	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:42	1
Arsenic	0.0012		0.00050		mg/L		06/26/20 05:22	06/30/20 14:42	1
Barium	0.022	D1	0.0020		mg/L		07/06/20 10:22	07/08/20 09:20	4
Cadmium	0.00015		0.00010		mg/L		06/26/20 05:22	06/30/20 14:42	1
Chromium	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:42	1
Cobalt	0.00077		0.00050		mg/L		06/26/20 05:22	06/30/20 14:42	1
Lead	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:42	1
Molybdenum	0.066		0.00050		mg/L		06/26/20 05:22	06/30/20 14:42	1
Selenium	0.0017		0.00050		mg/L		06/26/20 05:22	06/30/20 14:42	1
Thallium	0.0013		0.00010		mg/L		06/26/20 05:22	06/30/20 14:42	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW49A-0620

Lab Sample ID: 550-144001-3

Date Collected: 06/23/20 08:23

Matrix: Water

Date Received: 06/24/20 15:08

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	17000	D2	200		mg/L			06/29/20 09:44	1
pH	7.6	H5	1.7		SU			07/06/20 12:45	1
Temperature	8.4	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW52-0620

Lab Sample ID: 550-144001-4

Date Collected: 06/20/20 13:02

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.12		0.00050		mg/L		06/26/20 05:22	06/30/20 14:44	1
Molybdenum	0.0035		0.00050		mg/L		06/26/20 05:22	06/30/20 14:44	1

Client Sample ID: FC-CCR-MW61-0620

Lab Sample ID: 550-144001-5

Date Collected: 06/21/20 09:35

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	310	D2	100		mg/L			06/29/20 18:26	50
Fluoride	1.2	D1	0.80		mg/L			06/25/20 21:13	2
Sulfate	3500	D2	400		mg/L			06/25/20 21:32	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	41		0.050		mg/L		06/25/20 08:53	07/23/20 21:28	1
Calcium	540		2.0	0.015	mg/L		06/25/20 08:53	07/29/20 06:41	1
Lithium	0.68		0.20	0.040	mg/L		06/25/20 08:53	07/29/20 06:41	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:46	1
Arsenic	0.00087		0.00050		mg/L		06/26/20 05:22	06/30/20 14:46	1
Barium	0.017		0.00050		mg/L		07/06/20 10:22	07/07/20 14:09	1
Cadmium	0.00089		0.00010		mg/L		06/26/20 05:22	06/30/20 14:46	1
Chromium	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:46	1
Cobalt	0.021		0.00050		mg/L		06/26/20 05:22	06/30/20 14:46	1
Lead	0.00060		0.00050		mg/L		06/26/20 05:22	06/30/20 14:46	1
Molybdenum	0.10		0.00050		mg/L		06/26/20 05:22	06/30/20 14:46	1
Selenium	0.00056		0.00050		mg/L		06/26/20 05:22	06/30/20 14:46	1
Thallium	0.00019		0.00010		mg/L		06/26/20 05:22	06/30/20 14:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5700	B7 D2	100		mg/L			06/25/20 12:11	1
pH	8.6	H5	1.7		SU			07/06/20 12:45	1
Temperature	8.3	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW74-0620

Lab Sample ID: 550-144001-6

Date Collected: 06/20/20 11:51

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	700	D2	400		mg/L			06/25/20 22:09	200
Fluoride	1.1	D1	0.80		mg/L			06/25/20 21:50	2
Sulfate	18000	D2	400		mg/L			06/25/20 22:09	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.2		0.050		mg/L		06/25/20 08:53	07/23/20 21:32	1
Calcium	430	D2	20		mg/L		06/25/20 08:53	07/29/20 18:42	10
Lithium	1.7		0.20	0.040	mg/L		06/25/20 08:53	07/29/20 06:53	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:48	1
Arsenic	0.0049		0.00050		mg/L		06/26/20 05:22	06/30/20 14:48	1
Barium	0.014	D1	0.0010		mg/L		07/06/20 10:22	07/08/20 09:22	2
Cadmium	0.00029		0.00010		mg/L		06/26/20 05:22	06/30/20 14:48	1
Chromium	0.0019		0.0010		mg/L		06/26/20 05:22	06/30/20 14:48	1
Cobalt	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:48	1
Lead	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:48	1
Molybdenum	0.012		0.00050		mg/L		06/26/20 05:22	06/30/20 14:48	1
Selenium	0.049		0.00050		mg/L		06/26/20 05:22	06/30/20 14:48	1
Thallium	0.00022		0.00010		mg/L		06/26/20 05:22	06/30/20 14:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	28000	B7 D2	200		mg/L			06/25/20 12:11	1
pH	7.7	H5	1.7		SU			07/06/20 12:45	1
Temperature	7.7	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW75-0620

Lab Sample ID: 550-144001-7

Date Collected: 06/21/20 10:25

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	270	D2	100		mg/L			06/29/20 18:53	50
Fluoride	1.1	D1	0.80		mg/L			06/25/20 22:27	2
Sulfate	4300	D2	400		mg/L			06/25/20 22:45	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	24	D2	0.50		mg/L		06/25/20 08:53	07/29/20 18:46	10
Calcium	470	D2	20		mg/L		06/25/20 08:53	07/29/20 18:46	10
Lithium	0.77		0.20	0.040	mg/L		06/25/20 08:53	07/29/20 06:57	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:51	1
Arsenic	0.00071		0.00050		mg/L		06/26/20 05:22	06/30/20 14:51	1
Barium	0.018	D1	0.0010		mg/L		07/06/20 10:22	07/08/20 09:24	2
Cadmium	0.0017		0.00010		mg/L		06/26/20 05:22	06/30/20 14:51	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW75-0620

Lab Sample ID: 550-144001-7

Date Collected: 06/21/20 10:25

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:51	1
Cobalt	0.047		0.00050		mg/L		06/26/20 05:22	06/30/20 14:51	1
Lead	0.0028		0.00050		mg/L		06/26/20 05:22	06/30/20 14:51	1
Molybdenum	0.18		0.00050		mg/L		06/26/20 05:22	06/30/20 14:51	1
Selenium	0.0030		0.00050		mg/L		06/26/20 05:22	06/30/20 14:51	1
Thallium	0.00021		0.00010		mg/L		06/26/20 05:22	06/30/20 14:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6700	D2	100		mg/L			06/28/20 12:29	1
pH	8.4	H5	1.7		SU			07/06/20 12:45	1
Temperature	8.5	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW87-0620

Lab Sample ID: 550-144001-8

Date Collected: 06/23/20 15:02

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2200	D2	400		mg/L			06/25/20 23:22	200
Fluoride	ND	D1 D5	0.80		mg/L			06/25/20 23:04	2
Sulfate	19000	D2	400		mg/L			06/25/20 23:22	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4	D1	0.50		mg/L		06/25/20 08:53	07/29/20 05:25	10
Calcium	440	D1	20		mg/L		06/25/20 08:53	07/29/20 05:25	10
Magnesium	1500	D1	20		mg/L		06/25/20 08:53	07/29/20 05:25	10
Potassium	78	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:25	10
Sodium	7200	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:25	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0021	D1	0.0020		mg/L		06/26/20 05:22	07/01/20 10:53	2
Arsenic	0.0030	D1	0.0010		mg/L		06/26/20 05:22	07/01/20 10:53	2
Barium	0.012	D1	0.0020		mg/L		07/06/20 10:22	07/08/20 09:26	4
Cadmium	0.00032	D1	0.00020		mg/L		06/26/20 05:22	07/01/20 10:53	2
Chromium	ND	D1	0.0020		mg/L		06/26/20 05:22	07/01/20 10:53	2
Cobalt	0.010	D1	0.0010		mg/L		06/26/20 05:22	07/01/20 10:53	2
Lead	ND	D1	0.0010		mg/L		06/26/20 05:22	07/01/20 10:53	2
Molybdenum	0.069	D1	0.0010		mg/L		06/26/20 05:22	07/01/20 10:53	2
Selenium	0.0067	D1	0.0020		mg/L		07/06/20 10:22	07/09/20 15:15	4
Thallium	ND	D1	0.00020		mg/L		06/26/20 05:22	07/01/20 10:53	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	900		6.0		mg/L			06/30/20 10:10	1
Bicarbonate Alkalinity as CaCO3	900		6.0		mg/L			06/30/20 10:10	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/30/20 10:10	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/30/20 10:10	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/30/20 10:10	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW87-0620

Lab Sample ID: 550-144001-8

Date Collected: 06/23/20 15:02

Matrix: Water

Date Received: 06/24/20 15:08

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	30000	D2	200		mg/L			06/29/20 09:44	1
pH	7.7	H5	1.7		SU			07/06/20 12:45	1
Temperature	9.4	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-FD04-0620

Lab Sample ID: 550-144001-9

Date Collected: 06/23/20 09:34

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	970	D2	400		mg/L			06/25/20 23:59	200
Fluoride	ND	D1 D5	0.80		mg/L			06/25/20 23:41	2
Sulfate	9300	D2	400		mg/L			06/25/20 23:59	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	19	D1	0.50		mg/L		06/25/20 08:53	07/29/20 05:29	10
Calcium	460	D1	20		mg/L		06/25/20 08:53	07/29/20 05:29	10
Magnesium	830	D1	20		mg/L		06/25/20 08:53	07/29/20 05:29	10
Potassium	37	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:29	10
Sodium	3100	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:29	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:55	1
Arsenic	0.00077		0.00050		mg/L		06/26/20 05:22	06/30/20 14:55	1
Barium	0.0097	D1	0.0010		mg/L		07/06/20 10:22	07/08/20 09:29	2
Cadmium	0.00021		0.00010		mg/L		06/26/20 05:22	06/30/20 14:55	1
Chromium	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:55	1
Cobalt	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:55	1
Lead	0.00074		0.00050		mg/L		06/26/20 05:22	06/30/20 14:55	1
Molybdenum	0.011		0.00050		mg/L		06/26/20 05:22	06/30/20 14:55	1
Selenium	0.00080		0.00050		mg/L		06/26/20 05:22	06/30/20 14:55	1
Thallium	ND		0.00010		mg/L		06/26/20 05:22	06/30/20 14:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	490		6.0		mg/L			06/27/20 17:17	1
Bicarbonate Alkalinity as CaCO3	490		6.0		mg/L			06/27/20 17:17	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 17:17	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/27/20 17:17	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 17:17	1
Total Dissolved Solids	14000	D2	100		mg/L			06/29/20 09:44	1
pH	7.3	H5	1.7		SU			07/06/20 12:45	1
Temperature	9.9	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-EW01-0620

Lab Sample ID: 550-144001-10

Date Collected: 06/23/20 13:00

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	430	D2	400		mg/L			06/26/20 02:26	200
Fluoride	ND	D1 D5	0.80		mg/L			06/26/20 02:08	2
Sulfate	5500	D2	400		mg/L			06/26/20 02:26	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	11	D1	0.50		mg/L		06/25/20 08:53	07/29/20 05:33	10
Calcium	510	D1	20		mg/L		06/25/20 08:53	07/29/20 05:33	10
Magnesium	580	D1	20		mg/L		06/25/20 08:53	07/29/20 05:33	10
Potassium	36	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:33	10
Sodium	1700	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:33	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.010		0.0010		mg/L		06/26/20 05:22	06/30/20 14:57	1
Arsenic	0.00085		0.00050		mg/L		06/26/20 05:22	06/30/20 14:57	1
Barium	0.0044		0.00050		mg/L		07/06/20 10:33	07/07/20 10:46	1
Cadmium	0.00024		0.00010		mg/L		06/26/20 05:22	06/30/20 14:57	1
Chromium	0.0095		0.0010		mg/L		06/26/20 05:22	06/30/20 14:57	1
Cobalt	0.011		0.00050		mg/L		06/26/20 05:22	06/30/20 14:57	1
Lead	0.0011		0.00050		mg/L		06/26/20 05:22	06/30/20 14:57	1
Molybdenum	0.0032		0.00050		mg/L		06/26/20 05:22	06/30/20 14:57	1
Selenium	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:57	1
Thallium	0.00012		0.00010		mg/L		06/26/20 05:22	06/30/20 14:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	310		6.0		mg/L			06/27/20 17:27	1
Bicarbonate Alkalinity as CaCO3	310		6.0		mg/L			06/27/20 17:27	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 17:27	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/27/20 17:27	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 17:27	1
Total Dissolved Solids	8600	D2	100		mg/L			06/29/20 09:44	1
pH	7.6	H5	1.7		SU			07/06/20 12:45	1
Temperature	9.5	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-EW05-0620

Lab Sample ID: 550-144001-11

Date Collected: 06/23/20 13:55

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	400	D2	400		mg/L			06/26/20 03:03	200
Fluoride	ND	D1 D5	0.80		mg/L			06/26/20 02:45	2
Sulfate	5600	D2	400		mg/L			06/26/20 03:03	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	6.4	D1	0.50		mg/L		06/25/20 08:53	07/29/20 05:37	10
Calcium	430	D1	20		mg/L		06/25/20 08:53	07/29/20 05:37	10
Magnesium	540	D1	20		mg/L		06/25/20 08:53	07/29/20 05:37	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-EW05-0620

Lab Sample ID: 550-144001-11

Date Collected: 06/23/20 13:55

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	32	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:37	10
Sodium	1700	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:37	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:59	1
Arsenic	0.00057		0.00050		mg/L		06/26/20 05:22	06/30/20 14:59	1
Barium	0.027		0.00050		mg/L		07/06/20 10:33	07/07/20 10:48	1
Cadmium	0.00060		0.00010		mg/L		06/26/20 05:22	06/30/20 14:59	1
Chromium	0.0060		0.0010		mg/L		06/26/20 05:22	06/30/20 14:59	1
Cobalt	0.0012		0.00050		mg/L		06/26/20 05:22	06/30/20 14:59	1
Lead	0.00071		0.00050		mg/L		06/26/20 05:22	06/30/20 14:59	1
Molybdenum	0.0020		0.00050		mg/L		06/26/20 05:22	06/30/20 14:59	1
Selenium	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:59	1
Thallium	0.00022		0.00010		mg/L		06/26/20 05:22	06/30/20 14:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	280		6.0		mg/L			06/27/20 17:36	1
Bicarbonate Alkalinity as CaCO3	280		6.0		mg/L			06/27/20 17:36	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 17:36	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/27/20 17:36	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 17:36	1
Total Dissolved Solids	8700	D2	100		mg/L			06/29/20 09:44	1
pH	7.7	H5	1.7		SU			07/06/20 12:45	1
Temperature	9.0	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-EW14-0620

Lab Sample ID: 550-144001-12

Date Collected: 06/23/20 15:28

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	360	D2	100		mg/L			06/29/20 19:20	50
Fluoride	ND	D1 D5	0.80		mg/L			06/26/20 03:21	2
Sulfate	4900	D2	400		mg/L			06/26/20 03:40	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	19	D1	0.50		mg/L		06/25/20 08:53	07/29/20 05:41	10
Calcium	470	D1	20		mg/L		06/25/20 08:53	07/29/20 05:41	10
Magnesium	420	D1	20		mg/L		06/25/20 08:53	07/29/20 05:41	10
Potassium	26	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:41	10
Sodium	1400	D1	5.0		mg/L		06/25/20 08:53	07/29/20 05:41	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010		mg/L		06/26/20 05:22	07/01/20 10:55	1
Arsenic	0.00082		0.00050		mg/L		06/26/20 05:22	07/01/20 10:55	1
Barium	0.018		0.00050		mg/L		07/06/20 10:33	07/07/20 10:50	1
Cadmium	0.00077		0.00010		mg/L		06/26/20 05:22	07/01/20 10:55	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-EW14-0620

Lab Sample ID: 550-144001-12

Date Collected: 06/23/20 15:28

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0010		mg/L		06/26/20 05:22	07/01/20 10:55	1
Cobalt	0.023		0.00050		mg/L		06/26/20 05:22	07/01/20 10:55	1
Lead	ND		0.00050		mg/L		06/26/20 05:22	07/01/20 10:55	1
Molybdenum	0.012		0.00050		mg/L		06/26/20 05:22	07/01/20 10:55	1
Selenium	0.00063		0.00050		mg/L		07/06/20 10:33	07/07/20 10:50	1
Thallium	0.00026		0.00010		mg/L		06/26/20 05:22	07/01/20 10:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	140		6.0		mg/L			06/27/20 17:45	1
Bicarbonate Alkalinity as CaCO3	140		6.0		mg/L			06/27/20 17:45	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 17:45	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/27/20 17:45	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 17:45	1
Total Dissolved Solids	7600	D2	100		mg/L			06/29/20 09:44	1
pH	7.6	H5	1.7		SU			07/06/20 12:45	1
Temperature	9.0	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW34-0620

Lab Sample ID: 550-144001-13

Date Collected: 06/23/20 16:11

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	350	D2	100		mg/L			06/29/20 19:48	50
Fluoride	ND	D1 D5	0.80		mg/L			06/26/20 00:54	2
Sulfate	5000	D2	400		mg/L			06/26/20 01:13	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	11		0.050		mg/L		06/25/20 08:53	07/30/20 17:26	1
Calcium	410		2.0		mg/L		06/25/20 08:53	07/30/20 17:26	1
Magnesium	480		2.0		mg/L		06/25/20 08:53	07/30/20 17:26	1
Potassium	28		0.50		mg/L		06/25/20 08:53	07/30/20 17:26	1
Sodium	1100	D2	5.0		mg/L		06/25/20 08:53	07/30/20 16:49	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010		mg/L		06/26/20 05:22	07/01/20 10:57	1
Arsenic	0.00065		0.00050		mg/L		06/26/20 05:22	07/01/20 10:57	1
Barium	0.018		0.00050		mg/L		07/06/20 10:33	07/07/20 10:52	1
Cadmium	0.00029		0.00010		mg/L		06/26/20 05:22	07/01/20 10:57	1
Chromium	0.0022		0.0010		mg/L		06/26/20 05:22	07/01/20 10:57	1
Cobalt	0.029		0.00050		mg/L		06/26/20 05:22	07/01/20 10:57	1
Lead	ND		0.00050		mg/L		06/26/20 05:22	07/01/20 10:57	1
Molybdenum	0.0084		0.00050		mg/L		06/26/20 05:22	07/01/20 10:57	1
Selenium	0.00086		0.00050		mg/L		07/06/20 10:33	07/07/20 10:52	1
Thallium	0.00022		0.00010		mg/L		06/26/20 05:22	07/01/20 10:57	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW34-0620

Lab Sample ID: 550-144001-13

Date Collected: 06/23/20 16:11

Matrix: Water

Date Received: 06/24/20 15:08

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	210		6.0		mg/L			06/27/20 18:11	1
Bicarbonate Alkalinity as CaCO3	210		6.0		mg/L			06/27/20 18:11	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 18:11	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/27/20 18:11	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 18:11	1
Total Dissolved Solids	7700	D2	100		mg/L			06/29/20 09:44	1
pH	7.7	H5	1.7		SU			07/06/20 12:45	1
Temperature	9.4	H5	0.1		Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-EW15-0620

Lab Sample ID: 550-144001-14

Date Collected: 06/23/20 17:00

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	670	D2	400		mg/L			06/26/20 01:49	200
Fluoride	ND	D1 D5	0.80		mg/L			06/26/20 01:31	2
Sulfate	4400	D2	400		mg/L			06/26/20 01:49	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	19		0.050		mg/L		06/25/20 08:53	07/30/20 17:30	1
Calcium	430		2.0		mg/L		06/25/20 08:53	07/30/20 17:30	1
Magnesium	350		2.0		mg/L		06/25/20 08:53	07/30/20 17:30	1
Potassium	26		0.50		mg/L		06/25/20 08:53	07/30/20 17:30	1
Sodium	1200	D2	5.0		mg/L		06/25/20 08:53	07/30/20 16:53	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010		0.0010		mg/L		06/26/20 05:22	07/01/20 11:00	1
Arsenic	0.00099		0.00050		mg/L		06/26/20 05:22	07/01/20 11:00	1
Barium	0.0089		0.00050		mg/L		07/06/20 10:33	07/07/20 10:54	1
Cadmium	0.00048		0.00010		mg/L		06/26/20 05:22	07/01/20 11:00	1
Chromium	0.0032		0.0010		mg/L		06/26/20 05:22	07/01/20 11:00	1
Cobalt	0.017		0.00050		mg/L		06/26/20 05:22	07/01/20 11:00	1
Lead	ND		0.00050		mg/L		06/26/20 05:22	07/01/20 11:00	1
Molybdenum	0.0039		0.00050		mg/L		06/26/20 05:22	07/01/20 11:00	1
Selenium	ND	D1	0.0010		mg/L		07/06/20 10:33	07/09/20 15:17	2
Thallium	0.00012		0.00010		mg/L		06/26/20 05:22	07/01/20 11:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	140		6.0		mg/L			06/27/20 18:29	1
Bicarbonate Alkalinity as CaCO3	140		6.0		mg/L			06/27/20 18:29	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 18:29	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/27/20 18:29	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 18:29	1
Total Dissolved Solids	7400	D2	100		mg/L			06/29/20 09:44	1
pH	7.6	H5	1.7		SU			07/06/20 12:45	1
Temperature	9.0	H5	0.1		Degrees C			07/06/20 12:45	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-213563/2
Matrix: Water
Analysis Batch: 213563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0		mg/L			06/25/20 16:00	1
Fluoride	ND		0.40		mg/L			06/25/20 16:00	1
Sulfate	ND		2.0		mg/L			06/25/20 16:00	1

Lab Sample ID: LCS 550-213563/5
Matrix: Water
Analysis Batch: 213563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.6		mg/L		103	90 - 110
Fluoride	4.00	3.84		mg/L		96	90 - 110
Sulfate	20.0	20.5		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-213563/6
Matrix: Water
Analysis Batch: 213563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.7		mg/L		103	90 - 110	1	20
Fluoride	4.00	3.86		mg/L		97	90 - 110	1	20
Sulfate	20.0	20.4		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-144001-2 MS
Matrix: Water
Analysis Batch: 213563

Client Sample ID: FC-CCR-MW08-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND	M2 D5 R13 D1	8.00	1.67	D1 M2	mg/L		15	80 - 120

Lab Sample ID: 550-144001-2 MS
Matrix: Water
Analysis Batch: 213563

Client Sample ID: FC-CCR-MW08-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1000	D2	4000	5320	D2	mg/L		107	80 - 120
Sulfate	9500	D2	4000	13500	D2	mg/L		100	80 - 120

Lab Sample ID: 550-144001-2 MSD
Matrix: Water
Analysis Batch: 213563

Client Sample ID: FC-CCR-MW08-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	ND	M2 D5 R13 D1	8.00	2.54	D1 M2 R13	mg/L		26	80 - 120	41	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-144001-2 MSD
Matrix: Water
Analysis Batch: 213563

Client Sample ID: FC-CCR-MW08-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1000	D2	4000	5350	D2	mg/L		108	80 - 120	1	20
Sulfate	9500	D2	4000	13400	D2	mg/L		97	80 - 120	1	20

Lab Sample ID: MB 550-213828/2
Matrix: Water
Analysis Batch: 213828

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0		mg/L			06/29/20 13:52	1
Fluoride	ND		0.40		mg/L			06/29/20 13:52	1
Sulfate	ND		2.0		mg/L			06/29/20 13:52	1

Lab Sample ID: LCS 550-213828/5
Matrix: Water
Analysis Batch: 213828

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.7		mg/L		104	90 - 110
Fluoride	4.00	4.13		mg/L		103	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-213828/6
Matrix: Water
Analysis Batch: 213828

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.7		mg/L		104	90 - 110	0	20
Fluoride	4.00	4.13		mg/L		103	90 - 110	0	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-143955-D-1 MS ^10
Matrix: Water
Analysis Batch: 213828

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	380	D2	200	609	D2	mg/L		117	80 - 120
Fluoride	ND	D5 D1	40.0	42.1	D1	mg/L		105	80 - 120
Sulfate	250	D2	200	466	D2	mg/L		109	80 - 120

Lab Sample ID: 550-143955-D-1 MSD ^10
Matrix: Water
Analysis Batch: 213828

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	380	D2	200	600	D2	mg/L		112	80 - 120	1	20
Fluoride	ND	D5 D1	40.0	42.1	D1	mg/L		105	80 - 120	0	20
Sulfate	250	D2	200	460	D2	mg/L		106	80 - 120	1	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-213493/1-A
Matrix: Water
Analysis Batch: 215716

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213493

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050		mg/L		06/25/20 08:53	07/23/20 20:40	1
Calcium	ND		2.0		mg/L		06/25/20 08:53	07/23/20 20:40	1
Lithium	ND		0.20		mg/L		06/25/20 08:53	07/23/20 20:40	1

Lab Sample ID: MB 550-213493/1-A
Matrix: Water
Analysis Batch: 216161

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213493

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND	E8	0.050	0.0030	mg/L		06/25/20 08:53	07/29/20 05:45	1
Calcium	ND	E8	2.0	0.015	mg/L		06/25/20 08:53	07/29/20 05:45	1
Magnesium	ND	E8	2.0	0.055	mg/L		06/25/20 08:53	07/29/20 05:45	1
Lithium	ND	E8	0.20	0.040	mg/L		06/25/20 08:53	07/29/20 05:45	1
Potassium	ND	E8	0.50	0.15	mg/L		06/25/20 08:53	07/29/20 05:45	1
Sodium	0.119	E4	0.50	0.028	mg/L		06/25/20 08:53	07/29/20 05:45	1

Lab Sample ID: LCS 550-213493/2-A
Matrix: Water
Analysis Batch: 215716

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	1.05		mg/L		105	85 - 115

Lab Sample ID: LCS 550-213493/2-A
Matrix: Water
Analysis Batch: 216161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	1.10		mg/L		110	85 - 115
Calcium	21.0	23.1		mg/L		110	85 - 115
Magnesium	21.0	23.6		mg/L		113	85 - 115
Lithium	1.00	1.08		mg/L		108	85 - 115
Potassium	20.0	21.9		mg/L		109	85 - 115
Sodium	20.0	22.3		mg/L		111	85 - 115

Lab Sample ID: LCSD 550-213493/3-A
Matrix: Water
Analysis Batch: 215716

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	1.00	1.01		mg/L		101	85 - 115	4	20
Calcium	21.0	21.7		mg/L		104	85 - 115	20	20

Lab Sample ID: LCSD 550-213493/3-A
Matrix: Water
Analysis Batch: 216161

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	1.00	1.07		mg/L		107	85 - 115	3	20
Calcium	21.0	22.2		mg/L		106	85 - 115	4	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-213493/3-A
Matrix: Water
Analysis Batch: 216161

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Magnesium	21.0	22.7		mg/L		108	85 - 115	4	20
Lithium	1.00	1.02		mg/L		102	85 - 115	5	20
Potassium	20.0	21.0		mg/L		105	85 - 115	4	20
Sodium	20.0	21.4		mg/L		107	85 - 115	4	20

Lab Sample ID: 550-144000-B-11-A MS
Matrix: Water
Analysis Batch: 215716

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	2.2		1.00	3.23		mg/L		105	70 - 130
Calcium	310	M3 L3	21.0	313	M3	mg/L		39	70 - 130
Lithium	ND	L3 R6	1.00	1.18		mg/L		106	70 - 130

Lab Sample ID: 550-144000-B-11-A MS
Matrix: Water
Analysis Batch: 216161

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	2.4		1.00	3.34		mg/L		99	70 - 130
Calcium	340	M3	21.0	335	M3	mg/L		-45	70 - 130
Magnesium	150	M3	21.0	162	M3	mg/L		46	70 - 130
Lithium	0.30		1.00	1.40		mg/L		110	70 - 130
Potassium	8.1		20.0	30.5		mg/L		112	70 - 130
Sodium	370	M3	20.0	358	M3	mg/L		-63	70 - 130

Lab Sample ID: 550-144000-B-11-B MSD
Matrix: Water
Analysis Batch: 215716

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	2.2		1.00	3.12		mg/L		95	70 - 130	3	20
Calcium	310	M3 L3	21.0	309	M3	mg/L		19	70 - 130	1	20
Lithium	ND	L3 R6	1.00	1.16		mg/L		103	70 - 130	2	20

Lab Sample ID: 550-144000-B-11-B MSD
Matrix: Water
Analysis Batch: 216161

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213493

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	2.4		1.00	3.36		mg/L		101	70 - 130	1	20
Calcium	340	M3	21.0	329	M3	mg/L		-72	70 - 130	2	20
Magnesium	150	M3	21.0	159	M3	mg/L		33	70 - 130	2	20
Lithium	0.30		1.00	1.39		mg/L		109	70 - 130	1	20
Potassium	8.1		20.0	30.3		mg/L		111	70 - 130	1	20
Sodium	370	M3	20.0	351	M3	mg/L		-94	70 - 130	2	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-213589/1-A
Matrix: Water
Analysis Batch: 213945

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213589

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:30	1
Arsenic	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:30	1
Cadmium	ND		0.00010		mg/L		06/26/20 05:22	06/30/20 14:30	1
Chromium	ND		0.0010		mg/L		06/26/20 05:22	06/30/20 14:30	1
Cobalt	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:30	1
Lead	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:30	1
Molybdenum	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:30	1
Selenium	ND		0.00050		mg/L		06/26/20 05:22	06/30/20 14:30	1
Thallium	ND		0.00010		mg/L		06/26/20 05:22	06/30/20 14:30	1

Lab Sample ID: LCS 550-213589/2-A
Matrix: Water
Analysis Batch: 213945

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213589

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.100	0.0966		mg/L		97	85 - 115
Arsenic	0.100	0.0993		mg/L		99	85 - 115
Cadmium	0.100	0.0974		mg/L		97	85 - 115
Chromium	0.100	0.0998		mg/L		100	85 - 115
Cobalt	0.100	0.0979		mg/L		98	85 - 115
Lead	0.100	0.0986		mg/L		99	85 - 115
Molybdenum	0.100	0.0980		mg/L		98	85 - 115
Selenium	0.100	0.101		mg/L		101	85 - 115
Thallium	0.100	0.0983		mg/L		98	85 - 115

Lab Sample ID: LCSD 550-213589/3-A
Matrix: Water
Analysis Batch: 213945

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213589

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.100	0.0977		mg/L		98	85 - 115	1	20
Arsenic	0.100	0.100		mg/L		100	85 - 115	1	20
Cadmium	0.100	0.0979		mg/L		98	85 - 115	1	20
Chromium	0.100	0.0999		mg/L		100	85 - 115	0	20
Cobalt	0.100	0.0979		mg/L		98	85 - 115	0	20
Lead	0.100	0.0991		mg/L		99	85 - 115	0	20
Molybdenum	0.100	0.0979		mg/L		98	85 - 115	0	20
Selenium	0.100	0.105		mg/L		105	85 - 115	4	20
Thallium	0.100	0.0982		mg/L		98	85 - 115	0	20

Lab Sample ID: 550-144002-A-4-A MS
Matrix: Water
Analysis Batch: 213945

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213589

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		0.100	0.101		mg/L		101	70 - 130
Arsenic	0.00086		0.100	0.119		mg/L		118	70 - 130
Cadmium	0.00099		0.100	0.0915		mg/L		91	70 - 130
Chromium	0.0017		0.100	0.102		mg/L		100	70 - 130

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-144002-A-4-A MS
Matrix: Water
Analysis Batch: 213945

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213589

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Cobalt	0.073		0.100	0.164		mg/L		91		70 - 130
Lead	0.0015		0.100	0.0946		mg/L		93		70 - 130
Molybdenum	0.045		0.100	0.148		mg/L		103		70 - 130
Selenium	0.00086	M1	0.100	0.151	M1	mg/L		151		70 - 130
Thallium	0.00036		0.100	0.0939		mg/L		94		70 - 130

Lab Sample ID: 550-144002-A-4-B MSD
Matrix: Water
Analysis Batch: 213945

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213589

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Antimony	ND		0.100	0.102		mg/L		102		70 - 130	0	20
Arsenic	0.00086		0.100	0.119		mg/L		119		70 - 130	1	20
Cadmium	0.00099		0.100	0.0923		mg/L		91		70 - 130	1	20
Chromium	0.0017		0.100	0.103		mg/L		101		70 - 130	1	20
Cobalt	0.073		0.100	0.164		mg/L		91		70 - 130	0	20
Lead	0.0015		0.100	0.0937		mg/L		92		70 - 130	1	20
Molybdenum	0.045		0.100	0.151		mg/L		106		70 - 130	2	20
Selenium	0.00086	M1	0.100	0.147	M1	mg/L		146		70 - 130	3	20
Thallium	0.00036		0.100	0.0921		mg/L		92		70 - 130	2	20

Lab Sample ID: MB 550-213871/1-A
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213871

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:09	1
Cadmium	ND		0.00010		mg/L		06/30/20 09:43	07/01/20 13:09	1
Chromium	ND		0.0010		mg/L		06/30/20 09:43	07/01/20 13:09	1
Cobalt	ND		0.00050		mg/L		06/30/20 09:43	07/01/20 13:09	1
Lead	ND		0.00050		mg/L		06/30/20 09:43	07/01/20 13:09	1
Molybdenum	ND		0.00050		mg/L		06/30/20 09:43	07/01/20 13:09	1
Thallium	ND		0.00010		mg/L		06/30/20 09:43	07/01/20 13:09	1

Lab Sample ID: MB 550-213871/1-A
Matrix: Water
Analysis Batch: 214188

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213871

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.00050		mg/L		06/30/20 09:43	07/06/20 12:23	1
Selenium	ND		0.00050		mg/L		06/30/20 09:43	07/06/20 12:23	1

Lab Sample ID: LCS 550-213871/2-A
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
Antimony	0.100	0.0943		mg/L		94		85 - 115
Cadmium	0.100	0.0956		mg/L		96		85 - 115
Chromium	0.100	0.0982		mg/L		98		85 - 115

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 550-213871/2-A
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
							Lower	Upper
Cobalt	0.100	0.0965		mg/L		96	85	115
Lead	0.100	0.0959		mg/L		96	85	115
Molybdenum	0.100	0.0934		mg/L		93	85	115
Thallium	0.100	0.0955		mg/L		96	85	115

Lab Sample ID: LCS 550-213871/2-A
Matrix: Water
Analysis Batch: 214188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
							Lower	Upper
Arsenic	0.100	0.0996		mg/L		100	85	115
Selenium	0.100	0.102		mg/L		102	85	115

Lab Sample ID: LCSD 550-213871/3-A
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD Limit	
							Lower	Upper	RPD	Limit
Antimony	0.100	0.0957		mg/L		96	85	115	1	20
Cadmium	0.100	0.0963		mg/L		96	85	115	1	20
Chromium	0.100	0.0991		mg/L		99	85	115	1	20
Cobalt	0.100	0.0992		mg/L		99	85	115	3	20
Lead	0.100	0.0966		mg/L		97	85	115	1	20
Molybdenum	0.100	0.0951		mg/L		95	85	115	2	20
Thallium	0.100	0.0949		mg/L		95	85	115	1	20

Lab Sample ID: LCSD 550-213871/3-A
Matrix: Water
Analysis Batch: 214188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD Limit	
							Lower	Upper	RPD	Limit
Arsenic	0.100	0.100		mg/L		100	85	115	0	20
Selenium	0.100	0.102		mg/L		102	85	115	0	20

Lab Sample ID: 550-143979-E-2-D MS
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	
									Lower	Upper
Antimony	ND		0.100	0.0972		mg/L		97	70	130
Cadmium	ND		0.100	0.0936		mg/L		94	70	130
Chromium	0.0024		0.100	0.0994		mg/L		97	70	130
Cobalt	ND		0.100	0.0957		mg/L		95	70	130
Lead	ND		0.100	0.0926		mg/L		92	70	130
Molybdenum	0.0026		0.100	0.0998		mg/L		97	70	130
Thallium	ND		0.100	0.0924		mg/L		92	70	130

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-143979-E-2-D MS
Matrix: Water
Analysis Batch: 214188

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.010		0.100	0.114		mg/L		103	70 - 130
Selenium	ND		0.100	0.103		mg/L		103	70 - 130

Lab Sample ID: 550-143979-E-2-E MSD
Matrix: Water
Analysis Batch: 214049

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		0.100	0.0976		mg/L		97	70 - 130	0	20
Cadmium	ND		0.100	0.0934		mg/L		93	70 - 130	0	20
Chromium	0.0024		0.100	0.0998		mg/L		97	70 - 130	0	20
Cobalt	ND		0.100	0.0949		mg/L		95	70 - 130	1	20
Lead	ND		0.100	0.0925		mg/L		92	70 - 130	0	20
Molybdenum	0.0026		0.100	0.101		mg/L		98	70 - 130	1	20
Thallium	ND		0.100	0.0918		mg/L		92	70 - 130	1	20

Lab Sample ID: 550-143979-E-2-E MSD
Matrix: Water
Analysis Batch: 214188

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 213871

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.010		0.100	0.111		mg/L		101	70 - 130	2	20
Selenium	ND		0.100	0.102		mg/L		102	70 - 130	1	20

Lab Sample ID: MB 550-214165/1-A
Matrix: Water
Analysis Batch: 214330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214165

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.00050		mg/L		07/06/20 10:22	07/07/20 13:19	1
Selenium	ND		0.00050		mg/L		07/06/20 10:22	07/07/20 13:19	1

Lab Sample ID: LCS 550-214165/2-A
Matrix: Water
Analysis Batch: 214330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214165

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.100	0.110		mg/L		110	85 - 115
Selenium	0.100	0.0927		mg/L		93	85 - 115

Lab Sample ID: LCSD 550-214165/3-A
Matrix: Water
Analysis Batch: 214330

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 214165

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.100	0.112		mg/L		112	85 - 115	1	20
Selenium	0.100	0.0957		mg/L		96	85 - 115	3	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-144002-C-4-A MS
Matrix: Water
Analysis Batch: 214330

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 214165
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.014		0.100	0.127		mg/L		114	70 - 130
Selenium	ND	M1	0.100	0.130		mg/L		130	70 - 130

Lab Sample ID: 550-144002-C-4-B MSD
Matrix: Water
Analysis Batch: 214330

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 214165
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.014		0.100	0.127		mg/L		114	70 - 130	0	20
Selenium	ND	M1	0.100	0.132	M1	mg/L		131	70 - 130	1	20

Lab Sample ID: MB 550-214168/1-A
Matrix: Water
Analysis Batch: 214261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214168

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.00050		mg/L		07/06/20 10:33	07/07/20 10:27	1
Selenium	ND		0.00050		mg/L		07/06/20 10:33	07/07/20 10:27	1

Lab Sample ID: LCS 550-214168/2-A
Matrix: Water
Analysis Batch: 214261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214168
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.100	0.113		mg/L		113	85 - 115
Selenium	0.100	0.0922		mg/L		92	85 - 115

Lab Sample ID: LCSD 550-214168/3-A
Matrix: Water
Analysis Batch: 214261

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 214168
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.100	0.113		mg/L		113	85 - 115	0	20
Selenium	0.100	0.0902		mg/L		90	85 - 115	2	20

Lab Sample ID: 550-144000-B-1-D MS ^2
Matrix: Water
Analysis Batch: 214261

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 214168
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.019	D1 M1	0.100	0.147		mg/L		127	70 - 130
Selenium	0.0020	D1 M1	0.100	0.155	M1	mg/L		153	70 - 130

Lab Sample ID: 550-144000-B-1-E MSD ^2
Matrix: Water
Analysis Batch: 214261

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 214168
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.019	D1 M1	0.100	0.151	M1	mg/L		132	70 - 130	3	20
Selenium	0.0020	D1 M1	0.100	0.156	M1	mg/L		154	70 - 130	1	20

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QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-213726/33
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 15:59	1
Bicarbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 15:59	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 15:59	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/27/20 15:59	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/27/20 15:59	1

Lab Sample ID: LCS 550-213726/32
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	250	243		mg/L		97	90 - 110

Lab Sample ID: LCSD 550-213726/45
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	244		mg/L		98	90 - 110	0	20

Lab Sample ID: 160-38439-G-10 DU
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	90		90.2		mg/L		0.7	20
Bicarbonate Alkalinity as CaCO3	90		90.2		mg/L		0.7	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Lab Sample ID: 550-144001-13 DU
Matrix: Water
Analysis Batch: 213726

Client Sample ID: FC-CCR-MW34-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	210		210		mg/L		0.3	20
Bicarbonate Alkalinity as CaCO3	210		210		mg/L		0.3	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Lab Sample ID: MB 550-213873/1
Matrix: Water
Analysis Batch: 213873

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0		mg/L			06/30/20 10:10	1
Bicarbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/30/20 10:10	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/30/20 10:10	1

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QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 550-213873/1
Matrix: Water
Analysis Batch: 213873

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/30/20 10:10	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/30/20 10:10	1

Lab Sample ID: LCS 550-213873/2
Matrix: Water
Analysis Batch: 213873

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	250	234		mg/L		94	90 - 110

Lab Sample ID: LCSD 550-213873/5
Matrix: Water
Analysis Batch: 213873

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	236		mg/L		94	90 - 110	1	20

Lab Sample ID: 550-143998-A-5 DU
Matrix: Water
Analysis Batch: 213873

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Bicarbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-213528/1
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	40.8	B1	20		mg/L			06/25/20 12:11	1

Lab Sample ID: LCS 550-213528/2
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1030		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-213528/3
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	90 - 110	1	10

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 550-144000-A-7 DU
Matrix: Water
Analysis Batch: 213528

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	16000	D2 B7	16200	B7 D2	mg/L	-	2	10

Lab Sample ID: MB 550-213734/1
Matrix: Water
Analysis Batch: 213734

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	-	20	-	mg/L	-	-	06/28/20 12:29	1

Lab Sample ID: LCS 550-213734/2
Matrix: Water
Analysis Batch: 213734

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1070	-	mg/L	-	107	90 - 110

Lab Sample ID: LCSD 550-213734/3
Matrix: Water
Analysis Batch: 213734

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	975	-	mg/L	-	98	90 - 110	9	10

Lab Sample ID: 550-144001-7 DU
Matrix: Water
Analysis Batch: 213734

Client Sample ID: FC-CCR-MW75-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	6700	D2	6720	D2	mg/L	-	0.4	10

Lab Sample ID: MB 550-213773/1
Matrix: Water
Analysis Batch: 213773

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	-	10	-	mg/L	-	-	06/29/20 09:44	1

Lab Sample ID: LCS 550-213773/2
Matrix: Water
Analysis Batch: 213773

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1020	-	mg/L	-	102	90 - 110

Lab Sample ID: LCSD 550-213773/3
Matrix: Water
Analysis Batch: 213773

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	983	-	mg/L	-	98	90 - 110	4	10

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: 550-144001-1 DU
Matrix: Water
Analysis Batch: 213773

Client Sample ID: FC-CCR-MW07-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	8600	D2	8900	D2	mg/L		4	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-214191/1
Matrix: Water
Analysis Batch: 214191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.4	98.5 - 101.5

Lab Sample ID: LCSSRM 550-214191/13
Matrix: Water
Analysis Batch: 214191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.0	98.5 - 101.5

Lab Sample ID: LCSSRM 550-214191/25
Matrix: Water
Analysis Batch: 214191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.6	98.5 - 101.5

Lab Sample ID: 550-144000-A-11 DU
Matrix: Water
Analysis Batch: 214191

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH	7.3	H5	7.3	H5	SU		0.1	5
Temperature	10.5	H5	9.8	H5	Degrees C		7	

Lab Sample ID: 550-144001-8 DU
Matrix: Water
Analysis Batch: 214191

Client Sample ID: FC-CCR-MW87-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH	7.7	H5	7.7	H5	SU		0.3	5
Temperature	9.4	H5	9.5	H5	Degrees C		1	

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

HPLC/IC

Analysis Batch: 213563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	300.0	
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	300.0	
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	300.0	
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	300.0	
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	300.0	
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	300.0	
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	300.0	
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	300.0	
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	300.0	
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	300.0	
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	300.0	
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	300.0	
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	300.0	
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	300.0	
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	300.0	
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	300.0	
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	300.0	
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	300.0	
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	300.0	
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	300.0	
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	300.0	
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	300.0	
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	300.0	
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	300.0	
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	300.0	
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	300.0	
MB 550-213563/2	Method Blank	Total/NA	Water	300.0	
LCS 550-213563/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-213563/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-144001-2 MS	FC-CCR-MW08-0620	Total/NA	Water	300.0	
550-144001-2 MS	FC-CCR-MW08-0620	Total/NA	Water	300.0	
550-144001-2 MSD	FC-CCR-MW08-0620	Total/NA	Water	300.0	
550-144001-2 MSD	FC-CCR-MW08-0620	Total/NA	Water	300.0	

Analysis Batch: 213828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	300.0	
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	300.0	
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	300.0	
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	300.0	
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	300.0	
MB 550-213828/2	Method Blank	Total/NA	Water	300.0	
LCS 550-213828/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-213828/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-143955-D-1 MS ^10	Matrix Spike	Total/NA	Water	300.0	
550-143955-D-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	300.0	

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Metals

Prep Batch: 213493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	200.7	
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	200.7	
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	200.7	
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	200.7	
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	200.7	
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	200.7	
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	200.7	
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	200.7	
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	200.7	
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	200.7	
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	200.7	
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	200.7	
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	200.7	
MB 550-213493/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-213493/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-213493/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-144000-B-11-A MS	Matrix Spike	Total/NA	Water	200.7	
550-144000-B-11-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Prep Batch: 213589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	200.8	
550-144001-4	FC-CCR-MW52-0620	Total/NA	Water	200.8	
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	200.8	
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	200.8	
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	200.8	
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	200.8	
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	200.8	
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	200.8	
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	200.8	
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	200.8	
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	200.8	
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	200.8	
MB 550-213589/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-213589/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-213589/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-144002-A-4-A MS	Matrix Spike	Total/NA	Water	200.8	
550-144002-A-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

Prep Batch: 213871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	200.8	
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	200.8	
MB 550-213871/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-213871/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-213871/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-143979-E-2-D MS	Matrix Spike	Total/NA	Water	200.8	
550-143979-E-2-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Metals

Analysis Batch: 213945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	200.8 LL	213589
550-144001-4	FC-CCR-MW52-0620	Total/NA	Water	200.8 LL	213589
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	200.8 LL	213589
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	200.8 LL	213589
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	200.8 LL	213589
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	200.8 LL	213589
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	200.8 LL	213589
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	200.8 LL	213589
MB 550-213589/1-A	Method Blank	Total/NA	Water	200.8 LL	213589
LCS 550-213589/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	213589
LCSD 550-213589/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	213589
550-144002-A-4-A MS	Matrix Spike	Total/NA	Water	200.8 LL	213589
550-144002-A-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	213589

Analysis Batch: 213983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	200.8 LL	213589
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	200.8 LL	213589
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	200.8 LL	213589
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	200.8 LL	213589

Analysis Batch: 214049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-213871/1-A	Method Blank	Total/NA	Water	200.8 LL	213871
LCS 550-213871/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	213871
LCSD 550-213871/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	213871
550-143979-E-2-D MS	Matrix Spike	Total/NA	Water	200.8 LL	213871
550-143979-E-2-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	213871

Prep Batch: 214165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	200.8	
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	200.8	
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	200.8	
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	200.8	
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	200.8	
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	200.8	
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	200.8	
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	200.8	
MB 550-214165/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-214165/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-214165/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-144002-C-4-A MS	Matrix Spike	Total/NA	Water	200.8	
550-144002-C-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

Prep Batch: 214168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	200.8	
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	200.8	
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	200.8	
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	200.8	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Metals (Continued)

Prep Batch: 214168 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	200.8	
MB 550-214168/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-214168/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-214168/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-144000-B-1-D MS ^2	Matrix Spike	Total/NA	Water	200.8	
550-144000-B-1-E MSD ^2	Matrix Spike Duplicate	Total/NA	Water	200.8	

Analysis Batch: 214188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-213871/1-A	Method Blank	Total/NA	Water	200.8 LL	213871
LCS 550-213871/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	213871
LCSD 550-213871/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	213871
550-143979-E-2-D MS	Matrix Spike	Total/NA	Water	200.8 LL	213871
550-143979-E-2-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	213871

Analysis Batch: 214221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	200.8 LL	213871
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	200.8 LL	213871

Analysis Batch: 214261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	200.8 LL	214168
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	200.8 LL	214168
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	200.8 LL	214168
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	200.8 LL	214168
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	200.8 LL	214168
MB 550-214168/1-A	Method Blank	Total/NA	Water	200.8 LL	214168
LCS 550-214168/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	214168
LCSD 550-214168/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	214168
550-144000-B-1-D MS ^2	Matrix Spike	Total/NA	Water	200.8 LL	214168
550-144000-B-1-E MSD ^2	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	214168

Analysis Batch: 214330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	200.8 LL	214165
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	200.8 LL	214165
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	200.8 LL	214165
MB 550-214165/1-A	Method Blank	Total/NA	Water	200.8 LL	214165
LCS 550-214165/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	214165
LCSD 550-214165/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	214165
550-144002-C-4-A MS	Matrix Spike	Total/NA	Water	200.8 LL	214165
550-144002-C-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	214165

Analysis Batch: 214347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	200.8 LL	214165
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	200.8 LL	214165
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	200.8 LL	214165
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	200.8 LL	214165
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	200.8 LL	214165

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Metals

Analysis Batch: 214548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	200.8 LL	214165
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	200.8 LL	214168

Analysis Batch: 215716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	200.7 Rev 4.4	213493
MB 550-213493/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	213493
LCS 550-213493/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	213493
LCSD 550-213493/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-B-11-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-B-11-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	213493

Analysis Batch: 216161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	200.7 Rev 4.4	213493
MB 550-213493/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	213493
LCS 550-213493/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	213493
LCSD 550-213493/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-B-11-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	213493
550-144000-B-11-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	213493

Analysis Batch: 216252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	200.7 Rev 4.4	213493

Analysis Batch: 216386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	200.7 Rev 4.4	213493
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	200.7 Rev 4.4	213493

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

General Chemistry

Analysis Batch: 213528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	SM 2540C	
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	SM 2540C	
MB 550-213528/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-213528/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-213528/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-144000-A-7 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 213726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	SM 2320B	
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	SM 2320B	
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	SM 2320B	
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	SM 2320B	
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	SM 2320B	
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	SM 2320B	
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	SM 2320B	
MB 550-213726/33	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-213726/32	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-213726/45	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
160-38439-G-10 DU	Duplicate	Total/NA	Water	SM 2320B	
550-144001-13 DU	FC-CCR-MW34-0620	Total/NA	Water	SM 2320B	

Analysis Batch: 213734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	SM 2540C	
MB 550-213734/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-213734/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-213734/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-144001-7 DU	FC-CCR-MW75-0620	Total/NA	Water	SM 2540C	

Analysis Batch: 213773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	SM 2540C	
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	SM 2540C	
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	SM 2540C	
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	SM 2540C	
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	SM 2540C	
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	SM 2540C	
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	SM 2540C	
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	SM 2540C	
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	SM 2540C	
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	SM 2540C	
MB 550-213773/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-213773/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-213773/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-144001-1 DU	FC-CCR-MW07-0620	Total/NA	Water	SM 2540C	

Analysis Batch: 213873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-213873/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-213873/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

General Chemistry (Continued)

Analysis Batch: 213873 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-213873/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-143998-A-5 DU	Duplicate	Total/NA	Water	SM 2320B	

Analysis Batch: 213874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	SM 2320B	

Analysis Batch: 214191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144001-1	FC-CCR-MW07-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-2	FC-CCR-MW08-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-3	FC-CCR-MW49A-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-5	FC-CCR-MW61-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-6	FC-CCR-MW74-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-7	FC-CCR-MW75-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-8	FC-CCR-MW87-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-9	FC-CCR-FD04-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-10	FC-CCR-EW01-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-11	FC-CCR-EW05-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-12	FC-CCR-EW14-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-13	FC-CCR-MW34-0620	Total/NA	Water	SM 4500 H+ B	
550-144001-14	FC-CCR-EW15-0620	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-214191/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-214191/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-214191/25	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-144000-A-11 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	
550-144001-8 DU	FC-CCR-MW87-0620	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW07-0620

Lab Sample ID: 550-144001-1

Date Collected: 06/23/20 10:28

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/25/20 19:23	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/25/20 19:41	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215716	07/23/20 21:16	SRA	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216161	07/29/20 06:29	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214221	07/06/20 14:27	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 14:02	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
					(Start)	06/29/20 09:44		
					(End)	06/30/20 08:50		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW08-0620

Lab Sample ID: 550-144001-2

Date Collected: 06/23/20 09:34

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/25/20 17:32	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/25/20 18:28	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215716	07/23/20 21:20	SRA	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216161	07/29/20 05:21	MGM	TAL PHX
Total/NA	Prep	200.8			213871	06/30/20 09:43	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214221	07/06/20 14:29	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 14:05	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 16:53	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
					(Start)	06/29/20 09:44		
					(End)	06/30/20 08:50		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW49A-0620

Lab Sample ID: 550-144001-3

Date Collected: 06/23/20 08:23

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/25/20 20:00	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/25/20 20:18	RDC	TAL PHX
Total/NA	Analysis	300.0		50	213828	06/29/20 17:58	RDC	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW49A-0620

Lab Sample ID: 550-144001-3

Date Collected: 06/23/20 08:23

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215716	07/23/20 21:24	SRA	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216161	07/29/20 06:37	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213945	06/30/20 14:42	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214347	07/08/20 09:20	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
					(Start)	06/29/20 09:44		
					(End)	06/30/20 08:50		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW52-0620

Lab Sample ID: 550-144001-4

Date Collected: 06/20/20 13:02

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213945	06/30/20 14:44	ARE	TAL PHX

Client Sample ID: FC-CCR-MW61-0620

Lab Sample ID: 550-144001-5

Date Collected: 06/21/20 09:35

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/25/20 21:13	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/25/20 21:32	RDC	TAL PHX
Total/NA	Analysis	300.0		50	213828	06/29/20 18:26	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215716	07/23/20 21:28	SRA	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216161	07/29/20 06:41	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213945	06/30/20 14:46	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	214330	07/07/20 14:09	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW74-0620

Lab Sample ID: 550-144001-6

Date Collected: 06/20/20 11:51

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/25/20 21:50	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/25/20 22:09	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	215716	07/23/20 21:32	SRA	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216161	07/29/20 06:53	MGM	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216252	07/29/20 18:42	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213945	06/30/20 14:48	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214347	07/08/20 09:22	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213528		CMM	TAL PHX
					(Start)	06/25/20 12:11		
					(End)	06/28/20 07:10		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW75-0620

Lab Sample ID: 550-144001-7

Date Collected: 06/21/20 10:25

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/25/20 22:27	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/25/20 22:45	RDC	TAL PHX
Total/NA	Analysis	300.0		50	213828	06/29/20 18:53	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216161	07/29/20 06:57	MGM	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216252	07/29/20 18:46	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213945	06/30/20 14:51	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214347	07/08/20 09:24	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213734		DGS	TAL PHX
					(Start)	06/28/20 12:29		
					(End)	06/29/20 09:15		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW87-0620

Lab Sample ID: 550-144001-8

Date Collected: 06/23/20 15:02

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/25/20 23:04	RDC	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-MW87-0620

Lab Sample ID: 550-144001-8

Date Collected: 06/23/20 15:02

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		200	213563	06/25/20 23:22	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216161	07/29/20 05:25	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213983	07/01/20 10:53	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214347	07/08/20 09:26	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214548	07/09/20 15:15	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213874	06/30/20 10:10	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773	(Start) 06/29/20 09:44 (End) 06/30/20 08:50	DGS	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-FD04-0620

Lab Sample ID: 550-144001-9

Date Collected: 06/23/20 09:34

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/25/20 23:41	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/25/20 23:59	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216161	07/29/20 05:29	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213945	06/30/20 14:55	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214347	07/08/20 09:29	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 17:17	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773	(Start) 06/29/20 09:44 (End) 06/30/20 08:50	DGS	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-EW01-0620

Lab Sample ID: 550-144001-10

Date Collected: 06/23/20 13:00

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 02:08	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 02:26	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216161	07/29/20 05:33	MGM	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-EW01-0620

Lab Sample ID: 550-144001-10

Date Collected: 06/23/20 13:00

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213945	06/30/20 14:57	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	214261	07/07/20 10:46	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 17:27	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
					(Start)	06/29/20 09:44		
					(End)	06/30/20 08:50		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-EW05-0620

Lab Sample ID: 550-144001-11

Date Collected: 06/23/20 13:55

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 02:45	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 03:03	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216161	07/29/20 05:37	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213945	06/30/20 14:59	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	214261	07/07/20 10:48	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 17:36	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
					(Start)	06/29/20 09:44		
					(End)	06/30/20 08:50		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-EW14-0620

Lab Sample ID: 550-144001-12

Date Collected: 06/23/20 15:28

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 03:21	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 03:40	RDC	TAL PHX
Total/NA	Analysis	300.0		50	213828	06/29/20 19:20	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216161	07/29/20 05:41	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213983	07/01/20 10:55	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	214261	07/07/20 10:50	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 17:45	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
 SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-EW14-0620

Lab Sample ID: 550-144001-12

Date Collected: 06/23/20 15:28

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW34-0620

Lab Sample ID: 550-144001-13

Date Collected: 06/23/20 16:11

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 00:54	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 01:13	RDC	TAL PHX
Total/NA	Analysis	300.0		50	213828	06/29/20 19:48	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216386	07/30/20 16:49	MGM	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216386	07/30/20 17:26	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213983	07/01/20 10:57	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	214261	07/07/20 10:52	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 18:11	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
					(Start)	06/29/20 09:44		
					(End)	06/30/20 08:50		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-EW15-0620

Lab Sample ID: 550-144001-14

Date Collected: 06/23/20 17:00

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 01:31	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 01:49	RDC	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216386	07/30/20 16:53	MGM	TAL PHX
Total/NA	Prep	200.7			213493	06/25/20 08:53	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216386	07/30/20 17:30	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213983	07/01/20 11:00	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	214261	07/07/20 10:54	ARE	TAL PHX
Total/NA	Prep	200.8			214168	07/06/20 10:33	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214548	07/09/20 15:17	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 18:29	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Client Sample ID: FC-CCR-EW15-0620

Lab Sample ID: 550-144001-14

Date Collected: 06/23/20 17:00

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

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Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 2320B		Water	Alkalinity, Phenolphthalein
SM 4500 H+ B		Water	Temperature

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144001-1
SDG: APS Four Corners Power Plant (Multiunit)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
SM 2320B	Alkalinity	SM	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
 4625 E Cotton Center Blvd
 Suite 189
 Phoenix, AZ 85040
 phone 602.437.3340 fax 602.454.9303

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Arizona Public Service
 PO Box 355, MS 4915
 Fulliland, NM 87416

Client Contact
 Natalie Chrisman
 602-250-3608

Regulatory Program: DW NPDES RCRA Other: CCR

Lab Contact: Ken Baker
 (928) 288-1241

Date: 6/24/2020

TestAmerica Laboratories, Inc.
 COC No.: 1 of 2 COCs

Project Name: CCR Groundwater Monitoring
 Site: APS Four Corners Power Plant (Multiunit)
 Project # 1420202015 ****.02

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below
 2 weeks
 1 week
 2 days
 1 day

For Lab Use Only:
 Walk-in Client: _____
 Lab Sampling: _____
 Job / SDG No.: _____

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Li)	EPA 200.7 - Totals (B, Ca, Li, K, Mg, Na)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)	EPA 200.8 - Totals (Co, Mo)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)	Sample Specific Notes:
FC-CCR-MW07-0620	6/23/2020	10:28	G	W	2	N	N	X					X			Low Flow
FC-CCR-MW08-0620	6/23/2020	9:34	G	W	2	N	N	X		X			X			Low Flow
FC-CCR-MW49A-0620	6/23/2020	8:23	G	W	2	N	N	X	X				X			Low Flow
FC-CCR-MW52-0620	6/20/2020	13:02	G	W	1	N	N				X					Low Flow
FC-CCR-MW61-0620	6/21/2020	9:35	G	W	2	N	N	X	X				X			Low Flow
FC-CCR-MW74-0620	6/20/2020	11:51	G	W	2	N	N	X	X				X			Low Flow
FC-CCR-MW75-0620	6/21/2020	10:25	G	W	2	N	N	X	X				X			Low Flow
FC-CCR-MW87-0620	6/23/2020	15:02	G	W	2	N	N	X	X				X			Low Flow
FC-CCR-FD04-0620	6/23/2020	9:34	G	W	2	N	N	X	X				X			Low Flow



550-14401 Chain of Custody

Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO
Possible Hazard Identification:
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
 Method 200.8 with collision cell

Custody Seal Intact: Yes No

Relinquished by: _____ Company: _____ Date/Time: 6/24/20 15:08

Relinquished by: _____ Company: _____ Date/Time: _____

Relinquished by: _____ Company: _____ Date/Time: _____

Relinquished by: _____ Company: _____ Date/Time: _____

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposed by Lab Archive for _____ Months
 Cooler Temp. (°C): Obs'd: 1.3°C, 1.4°C, 1.3°C
 Therm ID No.: _____

TestAmerica Phoenix

4825 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

144001

Regulatory Program: DW NPDES RCRA Other: CCR

Arizona Public Service
PO Box 355, MS 4915
Fullland, NM 87415
Client Contact: Natalie Chrisman 602-250-3608
Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
TAT if different from Below: 2 weeks 1 week 2 days 1 day

Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (Mullum)
Project # 1420202015....02
Lab Contact: Ken Baker
Date: 6/24/2020
Carrier:
COC No: 2 of 2 COCs
Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C-Contn, G-grain)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Li)	EPA 200.7 - Totals (B, Ca, Li, K, Mg, Na)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)	EPA 200.8 - Totals (Co, Mo)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)	Sample Specific Notes:
FC-CCR-EW01-0620	6/23/2020	13:00	G	W	2	N	N	X	X	X	X	X	X	X	X	
FC-CCR-EW05-0620	6/23/2020	13:55	G	W	2	N	N	X	X	X	X	X	X	X	X	
FC-CCR-EW14-0620	6/23/2020	15:28	G	W	2	N	N	X	X	X	X	X	X	X	X	
FC-CCR-MMW34-0620	6/23/2020	16:11	G	W	2	N	N	X	X	X	X	X	X	X	X	
FC-CCR-EW15-0620	6/23/2020	17:00	G	W	2	N	N	X	X	X	X	X	X	X	X	

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6= Other _____
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
Special Instructions/QC Requirements & Comments: Non-hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months
Method 200.8 with collision cell

Custody Seals intact: Yes No
Reinforced by:
Reinforced by:
Reinforced by:
Cooler Temp. (°C): Obs'd: _____
Therm ID No.: _____
Company:
Date/Time:
Received by:
Date/Time:
Company:
Date/Time:
Received in Laboratory by:
Date/Time:
Company:
Date/Time:
Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-144001-1

SDG Number: APS Four Corners Power Plant (Multiunit)

Login Number: 144001

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-144002-1

Laboratory SDG: APS Four Corners Power Plant (Other)
Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Jim Edwards



Authorized for release by:
7/30/2020 1:07:26 PM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

Metals

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Job ID: 550-144002-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-144002-1

Comments

No additional comments.

Receipt

The samples were received on 6/24/2020 3:08 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.8° C, 1.3° C and 1.4° C.

HPLC/IC

Method 300.0: The following samples were diluted for Fluoride by method EPA 300.0 due to the nature of the sample matrix: FC-CCR-MW38R-0620 (550-144002-17), FC-CCR-MW57-0620 (550-144002-19) and FC-CCR-FD05-0620 (550-144002-20). These analytes were not detected in the diluted sample. As such, elevated reporting limits (RLs) have been provided and these data have been qualified with D1 and D5 flags.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-214368 contained potassium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: FC-CCR-DMX04-0620 (550-144002-2), FC-CCR-DMX06-0620 (550-144002-3), FC-CCR-MW38R-0620 (550-144002-17), FC-CCR-MW57-0620 (550-144002-19) and FC-CCR-FD05-0620 (550-144002-20). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-144002-1	FC-CCR-DMX03-0620	Water	06/22/20 08:54	06/24/20 15:08	
550-144002-2	FC-CCR-DMX04-0620	Water	06/22/20 13:00	06/24/20 15:08	
550-144002-3	FC-CCR-DMX06-0620	Water	06/23/20 12:38	06/24/20 15:08	
550-144002-4	FC-CCR-MW01-0620	Water	06/21/20 11:58	06/24/20 15:08	
550-144002-5	FC-CCR-MW03-0620	Water	06/21/20 12:40	06/24/20 15:08	
550-144002-6	FC-CCR-MW05-0620	Water	06/22/20 09:30	06/24/20 15:08	
550-144002-7	FC-CCR-MW06-0620	Water	06/23/20 13:54	06/24/20 15:08	
550-144002-8	FC-CCR-MW15-0620	Water	06/23/20 11:57	06/24/20 15:08	
550-144002-9	FC-CCR-MW16-0620	Water	06/23/20 11:15	06/24/20 15:08	
550-144002-10	FC-CCR-FD03-0620	Water	06/21/20 11:58	06/24/20 15:08	
550-144002-11	FC-CCR-MW17R0620	Water	06/22/20 12:10	06/24/20 15:08	
550-144002-12	FC-CCR-MW18-0620	Water	06/22/20 10:18	06/24/20 15:08	
550-144002-13	FC-CCR-MW19-0620	Water	06/21/20 15:37	06/24/20 15:08	
550-144002-14	FC-CCR-MW21-0620	Water	06/21/20 13:20	06/24/20 15:08	
550-144002-15	FC-CCR-MW23R-0620	Water	06/21/20 16:15	06/24/20 15:08	
550-144002-16	FC-CCR-MW36R-0620	Water	06/21/20 16:49	06/24/20 15:08	
550-144002-17	FC-CCR-MW38R-0620	Water	06/22/20 15:26	06/24/20 15:08	
550-144002-18	FC-CCR-MW56-0620	Water	06/22/20 10:54	06/24/20 15:08	
550-144002-19	FC-CCR-MW57-0620	Water	06/22/20 14:46	06/24/20 15:08	
550-144002-20	FC-CCR-FD05-0620	Water	06/22/20 15:26	06/24/20 15:08	
550-144002-21	FC-CCR-MW60-0620	Water	06/21/20 11:11	06/24/20 15:08	
550-144002-22	FC-CCR-MW78S-0620	Water	06/21/20 14:00	06/24/20 15:08	
550-144002-23	FC-CCR-MW81-0620	Water	06/21/20 14:32	06/24/20 15:08	
550-144002-24	FC-CCR-MW82S-0620	Water	06/21/20 15:06	06/24/20 15:08	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-DMX03-0620

Lab Sample ID: 550-144002-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.0043	D1	0.0010	mg/L	2		200.8 LL	Total/NA

Client Sample ID: FC-CCR-DMX04-0620

Lab Sample ID: 550-144002-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	490	D2	400	mg/L	200		300.0	Total/NA
Sulfate	7400	D2	400	mg/L	200		300.0	Total/NA
Boron	1.3		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	410	M3	2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.89		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.0088	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0080	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0036	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Thallium	0.00023	D1	0.00020	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	12000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-DMX06-0620

Lab Sample ID: 550-144002-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	880	D2	400	mg/L	200		300.0	Total/NA
Sulfate	8000	D2	400	mg/L	200		300.0	Total/NA
Boron	6.0		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	350		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	1.2		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	510		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	48		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3100	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.010	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00027	D1	0.00020	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0080	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	480		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	480		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	13000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW01-0620

Lab Sample ID: 550-144002-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.073		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.045		0.00050	mg/L	1		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW03-0620

Lab Sample ID: 550-144002-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.0037	D1	0.0010	mg/L	2		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW05-0620

Lab Sample ID: 550-144002-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0069	D1	0.0010	mg/L	2		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW05-0620 (Continued)

Lab Sample ID: 550-144002-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.0042	D1	0.0010	mg/L	2		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW06-0620

Lab Sample ID: 550-144002-7

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2200	D2	400	mg/L	200		300.0	Total/NA
Sulfate	18000	D2	400	mg/L	200		300.0	Total/NA
Boron	5.9		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	520		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	2.7		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0025	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.019	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0025	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0042	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	29000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW15-0620

Lab Sample ID: 550-144002-8

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	990	D2	400	mg/L	200		300.0	Total/NA
Sulfate	6600	D2	400	mg/L	200		300.0	Total/NA
Boron	8.8		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	1.2		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0010	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.019	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0016	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0018	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	12000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.0	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW16-0620

Lab Sample ID: 550-144002-9

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	870	D2	400	mg/L	200		300.0	Total/NA
Sulfate	12000	D2	400	mg/L	200		300.0	Total/NA
Boron	7.8		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	430		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	1.8		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0026	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.019	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0068	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.037	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Thallium	0.00051	D1	0.00020	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	18000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-FD03-0620

Lab Sample ID: 550-144002-10

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.073	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.041	D1	0.0010	mg/L	2		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW17R0620

Lab Sample ID: 550-144002-11

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	380	D2	100	mg/L	50		300.0	Total/NA
Sulfate	3900	D2	400	mg/L	200		300.0	Total/NA
Boron	36		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.55		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.016	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.0014	D1	0.00020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.062	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Lead	0.0025	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0069	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Thallium	0.00036	D1	0.00020	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	6100	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW18-0620

Lab Sample ID: 550-144002-12

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.011	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0022	D1	0.0010	mg/L	2		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW19-0620

Lab Sample ID: 550-144002-13

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0015	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.014	D1	0.0010	mg/L	2		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW21-0620

Lab Sample ID: 550-144002-14

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0046	D1	0.0040	mg/L	8		200.8 LL	Total/NA
Molybdenum	0.0053	D1	0.0020	mg/L	4		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW23R-0620

Lab Sample ID: 550-144002-15

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.019	D1	0.0010	mg/L	2		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW36R-0620

Lab Sample ID: 550-144002-16

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.26	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0013	D1	0.0010	mg/L	2		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW38R-0620

Lab Sample ID: 550-144002-17

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	290	D1	4.0	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW38R-0620 (Continued)

Lab Sample ID: 550-144002-17

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	3700	D2	400	mg/L	200		300.0	Total/NA
Boron	29		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	450		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.49		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	290		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	20		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	920	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.014	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cobalt	0.24	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0057	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	120		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	120		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	5600	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW56-0620

Lab Sample ID: 550-144002-18

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2000	D2	400	mg/L	200		300.0	Total/NA
Sulfate	16000	D2	400	mg/L	200		300.0	Total/NA
Boron	2.2	D1	0.50	mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	460	D1	20	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0053	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Barium	0.017	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0045	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Selenium	0.30	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Thallium	0.0011	D1	0.00040	mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	28000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW57-0620

Lab Sample ID: 550-144002-19

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	430	D2	400	mg/L	200		300.0	Total/NA
Sulfate	7500	D2	400	mg/L	200		300.0	Total/NA
Boron	1.3		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	410		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.97		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	700		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	46		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1900	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.016	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0020	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0064	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Alkalinity as CaCO3	400		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	400		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	11000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-FD05-0620

Lab Sample ID: 550-144002-20

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	290	D1	4.0	mg/L	2		300.0	Total/NA
Sulfate	3800	D2	400	mg/L	200		300.0	Total/NA
Boron	30		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.49		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	300		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	19		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	910	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.016	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cobalt	0.28	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0063	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Alkalinity as CaCO3	130		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	130		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	5400	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW60-0620

Lab Sample ID: 550-144002-21

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.24	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.18	D1	0.0020	mg/L	4		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW78S-0620

Lab Sample ID: 550-144002-22

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0063	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.039	D1	0.0020	mg/L	4		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW81-0620

Lab Sample ID: 550-144002-23

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.021	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.027	D1	0.0020	mg/L	4		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW82S-0620

Lab Sample ID: 550-144002-24

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.13	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0044	D1	0.0020	mg/L	4		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-DMX03-0620

Lab Sample ID: 550-144002-1

Date Collected: 06/22/20 08:54

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:06	2
Molybdenum	0.0043	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:06	2

Client Sample ID: FC-CCR-DMX04-0620

Lab Sample ID: 550-144002-2

Date Collected: 06/22/20 13:00

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	490	D2	400	mg/L			06/26/20 04:53	200
Fluoride	ND	D1 D5	0.80	mg/L			06/26/20 04:35	2
Sulfate	7400	D2	400	mg/L			06/26/20 04:53	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.050	mg/L		06/25/20 08:59	07/08/20 08:29	1
Calcium	410	M3	2.0	mg/L		06/25/20 08:59	07/30/20 01:07	1
Lithium	0.89		0.20	mg/L		06/25/20 08:59	07/30/20 01:07	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		06/26/20 05:22	07/01/20 11:08	2
Arsenic	ND	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:08	2
Barium	0.0088	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:35	2
Cadmium	ND	D1	0.00020	mg/L		06/26/20 05:22	07/01/20 11:08	2
Chromium	ND	D1	0.0020	mg/L		06/26/20 05:22	07/01/20 11:08	2
Cobalt	ND	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:08	2
Lead	ND	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:08	2
Molybdenum	0.0080	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:08	2
Selenium	0.0036	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:35	2
Thallium	0.00023	D1	0.00020	mg/L		06/26/20 05:22	07/01/20 11:08	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	12000	D2	100	mg/L			06/28/20 12:29	1
pH	7.7	H5	1.7	SU			07/06/20 12:45	1
Temperature	10.6	H5	0.1	Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-DMX06-0620

Lab Sample ID: 550-144002-3

Date Collected: 06/23/20 12:38

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	880	D2	400	mg/L			06/26/20 05:30	200
Fluoride	ND	D1 D5	0.80	mg/L			06/26/20 05:12	2
Sulfate	8000	D2	400	mg/L			06/26/20 05:30	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	6.0		0.050	mg/L		06/25/20 08:59	07/08/20 08:33	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-DMX06-0620

Lab Sample ID: 550-144002-3

Date Collected: 06/23/20 12:38

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	350		2.0	mg/L		06/25/20 08:59	07/30/20 01:11	1
Lithium	1.2		0.20	mg/L		06/25/20 08:59	07/30/20 01:11	1
Magnesium	510		2.0	mg/L		06/25/20 08:59	07/30/20 01:11	1
Potassium	48		0.50	mg/L		06/25/20 08:59	07/08/20 08:33	1
Sodium	3100	D2	5.0	mg/L		06/25/20 08:59	07/30/20 00:15	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		06/26/20 05:22	07/01/20 11:10	2
Arsenic	ND	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:10	2
Barium	0.010	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:37	2
Cadmium	0.00027	D1	0.00020	mg/L		06/26/20 05:22	07/01/20 11:10	2
Chromium	ND	D1	0.0020	mg/L		06/26/20 05:22	07/01/20 11:10	2
Cobalt	ND	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:10	2
Lead	ND	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:10	2
Molybdenum	0.0080	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:10	2
Selenium	ND	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:37	2
Thallium	ND	D1	0.00020	mg/L		06/26/20 05:22	07/01/20 11:10	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	480		6.0	mg/L			06/27/20 13:29	1
Bicarbonate Alkalinity as CaCO3	480		6.0	mg/L			06/27/20 13:29	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 13:29	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/27/20 13:29	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 13:29	1
Total Dissolved Solids	13000	D2	100	mg/L			06/29/20 09:44	1
pH	7.3	H5	1.7	SU			07/06/20 12:45	1
Temperature	10.3	H5	0.1	Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW01-0620

Lab Sample ID: 550-144002-4

Date Collected: 06/21/20 11:58

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.073		0.00050	mg/L		06/26/20 05:22	06/30/20 14:40	1
Molybdenum	0.045		0.00050	mg/L		06/26/20 05:22	06/30/20 14:40	1

Client Sample ID: FC-CCR-MW03-0620

Lab Sample ID: 550-144002-5

Date Collected: 06/21/20 12:40

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:12	2
Molybdenum	0.0037	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:12	2

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW05-0620

Lab Sample ID: 550-144002-6

Date Collected: 06/22/20 09:30

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0069	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:14	2
Molybdenum	0.0042	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:14	2

Client Sample ID: FC-CCR-MW06-0620

Lab Sample ID: 550-144002-7

Date Collected: 06/23/20 13:54

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2200	D2	400	mg/L			06/26/20 06:07	200
Fluoride	ND	D1 D5	0.80	mg/L			06/26/20 05:49	2
Sulfate	18000	D2	400	mg/L			06/26/20 06:07	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	5.9		0.050	mg/L		06/25/20 08:59	07/08/20 08:37	1
Calcium	520		2.0	mg/L		06/25/20 08:59	07/30/20 01:15	1
Lithium	2.7		0.20	mg/L		06/25/20 08:59	07/30/20 01:15	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		06/26/20 05:22	07/01/20 11:16	2
Arsenic	0.0025	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:16	2
Barium	0.019	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:39	2
Cadmium	ND	D1	0.00020	mg/L		06/26/20 05:22	07/01/20 11:16	2
Chromium	ND	D1	0.0020	mg/L		06/26/20 05:22	07/01/20 11:16	2
Cobalt	0.0025	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:16	2
Lead	ND	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:16	2
Molybdenum	0.0042	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:16	2
Selenium	ND	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:39	2
Thallium	ND	D1	0.00020	mg/L		06/26/20 05:22	07/01/20 11:16	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	29000	D2	200	mg/L			06/29/20 09:44	1
pH	7.5	H5	1.7	SU			07/06/20 12:45	1
Temperature	10.3	H5	0.1	Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW15-0620

Lab Sample ID: 550-144002-8

Date Collected: 06/23/20 11:57

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	990	D2	400	mg/L			06/26/20 06:44	200
Fluoride	ND	D1 D5	0.80	mg/L			06/26/20 06:25	2
Sulfate	6600	D2	400	mg/L			06/26/20 06:44	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	8.8		0.050	mg/L		06/25/20 08:59	07/08/20 08:41	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW15-0620

Lab Sample ID: 550-144002-8

Date Collected: 06/23/20 11:57

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	440		2.0	mg/L		06/25/20 08:59	07/30/20 01:19	1
Lithium	1.2		0.20	mg/L		06/25/20 08:59	07/30/20 01:19	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		06/26/20 05:22	07/01/20 11:18	2
Arsenic	0.0010	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:18	2
Barium	0.019	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:42	2
Cadmium	ND	D1	0.00020	mg/L		06/26/20 05:22	07/01/20 11:18	2
Chromium	ND	D1	0.0020	mg/L		06/26/20 05:22	07/01/20 11:18	2
Cobalt	0.0016	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:18	2
Lead	ND	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:18	2
Molybdenum	0.0018	D1	0.0010	mg/L		06/26/20 05:22	07/01/20 11:18	2
Selenium	ND	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:42	2
Thallium	ND	D1	0.00020	mg/L		06/26/20 05:22	07/01/20 11:18	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	12000	D2	100	mg/L			06/29/20 09:44	1
pH	7.0	H5	1.7	SU			07/06/20 12:45	1
Temperature	9.5	H5	0.1	Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW16-0620

Lab Sample ID: 550-144002-9

Date Collected: 06/23/20 11:15

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	870	D2	400	mg/L			06/26/20 07:21	200
Fluoride	ND	D1 D5	0.80	mg/L			06/26/20 07:02	2
Sulfate	12000	D2	400	mg/L			06/26/20 07:21	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	7.8		0.050	mg/L		06/25/20 08:59	07/08/20 08:45	1
Calcium	430		2.0	mg/L		06/25/20 08:59	07/30/20 01:23	1
Lithium	1.8		0.20	mg/L		06/25/20 08:59	07/30/20 01:23	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		06/26/20 05:34	07/01/20 11:37	2
Arsenic	0.0026	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:37	2
Barium	0.019	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:44	2
Cadmium	ND	D1	0.00020	mg/L		06/26/20 05:34	07/01/20 11:37	2
Chromium	ND	D1	0.0020	mg/L		06/26/20 05:34	07/01/20 11:37	2
Cobalt	0.0068	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:37	2
Lead	ND	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:37	2
Molybdenum	ND	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:37	2
Selenium	0.037	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 14:48	2
Thallium	0.00051	D1	0.00020	mg/L		06/26/20 05:34	07/01/20 11:37	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW16-0620

Lab Sample ID: 550-144002-9

Date Collected: 06/23/20 11:15

Matrix: Water

Date Received: 06/24/20 15:08

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	18000	D2	200	mg/L			06/29/20 09:46	1
pH	7.3	H5	1.7	SU			07/06/20 12:45	1
Temperature	10.3	H5	0.1	Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-FD03-0620

Lab Sample ID: 550-144002-10

Date Collected: 06/21/20 11:58

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.073	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:39	2
Molybdenum	0.041	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:39	2

Client Sample ID: FC-CCR-MW17R0620

Lab Sample ID: 550-144002-11

Date Collected: 06/22/20 12:10

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	380	D2	100	mg/L			06/29/20 20:15	50
Fluoride	ND	D1 D5	0.80	mg/L			06/26/20 08:53	2
Sulfate	3900	D2	400	mg/L			06/26/20 09:11	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	36		0.050	mg/L		06/25/20 08:59	07/08/20 08:49	1
Calcium	440		2.0	mg/L		06/25/20 08:59	07/30/20 01:27	1
Lithium	0.55		0.20	mg/L		06/25/20 08:59	07/30/20 01:27	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		06/26/20 05:34	07/01/20 11:35	2
Arsenic	ND	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:35	2
Barium	0.016	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:46	2
Cadmium	0.0014	D1	0.00020	mg/L		06/26/20 05:34	07/01/20 11:35	2
Chromium	ND	D1	0.0020	mg/L		06/26/20 05:34	07/01/20 11:35	2
Cobalt	0.062	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:35	2
Lead	0.0025	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:35	2
Molybdenum	0.0069	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:35	2
Selenium	ND	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 14:45	2
Thallium	0.00036	D1	0.00020	mg/L		06/26/20 05:34	07/01/20 11:35	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6100	D2	100	mg/L			06/28/20 12:29	1
pH	7.5	H5	1.7	SU			07/06/20 12:45	1
Temperature	10.5	H5	0.1	Degrees C			07/06/20 12:45	1

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW18-0620

Lab Sample ID: 550-144002-12

Date Collected: 06/22/20 10:18

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.011	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:41	2
Molybdenum	0.0022	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:41	2

Client Sample ID: FC-CCR-MW19-0620

Lab Sample ID: 550-144002-13

Date Collected: 06/21/20 15:37

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0015	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:43	2
Molybdenum	0.014	D1	0.0010	mg/L		06/26/20 05:34	07/01/20 11:43	2

Client Sample ID: FC-CCR-MW21-0620

Lab Sample ID: 550-144002-14

Date Collected: 06/21/20 13:20

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0046	D1	0.0040	mg/L		06/26/20 05:34	07/07/20 10:21	8
Molybdenum	0.0053	D1	0.0020	mg/L		06/26/20 05:34	07/07/20 09:44	4

Client Sample ID: FC-CCR-MW23R-0620

Lab Sample ID: 550-144002-15

Date Collected: 06/21/20 16:15

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 15:02	2
Molybdenum	0.019	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 15:02	2

Client Sample ID: FC-CCR-MW36R-0620

Lab Sample ID: 550-144002-16

Date Collected: 06/21/20 16:49

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.26	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 15:04	2
Molybdenum	0.0013	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 15:04	2

Client Sample ID: FC-CCR-MW38R-0620

Lab Sample ID: 550-144002-17

Date Collected: 06/22/20 15:26

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	290	D1	4.0	mg/L			06/26/20 00:40	2
Fluoride	ND	D1 D5	0.80	mg/L			06/26/20 00:40	2
Sulfate	3700	D2	400	mg/L			06/26/20 01:07	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	29		0.050	mg/L		06/25/20 08:59	07/08/20 08:53	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW38R-0620

Lab Sample ID: 550-144002-17

Date Collected: 06/22/20 15:26

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	450		2.0	mg/L		06/25/20 08:59	07/30/20 01:31	1
Lithium	0.49		0.20	mg/L		06/25/20 08:59	07/30/20 01:31	1
Magnesium	290		2.0	mg/L		06/25/20 08:59	07/30/20 01:31	1
Potassium	20		0.50	mg/L		06/25/20 08:59	07/08/20 08:53	1
Sodium	920	D2	5.0	mg/L		06/25/20 08:59	07/30/20 00:35	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:06	2
Arsenic	ND	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 15:06	2
Barium	0.014	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:48	2
Cadmium	ND	D1	0.00020	mg/L		06/26/20 05:34	07/06/20 15:06	2
Chromium	ND	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:06	2
Cobalt	0.24	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 15:06	2
Lead	ND	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 15:06	2
Molybdenum	0.0057	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 15:06	2
Selenium	ND	D1	0.0010	mg/L		06/26/20 05:34	07/06/20 15:06	2
Thallium	ND	D1	0.00020	mg/L		06/26/20 05:34	07/06/20 15:06	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	120		6.0	mg/L			06/27/20 13:37	1
Bicarbonate Alkalinity as CaCO3	120		6.0	mg/L			06/27/20 13:37	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 13:37	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/27/20 13:37	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 13:37	1
Total Dissolved Solids	5600	D2	100	mg/L			06/28/20 12:29	1
pH	7.2	H5	1.7	SU			07/06/20 12:45	1
Temperature	10.2	H5	0.1	Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW56-0620

Lab Sample ID: 550-144002-18

Date Collected: 06/22/20 10:54

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	D2	400	mg/L			06/26/20 08:34	200
Fluoride	ND	D1 D5	0.80	mg/L			06/26/20 08:16	2
Sulfate	16000	D2	400	mg/L			06/26/20 08:34	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.2	D1	0.50	mg/L		06/25/20 08:59	07/30/20 00:39	10
Calcium	460	D1	20	mg/L		06/25/20 08:59	07/30/20 00:39	10
Lithium	ND	D1	2.0	mg/L		06/25/20 08:59	07/30/20 00:39	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040	mg/L		06/26/20 05:34	07/06/20 15:08	4
Arsenic	0.0053	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:08	4
Barium	0.017	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:50	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW56-0620

Lab Sample ID: 550-144002-18

Date Collected: 06/22/20 10:54

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	D1	0.00040	mg/L		06/26/20 05:34	07/06/20 15:08	4
Chromium	ND	D1	0.0040	mg/L		06/26/20 05:34	07/06/20 15:08	4
Cobalt	ND	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:08	4
Lead	ND	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:08	4
Molybdenum	0.0045	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:08	4
Selenium	0.30	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:08	4
Thallium	0.0011	D1	0.00040	mg/L		06/26/20 05:34	07/06/20 15:08	4

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	28000	D2	200	mg/L			06/28/20 12:29	1
pH	7.1	H5	1.7	SU			07/06/20 12:45	1
Temperature	10.5	H5	0.1	Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-MW57-0620

Lab Sample ID: 550-144002-19

Date Collected: 06/22/20 14:46

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	430	D2	400	mg/L			06/26/20 02:02	200
Fluoride	ND	D1 D5	0.80	mg/L			06/26/20 01:35	2
Sulfate	7500	D2	400	mg/L			06/26/20 02:02	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.050	mg/L		06/25/20 08:59	07/08/20 09:01	1
Calcium	410		2.0	mg/L		06/25/20 08:59	07/30/20 01:35	1
Lithium	0.97		0.20	mg/L		06/25/20 08:59	07/30/20 01:35	1
Magnesium	700		2.0	mg/L		06/25/20 08:59	07/30/20 01:35	1
Potassium	46		0.50	mg/L		06/25/20 08:59	07/08/20 09:01	1
Sodium	1900	D2	5.0	mg/L		06/25/20 08:59	07/30/20 00:43	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040	mg/L		06/26/20 05:34	07/06/20 15:10	4
Arsenic	ND	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:10	4
Barium	0.016	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:52	2
Cadmium	ND	D1	0.00040	mg/L		06/26/20 05:34	07/06/20 15:10	4
Chromium	ND	D1	0.0040	mg/L		06/26/20 05:34	07/06/20 15:10	4
Cobalt	0.0020	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:10	4
Lead	ND	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:10	4
Molybdenum	0.0064	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:10	4
Selenium	ND	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:10	4
Thallium	ND	D1	0.00040	mg/L		06/26/20 05:34	07/06/20 15:10	4

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	400		6.0	mg/L			06/27/20 13:48	1
Bicarbonate Alkalinity as CaCO3	400		6.0	mg/L			06/27/20 13:48	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 13:48	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW57-0620

Lab Sample ID: 550-144002-19

Date Collected: 06/22/20 14:46

Matrix: Water

Date Received: 06/24/20 15:08

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/27/20 13:48	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 13:48	1
Total Dissolved Solids	11000	D2	100	mg/L			06/28/20 12:29	1
pH	7.5	H5	1.7	SU			07/06/20 12:45	1
Temperature	10.4	H5	0.1	Degrees C			07/06/20 12:45	1

Client Sample ID: FC-CCR-FD05-0620

Lab Sample ID: 550-144002-20

Date Collected: 06/22/20 15:26

Matrix: Water

Date Received: 06/24/20 15:08

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	290	D1	4.0	mg/L			06/26/20 02:29	2
Fluoride	ND	D1 D5	0.80	mg/L			06/26/20 02:29	2
Sulfate	3800	D2	400	mg/L			06/26/20 02:57	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	30		0.050	mg/L		06/25/20 08:59	07/08/20 09:05	1
Calcium	440		2.0	mg/L		06/25/20 08:59	07/30/20 01:39	1
Lithium	0.49		0.20	mg/L		06/25/20 08:59	07/30/20 01:39	1
Magnesium	300		2.0	mg/L		06/25/20 08:59	07/30/20 01:39	1
Potassium	19		0.50	mg/L		06/25/20 08:59	07/08/20 09:05	1
Sodium	910	D2	5.0	mg/L		06/25/20 08:59	07/30/20 00:47	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040	mg/L		06/26/20 05:34	07/06/20 15:13	4
Arsenic	ND	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:13	4
Barium	0.016	D1	0.0010	mg/L		07/06/20 10:22	07/07/20 13:54	2
Cadmium	ND	D1	0.00040	mg/L		06/26/20 05:34	07/06/20 15:13	4
Chromium	ND	D1	0.0040	mg/L		06/26/20 05:34	07/06/20 15:13	4
Cobalt	0.28	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:13	4
Lead	ND	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:13	4
Molybdenum	0.0063	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:13	4
Selenium	ND	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:13	4
Thallium	ND	D1	0.00040	mg/L		06/26/20 05:34	07/06/20 15:13	4

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	130		6.0	mg/L			06/27/20 14:14	1
Bicarbonate Alkalinity as CaCO3	130		6.0	mg/L			06/27/20 14:14	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 14:14	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/27/20 14:14	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 14:14	1
Total Dissolved Solids	5400	D2	100	mg/L			06/28/20 12:29	1
pH	7.4	H5	1.7	SU			07/06/20 12:45	1
Temperature	10.4	H5	0.1	Degrees C			07/06/20 12:45	1

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW60-0620

Lab Sample ID: 550-144002-21

Date Collected: 06/21/20 11:11

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.24	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:15	4
Molybdenum	0.18	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:15	4

Client Sample ID: FC-CCR-MW78S-0620

Lab Sample ID: 550-144002-22

Date Collected: 06/21/20 14:00

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0063	D1	0.0020	mg/L		06/26/20 05:34	07/07/20 09:46	4
Molybdenum	0.039	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:17	4

Client Sample ID: FC-CCR-MW81-0620

Lab Sample ID: 550-144002-23

Date Collected: 06/21/20 14:32

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.021	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:19	4
Molybdenum	0.027	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:19	4

Client Sample ID: FC-CCR-MW82S-0620

Lab Sample ID: 550-144002-24

Date Collected: 06/21/20 15:06

Matrix: Water

Date Received: 06/24/20 15:08

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.13	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:21	4
Molybdenum	0.0044	D1	0.0020	mg/L		06/26/20 05:34	07/06/20 15:21	4

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-213563/2
Matrix: Water
Analysis Batch: 213563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			06/25/20 16:00	1
Fluoride	ND		0.40	mg/L			06/25/20 16:00	1
Sulfate	ND		2.0	mg/L			06/25/20 16:00	1

Lab Sample ID: LCS 550-213563/5
Matrix: Water
Analysis Batch: 213563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.6		mg/L		103	90 - 110
Fluoride	4.00	3.84		mg/L		96	90 - 110
Sulfate	20.0	20.5		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-213563/6
Matrix: Water
Analysis Batch: 213563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.7		mg/L		103	90 - 110	1	20
Fluoride	4.00	3.86		mg/L		97	90 - 110	1	20
Sulfate	20.0	20.4		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-144001-A-2 MS ^2
Matrix: Water
Analysis Batch: 213563

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND	M2 D5 R13 D1	8.00	1.67	D1 M2	mg/L		15	80 - 120

Lab Sample ID: 550-144001-A-2 MS ^200
Matrix: Water
Analysis Batch: 213563

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1000	D2	4000	5320	D2	mg/L		107	80 - 120
Sulfate	9500	D2	4000	13500	D2	mg/L		100	80 - 120

Lab Sample ID: 550-144001-A-2 MSD ^2
Matrix: Water
Analysis Batch: 213563

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	ND	M2 D5 R13 D1	8.00	2.54	D1 M2 R13	mg/L		26	80 - 120	41	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-144001-A-2 MSD ^200
Matrix: Water
Analysis Batch: 213563

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1000	D2	4000	5350	D2	mg/L		108	80 - 120	1	20
Sulfate	9500	D2	4000	13400	D2	mg/L		97	80 - 120	1	20

Lab Sample ID: MB 550-213564/2
Matrix: Water
Analysis Batch: 213564

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			06/25/20 14:37	1
Fluoride	ND		0.40	mg/L			06/25/20 14:37	1
Sulfate	ND		2.0	mg/L			06/25/20 14:37	1

Lab Sample ID: LCS 550-213564/5
Matrix: Water
Analysis Batch: 213564

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.8		mg/L		104	90 - 110
Fluoride	4.00	4.13		mg/L		103	90 - 110
Sulfate	20.0	20.7		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-213564/6
Matrix: Water
Analysis Batch: 213564

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.8		mg/L		104	90 - 110	0	20
Fluoride	4.00	4.13		mg/L		103	90 - 110	0	20
Sulfate	20.0	20.7		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-144010-A-1 MS
Matrix: Water
Analysis Batch: 213564

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		20.0	21.1		mg/L		105	80 - 120
Fluoride	ND		4.00	4.17		mg/L		104	80 - 120
Sulfate	ND		20.0	21.3		mg/L		104	80 - 120

Lab Sample ID: 550-144010-A-1 MSD
Matrix: Water
Analysis Batch: 213564

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	ND		20.0	21.2		mg/L		106	80 - 120	0	20
Fluoride	ND		4.00	4.19		mg/L		105	80 - 120	0	20
Sulfate	ND		20.0	21.4		mg/L		105	80 - 120	0	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-213828/2
Matrix: Water
Analysis Batch: 213828

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			06/29/20 13:52	1
Fluoride	ND		0.40	mg/L			06/29/20 13:52	1
Sulfate	ND		2.0	mg/L			06/29/20 13:52	1

Lab Sample ID: LCS 550-213828/5
Matrix: Water
Analysis Batch: 213828

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.7		mg/L		104	90 - 110
Fluoride	4.00	4.13		mg/L		103	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-213828/6
Matrix: Water
Analysis Batch: 213828

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.7		mg/L		104	90 - 110	0	20
Fluoride	4.00	4.13		mg/L		103	90 - 110	0	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-143955-D-1 MS ^10
Matrix: Water
Analysis Batch: 213828

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	380	D2	200	609	D2	mg/L		117	80 - 120
Fluoride	ND	D5 D1	40.0	42.1	D1	mg/L		105	80 - 120
Sulfate	250	D2	200	466	D2	mg/L		109	80 - 120

Lab Sample ID: 550-143955-D-1 MSD ^10
Matrix: Water
Analysis Batch: 213828

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	380	D2	200	600	D2	mg/L		112	80 - 120	1	20
Fluoride	ND	D5 D1	40.0	42.1	D1	mg/L		105	80 - 120	0	20
Sulfate	250	D2	200	460	D2	mg/L		106	80 - 120	1	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-213495/1-A
Matrix: Water
Analysis Batch: 214368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213495

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	mg/L		06/25/20 08:59	07/08/20 08:09	1
Potassium	ND		0.50	mg/L		06/25/20 08:59	07/08/20 08:09	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 550-213495/1-A
Matrix: Water
Analysis Batch: 216257

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213495

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	mg/L		06/25/20 08:59	07/29/20 23:51	1
Calcium	ND		2.0	mg/L		06/25/20 08:59	07/29/20 23:51	1
Lithium	ND		0.20	mg/L		06/25/20 08:59	07/29/20 23:51	1
Magnesium	ND		2.0	mg/L		06/25/20 08:59	07/29/20 23:51	1
Potassium	ND		0.50	mg/L		06/25/20 08:59	07/29/20 23:51	1
Sodium	ND		0.50	mg/L		06/25/20 08:59	07/29/20 23:51	1

Lab Sample ID: LCS 550-213495/2-A
Matrix: Water
Analysis Batch: 214368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213495

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	1.02		mg/L		102	85 - 115
Potassium	20.0	19.8		mg/L		99	85 - 115

Lab Sample ID: LCS 550-213495/2-A
Matrix: Water
Analysis Batch: 216257

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213495

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	0.983		mg/L		98	85 - 115
Calcium	21.0	21.2		mg/L		101	85 - 115
Lithium	1.00	0.935		mg/L		94	85 - 115
Magnesium	21.0	21.2		mg/L		101	85 - 115
Potassium	20.0	19.9		mg/L		99	85 - 115
Sodium	20.0	20.3		mg/L		101	85 - 115

Lab Sample ID: LCSD 550-213495/3-A
Matrix: Water
Analysis Batch: 214368

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213495

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	1.00	1.03		mg/L		103	85 - 115	1	20
Potassium	20.0	20.3		mg/L		101	85 - 115	2	20

Lab Sample ID: LCSD 550-213495/3-A
Matrix: Water
Analysis Batch: 216257

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213495

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	1.00	1.01		mg/L		101	85 - 115	3	20
Calcium	21.0	21.5		mg/L		102	85 - 115	1	20
Lithium	1.00	0.953		mg/L		95	85 - 115	2	20
Magnesium	21.0	21.6		mg/L		103	85 - 115	2	20
Potassium	20.0	20.2		mg/L		101	85 - 115	2	20
Sodium	20.0	20.7		mg/L		103	85 - 115	2	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-144002-2 MS
Matrix: Water
Analysis Batch: 214368

Client Sample ID: FC-CCR-DMX04-0620
Prep Type: Total/NA
Prep Batch: 213495

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Boron	1.3		1.00	2.32		mg/L		102	70 - 130
Potassium	40		20.0	61.4		mg/L		107	70 - 130

Lab Sample ID: 550-144002-2 MS
Matrix: Water
Analysis Batch: 216257

Client Sample ID: FC-CCR-DMX04-0620
Prep Type: Total/NA
Prep Batch: 213495

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Boron	1.3	D2	1.00	2.29		mg/L		100	70 - 130
Calcium	420	M3 D2	21.0	415	M3	mg/L		-40	70 - 130
Lithium	ND	D2	1.00	ND		mg/L		84	70 - 130
Magnesium	730	M3 D2	21.0	698	M3	mg/L		-140	70 - 130
Potassium	35	D2	20.0	52.3		mg/L		86	70 - 130
Sodium	1900	M3 D2	20.0	1790	M3	mg/L		-511	70 - 130

Lab Sample ID: 550-144002-2 MS
Matrix: Water
Analysis Batch: 216257

Client Sample ID: FC-CCR-DMX04-0620
Prep Type: Total/NA
Prep Batch: 213495

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Boron	1.3		1.00	2.26		mg/L		100	70 - 130
Calcium	410	M3	21.0	411	M3	mg/L		-2	70 - 130
Lithium	0.89		1.00	1.93		mg/L		105	70 - 130
Magnesium	750	M3	21.0	729	M3	mg/L		-78	70 - 130
Potassium	40		20.0	61.2		mg/L		104	70 - 130

Lab Sample ID: 550-144002-2 MSD
Matrix: Water
Analysis Batch: 214368

Client Sample ID: FC-CCR-DMX04-0620
Prep Type: Total/NA
Prep Batch: 213495

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Boron	1.3		1.00	2.35		mg/L		105	70 - 130	1	20
Potassium	40		20.0	60.6		mg/L		103	70 - 130	1	20

Lab Sample ID: 550-144002-2 MSD
Matrix: Water
Analysis Batch: 216257

Client Sample ID: FC-CCR-DMX04-0620
Prep Type: Total/NA
Prep Batch: 213495

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Boron	1.3	D2	1.00	2.27		mg/L		98	70 - 130	1	20
Calcium	420	M3 D2	21.0	421	M3	mg/L		-12	70 - 130	1	20
Lithium	ND	D2	1.00	ND		mg/L		87	70 - 130	2	20
Magnesium	730	M3 D2	21.0	708	M3	mg/L		-95	70 - 130	1	20
Potassium	35	D2	20.0	52.8		mg/L		88	70 - 130	1	20
Sodium	1900	M3 D2	20.0	1810	M3	mg/L		-404	70 - 130	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-144002-2 MSD
Matrix: Water
Analysis Batch: 216257

Client Sample ID: FC-CCR-DMX04-0620
Prep Type: Total/NA
Prep Batch: 213495

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Boron	1.3		1.00	2.26		mg/L		100	70 - 130	0	20
Calcium	410	M3	21.0	435	M3	mg/L		113	70 - 130	6	20
Lithium	0.89		1.00	2.06		mg/L		117	70 - 130	6	20
Magnesium	750	M3	21.0	774	M3	mg/L		132	70 - 130	6	20
Potassium	40		20.0	64.8		mg/L		122	70 - 130	6	20

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-213589/1-A
Matrix: Water
Analysis Batch: 213945

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213589

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Antimony	ND		0.0010	mg/L		06/26/20 05:22	06/30/20 14:30	1
Arsenic	ND		0.00050	mg/L		06/26/20 05:22	06/30/20 14:30	1
Cadmium	ND		0.00010	mg/L		06/26/20 05:22	06/30/20 14:30	1
Chromium	ND		0.0010	mg/L		06/26/20 05:22	06/30/20 14:30	1
Cobalt	ND		0.00050	mg/L		06/26/20 05:22	06/30/20 14:30	1
Lead	ND		0.00050	mg/L		06/26/20 05:22	06/30/20 14:30	1
Molybdenum	ND		0.00050	mg/L		06/26/20 05:22	06/30/20 14:30	1
Selenium	ND		0.00050	mg/L		06/26/20 05:22	06/30/20 14:30	1
Thallium	ND		0.00010	mg/L		06/26/20 05:22	06/30/20 14:30	1

Lab Sample ID: LCS 550-213589/2-A
Matrix: Water
Analysis Batch: 213945

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213589

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
		Result	Qualifier					
Antimony	0.100	0.0966		mg/L		97	85 - 115	
Arsenic	0.100	0.0993		mg/L		99	85 - 115	
Cadmium	0.100	0.0974		mg/L		97	85 - 115	
Chromium	0.100	0.0998		mg/L		100	85 - 115	
Cobalt	0.100	0.0979		mg/L		98	85 - 115	
Lead	0.100	0.0986		mg/L		99	85 - 115	
Molybdenum	0.100	0.0980		mg/L		98	85 - 115	
Selenium	0.100	0.101		mg/L		101	85 - 115	
Thallium	0.100	0.0983		mg/L		98	85 - 115	

Lab Sample ID: LCSD 550-213589/3-A
Matrix: Water
Analysis Batch: 213945

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213589

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
		Result	Qualifier							
Antimony	0.100	0.0977		mg/L		98	85 - 115	1	20	
Arsenic	0.100	0.100		mg/L		100	85 - 115	1	20	
Cadmium	0.100	0.0979		mg/L		98	85 - 115	1	20	
Chromium	0.100	0.0999		mg/L		100	85 - 115	0	20	
Cobalt	0.100	0.0979		mg/L		98	85 - 115	0	20	
Lead	0.100	0.0991		mg/L		99	85 - 115	0	20	

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-213589/3-A
Matrix: Water
Analysis Batch: 213945

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213589

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	0.100	0.0979		mg/L		98	85 - 115	0	20
Selenium	0.100	0.105		mg/L		105	85 - 115	4	20
Thallium	0.100	0.0982		mg/L		98	85 - 115	0	20

Lab Sample ID: 550-144002-4 MS
Matrix: Water
Analysis Batch: 213945

Client Sample ID: FC-CCR-MW01-0620
Prep Type: Total/NA
Prep Batch: 213589

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	0.073		0.100	0.164		mg/L		91	70 - 130		
Molybdenum	0.045		0.100	0.148		mg/L		103	70 - 130		

Lab Sample ID: 550-144002-4 MSD
Matrix: Water
Analysis Batch: 213945

Client Sample ID: FC-CCR-MW01-0620
Prep Type: Total/NA
Prep Batch: 213589

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	0.073		0.100	0.164		mg/L		91	70 - 130	0	20
Molybdenum	0.045		0.100	0.151		mg/L		106	70 - 130	2	20

Lab Sample ID: MB 550-213590/1-A
Matrix: Water
Analysis Batch: 213989

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213590

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010	mg/L		06/26/20 05:34	07/01/20 11:24	1
Arsenic	ND		0.00050	mg/L		06/26/20 05:34	07/01/20 11:24	1
Cadmium	ND		0.00010	mg/L		06/26/20 05:34	07/01/20 11:24	1
Chromium	ND		0.0010	mg/L		06/26/20 05:34	07/01/20 11:24	1
Cobalt	ND		0.00050	mg/L		06/26/20 05:34	07/01/20 11:24	1
Lead	ND		0.00050	mg/L		06/26/20 05:34	07/01/20 11:24	1
Molybdenum	ND		0.00050	mg/L		06/26/20 05:34	07/01/20 11:24	1
Thallium	ND		0.00010	mg/L		06/26/20 05:34	07/01/20 11:24	1

Lab Sample ID: MB 550-213590/1-A
Matrix: Water
Analysis Batch: 214222

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213590

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010	mg/L		06/26/20 05:34	07/06/20 14:35	1
Arsenic	ND		0.00050	mg/L		06/26/20 05:34	07/06/20 14:35	1
Cadmium	ND		0.00010	mg/L		06/26/20 05:34	07/06/20 14:35	1
Chromium	ND		0.0010	mg/L		06/26/20 05:34	07/06/20 14:35	1
Cobalt	ND		0.00050	mg/L		06/26/20 05:34	07/06/20 14:35	1
Lead	ND		0.00050	mg/L		06/26/20 05:34	07/06/20 14:35	1
Molybdenum	ND		0.00050	mg/L		06/26/20 05:34	07/06/20 14:35	1
Selenium	ND		0.00050	mg/L		06/26/20 05:34	07/06/20 14:35	1
Thallium	ND		0.00010	mg/L		06/26/20 05:34	07/06/20 14:35	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 550-213590/2-A
Matrix: Water
Analysis Batch: 213989

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213590

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.100	0.0953		mg/L		95	85 - 115
Arsenic	0.100	0.0922		mg/L		92	85 - 115
Cadmium	0.100	0.0930		mg/L		93	85 - 115
Chromium	0.100	0.0921		mg/L		92	85 - 115
Cobalt	0.100	0.0911		mg/L		91	85 - 115
Lead	0.100	0.0960		mg/L		96	85 - 115
Molybdenum	0.100	0.0960		mg/L		96	85 - 115
Thallium	0.100	0.0957		mg/L		96	85 - 115

Lab Sample ID: LCS 550-213590/2-A
Matrix: Water
Analysis Batch: 214222

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213590

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.100	0.106		mg/L		106	85 - 115
Arsenic	0.100	0.108		mg/L		108	85 - 115
Cadmium	0.100	0.103		mg/L		103	85 - 115
Chromium	0.100	0.104		mg/L		104	85 - 115
Cobalt	0.100	0.104		mg/L		104	85 - 115
Lead	0.100	0.105		mg/L		105	85 - 115
Molybdenum	0.100	0.106		mg/L		106	85 - 115
Selenium	0.100	0.108		mg/L		108	85 - 115
Thallium	0.100	0.103		mg/L		103	85 - 115

Lab Sample ID: LCSD 550-213590/3-A
Matrix: Water
Analysis Batch: 213989

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213590

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.100	0.0943		mg/L		94	85 - 115	1	20
Arsenic	0.100	0.0922		mg/L		92	85 - 115	0	20
Cadmium	0.100	0.0931		mg/L		93	85 - 115	0	20
Chromium	0.100	0.0925		mg/L		92	85 - 115	0	20
Cobalt	0.100	0.0908		mg/L		91	85 - 115	0	20
Lead	0.100	0.0949		mg/L		95	85 - 115	1	20
Molybdenum	0.100	0.0959		mg/L		96	85 - 115	0	20
Thallium	0.100	0.0947		mg/L		95	85 - 115	1	20

Lab Sample ID: LCSD 550-213590/3-A
Matrix: Water
Analysis Batch: 214222

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213590

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.100	0.106		mg/L		106	85 - 115	0	20
Arsenic	0.100	0.107		mg/L		107	85 - 115	1	20
Cadmium	0.100	0.104		mg/L		104	85 - 115	0	20
Chromium	0.100	0.102		mg/L		102	85 - 115	2	20
Cobalt	0.100	0.101		mg/L		101	85 - 115	3	20
Lead	0.100	0.105		mg/L		105	85 - 115	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-213590/3-A
Matrix: Water
Analysis Batch: 214222

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213590

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	0.100	0.105		mg/L		105	85 - 115	1	20
Selenium	0.100	0.102		mg/L		102	85 - 115	6	20
Thallium	0.100	0.102		mg/L		102	85 - 115	1	20

Lab Sample ID: 550-144002-11 MS
Matrix: Water
Analysis Batch: 213989

Client Sample ID: FC-CCR-MW17R0620
Prep Type: Total/NA
Prep Batch: 213590

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	D1	0.100	0.107		mg/L		107	70 - 130
Arsenic	ND	D1	0.100	0.108		mg/L		108	70 - 130
Cadmium	0.0014	D1	0.100	0.0995		mg/L		98	70 - 130
Chromium	ND	D1	0.100	0.102		mg/L		102	70 - 130
Cobalt	0.062	D1	0.100	0.160		mg/L		99	70 - 130
Lead	0.0025	D1	0.100	0.101		mg/L		98	70 - 130
Molybdenum	0.0069	D1	0.100	0.116		mg/L		109	70 - 130
Thallium	0.00036	D1	0.100	0.0976		mg/L		97	70 - 130

Lab Sample ID: 550-144002-11 MS
Matrix: Water
Analysis Batch: 214222

Client Sample ID: FC-CCR-MW17R0620
Prep Type: Total/NA
Prep Batch: 213590

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	D1	0.100	0.109		mg/L		109	70 - 130
Arsenic	ND	D1	0.100	0.113		mg/L		113	70 - 130
Cadmium	0.0015	D1	0.100	0.0981		mg/L		97	70 - 130
Chromium	ND	D1	0.100	0.0972		mg/L		97	70 - 130
Cobalt	0.063	D1	0.100	0.157		mg/L		94	70 - 130
Lead	0.0025	D1	0.100	0.102		mg/L		99	70 - 130
Molybdenum	0.0066	D1	0.100	0.113		mg/L		107	70 - 130
Selenium	ND	D1	0.100	0.121		mg/L		121	70 - 130
Thallium	0.00039	D1	0.100	0.0965		mg/L		96	70 - 130

Lab Sample ID: 550-144002-11 MSD
Matrix: Water
Analysis Batch: 213989

Client Sample ID: FC-CCR-MW17R0620
Prep Type: Total/NA
Prep Batch: 213590

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND	D1	0.100	0.102		mg/L		102	70 - 130	4	20
Arsenic	ND	D1	0.100	0.102		mg/L		101	70 - 130	7	20
Cadmium	0.0014	D1	0.100	0.0939		mg/L		93	70 - 130	6	20
Chromium	ND	D1	0.100	0.0942		mg/L		94	70 - 130	7	20
Cobalt	0.062	D1	0.100	0.150		mg/L		89	70 - 130	6	20
Lead	0.0025	D1	0.100	0.0958		mg/L		93	70 - 130	5	20
Molybdenum	0.0069	D1	0.100	0.112		mg/L		105	70 - 130	3	20
Thallium	0.00036	D1	0.100	0.0934		mg/L		93	70 - 130	4	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-144002-11 MSD
Matrix: Water
Analysis Batch: 214222

Client Sample ID: FC-CCR-MW17R0620
Prep Type: Total/NA
Prep Batch: 213590

Analyte	Sample		Spike Added	MSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Antimony	ND	D1	0.100	0.109		mg/L		108	70 - 130	0	20
Arsenic	ND	D1	0.100	0.116		mg/L		116	70 - 130	2	20
Cadmium	0.0015	D1	0.100	0.100		mg/L		99	70 - 130	2	20
Chromium	ND	D1	0.100	0.0989		mg/L		99	70 - 130	2	20
Cobalt	0.063	D1	0.100	0.162		mg/L		99	70 - 130	3	20
Lead	0.0025	D1	0.100	0.102		mg/L		100	70 - 130	1	20
Molybdenum	0.0066	D1	0.100	0.115		mg/L		108	70 - 130	1	20
Selenium	ND	D1	0.100	0.121		mg/L		121	70 - 130	0	20
Thallium	0.00039	D1	0.100	0.0970		mg/L		97	70 - 130	1	20

Lab Sample ID: MB 550-214165/1-A
Matrix: Water
Analysis Batch: 214330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214165

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Barium	ND		0.00050	mg/L		07/06/20 10:22	07/07/20 13:19	1
Selenium	ND		0.00050	mg/L		07/06/20 10:22	07/07/20 13:19	1

Lab Sample ID: LCS 550-214165/2-A
Matrix: Water
Analysis Batch: 214330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214165

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Barium	0.100	0.110		mg/L		110	85 - 115
Selenium	0.100	0.0927		mg/L		93	85 - 115

Lab Sample ID: LCSD 550-214165/3-A
Matrix: Water
Analysis Batch: 214330

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 214165

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
		Result	Qualifier						
Barium	0.100	0.112		mg/L		112	85 - 115	1	20
Selenium	0.100	0.0957		mg/L		96	85 - 115	3	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-213726/33
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 15:59	1
Bicarbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 15:59	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 15:59	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/27/20 15:59	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 15:59	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 550-213726/6
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 12:08	1
Bicarbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 12:08	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 12:08	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/27/20 12:08	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/27/20 12:08	1

Lab Sample ID: LCS 550-213726/32
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	250	243		mg/L		97	90 - 110

Lab Sample ID: LCS 550-213726/5
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	250	246		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-213726/19
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	244		mg/L		97	90 - 110	1	20

Lab Sample ID: LCSD 550-213726/45
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	244		mg/L		98	90 - 110	0	20

Lab Sample ID: 550-143998-A-1 DU
Matrix: Water
Analysis Batch: 213726

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	340		415		mg/L		20	20
Bicarbonate Alkalinity as CaCO3	340		415		mg/L		20	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 550-144002-20 DU
Matrix: Water
Analysis Batch: 213726

Client Sample ID: FC-CCR-FD05-0620
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Alkalinity as CaCO3	130		126		mg/L		0.3	20
Bicarbonate Alkalinity as CaCO3	130		126		mg/L		0.3	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-213734/1
Matrix: Water
Analysis Batch: 213734

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Total Dissolved Solids	ND		20	mg/L			06/28/20 12:29	1

Lab Sample ID: LCS 550-213734/2
Matrix: Water
Analysis Batch: 213734

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Total Dissolved Solids	1000	1070		mg/L		107	90 - 110

Lab Sample ID: LCSD 550-213734/3
Matrix: Water
Analysis Batch: 213734

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec. Limits	RPD	Limit
		Result	Qualifier						
Total Dissolved Solids	1000	975		mg/L		98	90 - 110	9	10

Lab Sample ID: 550-144001-A-7 DU
Matrix: Water
Analysis Batch: 213734

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Total Dissolved Solids	6700	D2	6720	D2	mg/L		0.4	10

Lab Sample ID: MB 550-213773/1
Matrix: Water
Analysis Batch: 213773

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Total Dissolved Solids	ND		10	mg/L			06/29/20 09:44	1

Lab Sample ID: LCS 550-213773/2
Matrix: Water
Analysis Batch: 213773

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Total Dissolved Solids	1000	1020		mg/L		102	90 - 110

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCSD 550-213773/3
Matrix: Water
Analysis Batch: 213773

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	983		mg/L		98	90 - 110	4	10

Lab Sample ID: 550-143981-A-1 DU
Matrix: Water
Analysis Batch: 213773

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1300		1230		mg/L		2	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-214191/13
Matrix: Water
Analysis Batch: 214191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.0	98.5 - 101.5

Lab Sample ID: LCSSRM 550-214191/25
Matrix: Water
Analysis Batch: 214191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.6	98.5 - 101.5

Lab Sample ID: LCSSRM 550-214191/37
Matrix: Water
Analysis Batch: 214191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.0	98.5 - 101.5

Lab Sample ID: 550-144001-A-8 DU
Matrix: Water
Analysis Batch: 214191

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.7	H5	7.7	H5	SU		0.3	5
Temperature	9.4	H5	9.5	H5	Degrees C		1	

Lab Sample ID: 550-144002-8 DU
Matrix: Water
Analysis Batch: 214191

Client Sample ID: FC-CCR-MW15-0620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.0	H5	7.0	H5	SU		0	5
Temperature	9.5	H5	10.0	H5	Degrees C		5	

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

HPLC/IC

Analysis Batch: 213563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	300.0	
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	300.0	
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	300.0	
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	300.0	
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	300.0	
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	300.0	
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	300.0	
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	300.0	
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	300.0	
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	300.0	
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	300.0	
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	300.0	
550-144002-18	FC-CCR-MW56-0620	Total/NA	Water	300.0	
550-144002-18	FC-CCR-MW56-0620	Total/NA	Water	300.0	
MB 550-213563/2	Method Blank	Total/NA	Water	300.0	
LCS 550-213563/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-213563/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-144001-A-2 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-144001-A-2 MS ^200	Matrix Spike	Total/NA	Water	300.0	
550-144001-A-2 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-144001-A-2 MSD ^200	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 213564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	300.0	
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	300.0	
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	300.0	
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	300.0	
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	300.0	
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	300.0	
MB 550-213564/2	Method Blank	Total/NA	Water	300.0	
LCS 550-213564/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-213564/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-144010-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-144010-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 213828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	300.0	
MB 550-213828/2	Method Blank	Total/NA	Water	300.0	
LCS 550-213828/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-213828/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-143955-D-1 MS ^10	Matrix Spike	Total/NA	Water	300.0	
550-143955-D-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 213495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	200.7	
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	200.7	

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Metals (Continued)

Prep Batch: 213495 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	200.7	
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	200.7	
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	200.7	
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	200.7	
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	200.7	
550-144002-18	FC-CCR-MW56-0620	Total/NA	Water	200.7	
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	200.7	
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	200.7	
MB 550-213495/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-213495/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-213495/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-144002-2 MS	FC-CCR-DMX04-0620	Total/NA	Water	200.7	
550-144002-2 MSD	FC-CCR-DMX04-0620	Total/NA	Water	200.7	

Prep Batch: 213589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-1	FC-CCR-DMX03-0620	Total/NA	Water	200.8	
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	200.8	
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	200.8	
550-144002-4	FC-CCR-MW01-0620	Total/NA	Water	200.8	
550-144002-5	FC-CCR-MW03-0620	Total/NA	Water	200.8	
550-144002-6	FC-CCR-MW05-0620	Total/NA	Water	200.8	
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	200.8	
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	200.8	
MB 550-213589/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-213589/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-213589/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-144002-4 MS	FC-CCR-MW01-0620	Total/NA	Water	200.8	
550-144002-4 MSD	FC-CCR-MW01-0620	Total/NA	Water	200.8	

Prep Batch: 213590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	200.8	
550-144002-10	FC-CCR-FD03-0620	Total/NA	Water	200.8	
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	200.8	
550-144002-12	FC-CCR-MW18-0620	Total/NA	Water	200.8	
550-144002-13	FC-CCR-MW19-0620	Total/NA	Water	200.8	
550-144002-14	FC-CCR-MW21-0620	Total/NA	Water	200.8	
550-144002-15	FC-CCR-MW23R-0620	Total/NA	Water	200.8	
550-144002-16	FC-CCR-MW36R-0620	Total/NA	Water	200.8	
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	200.8	
550-144002-18	FC-CCR-MW56-0620	Total/NA	Water	200.8	
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	200.8	
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	200.8	
550-144002-21	FC-CCR-MW60-0620	Total/NA	Water	200.8	
550-144002-22	FC-CCR-MW78S-0620	Total/NA	Water	200.8	
550-144002-23	FC-CCR-MW81-0620	Total/NA	Water	200.8	
550-144002-24	FC-CCR-MW82S-0620	Total/NA	Water	200.8	
MB 550-213590/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-213590/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-213590/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Metals (Continued)

Prep Batch: 213590 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-11 MS	FC-CCR-MW17R0620	Total/NA	Water	200.8	
550-144002-11 MSD	FC-CCR-MW17R0620	Total/NA	Water	200.8	

Analysis Batch: 213945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-4	FC-CCR-MW01-0620	Total/NA	Water	200.8 LL	213589
MB 550-213589/1-A	Method Blank	Total/NA	Water	200.8 LL	213589
LCS 550-213589/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	213589
LCSD 550-213589/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	213589
550-144002-4 MS	FC-CCR-MW01-0620	Total/NA	Water	200.8 LL	213589
550-144002-4 MSD	FC-CCR-MW01-0620	Total/NA	Water	200.8 LL	213589

Analysis Batch: 213983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-1	FC-CCR-DMX03-0620	Total/NA	Water	200.8 LL	213589
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	200.8 LL	213589
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	200.8 LL	213589
550-144002-5	FC-CCR-MW03-0620	Total/NA	Water	200.8 LL	213589
550-144002-6	FC-CCR-MW05-0620	Total/NA	Water	200.8 LL	213589
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	200.8 LL	213589
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	200.8 LL	213589

Analysis Batch: 213989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	200.8 LL	213590
550-144002-10	FC-CCR-FD03-0620	Total/NA	Water	200.8 LL	213590
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	200.8 LL	213590
550-144002-12	FC-CCR-MW18-0620	Total/NA	Water	200.8 LL	213590
550-144002-13	FC-CCR-MW19-0620	Total/NA	Water	200.8 LL	213590
MB 550-213590/1-A	Method Blank	Total/NA	Water	200.8 LL	213590
LCS 550-213590/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	213590
LCSD 550-213590/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	213590
550-144002-11 MS	FC-CCR-MW17R0620	Total/NA	Water	200.8 LL	213590
550-144002-11 MSD	FC-CCR-MW17R0620	Total/NA	Water	200.8 LL	213590

Prep Batch: 214165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	200.8	
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	200.8	
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	200.8	
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	200.8	
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	200.8	
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	200.8	
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	200.8	
550-144002-18	FC-CCR-MW56-0620	Total/NA	Water	200.8	
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	200.8	
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	200.8	
MB 550-214165/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-214165/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-214165/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Metals

Analysis Batch: 214222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	200.8 LL	213590
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	200.8 LL	213590
550-144002-15	FC-CCR-MW23R-0620	Total/NA	Water	200.8 LL	213590
550-144002-16	FC-CCR-MW36R-0620	Total/NA	Water	200.8 LL	213590
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	200.8 LL	213590
550-144002-18	FC-CCR-MW56-0620	Total/NA	Water	200.8 LL	213590
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	200.8 LL	213590
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	200.8 LL	213590
550-144002-21	FC-CCR-MW60-0620	Total/NA	Water	200.8 LL	213590
550-144002-22	FC-CCR-MW78S-0620	Total/NA	Water	200.8 LL	213590
550-144002-23	FC-CCR-MW81-0620	Total/NA	Water	200.8 LL	213590
550-144002-24	FC-CCR-MW82S-0620	Total/NA	Water	200.8 LL	213590
MB 550-213590/1-A	Method Blank	Total/NA	Water	200.8 LL	213590
LCS 550-213590/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	213590
LCS 550-213590/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	213590
550-144002-11 MS	FC-CCR-MW17R0620	Total/NA	Water	200.8 LL	213590
550-144002-11 MSD	FC-CCR-MW17R0620	Total/NA	Water	200.8 LL	213590

Analysis Batch: 214260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-14	FC-CCR-MW21-0620	Total/NA	Water	200.8 LL	213590
550-144002-14	FC-CCR-MW21-0620	Total/NA	Water	200.8 LL	213590
550-144002-22	FC-CCR-MW78S-0620	Total/NA	Water	200.8 LL	213590

Analysis Batch: 214330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	200.8 LL	214165
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	200.8 LL	214165
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	200.8 LL	214165
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	200.8 LL	214165
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	200.8 LL	214165
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	200.8 LL	214165
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	200.8 LL	214165
550-144002-18	FC-CCR-MW56-0620	Total/NA	Water	200.8 LL	214165
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	200.8 LL	214165
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	200.8 LL	214165
MB 550-214165/1-A	Method Blank	Total/NA	Water	200.8 LL	214165
LCS 550-214165/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	214165
LCS 550-214165/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	214165

Analysis Batch: 214368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	200.7 Rev 4.4	213495

Eurolins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Metals (Continued)

Analysis Batch: 214368 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-213495/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	213495
LCS 550-213495/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	213495
LCSD 550-213495/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-2 MS	FC-CCR-DMX04-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-2 MSD	FC-CCR-DMX04-0620	Total/NA	Water	200.7 Rev 4.4	213495

Analysis Batch: 216257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-18	FC-CCR-MW56-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	200.7 Rev 4.4	213495
MB 550-213495/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	213495
LCS 550-213495/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	213495
LCSD 550-213495/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-2 MS	FC-CCR-DMX04-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-2 MS	FC-CCR-DMX04-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-2 MSD	FC-CCR-DMX04-0620	Total/NA	Water	200.7 Rev 4.4	213495
550-144002-2 MSD	FC-CCR-DMX04-0620	Total/NA	Water	200.7 Rev 4.4	213495

General Chemistry

Analysis Batch: 213726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	SM 2320B	
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	SM 2320B	
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	SM 2320B	
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	SM 2320B	
MB 550-213726/33	Method Blank	Total/NA	Water	SM 2320B	
MB 550-213726/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-213726/32	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 550-213726/5	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-213726/19	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
LCSD 550-213726/45	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-143998-A-1 DU	Duplicate	Total/NA	Water	SM 2320B	
550-144002-20 DU	FC-CCR-FD05-0620	Total/NA	Water	SM 2320B	

Analysis Batch: 213734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	SM 2540C	
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

General Chemistry (Continued)

Analysis Batch: 213734 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	SM 2540C	
550-144002-18	FC-CCR-MW56-0620	Total/NA	Water	SM 2540C	
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	SM 2540C	
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	SM 2540C	
MB 550-213734/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-213734/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-213734/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-144001-A-7 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 213773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	SM 2540C	
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	SM 2540C	
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	SM 2540C	
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	SM 2540C	
MB 550-213773/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-213773/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-213773/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-143981-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 214191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-144002-2	FC-CCR-DMX04-0620	Total/NA	Water	SM 4500 H+ B	
550-144002-3	FC-CCR-DMX06-0620	Total/NA	Water	SM 4500 H+ B	
550-144002-7	FC-CCR-MW06-0620	Total/NA	Water	SM 4500 H+ B	
550-144002-8	FC-CCR-MW15-0620	Total/NA	Water	SM 4500 H+ B	
550-144002-9	FC-CCR-MW16-0620	Total/NA	Water	SM 4500 H+ B	
550-144002-11	FC-CCR-MW17R0620	Total/NA	Water	SM 4500 H+ B	
550-144002-17	FC-CCR-MW38R-0620	Total/NA	Water	SM 4500 H+ B	
550-144002-18	FC-CCR-MW56-0620	Total/NA	Water	SM 4500 H+ B	
550-144002-19	FC-CCR-MW57-0620	Total/NA	Water	SM 4500 H+ B	
550-144002-20	FC-CCR-FD05-0620	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-214191/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-214191/25	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-214191/37	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-144001-A-8 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	
550-144002-8 DU	FC-CCR-MW15-0620	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-DMX03-0620

Lab Sample ID: 550-144002-1

Date Collected: 06/22/20 08:54

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213983	07/01/20 11:06	ARE	TAL PHX

Client Sample ID: FC-CCR-DMX04-0620

Lab Sample ID: 550-144002-2

Date Collected: 06/22/20 13:00

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 04:35	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 04:53	RDC	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	214368	07/08/20 08:29	SRA	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216257	07/30/20 01:07	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213983	07/01/20 11:08	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 13:35	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213734		DGS	TAL PHX
					(Start)	06/28/20 12:29		
					(End)	06/29/20 09:15		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-DMX06-0620

Lab Sample ID: 550-144002-3

Date Collected: 06/23/20 12:38

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 05:12	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 05:30	RDC	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	214368	07/08/20 08:33	SRA	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216257	07/30/20 00:15	MGM	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216257	07/30/20 01:11	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213983	07/01/20 11:10	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 13:37	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 13:29	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
					(Start)	06/29/20 09:44		
					(End)	06/30/20 08:50		

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-DMX06-0620

Lab Sample ID: 550-144002-3

Date Collected: 06/23/20 12:38

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW01-0620

Lab Sample ID: 550-144002-4

Date Collected: 06/21/20 11:58

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	213945	06/30/20 14:40	ARE	TAL PHX

Client Sample ID: FC-CCR-MW03-0620

Lab Sample ID: 550-144002-5

Date Collected: 06/21/20 12:40

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213983	07/01/20 11:12	ARE	TAL PHX

Client Sample ID: FC-CCR-MW05-0620

Lab Sample ID: 550-144002-6

Date Collected: 06/22/20 09:30

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213983	07/01/20 11:14	ARE	TAL PHX

Client Sample ID: FC-CCR-MW06-0620

Lab Sample ID: 550-144002-7

Date Collected: 06/23/20 13:54

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 05:49	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 06:07	RDC	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	214368	07/08/20 08:37	SRA	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216257	07/30/20 01:15	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213983	07/01/20 11:16	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 13:39	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
					(Start)	06/29/20 09:44		
					(End)	06/30/20 08:50		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW15-0620

Lab Sample ID: 550-144002-8

Date Collected: 06/23/20 11:57

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 06:25	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 06:44	RDC	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	214368	07/08/20 08:41	SRA	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216257	07/30/20 01:19	MGM	TAL PHX
Total/NA	Prep	200.8			213589	06/26/20 05:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213983	07/01/20 11:18	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 13:42	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
					(Start)	06/29/20 09:44		
					(End)	06/30/20 08:50		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW16-0620

Lab Sample ID: 550-144002-9

Date Collected: 06/23/20 11:15

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 07:02	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 07:21	RDC	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	214368	07/08/20 08:45	SRA	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216257	07/30/20 01:23	MGM	TAL PHX
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213989	07/01/20 11:37	ARE	TAL PHX
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214222	07/06/20 14:48	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 13:44	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213773		DGS	TAL PHX
					(Start)	06/29/20 09:46		
					(End)	06/30/20 08:50		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-FD03-0620

Lab Sample ID: 550-144002-10

Date Collected: 06/21/20 11:58

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213989	07/01/20 11:39	ARE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW17R0620

Lab Sample ID: 550-144002-11

Date Collected: 06/22/20 12:10

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 08:53	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 09:11	RDC	TAL PHX
Total/NA	Analysis	300.0		50	213828	06/29/20 20:15	RDC	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	214368	07/08/20 08:49	SRA	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216257	07/30/20 01:27	MGM	TAL PHX
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213989	07/01/20 11:35	ARE	TAL PHX
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214222	07/06/20 14:45	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 13:46	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213734	(Start) 06/28/20 12:29 (End) 06/29/20 09:15	DGS	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW18-0620

Lab Sample ID: 550-144002-12

Date Collected: 06/22/20 10:18

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213989	07/01/20 11:41	ARE	TAL PHX

Client Sample ID: FC-CCR-MW19-0620

Lab Sample ID: 550-144002-13

Date Collected: 06/21/20 15:37

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	213989	07/01/20 11:43	ARE	TAL PHX

Client Sample ID: FC-CCR-MW21-0620

Lab Sample ID: 550-144002-14

Date Collected: 06/21/20 13:20

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214260	07/07/20 09:44	ARE	TAL PHX
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		8	214260	07/07/20 10:21	ARE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW23R-0620

Lab Sample ID: 550-144002-15

Date Collected: 06/21/20 16:15

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214222	07/06/20 15:02	ARE	TAL PHX

Client Sample ID: FC-CCR-MW36R-0620

Lab Sample ID: 550-144002-16

Date Collected: 06/21/20 16:49

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214222	07/06/20 15:04	ARE	TAL PHX

Client Sample ID: FC-CCR-MW38R-0620

Lab Sample ID: 550-144002-17

Date Collected: 06/22/20 15:26

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213564	06/26/20 00:40	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213564	06/26/20 01:07	RDC	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	214368	07/08/20 08:53	SRA	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216257	07/30/20 00:35	MGM	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216257	07/30/20 01:31	MGM	TAL PHX
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214222	07/06/20 15:06	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 13:48	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 13:37	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	213734	(Start) 06/28/20 12:29 (End) 06/29/20 09:15	DGS	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW56-0620

Lab Sample ID: 550-144002-18

Date Collected: 06/22/20 10:54

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213563	06/26/20 08:16	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213563	06/26/20 08:34	RDC	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216257	07/30/20 00:39	MGM	TAL PHX
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214222	07/06/20 15:08	ARE	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-MW56-0620

Lab Sample ID: 550-144002-18

Date Collected: 06/22/20 10:54

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 13:50	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	213734		DGS	TAL PHX
					(Start)	06/28/20 12:29		
					(End)	06/29/20 09:15		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW57-0620

Lab Sample ID: 550-144002-19

Date Collected: 06/22/20 14:46

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213564	06/26/20 01:35	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213564	06/26/20 02:02	RDC	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	214368	07/08/20 09:01	SRA	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216257	07/30/20 00:43	MGM	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216257	07/30/20 01:35	MGM	TAL PHX
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214222	07/06/20 15:10	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 13:52	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 13:48	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	213734		DGS	TAL PHX
					(Start)	06/28/20 12:29		
					(End)	06/29/20 09:15		
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-FD05-0620

Lab Sample ID: 550-144002-20

Date Collected: 06/22/20 15:26

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	213564	06/26/20 02:29	RDC	TAL PHX
Total/NA	Analysis	300.0		200	213564	06/26/20 02:57	RDC	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	214368	07/08/20 09:05	SRA	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	216257	07/30/20 00:47	MGM	TAL PHX
Total/NA	Prep	200.7			213495	06/25/20 08:59	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	216257	07/30/20 01:39	MGM	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
 SDG: APS Four Corners Power Plant (Other)

Client Sample ID: FC-CCR-FD05-0620

Lab Sample ID: 550-144002-20

Date Collected: 06/22/20 15:26

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214222	07/06/20 15:13	ARE	TAL PHX
Total/NA	Prep	200.8			214165	07/06/20 10:22	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	214330	07/07/20 13:54	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	213726	06/27/20 14:14	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	213734	(Start) 06/28/20 12:29 (End) 06/29/20 09:15	DGS	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	214191	07/06/20 12:45	MRR	TAL PHX

Client Sample ID: FC-CCR-MW60-0620

Lab Sample ID: 550-144002-21

Date Collected: 06/21/20 11:11

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214222	07/06/20 15:15	ARE	TAL PHX

Client Sample ID: FC-CCR-MW78S-0620

Lab Sample ID: 550-144002-22

Date Collected: 06/21/20 14:00

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214222	07/06/20 15:17	ARE	TAL PHX
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214260	07/07/20 09:46	ARE	TAL PHX

Client Sample ID: FC-CCR-MW81-0620

Lab Sample ID: 550-144002-23

Date Collected: 06/21/20 14:32

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214222	07/06/20 15:19	ARE	TAL PHX

Client Sample ID: FC-CCR-MW82S-0620

Lab Sample ID: 550-144002-24

Date Collected: 06/21/20 15:06

Matrix: Water

Date Received: 06/24/20 15:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			213590	06/26/20 05:34	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	214222	07/06/20 15:21	ARE	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Eurofins TestAmerica, Phoenix

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 2320B		Water	Alkalinity, Phenolphthalein
SM 4500 H+ B		Water	Temperature

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-144002-1
SDG: APS Four Corners Power Plant (Other)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
SM 2320B	Alkalinity	SM	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040

phone 602.497.3340 fax 602.454.9303

Regulatory Program: DW NPDES RCRA Other: CCR

TestAmerica Laboratories, Inc.

144002

THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica

Client Contact

Natalie Chrisman
602-250-3608

Lab Contact: Ken Baker
Jim Edwards / (928) 288-1241

Date: 06/24/2020

COC No: 1 of 3 COCs

Arizona Public Service
PO Box 355, MS 4915
Fullland, NM 87416

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
TAT if different from Below

Carrier:

Sampler: _____
For Lab Use Only:
Walk-In Client: _____
Lab Sampling: _____

Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (Other)
Project # 1420202015....02

FAX
 2 weeks
 1 week
 2 days
 1 day

Job / SDG No.:

Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (G-Comp, G-Grab)	Matrix	# of Cont.
FC-CCR-DMX03-0620	6/22/2020	8:54	G	W	1
FC-CCR-DMX04-0620	6/22/2020	13:00	G	W	2
FC-CCR-DMX06-0620	6/23/2020	12:38	G	W	2
FC-CCR-MW01-0620	6/21/2020	11:58	G	W	3
FC-CCR-MW03-0620	6/21/2020	12:40	G	W	1
FC-CCR-MW05-0620	6/22/2020	9:30	G	W	1
FC-CCR-MW06-0620	6/23/2020	13:54	G	W	2
FC-CCR-MW15-0620	6/23/2020	11:57	G	W	2
FC-CCR-MW16-0620	6/23/2020	11:15	G	W	2
FC-CCR-FD03-0620	6/21/2020	11:58	G	W	1

Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Li)	EPA 200.7 - Totals (B, Ca, Li, K, Mg, Na)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)	EPA 200.8 - Totals (Co, Mo)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)

Sample Specific Notes:
Low Flow
Low Flow
Low Flow
Low Flow
Low Flow
Low Flow
Low Flow
Low Flow
Low Flow

Sample Identification	Sample Date	Sample Time	Sample Type (G-Comp, G-Grab)	Matrix	# of Cont.
FC-CCR-DMX03-0620	6/22/2020	8:54	G	W	1
FC-CCR-DMX04-0620	6/22/2020	13:00	G	W	2
FC-CCR-DMX06-0620	6/23/2020	12:38	G	W	2
FC-CCR-MW01-0620	6/21/2020	11:58	G	W	3
FC-CCR-MW03-0620	6/21/2020	12:40	G	W	1
FC-CCR-MW05-0620	6/22/2020	9:30	G	W	1
FC-CCR-MW06-0620	6/23/2020	13:54	G	W	2
FC-CCR-MW15-0620	6/23/2020	11:57	G	W	2
FC-CCR-MW16-0620	6/23/2020	11:15	G	W	2
FC-CCR-FD03-0620	6/21/2020	11:58	G	W	1

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	1	4	4	4	4	1	1	1	1

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	1	4	4	4	4	1	1	1	1

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste?
Comments Section if the lab is to dispose of the sample.

Return to Client Disposed by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments

Method 200.8 with collision cell

550-144002 Chain of Custody



130°C, 0.8°C, 14°C

Custody Seals Intact: Yes No

Custody Seal No.:

Cooler Temp. (C): Obs'd: _____

Therm ID No.:

Relinquished by:

Company:

Date/Time:

Received by:

Company:

Date/Time:

Relinquished by:

Company:

Date/Time:

Received by:

Company:

Date/Time:

Relinquished by:

Company:

Date/Time:

Received in Laboratory by:

Company:

Date/Time:

TestAmerica Phoenix

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: DW NPDES RCRA Other: CCR

TestAmerica Laboratories, Inc.

144002

Arizona Public Service Client Contact Natalie Chrisman 602-250-3608
PO Box 355, MS 4915 Fruitland, NM 87416
Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
TAT if different from Below
 2 weeks
 1 week
 2 days
 1 day

Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (Other)
Project # 1420202015.****.02
Jim Edwards / (928) 288-1241 Lab Contact: Ken Baker
Date: 6/24/2020
Carrier:
COC No: 2 of 3 COCs
Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Li)	EPA 200.7 - Totals (B, Ca, Li, K, Mg, Na)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)	EPA 200.8 - Totals (Co, Mo)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)	Sample Specific Notes:
FC-CCR-MW17R-0620	6/22/2020	12:10	G	W	2	N	N	X			X		X			Low Flow
FC-CCR-MW18-0620	6/22/2020	10:18	G	W	1	N	N				X					Low Flow
FC-CCR-MW19-0620	6/21/2020	15:37	G	W	1	N	N				X					Low Flow
FC-CCR-MW21-0620	6/21/2020	13:20	G	W	1	N	N				X					Low Flow
FC-CCR-MW23R-0620	6/21/2020	16:15	G	W	1	N	N				X					Low Flow
FC-CCR-MW36R-0620	6/21/2020	16:49	G	W	1	N	N				X					Low Flow
FC-CCR-MW38R-0620	6/22/2020	15:26	G	W	2	N	N	X			X					Low Flow
FC-CCR-MW56-0620	6/22/2020	10:54	G	W	2	N	N	X			X					Low Flow
FC-CCR-MW57-0620	6/22/2020	14:46	G	W	2	N	N	X			X					Low Flow
FC-CCR-FD05-0620	6/22/2020	15:26	G	W	2	N	N	X			X					Low Flow

Preservation Used: 1= Ice, 2= HCI, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:
 Non-hazard Flammable Skin Irritant Poison B Unknown
 Return to Client Disposal by Lab Archive for _____ Months

Method 200.8 with collision cell
Custody Seal Fract: Yes No
Custody Seal No.:
Custody Company: *Yoda*
Date/Time: *6/24/20 15:06*
Received by: *[Signature]*
Received in Laboratory by: *[Signature]*
Company: *APPA*
Date/Time: *6-24-20 1508*

Relinquished by: *[Signature]*
Relinquished by: *[Signature]*
Relinquished by: *[Signature]*
Cooled Temp. (°C): Obs'd:
Term ID No.:
Date/Time: *6-24-20 1508*
Company: *APPA*
Date/Time: *6-24-20 1508*
Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

TestAmerica Phoenix

Chain of Custody Record

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040

phone 602.437.3340 fax 602.454.9303

Regulatory Program: DW NPDES RCRA Other: CCR

TestAmerica Laboratories, Inc.

THE LEADER IN ENVIRONMENTAL TESTING

144002

TestAmerica

Client Contact

Arizona Public Service
PO Box 355, MS 4915
Fountainland, NM 87416

Natalie Chrisman
602-250-3608

Jim Edwards / (928) 288-1241
Lab Contact: Ken Baker

Date: 06/24/2020
Carrier:

COC No: 3 of 3 COCs

Phone

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS

Filtered Sample (Y / N)
Perform MS / MSD (Y / N)

Sampler:
Walk-In Client:
Lab Sampling:

FAX

TAT if different from Below
 2 weeks
 1 week
 2 days
 1 day

EPA 300.0 (Cl, F, SO4)
EPA 200.7 - Totals (B, Ca, Li)
EPA 200.7 - Totals (B, Ca, Li, K, Mg, Na)
EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)
EPA 200.8 - Totals (Co, Mo)
SM 4500-HB (pH)
SM 2540C (TDS)
SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)

Job / SDG No.:

Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (Other)
Project # 1420202015.***.02

Sample Identification

Sample Date

Sample Time

Sample Type (C=Comp, G=Grab)

Matrix

of Cont.

Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Li)	EPA 200.7 - Totals (B, Ca, Li, K, Mg, Na)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)	EPA 200.8 - Totals (Co, Mo)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)	
FC-CCR-MW60-0620	6/21/2020	11:11	G	W	1	N	N					X				Low Flow
FC-CCR-MW78S-0620	6/21/2020	14:00	G	W	1	N	N					X				Low Flow
FC-CCR-MW81-0620	6/21/2020	14:32	G	W	1	N	N					X				Low Flow
FC-CCR-MW82S-0620	6/21/2020	15:06	G	W	1	N	N					X				Low Flow

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments: Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return to Client Disposed by Lab Archive for _____ Months

Method 200.8 with collision cell

Custody Seals Intact: Yes No
Cooler Temp. (°C): Obs'd: _____
Custody Seal No.: _____
Corr'd: _____
Term ID No.: _____

Relinquished by: _____
Received by: _____
Company: _____
Date/Time: 06/24/20 15:08

Relinquished by: _____
Received in Laboratory by: _____
Company: _____
Date/Time: _____

Relinquished by: _____
Received by: _____
Company: _____
Date/Time: _____

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-144002-1
SDG Number: APS Four Corners Power Plant (Other)

Login Number: 144002

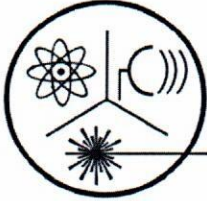
List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.





Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

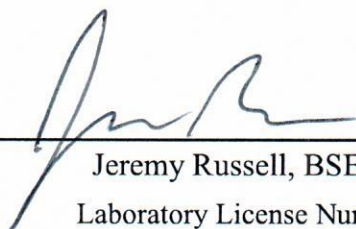
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 19, 2020
Sample Received: June 26, 2020
Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW85-0620	0.5 ± 0.2	< 0.6	0.5 ± 0.2

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 19, 2020 13:03 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- Reduced Monitoring Date Q1 collected: _____
- Quarterly Date Q2 collected: _____
- Composite of four quarterly samples Date Q3 collected: _____
- Date Q4 collected: _____

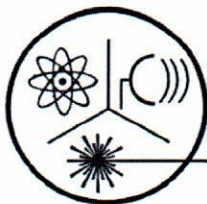
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.5 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.5 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.6	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64611 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW85-0620 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

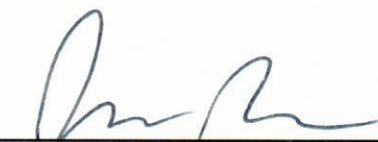
Sampling Date: June 19, 2020

Sample Received: June 26, 2020

Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW86-0620	0.6 ± 0.2	1.2 ± 0.3	1.8 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 19, 2020 8:17 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

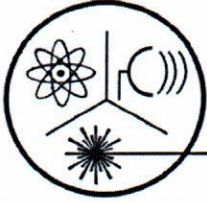
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	1.8 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.6 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.2 ± 0.3	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64612
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW86-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

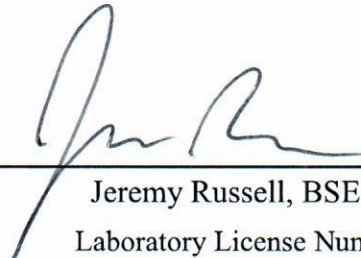
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 19, 2020
Sample Received: June 26, 2020
Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-FD01-0620	< 0.4	< 0.6	< 0.6

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

7/14/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 19, 2020 15:32 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

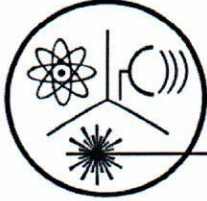
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	< 0.6	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.6	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64613
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-FD01-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

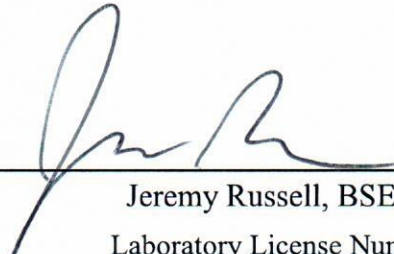
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 20, 2020
Sample Received: June 26, 2020
Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-FD02-0620	< 0.4	0.9 ± 0.3	0.9 ± 0.3

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 20, 2020 8:07 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

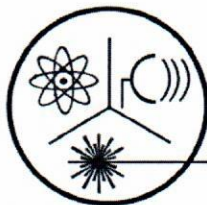
Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.9 ± 0.3	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	0.9 ± 0.3	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64614 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-FD02-0620 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____

Client Information			Radiation Safety Engineering, Inc. 85225 Analysis Request										Chandler, Arizona																			
3245 North Washington Street			Drinking Water Compliance			Gross Alpha		Gross Beta		Total Uranium		Isotopic Uranium		Ra-226		Ra-228		Ra-226 + Ra-228, Combined		H-3		Gamma Spectroscopy		Sr-89/Sr-90		Radon in Water		Radon in Air				
Name:	Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241		Address		PO Box 355, MS 4915 Fruitland, NM 87416		Phone		Site		APS Four Corners Power Plant (URS)		Collection		Media (DW* WW* Other)		Date		Time		Sample ID & Location (DWR#)		Date		Time		Media (DW* WW* Other)		Date		Time	
Company			Arizona Public Service		FC-CCR-MW85-0620		6/19/2020		13:03		GW		X		X		X		X		X		X		X		X		X		X	
Address			FC-CCR-MW86-0620		6/19/2020		8:17		GW		X		X		X		X		X		X		X		X		X		X		X	
Phone			FC-CCR-FD01-0620		6/19/2020		14:50		GW		X		X		X		X		X		X		X		X		X		X		X	
Site			FC-CCR-FD02-0620		6/20/2020		8:07		GW		X		X		X		X		X		X		X		X		X		X		X	
Sample Receipt			Total No. of Containers		Chain of Custody Seals		Container Condition		Lab No.		Instructions/Comments		Method HPGe		Date/time: 3:47		Date/time: 6:26:30		Date/time: 3:47		Company: RSE		Company:		Company:		Date/time: 6:26:30		Date/time: 3:47		Date/time: 3:47	
Relinequished By:			Ame		Company: wood		Received By: P. Flannery		Date/time: 3:47		Received By:		Date/time:		Company:		Company:		Company:		Date/time: 6:26:30		Date/time: 3:47		Date/time: 3:47		Date/time: 6:26:30		Date/time: 3:47		Date/time: 3:47	
Relinequished By:			Company:		Company:		Received By:		Date/time:		Received By:		Date/time:		Company:		Company:		Company:		Date/time: 6:26:30		Date/time: 3:47		Date/time: 3:47		Date/time: 6:26:30		Date/time: 3:47		Date/time: 3:47	
Relinequished By:			Company:		Company:		Received By:		Date/time:		Received By:		Date/time:		Company:		Company:		Company:		Date/time: 6:26:30		Date/time: 3:47		Date/time: 3:47		Date/time: 6:26:30		Date/time: 3:47		Date/time: 3:47	

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.
u:\client\forms\cofc.frm



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

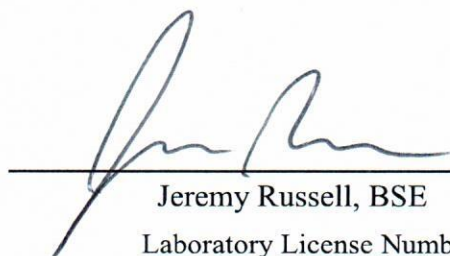
Sampling Date: June 23, 2020

Sample Received: June 26, 2020

Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW07-0620	< 0.5	1.5 ± 0.3	1.5 ± 0.3

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

June 23, 2020 10:28 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	1.5 ± 0.3	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.5	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.5 ± 0.3	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64603

Lab ID Number: AZ0462

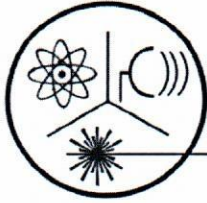
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW07-0620

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

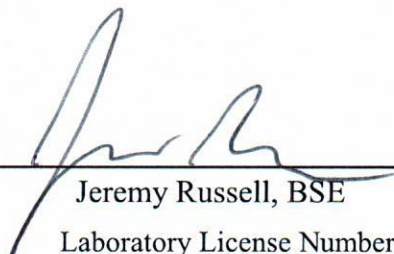
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 23, 2020
Sample Received: June 26, 2020
Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW08-0620	< 0.4	0.7 ± 0.3	0.7 ± 0.3

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020
Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

June 23, 2020 _____ (24 hour clock)

Sample Date _____ Sample Time _____

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.7 ± 0.3	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	0.7 ± 0.3	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64604

Lab ID Number: AZ0462

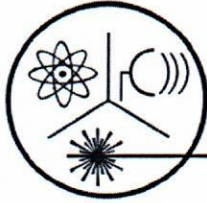
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW08-0620

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

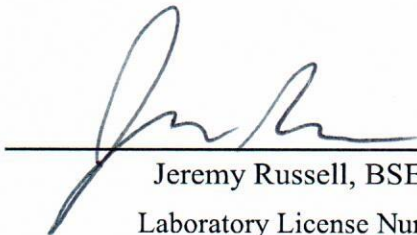
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 23, 2020
Sample Received: June 26, 2020
Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW49A-0620	< 0.4	1.8 ± 0.3	1.8 ± 0.3

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 23, 2020 8:23 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

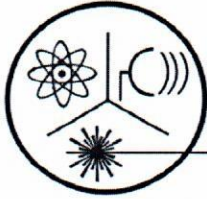
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	1.8 ± 0.3	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.8 ± 0.3	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64605
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW49A-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

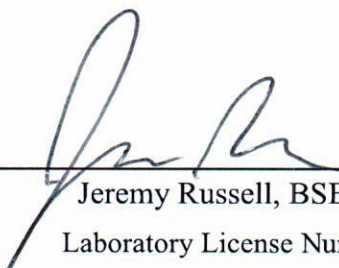
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 21, 2020
Sample Received: June 26, 2020
Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW61-0620	0.7 ± 0.2	< 0.6	0.7 ± 0.2

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020
Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 21, 2020 9:35 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

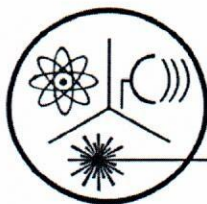
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.7 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.7 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.6	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64606
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW61-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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(480) 897-9459

FAX (480) 892-5446

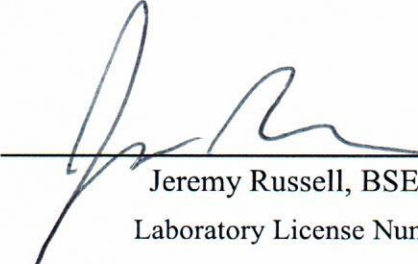
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 20, 2020
Sample Received: June 26, 2020
Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW74-0620	< 0.4	< 0.6	< 0.6

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 20, 2020 11:51 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

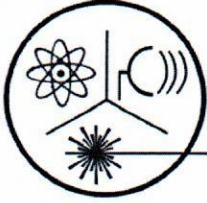
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	< 0.6	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.6	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64607
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW74-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

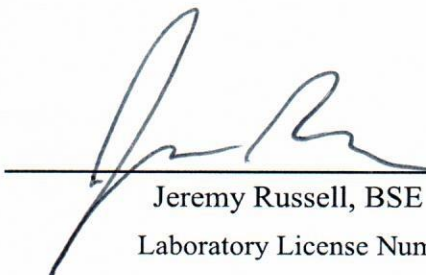
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 21, 2020
Sample Received: June 26, 2020
Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW75-0620	0.8 ± 0.2	< 0.6	0.8 ± 0.2

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 21, 2020 10:25 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

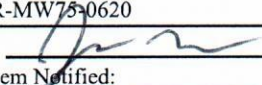
- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

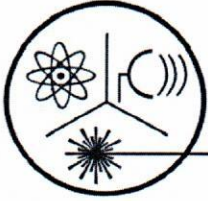
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.8 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.8 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.6	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64608 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW75-0620 _____
 Authorized Signature:  _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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FAX (480) 892-5446

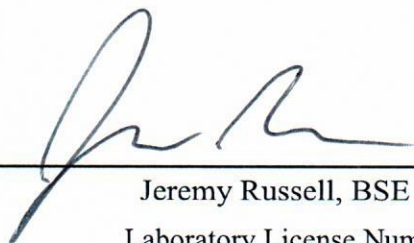
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 23, 2020
Sample Received: June 26, 2020
Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW87-0620	0.8 ± 0.2	2.0 ± 0.3	2.8 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 23, 2020 15:02 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

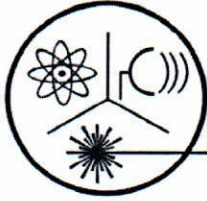
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	2.8 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.8 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	2.0 ± 0.3	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64609
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW87-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

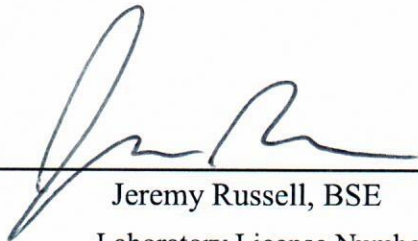
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 23, 2020
Sample Received: June 26, 2020
Analysis Completed: July 14, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-FD04-0620	< 0.4	0.7 ± 0.3	0.7 ± 0.3

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/14/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 23, 2020 9:34 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.7 ± 0.3	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	0.7 ± 0.3	_____

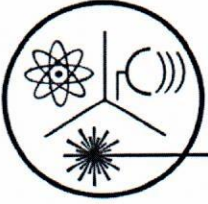
*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64610 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-FD04-0020 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____

Client Information			Radiation Safety Engineering, Inc.										Chandler, Arizona			
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241 Arizona Public Service			3245 North Washington Street 85225 Analysis Request													
Address: PO Box 355, MS 4915 Fruitland, NM 87416																
Phone:																
Site: APS Four Corners Power Plant (Multiunit)																
Sample ID & Location (DWR#)	Collection		Media (DW* WW** Other)	Drinking Water Compliance										Radon in Water	Radon in Air	
	Date	Time		Gross Alpha	Gross Beta	Total Uranium	Isotopic Uranium	Ra-226	Ra-228	Ra-226 + Ra-228, Combined	H-3	Gamma Spectroscopy	Sr-89/Sr-90			
FC-CCR-MW07-0620	6/23/2020	10:28	GW					X	X	X						64603
FC-CCR-MW08-0620	6/23/2020	9:34	GW					X	X	X						64604
FC-CCR-MW49A-0620	6/23/2020	8:23	GW					X	X	X						64605
FC-CCR-MW61-0620	6/21/2020	9:35	GW					X	X	X						64606
FC-CCR-MW74-0620	6/20/2020	11:51	GW					X	X	X						64607
FC-CCR-MW75-0620	6/21/2020	10:25	GW					X	X	X						64608
FC-CCR-MW87-0620	6/23/2020	15:02	GW					X	X	X						64609
FC-CCR-FD04-0620	6/23/2020	9:34	GW					X	X	X						64610
Sample Receipt				Invoice to:												
Total No. of Containers																
Chain of Custody Seals																
Container Condition																
Lab No.																
Relinquished By: <i>Amel</i>				Received By: <i>S. Flannery</i>										Company: <i>RSE</i>		
Relinquished By:				Received By:										Date/time: <i>6-26-20</i>		
Relinquished By:				Received By:										Date/time:		

3:47

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 23, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-EW01-0620	< 0.4	< 0.6	< 0.6

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
------------------	----------	----------	----------

Jeremy Russell, BSE
Laboratory License Number AZ0462

7/13/2020
Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

June 23, 2020 _____ (24 hour clock)

Sample Date _____ Sample Time _____

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	< 0.6	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.6	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64615

Lab ID Number: AZ0462

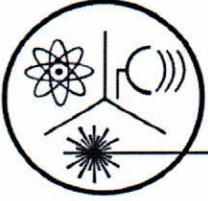
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-EW01-0620

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

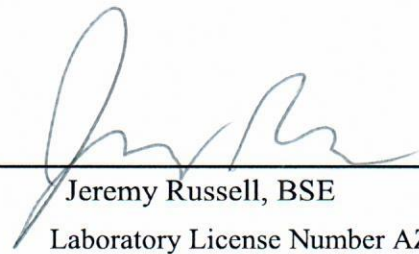
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 23, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-EW05-0620	0.5 ± 0.2	< 0.6	0.5 ± 0.2

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/13/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 23, 2020 13:55 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

 Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

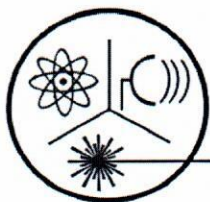
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.5 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.5 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.6	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64616 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-EW05-0620 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

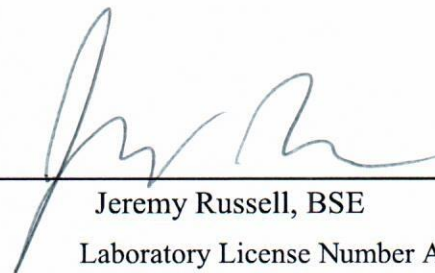
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 23, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-EW14-0620	< 0.4	< 0.6	< 0.6

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE

7/13/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

June 23, 2020 15:28 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006			µg/L
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	< 0.6	
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.6	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64617

Lab ID Number: AZ0462

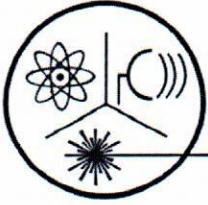
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-EW14-0620

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

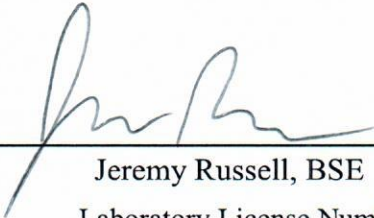
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 21, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW34-0620	< 0.4	0.6 ± 0.3	0.6 ± 0.3

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/13/2020

Date

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

June 21, 2020 16:11 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.6 ± 0.3	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	0.6 ± 0.3	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64618 _____

Lab ID Number: AZ0462 _____

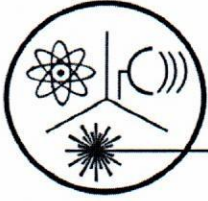
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW34-0620 _____

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

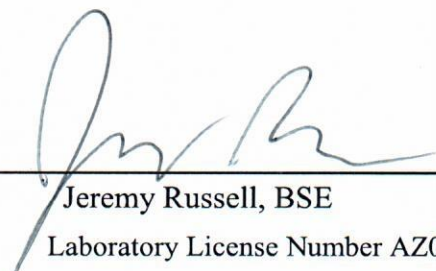
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 20, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-EW15-0620	< 0.4	0.8 ± 0.3	0.8 ± 0.3

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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7/13/2020

Jeremy Russell, BSE

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 20, 2020 17:00 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.8 ± 0.3	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	0.8 ± 0.3	_____

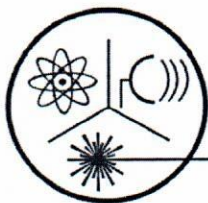
*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64619
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-EW15-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____

Client Information			Radiation Safety Engineering, Inc.										Chandler, Arizona				
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241			3245 North Washington Street														
Company: Arizona Public Service			85225														
Address: PO Box 355, MS 4915 Fruitland, NM 87416			Analysis Request														
Phone:																	
Site: APS Four Corners Power Plant (Multiunit)																	
Sample ID & Location (DWR#)	Collection Date	Time	Media		Drinking Water Compliance	Gross Alpha	Gross Beta	Total Uranium	Isotopic Uranium	Ra-226	Ra-228	Ra-226 + Ra-228, Combined	H-3	Gamma Spectroscopy	Sr-89/Sr-90	Radon in Water	Radon in Air
			DW*	WW* other													
FC-CCR-EW01-0620	6/23/2020	13:00	GW							X	X	X					6/24/20
FC-CCR-EW05-0620	6/23/2020	13:55	GW							X	X	X					6/24/20
FC-CCR-EW14-0620	6/23/2020	15:28	GW							X	X	X					6/24/20
FC-CCR-MW34-0620	6/21/2020	16:11	GW							X	X	X					6/24/20
FC-CCR-EW15-0620	6/20/2020	17:00	GW							X	X	X					6/24/20
Sample Receipt			Invoice to:														
Total No. of Containers																	
Chain of Custody Seals																	
Container Condition																	
Lab No.																	
Relinequished By: <i>[Signature]</i>			Company: wood			Date/time: 6/24/20			Received By: <i>[Signature]</i>			Company: RSE			Date/time: 6-24-20		
Relinequished By:			Company:			Date/time:			Received By:			Company:			Date/time:		
Relinequished By:			Company:			Date/time:			Received By:			Company:			Date/time:		

3:47

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.
u:\client\forms\cofc frm



Radiation Safety Engineering, Inc.

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FAX (480) 892-5446

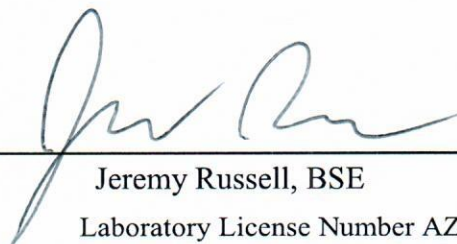
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 18, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW66-0620	1.5 ± 0.2	< 0.8	1.5 ± 0.2

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

7/13/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 18, 2020 16:35 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

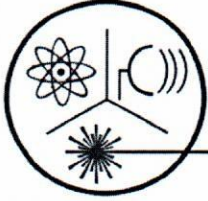
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	1.5 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	1.5 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64583 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW66-0620 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

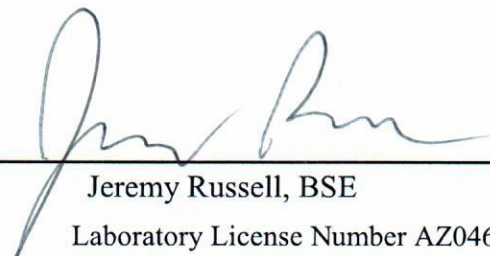
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 19, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW67-0620	0.8 ± 0.2	2.4 ± 0.4	3.2 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE Date
Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

June 19, 2020 13:46 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	3.2 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.8 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	2.4 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64584 _____

Lab ID Number: AZ0462 _____

Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW67-0620 _____

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

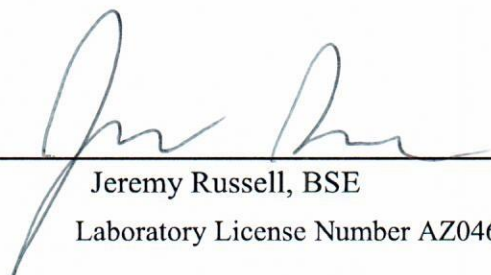
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 19, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW68-0620	< 0.4	0.9 ± 0.4	0.9 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE Date
Laboratory License Number AZ0462 7/13/2020

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____
 June 19, 2020 14:32 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person _____

 Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

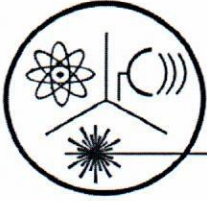
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.9 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	0.9 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64585
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW68-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

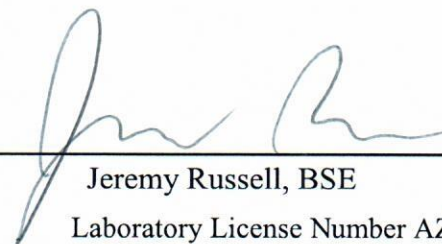
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 19, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW69-0620	0.6 ± 0.2	1.3 ± 0.4	1.9 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

7/13/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 19, 2020 11:40 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

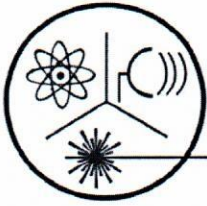
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	1.9 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.6 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.3 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64586 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW69-0620 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

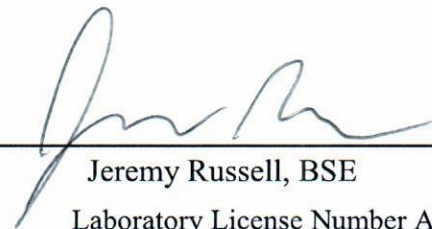
Sampling Date: June 19, 2020

Sample Received: June 26, 2020

Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW70-0620	0.6 ± 0.2	1.3 ± 0.4	1.9 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

7/13/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

June 19, 2020 _____ 9:53 _____ (24 hour clock)

Sample Date _____ Sample Time _____

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	1.9 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.6 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.3 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64587

Lab ID Number: AZ0462

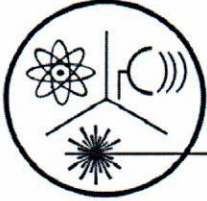
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW70-0620

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

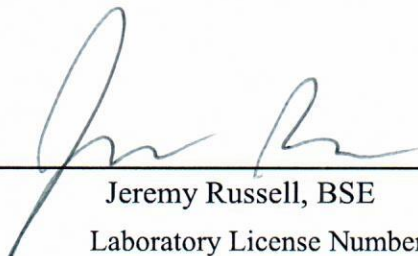
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 20, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW71-0620	< 0.4	< 0.8	< 0.8

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/13/2020
Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 20, 2020 9:18 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

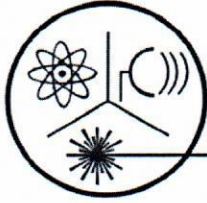
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64588
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW71-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

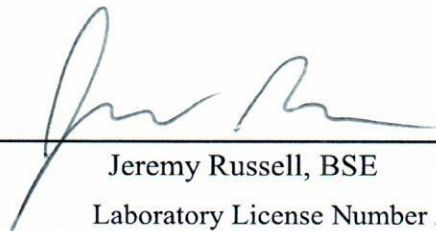
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 19, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW72-0620	0.9 ± 0.2	2.6 ± 0.4	3.5 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

7/13/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 19, 2020 14:50 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

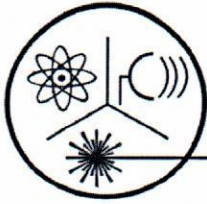
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	3.5 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.9 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	2.6 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64589 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW72-0620 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

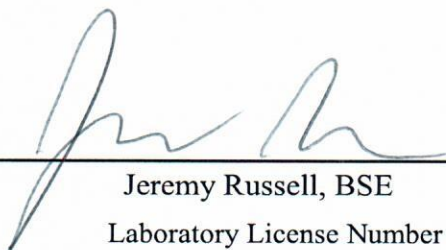
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 20, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW73-0620	1.5 ± 0.2	1.9 ± 0.4	3.4 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/13/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 20, 2020 10:12 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

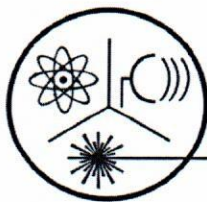
*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	3.4 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	1.5 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.9 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64590 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW73-0620 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

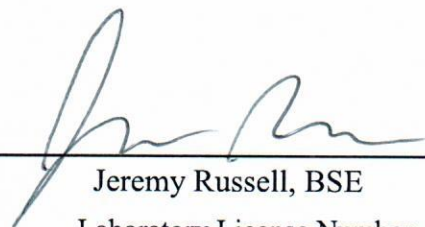
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 19, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW83-0620	< 0.4	< 0.8	< 0.8

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE

7/13/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 19, 2020 15:32 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- Reduced Monitoring Date Q1 collected: _____
- Quarterly Date Q2 collected: _____
- Composite of four quarterly samples Date Q3 collected: _____
- Date Q4 collected: _____

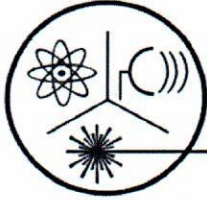
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64591 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW83-0620 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

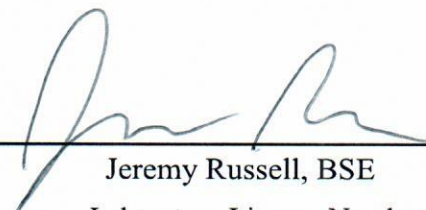
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 20, 2020
Sample Received: June 26, 2020
Analysis Completed: July 13, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW84-0620	< 0.4	1.0 ± 0.4	1.0 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/13/2020
Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 20, 2020 8:07 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	1.0 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.0 ± 0.4	_____

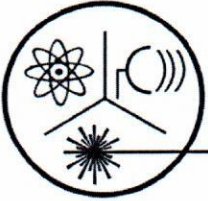
*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64592
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW84-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____

Client Information			Radiation Safety Engineering, Inc.										Chandler, Arizona		
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241			3245 North Washington Street										85225		
Company: Arizona Public Service			Analysis Request												
Address: PO Box 355, MS 4915 Fruitland, NM 87416			Drinking Water Compliance										Radon in Water		
Phone:			Total Uranium										Radon in Air		
Site: APS Four Corners Power Plant (URS)			Isotopic Uranium										Sr-89/Sr-90		
Sample ID & Location (DWR#)	Collection		Media (DW* WW* other)	Gross Alpha	Gross Beta	Total Uranium	Ra-226	Ra-228	Ra-226 + Ra-228, Combined	H-3	Gamma Spectroscopy	Date/time: 6-26-20	Company: RSE		
	Date	Time												Date/time: 6-26-20	Company:
FC-CCR-MW66-0620	6/18/2020	16:35	GW	X	X	X	X	X	X	X	X	64583			
FC-CCR-MW67-0620	6/19/2020	13:46	GW	X	X	X	X	X	X	X	X	64584			
FC-CCR-MW68-0620	6/19/2020	14:32	GW	X	X	X	X	X	X	X	X	64585			
FC-CCR-MW69-0620	6/19/2020	11:40	GW	X	X	X	X	X	X	X	X	64586			
FC-CCR-MW70-0620	6/19/2020	9:53	GW	X	X	X	X	X	X	X	X	64587			
FC-CCR-MW71-0620	6/20/2020	9:18	GW	X	X	X	X	X	X	X	X	64588			
FC-CCR-MW72-0620	6/19/2020	14:50	GW	X	X	X	X	X	X	X	X	64589			
FC-CCR-MW73-0620	6/20/2020	10:12	GW	X	X	X	X	X	X	X	X	64590			
FC-CCR-MW83-0620	6/19/2020	15:32	GW	X	X	X	X	X	X	X	X	64591			
FC-CCR-MW84-0620	6/20/2020	8:07	GW	X	X	X	X	X	X	X	X	64592			
Sample Receipt													Instructions/Comments		
Total No. of Containers													Method HPGe		
Chain of Custody Seals															
Container Condition															
Lab No.															
Relinequished By: wood			Date/time: 6/26/20			Received By: J. Flannery			Date/time: 6-26-20			Company: RSE			
Relinequished By:			Date/time:			Received By:			Date/time:			Company:			
Relinequished By:			Date/time:			Received By:			Date/time:			Company:			

3:47

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.
u:\client\forms\cofc.frm



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446


Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 22, 2020
Sample Received: June 26, 2020
Analysis Completed: July 15, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-DMX04-0620	0.6 ± 0.2	< 0.8	0.6 ± 0.2

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/15/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 22, 2020 _____ 13:00 _____ (24 hour clock)

Sample Date _____ Sample Time _____ Owner/Contact Person _____

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- Reduced Monitoring Date Q1 collected: _____
- Quarterly Date Q2 collected: _____
- Composite of four quarterly samples Date Q3 collected: _____
- Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.6 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.6 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64593

Lab ID Number: AZ0462

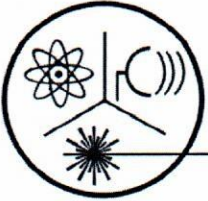
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-DMX04-0620

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

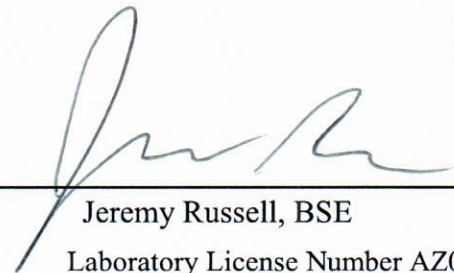
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 23, 2020
Sample Received: June 26, 2020
Analysis Completed: July 15, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-DMX06-0620	0.6 ± 0.2	< 0.8	0.6 ± 0.2

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/15/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 23, 2020 12:38 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

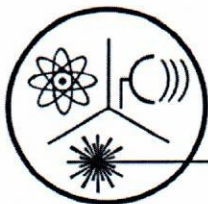
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.6 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.6 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64594
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-DMX06-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: June 22, 2020

Sample Received: June 26, 2020

Analysis Completed: July 15, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW06-0620	1.0 ± 0.2	1.8 ± 0.4	2.8 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

7/15/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 22, 2020 13:54 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

 Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

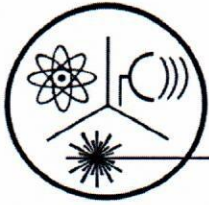
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	2.8 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	1.0 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.8 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64595 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW06-0620 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

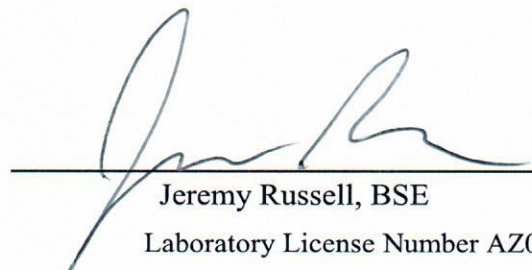
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 23, 2020
Sample Received: June 26, 2020
Analysis Completed: July 15, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW15-0620	< 0.4	< 0.8	< 0.8

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/15/2020
Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 23, 2020 11:57 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

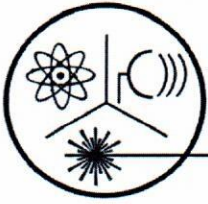
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64596
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW15-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 23, 2020
Sample Received: June 26, 2020
Analysis Completed: July 15, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW16-0620	0.9 ± 0.2	2.2 ± 0.4	3.1 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

7/15/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 23, 2020 _____ 11:15 _____ (24 hour clock) _____

Sample Date _____ Sample Time _____ Owner/Contact Person _____

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	3.1 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.9 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	2.2 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64597
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW16-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

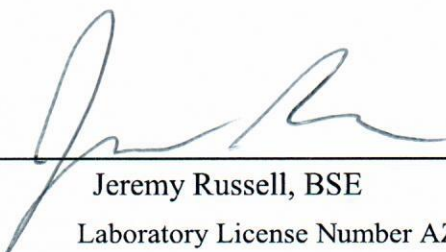
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 22, 2020
Sample Received: June 26, 2020
Analysis Completed: July 15, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW17R-0620	0.8 ± 0.2	1.1 ± 0.4	1.9 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

7/15/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

June 22, 2020 _____ 12:10 _____ (24 hour clock)

Sample Date _____ Sample Time _____

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	1.9 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.8 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.1 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64598

Lab ID Number: AZ0462

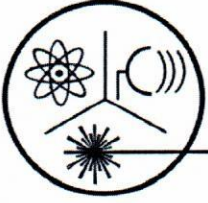
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW17R-0620

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

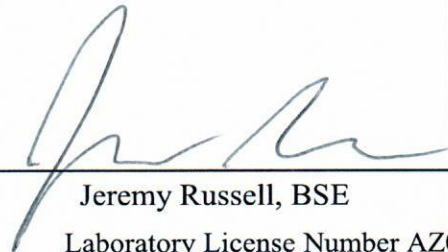
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 22, 2020
Sample Received: June 26, 2020
Analysis Completed: July 15, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW38R-0620	0.4 ± 0.2	< 0.8	0.4 ± 0.2

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
------------------	----------	----------	----------



Jeremy Russell, BSE

Laboratory License Number AZ0462

7/15/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 22, 2020 15:26 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

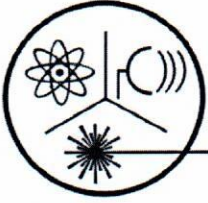
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	0.4 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.4 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64599 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW38R-0620 _____
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

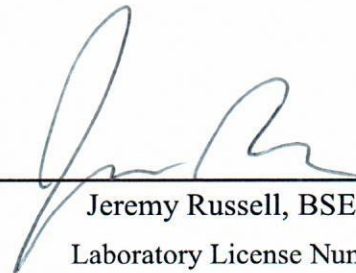
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 22, 2020
Sample Received: June 26, 2020
Analysis Completed: July 15, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW56-0620	1.2 ± 0.2	2.2 ± 0.4	3.4 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
------------------	----------	----------	----------


Jeremy Russell, BSE
Laboratory License Number AZ0462

7/15/2020

Date

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

June 22, 2020 10:54 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	3.4 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	1.2 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	2.2 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64600 _____

Lab ID Number: AZ0462 _____

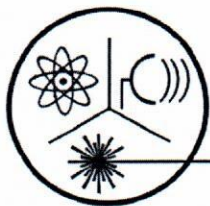
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW56-0620 _____

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: June 22, 2020

Sample Received: June 26, 2020

Analysis Completed: July 15, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW57-0620	0.7 ± 0.2	1.7 ± 0.4	2.4 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
------------------	----------	----------	----------

Jeremy Russell, BSE

Laboratory License Number AZ0462

7/15/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 22, 2020 14:46 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

 Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

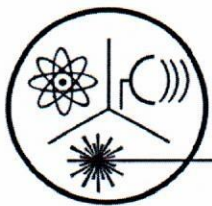
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	2.4 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	0.7 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.7 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64601
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW57-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: June 22, 2020
Sample Received: June 26, 2020
Analysis Completed: July 15, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-FD05-0620	< 0.4	1.1 ± 0.4	1.1 ± 0.4

Date of Analysis	7/2/2020	7/2/2020	7/2/2020
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7/15/2020

Jeremy Russell, BSE

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

June 22, 2020 15:26 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	7/2/2020	1.1 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	7/2/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	7/2/2020	1.1 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64602
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-FD05-0620
 Authorized Signature: _____
 Date Public Water System Notified: _____

Client Information				Radiation Safety Engineering, Inc.										Chandler, Arizona		
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241 Arizona Public Service				3245 North Washington Street										85225		
Address: PO Box 355, MS 4915 Fruitland, NM 87416				Analysis Request												
Phone:																
Site: APS Four Corners Power Plant (Other)																
Sample ID & Location (DWR#)	Collection		Media (DW* WW* Other)	Drinking Water Compliance	Gross Alpha	Gross Beta	Total Uranium	Isotopic Uranium	Ra-226	Ra-228	Ra-226 + Ra-228, Combined	H-3	Gamma Spectroscopy	Sr-89/Sr-90	Radon in Water	Radon in Air
	Date	Time														
FC-CCR-DMX04-0620	6/22/2020	13:00	GW	X					X	X	X				64593	
FC-CCR-DMX06-0620	6/23/2020	11:58	GW	X					X	X	X				64594	
FC-CCR-MW06-0620	6/22/2020	13:54	GW	X					X	X	X				64595	
FC-CCR-MW15-0620	6/23/2020	11:57	GW	X					X	X	X				64596	
FC-CCR-MW16-0620	6/23/2020	11:15	GW	X					X	X	X				64597	
FC-CCR-MW17R-0620	6/22/2020	12:10	GW	X					X	X	X				64598	
FC-CCR-MW38R-0620	6/22/2020	15:26	GW	X					X	X	X				64599	
FC-CCR-MW56-0620	6/22/2020	10:54	GW	X					X	X	X				64600	
FC-CCR-MW57-0620	6/22/2020	14:46	GW	X					X	X	X				64601	
FC-CCR-FD05-0620	6/22/2020	15:26	GW	X					X	X	X				64602	
Sample Receipt				Instructions/Comments												
Total No. of Containers				Method HPGe												
Chain of Custody Seals																
Container Condition																
Lab No.																
Relinequished By: <i>[Signature]</i>				Date/time: 5/24/04				Received By: <i>[Signature]</i>				Company: RSE				Date/time: 6-26-20
Relinequished By:				Date/time:				Received By:				Company:				Date/time:
Relinequished By:				Date/time:				Received By:				Company:				Date/time:

3:47

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-152659-1

Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
County Road 6675, Stn 4915
Fruitland, New Mexico 87416

Attn: Natalie Chrisman



Authorized for release by:
12/8/2020 2:51:54 PM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

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Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

Metals

Qualifier	Qualifier Description
B3	Target analyte detected in calibration blank at or above the method reporting limit.
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H1	Sample analysis performed past holding time.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

1

2

3

4

5

6

7

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9

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11

12

13

14

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Job ID: 550-152659-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-152659-1

Comments

No additional comments.

Receipt

The samples were received on 11/9/2020 3:15 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 2.1° C, 2.2° C, 2.3° C, 2.6° C and 3.4° C.

HPLC/IC

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for 550-225203 were outside control limits for Fluoride. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

Method 300.0: The following samples were diluted for Fluoride due to the nature of the sample matrix: FC-CCR-MW06-1120 (550-152659-7) and FC-CCR-MW56-1120 (550-152659-18). Elevated reporting limits (RLs) have been provided.

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for 550-225199 were outside control limits for Fluoride. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-226076 contained Boron above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-226076 contained Sodium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The following sample was diluted due to the nature of the sample matrix: FC-CCR-MW21-1120 (550-152659-14). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: FC-CCR-MW56-1120 (550-152659-18), FC-CCR-CM01-1120 (550-152659-24) and FC-CCR-CM02-1120 (550-152659-25). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: FC-CCR-MW38R-1120 (550-152659-17), FC-CCR-MW56-1120 (550-152659-18), FC-CCR-MW57-1120 (550-152659-19) and FC-CCR-CM04-1120 (550-152659-27). Elevated reporting limits (RLs) are provided.

Method 200.7: The following samples were diluted due to the nature of the sample matrix: FC-CCR-DMX03-1120 (550-152659-1), FC-CCR-DMX04-1120 (550-152659-2), FC-CCR-DMX06-1120 (550-152659-3), FC-CCR-MW01-1120 (550-152659-4), FC-CCR-MW01-1120 (550-152659-4[MS]), FC-CCR-MW01-1120 (550-152659-4[MSD]), FC-CCR-MW06-1120 (550-152659-7), FC-CCR-MW15-1120 (550-152659-8), FC-CCR-MW16-1120 (550-152659-9) and FC-CCR-MW17R-1120 (550-152659-11). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: FC-CCR-DMX03-1120 (550-152659-1), FC-CCR-DMX04-1120 (550-152659-2), FC-CCR-DMX06-1120 (550-152659-3), FC-CCR-MW06-1120 (550-152659-7), FC-CCR-MW15-1120 (550-152659-8), FC-CCR-MW16-1120 (550-152659-9) and FC-CCR-MW17R-1120 (550-152659-11). Elevated reporting limits (RLs) are provided.

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Job ID: 550-152659-1 (Continued)

Laboratory: Eurofins TestAmerica, Phoenix (Continued)

Method 200.8 LL: The continuing calibration blank (CCB) for analytical batch 550-227337 contained Selenium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.8 LL: The continuing calibration blank (CCB) for analytical batch 550-227337 contained Thallium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: There are 11 sample in this 200.7 batch due to the limited volume of job 550-152659<EXPLANATION_REQUIRED>

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method SM 2540C: The following sample(s) was received with 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: FC-CCR-CM01-1120 (550-152659-24), FC-CCR-CM02-1120 (550-152659-25), FC-CCR-CM03-1120 (550-152659-26), FC-CCR-CM04-1120 (550-152659-27) and (550-152659-A-24 DU).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-152659-1	FC-CCR-DMX03-1120	Water	11/07/20 13:31	11/09/20 15:15	
550-152659-2	FC-CCR-DMX04-1120	Water	11/07/20 09:19	11/09/20 15:15	
550-152659-3	FC-CCR-DMX06-1120	Water	11/06/20 13:36	11/09/20 15:15	
550-152659-4	FC-CCR-MW01-1120	Water	11/08/20 10:36	11/09/20 15:15	
550-152659-5	FC-CCR-MW03-1120	Water	11/08/20 11:31	11/09/20 15:15	
550-152659-6	FC-CCR-MW05-1120	Water	11/07/20 13:05	11/09/20 15:15	
550-152659-7	FC-CCR-MW06-1120	Water	11/07/20 08:33	11/09/20 15:15	
550-152659-8	FC-CCR-MW15-1120	Water	11/06/20 12:45	11/09/20 15:15	
550-152659-9	FC-CCR-MW16-1120	Water	11/06/20 11:42	11/09/20 15:15	
550-152659-10	FC-CCR-FD03-1120	Water	11/08/20 10:36	11/09/20 15:15	
550-152659-11	FC-CCR-MW17R-1120	Water	11/07/20 10:01	11/09/20 15:15	
550-152659-12	FC-CCR-MW18-1120	Water	11/07/20 12:22	11/09/20 15:15	
550-152659-13	FC-CCR-MW19-1120	Water	11/07/20 14:46	11/09/20 15:15	
550-152659-14	FC-CCR-MW21-1120	Water	11/08/20 12:15	11/09/20 15:15	
550-152659-15	FC-CCR-MW23R-1120	Water	11/07/20 14:14	11/09/20 15:15	
550-152659-16	FC-CCR-MW36R-1120	Water	11/07/20 11:40	11/09/20 15:15	
550-152659-17	FC-CCR-MW38R-1120	Water	11/06/20 16:03	11/09/20 15:15	
550-152659-18	FC-CCR-MW56-1120	Water	11/07/20 10:38	11/09/20 15:15	
550-152659-19	FC-CCR-MW57-1120	Water	11/06/20 15:13	11/09/20 15:15	
550-152659-20	FC-CCR-FD04-1120	Water	11/07/20 11:40	11/09/20 15:15	
550-152659-21	FC-CCR-MW60-1120	Water	11/08/20 10:07	11/09/20 15:15	
550-152659-22	FC-CCR-MW81-1120	Water	11/08/20 13:28	11/09/20 15:15	
550-152659-23	FC-CCR-MW82S-1120	Water	11/08/20 13:56	11/09/20 15:15	
550-152659-24	FC-CCR-CM01-1120	Water	11/04/20 13:07	11/09/20 15:15	
550-152659-25	FC-CCR-CM02-1120	Water	11/04/20 13:54	11/09/20 15:15	
550-152659-26	FC-CCR-CM03-1120	Water	11/04/20 10:33	11/09/20 15:15	
550-152659-27	FC-CCR-CM04-1120	Water	11/04/20 09:42	11/09/20 15:15	

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-DMX03-1120

Lab Sample ID: 550-152659-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1100	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.31	E4 M2 R13	0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	13000	D2 M1	400	85	mg/L	200		300.0	Total/NA
Lithium	1.3		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.86		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	1900		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	66		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2800	D2	4.0	0.24	mg/L	4		200.7 Rev 4.4	Total/NA
Antimony	0.000097	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0033	D1	0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.018	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.000078	E4	0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.0019	D1 E4	0.0040	0.0017	mg/L	4		200.8 LL	Total/NA
Cobalt	0.011		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.019		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.014	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00035	D1	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	750		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	750		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	19000	D1	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.3	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-DMX04-1120

Lab Sample ID: 550-152659-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	770	D2	200	52	mg/L	100		300.0	Total/NA
Fluoride	0.92		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	9400	D2	200	43	mg/L	100		300.0	Total/NA
Lithium	0.67		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	3.1		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	410		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	800		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	42		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3000	D2	4.0	0.24	mg/L	4		200.7 Rev 4.4	Total/NA
Antimony	0.00028	D1 E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0032	D1	0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.0084	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00018	D1 E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0070		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.011	D1	0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.018	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00031	D1	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	410		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	410		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	15000	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.1	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-DMX06-1120

Lab Sample ID: 550-152659-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1100	D2	200	52	mg/L	100		300.0	Total/NA
Fluoride	0.53		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	9100	D2	200	43	mg/L	100		300.0	Total/NA
Lithium	1.0		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	5.0		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	330		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	490		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	46		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3700	D2	4.0	0.24	mg/L	4		200.7 Rev 4.4	Total/NA
Antimony	0.00010	D1 E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0023	D1	0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.012	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.000076	D1 E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.0026	D1 E4	0.0040	0.0017	mg/L	4		200.8 LL	Total/NA
Cobalt	0.0067		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0045	D1	0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.0029	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.000044	D1 E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	570		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	570		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	14000	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.9	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW01-1120

Lab Sample ID: 550-152659-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	56	M3	0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.0015		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.00051		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW03-1120

Lab Sample ID: 550-152659-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	7.5		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.0031		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0030	D1	0.0010	0.00040	mg/L	2		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW05-1120

Lab Sample ID: 550-152659-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.2		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.0037		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0024	D1	0.0010	0.00040	mg/L	2		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW06-1120

Lab Sample ID: 550-152659-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2700	D2	1000	260	mg/L	500		300.0	Total/NA
Sulfate	23000	D2	1000	210	mg/L	500		300.0	Total/NA
Lithium	2.2		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	5.9		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	460		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW06-1120 (Continued)

Lab Sample ID: 550-152659-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	1500		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	88		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	7300	D2	5.0	0.31	mg/L	5		200.7 Rev 4.4	Total/NA
Antimony	0.00031	D1 E4	0.0040	0.00017	mg/L	4		200.8 LL	Total/NA
Arsenic	0.0030	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.017	D1	0.0020	0.0010	mg/L	4		200.8 LL	Total/NA
Cadmium	0.00011	D1 E4	0.00040	0.000092	mg/L	4		200.8 LL	Total/NA
Chromium	0.0025	D1 E4	0.0040	0.0017	mg/L	4		200.8 LL	Total/NA
Cobalt	0.00036	E4	0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0048	D1	0.0020	0.00081	mg/L	4		200.8 LL	Total/NA
Selenium	0.0049	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Alkalinity as CaCO3	720		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	720		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	31000	D1	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.9	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW15-1120

Lab Sample ID: 550-152659-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1000	D2	200	52	mg/L	100		300.0	Total/NA
Sulfate	6800	D2	200	43	mg/L	100		300.0	Total/NA
Lithium	1.0		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	7.9		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	430		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	640		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	41		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2200	D2	4.0	0.24	mg/L	4		200.7 Rev 4.4	Total/NA
Antimony	0.00041	D1 E4	0.0040	0.00017	mg/L	4		200.8 LL	Total/NA
Arsenic	0.0014	D1 E4	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.019	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.000092	D1 E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.0016	D1 E4	0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0030		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0020	D1	0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.0030	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00014	D1 E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	660		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	660		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	11000	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.3	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW16-1120

Lab Sample ID: 550-152659-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1400	D2	200	52	mg/L	100		300.0	Total/NA
Sulfate	11000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	1.3		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	7.3		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	410		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	1300		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW16-1120 (Continued)

Lab Sample ID: 550-152659-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	54		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3000	D2	4.0	0.24	mg/L	4		200.7 Rev 4.4	Total/NA
Antimony	0.00022	D1 E4	0.0040	0.00017	mg/L	4		200.8 LL	Total/NA
Barium	0.023	D1	0.0020	0.0010	mg/L	4		200.8 LL	Total/NA
Cadmium	0.00018	D1 E4	0.00040	0.000092	mg/L	4		200.8 LL	Total/NA
Chromium	0.0016	D1 E4	0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0058		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Selenium	0.034	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00054	D1	0.00040	0.000053	mg/L	4		200.8 LL	Total/NA
Alkalinity as CaCO3	610		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	610		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	16000	D1	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	14.3	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD03-1120

Lab Sample ID: 550-152659-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	56		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.00035	E4	0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.055		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW17R-1120

Lab Sample ID: 550-152659-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	400	D2	200	52	mg/L	100		300.0	Total/NA
Fluoride	0.40		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	4300	D2	200	43	mg/L	100		300.0	Total/NA
Lithium	0.47		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	36		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	260		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	20		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1100	D2	2.0	0.12	mg/L	2		200.7 Rev 4.4	Total/NA
Arsenic	0.0020	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.017	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.0011	D1	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.0029	D1	0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.072	D1	0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Lead	0.0019	D1	0.0010	0.00044	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.034	D1	0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.0025	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00029	D1	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	140		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	140		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	5900	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.6	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW18-1120

Lab Sample ID: 550-152659-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.1		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.076		0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0024	D1	0.0020	0.00081	mg/L	4		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW19-1120

Lab Sample ID: 550-152659-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.9		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.0020	D1	0.0020	0.00025	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0061	D1	0.0020	0.00081	mg/L	4		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW21-1120

Lab Sample ID: 550-152659-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	4.6	D1	0.10	0.0051	mg/L	2		200.7 Rev 4.4	Total/NA
Cobalt	0.0054	D1	0.0020	0.00025	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0035	D1	0.0020	0.00081	mg/L	4		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW23R-1120

Lab Sample ID: 550-152659-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	13		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.00068	D1 E4	0.0020	0.00025	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0075	D1	0.0020	0.00081	mg/L	4		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW36R-1120

Lab Sample ID: 550-152659-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	53	M3	0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.26		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0010		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW38R-1120

Lab Sample ID: 550-152659-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	280	D2	200	52	mg/L	100		300.0	Total/NA
Fluoride	0.36	E4	0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	4000	D2	200	43	mg/L	100		300.0	Total/NA
Lithium	0.41		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	27		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	430		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	490		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	300		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	16		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	18		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	970	D2	1.0	0.061	mg/L	2		200.7 Rev 4.4	Total/NA
Arsenic	0.0013	D1 E4	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.014	D1	0.0020	0.0010	mg/L	4		200.8 LL	Total/NA
Cadmium	0.00032	D1 E4	0.00040	0.000092	mg/L	4		200.8 LL	Total/NA
Chromium	0.0022	D1 E4	0.0040	0.0017	mg/L	4		200.8 LL	Total/NA
Cobalt	0.28	D1	0.0020	0.00025	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0073	D1	0.0020	0.00081	mg/L	4		200.8 LL	Total/NA
Selenium	0.0026	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW38R-1120 (Continued)

Lab Sample ID: 550-152659-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	5800	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.6	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW56-1120

Lab Sample ID: 550-152659-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2100	D2	400	100	mg/L	200		300.0	Total/NA
Sulfate	16000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	1.7		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	2.0		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	460		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2200	D2	20	0.44	mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	83		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	4900	D2	5.0	0.31	mg/L	10		200.7 Rev 4.4	Total/NA
Antimony	0.00020	D1 E4	0.0040	0.00017	mg/L	4		200.8 LL	Total/NA
Arsenic	0.015	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.020	D1	0.0020	0.0010	mg/L	4		200.8 LL	Total/NA
Cadmium	0.00068	D1	0.00040	0.000092	mg/L	4		200.8 LL	Total/NA
Chromium	0.0023	D1 E4	0.0040	0.0017	mg/L	4		200.8 LL	Total/NA
Cobalt	0.00074	D1 E4	0.0020	0.00025	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0047	D1	0.0020	0.00081	mg/L	4		200.8 LL	Total/NA
Selenium	0.31	B3 D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.0011	D1	0.00040	0.000053	mg/L	4		200.8 LL	Total/NA
Alkalinity as CaCO3	750		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	750		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	27000	D1	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.9	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW57-1120

Lab Sample ID: 550-152659-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	540	D2	200	52	mg/L	100		300.0	Total/NA
Sulfate	8300	D2	200	43	mg/L	100		300.0	Total/NA
Lithium	0.87		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	1.6		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	840		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	47		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2400	D2	2.5	0.15	mg/L	5		200.7 Rev 4.4	Total/NA
Antimony	0.00022	D1 E4	0.0040	0.00017	mg/L	4		200.8 LL	Total/NA
Arsenic	0.0012	D1 E4	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.020	D1	0.0020	0.0010	mg/L	4		200.8 LL	Total/NA
Cadmium	0.00081	D1	0.00040	0.000092	mg/L	4		200.8 LL	Total/NA
Chromium	0.0020	D1 E4	0.0040	0.0017	mg/L	4		200.8 LL	Total/NA
Cobalt	0.0043	D1	0.0020	0.00025	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.027	D1	0.0020	0.00081	mg/L	4		200.8 LL	Total/NA
Selenium	0.0030	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00018	D1 E4	0.00040	0.000053	mg/L	4		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW57-1120 (Continued)

Lab Sample ID: 550-152659-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity as CaCO3	510		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	510		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	12000	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.6	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD04-1120

Lab Sample ID: 550-152659-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	55		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.29	D1	0.0020	0.00025	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.0018	D1 E4	0.0020	0.00081	mg/L	4		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW60-1120

Lab Sample ID: 550-152659-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	61		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.26	D1	0.0050	0.00063	mg/L	10		200.8 LL	Total/NA
Molybdenum	0.20	D1	0.0050	0.0020	mg/L	10		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW81-1120

Lab Sample ID: 550-152659-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	38		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.018		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0077		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW82S-1120

Lab Sample ID: 550-152659-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	60		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.10		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0028		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA

Client Sample ID: FC-CCR-CM01-1120

Lab Sample ID: 550-152659-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1700	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	3.7	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	12000	D2	400	85	mg/L	200		300.0	Total/NA
Magnesium	2700	D2	10	0.22	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	39		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	700		0.50	0.031	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	400		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	400		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	19000	D2 H1	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.1	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-CM02-1120

Lab Sample ID: 550-152659-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1800	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	6.8	D1	0.80	0.095	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-CM02-1120 (Continued)

Lab Sample ID: 550-152659-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	12000	D2	400	85	mg/L	200		300.0	Total/NA
Magnesium	2700	D2	10	0.22	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	42		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	700		0.50	0.031	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	280		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	280		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	19000	D2 H1	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.0	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-CM03-1120

Lab Sample ID: 550-152659-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1600	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	16	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	14000	D2	400	85	mg/L	200		300.0	Total/NA
Magnesium	3000	D2	10	0.22	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	55		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	780		0.50	0.031	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	490		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	490		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	21000	D2 H1	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.2	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-CM04-1120

Lab Sample ID: 550-152659-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1700	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	10	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	11000	D2	400	85	mg/L	200		300.0	Total/NA
Magnesium	2300	D2	10	0.22	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	43		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	850	D2	2.5	0.15	mg/L	5		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	300		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	300		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	17000	D2 H1	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.3	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-DMX03-1120

Lab Sample ID: 550-152659-1

Date Collected: 11/07/20 13:31

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100	D2	400	100	mg/L			11/10/20 18:50	200
Fluoride	0.31	E4 M2 R13	0.40	0.047	mg/L			11/10/20 13:20	1
Sulfate	13000	D2 M1	400	85	mg/L			11/10/20 18:50	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/12/20 14:39	11/18/20 19:03	1
Lithium	1.3		0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 08:56	1
Boron	0.86		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:03	1
Calcium	440		2.0	0.013	mg/L		11/12/20 14:39	11/18/20 19:03	1
Magnesium	1900		2.0	0.044	mg/L		11/12/20 14:39	11/18/20 19:03	1
Potassium	66		0.50	0.17	mg/L		11/12/20 14:39	11/24/20 01:09	1
Sodium	2800	D2	4.0	0.24	mg/L		12/01/20 06:48	12/02/20 13:42	4

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000097	E4	0.0010	0.000043	mg/L		11/10/20 10:37	11/18/20 19:51	1
Arsenic	0.0033	D1	0.0010	0.00049	mg/L		11/10/20 10:37	11/20/20 18:13	2
Barium	0.018	D1	0.0010	0.00052	mg/L		11/10/20 10:37	11/20/20 18:13	2
Cadmium	0.000078	E4	0.00010	0.000023	mg/L		11/10/20 10:37	11/18/20 19:51	1
Chromium	0.0019	D1 E4	0.0040	0.0017	mg/L		11/10/20 10:37	12/07/20 11:52	4
Cobalt	0.011		0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 19:51	1
Lead	ND	D1 E8	0.0010	0.00044	mg/L		11/10/20 10:37	11/20/20 18:13	2
Molybdenum	0.019		0.00050	0.00020	mg/L		11/10/20 10:37	11/18/20 19:51	1
Selenium	0.014	D1	0.0020	0.00030	mg/L		11/10/20 10:37	12/04/20 16:13	4
Thallium	0.00035	D1	0.00020	0.000026	mg/L		11/10/20 10:37	11/20/20 18:13	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	750		6.0	6.0	mg/L			11/16/20 11:10	1
Bicarbonate Alkalinity as CaCO3	750		6.0	6.0	mg/L			11/16/20 11:10	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Total Dissolved Solids	19000	D1	200	200	mg/L			11/13/20 06:41	1
pH	7.5	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	13.3	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-DMX04-1120

Lab Sample ID: 550-152659-2

Date Collected: 11/07/20 09:19

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	770	D2	200	52	mg/L			11/10/20 16:33	100
Fluoride	0.92		0.40	0.047	mg/L			11/10/20 16:05	1
Sulfate	9400	D2	200	43	mg/L			11/10/20 16:33	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/12/20 14:39	11/18/20 19:07	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-DMX04-1120

Lab Sample ID: 550-152659-2

Date Collected: 11/07/20 09:19

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.67		0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 08:59	1
Boron	3.1		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:07	1
Calcium	410		2.0	0.013	mg/L		11/12/20 14:39	11/18/20 19:07	1
Magnesium	800		2.0	0.044	mg/L		11/12/20 14:39	11/18/20 19:07	1
Potassium	42		0.50	0.17	mg/L		11/12/20 14:39	11/24/20 01:12	1
Sodium	3000	D2	4.0	0.24	mg/L		12/01/20 06:48	12/02/20 13:46	4

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00028	D1 E4	0.0020	0.000087	mg/L		11/10/20 10:37	11/20/20 18:15	2
Arsenic	0.0032	D1	0.0010	0.00049	mg/L		11/10/20 10:37	11/20/20 18:15	2
Barium	0.0084	D1	0.0010	0.00052	mg/L		11/10/20 10:37	11/20/20 18:15	2
Cadmium	0.00018	D1 E4	0.00020	0.000046	mg/L		11/10/20 10:37	11/20/20 18:15	2
Chromium	ND	D1 E8	0.0040	0.00017	mg/L		11/10/20 10:37	12/07/20 11:54	4
Cobalt	0.0070		0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 19:53	1
Lead	ND	D1 E8	0.0010	0.00044	mg/L		11/10/20 10:37	11/20/20 18:15	2
Molybdenum	0.011	D1	0.0010	0.00040	mg/L		11/10/20 10:37	11/20/20 18:15	2
Selenium	0.018	D1	0.0020	0.00030	mg/L		11/10/20 10:37	12/04/20 16:24	4
Thallium	0.00031	D1	0.00020	0.000026	mg/L		11/10/20 10:37	11/20/20 18:15	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	410		6.0	6.0	mg/L			11/12/20 09:51	1
Bicarbonate Alkalinity as CaCO3	410		6.0	6.0	mg/L			11/12/20 09:51	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 09:51	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 09:51	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 09:51	1
Total Dissolved Solids	15000	D1	100	100	mg/L			11/13/20 06:41	1
pH	7.7	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	13.1	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-DMX06-1120

Lab Sample ID: 550-152659-3

Date Collected: 11/06/20 13:36

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100	D2	200	52	mg/L			11/10/20 17:27	100
Fluoride	0.53		0.40	0.047	mg/L			11/10/20 17:00	1
Sulfate	9100	D2	200	43	mg/L			11/10/20 17:27	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/12/20 14:39	11/18/20 19:10	1
Lithium	1.0		0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 09:02	1
Boron	5.0		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:10	1
Calcium	330		2.0	0.013	mg/L		11/12/20 14:39	11/18/20 19:10	1
Magnesium	490		2.0	0.044	mg/L		11/12/20 14:39	11/18/20 19:10	1
Potassium	46		0.50	0.17	mg/L		11/12/20 14:39	11/24/20 01:16	1
Sodium	3700	D2	4.0	0.24	mg/L		12/01/20 06:48	12/02/20 13:49	4

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-DMX06-1120

Lab Sample ID: 550-152659-3

Date Collected: 11/06/20 13:36

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00010	D1 E4	0.0020	0.000087	mg/L		11/10/20 10:37	11/20/20 18:17	2
Arsenic	0.0023	D1	0.0010	0.00049	mg/L		11/10/20 10:37	11/20/20 18:17	2
Barium	0.012	D1	0.0010	0.00052	mg/L		11/10/20 10:37	11/20/20 18:17	2
Cadmium	0.000076	D1 E4	0.00020	0.000046	mg/L		11/10/20 10:37	11/20/20 18:17	2
Chromium	0.0026	D1 E4	0.0040	0.0017	mg/L		11/10/20 10:37	12/07/20 11:56	4
Cobalt	0.0067		0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 19:55	1
Lead	ND	D1 E8	0.0010	0.00044	mg/L		11/10/20 10:37	11/20/20 18:17	2
Molybdenum	0.0045	D1	0.0010	0.00040	mg/L		11/10/20 10:37	11/20/20 18:17	2
Selenium	0.0029	D1	0.0020	0.00030	mg/L		11/10/20 10:37	12/04/20 16:26	4
Thallium	0.000044	D1 E4	0.00020	0.000026	mg/L		11/10/20 10:37	11/20/20 18:17	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	570		6.0	6.0	mg/L			11/12/20 10:03	1
Bicarbonate Alkalinity as CaCO3	570		6.0	6.0	mg/L			11/12/20 10:03	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:03	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 10:03	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:03	1
Total Dissolved Solids	14000	D1	100	100	mg/L			11/13/20 06:41	1
pH	7.3	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	13.9	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-MW01-1120

Lab Sample ID: 550-152659-4

Date Collected: 11/08/20 10:36

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	56	M3	0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 18:59	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0015		0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 19:49	1
Molybdenum	0.00051		0.00050	0.00020	mg/L		11/10/20 10:37	11/18/20 19:49	1

Client Sample ID: FC-CCR-MW03-1120

Lab Sample ID: 550-152659-5

Date Collected: 11/08/20 11:31

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	7.5		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:14	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0031		0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 19:57	1
Molybdenum	0.0030	D1	0.0010	0.00040	mg/L		11/10/20 10:37	11/20/20 18:19	2

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW05-1120

Lab Sample ID: 550-152659-6

Date Collected: 11/07/20 13:05

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.2		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:18	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0037		0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 20:00	1
Molybdenum	0.0024	D1	0.0010	0.00040	mg/L		11/10/20 10:37	11/24/20 19:26	2

Client Sample ID: FC-CCR-MW06-1120

Lab Sample ID: 550-152659-7

Date Collected: 11/07/20 08:33

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2700	D2	1000	260	mg/L			11/10/20 20:58	500
Fluoride	ND	D1 D5 E8 M2 R13	0.80	0.095	mg/L			11/10/20 13:36	2
Sulfate	23000	D2	1000	210	mg/L			11/10/20 20:58	500

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/12/20 14:39	11/18/20 19:22	1
Lithium	2.2		0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 09:06	1
Boron	5.9		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:22	1
Calcium	460		2.0	0.013	mg/L		11/12/20 14:39	11/18/20 19:22	1
Magnesium	1500		2.0	0.044	mg/L		11/12/20 14:39	11/18/20 19:22	1
Potassium	88		0.50	0.17	mg/L		11/12/20 14:39	11/24/20 01:20	1
Sodium	7300	D2	5.0	0.31	mg/L		12/01/20 06:48	12/02/20 13:53	5

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00031	D1 E4	0.0040	0.00017	mg/L		11/10/20 10:37	12/04/20 16:30	4
Arsenic	0.0030	D1	0.0020	0.00099	mg/L		11/10/20 10:37	12/04/20 16:30	4
Barium	0.017	D1	0.0020	0.0010	mg/L		11/10/20 10:37	12/04/20 16:30	4
Cadmium	0.00011	D1 E4	0.00040	0.000092	mg/L		11/10/20 10:37	12/04/20 16:30	4
Chromium	0.0025	D1 E4	0.0040	0.0017	mg/L		11/10/20 10:37	12/07/20 11:58	4
Cobalt	0.00036	E4	0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 20:02	1
Lead	ND	D1 E8	0.0020	0.00088	mg/L		11/10/20 10:37	12/04/20 16:30	4
Molybdenum	0.0048	D1	0.0020	0.00081	mg/L		11/10/20 10:37	12/04/20 16:30	4
Selenium	0.0049	D1	0.0020	0.00030	mg/L		11/10/20 10:37	12/04/20 16:30	4
Thallium	ND	B3 D1 E8	0.00040	0.000053	mg/L		11/10/20 10:37	12/04/20 16:30	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	720		6.0	6.0	mg/L			11/12/20 10:16	1
Bicarbonate Alkalinity as CaCO3	720		6.0	6.0	mg/L			11/12/20 10:16	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:16	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 10:16	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:16	1
Total Dissolved Solids	31000	D1	200	200	mg/L			11/13/20 06:41	1
pH	7.5	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	12.9	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW15-1120

Lab Sample ID: 550-152659-8

Date Collected: 11/06/20 12:45

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1000	D2	200	52	mg/L			11/10/20 15:45	100
Fluoride	ND	E8	0.40	0.047	mg/L			11/10/20 15:26	1
Sulfate	6800	D2	200	43	mg/L			11/10/20 15:45	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/12/20 14:39	11/18/20 19:26	1
Lithium	1.0		0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 09:09	1
Boron	7.9		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:26	1
Calcium	430		2.0	0.013	mg/L		11/12/20 14:39	11/18/20 19:26	1
Magnesium	640		2.0	0.044	mg/L		11/12/20 14:39	11/18/20 19:26	1
Potassium	41		0.50	0.17	mg/L		11/12/20 14:39	11/24/20 01:24	1
Sodium	2200	D2	4.0	0.24	mg/L		12/01/20 06:48	12/02/20 13:57	4

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00041	D1 E4	0.0040	0.00017	mg/L		11/10/20 10:37	12/04/20 16:32	4
Arsenic	0.0014	D1 E4	0.0020	0.00099	mg/L		11/10/20 10:37	12/04/20 16:32	4
Barium	0.019	D1	0.0010	0.00052	mg/L		11/10/20 10:37	11/24/20 19:30	2
Cadmium	0.000092	D1 E4	0.00020	0.000046	mg/L		11/10/20 10:37	11/24/20 19:30	2
Chromium	0.0016	D1 E4	0.0020	0.00087	mg/L		11/10/20 10:37	11/24/20 19:30	2
Cobalt	0.0030		0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 20:04	1
Lead	ND	D1 E8	0.0010	0.00044	mg/L		11/10/20 10:37	11/24/20 19:30	2
Molybdenum	0.0020	D1	0.0010	0.00040	mg/L		11/10/20 10:37	11/24/20 19:30	2
Selenium	0.0030	D1	0.0020	0.00030	mg/L		11/10/20 10:37	12/04/20 16:32	4
Thallium	0.00014	D1 E4	0.00020	0.000026	mg/L		11/10/20 10:37	11/24/20 19:30	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	660		6.0	6.0	mg/L			11/12/20 10:27	1
Bicarbonate Alkalinity as CaCO3	660		6.0	6.0	mg/L			11/12/20 10:27	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:27	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 10:27	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:27	1
Total Dissolved Solids	11000	D1	100	100	mg/L			11/13/20 06:41	1
pH	7.2	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	13.3	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-MW16-1120

Lab Sample ID: 550-152659-9

Date Collected: 11/06/20 11:42

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1400	D2	200	52	mg/L			11/10/20 16:22	100
Fluoride	ND	E8	0.40	0.047	mg/L			11/10/20 16:03	1
Sulfate	11000	D2	400	85	mg/L			11/12/20 16:26	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/12/20 14:39	11/18/20 19:29	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW16-1120

Lab Sample ID: 550-152659-9

Date Collected: 11/06/20 11:42

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	1.3		0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 09:26	1
Boron	7.3		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:29	1
Calcium	410		2.0	0.013	mg/L		11/12/20 14:39	11/18/20 19:29	1
Magnesium	1300		2.0	0.044	mg/L		11/12/20 14:39	11/18/20 19:29	1
Potassium	54		0.50	0.17	mg/L		11/12/20 14:39	11/24/20 01:27	1
Sodium	3000	D2	4.0	0.24	mg/L		12/01/20 06:48	12/02/20 14:01	4

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00022	D1 E4	0.0040	0.00017	mg/L		11/10/20 10:37	12/04/20 16:34	4
Arsenic	ND	D1 E8	0.0020	0.00099	mg/L		11/10/20 10:37	12/04/20 16:34	4
Barium	0.023	D1	0.0020	0.0010	mg/L		11/10/20 10:37	12/04/20 16:34	4
Cadmium	0.00018	D1 E4	0.00040	0.000092	mg/L		11/10/20 10:37	12/04/20 16:34	4
Chromium	0.0016	D1 E4	0.0020	0.00087	mg/L		11/10/20 10:37	11/24/20 19:32	2
Cobalt	0.0058		0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 20:06	1
Lead	ND	D1 E8	0.0020	0.00088	mg/L		11/10/20 10:37	12/04/20 16:34	4
Molybdenum	ND	D1 E8	0.0020	0.00081	mg/L		11/10/20 10:37	12/04/20 16:34	4
Selenium	0.034	D1	0.0020	0.00030	mg/L		11/10/20 10:37	12/04/20 16:34	4
Thallium	0.00054	D1	0.00040	0.000053	mg/L		11/10/20 10:37	12/07/20 12:00	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	610		6.0	6.0	mg/L			11/12/20 10:39	1
Bicarbonate Alkalinity as CaCO3	610		6.0	6.0	mg/L			11/12/20 10:39	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:39	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 10:39	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:39	1
Total Dissolved Solids	16000	D1	200	200	mg/L			11/13/20 06:41	1
pH	7.4	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	14.3	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-FD03-1120

Lab Sample ID: 550-152659-10

Date Collected: 11/08/20 10:36

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	56		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:33	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00035	E4	0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 20:08	1
Molybdenum	0.055		0.00050	0.00020	mg/L		11/10/20 10:37	11/18/20 20:08	1

Client Sample ID: FC-CCR-MW17R-1120

Lab Sample ID: 550-152659-11

Date Collected: 11/07/20 10:01

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	400	D2	200	52	mg/L			11/10/20 17:35	100

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW17R-1120

Lab Sample ID: 550-152659-11

Date Collected: 11/07/20 10:01

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.40		0.40	0.047	mg/L			11/10/20 17:17	1
Sulfate	4300	D2	200	43	mg/L			11/10/20 17:35	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/12/20 14:39	11/18/20 19:44	1
Lithium	0.47		0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 09:29	1
Boron	36		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:44	1
Calcium	440		2.0	0.013	mg/L		11/12/20 14:39	11/18/20 19:44	1
Magnesium	260		2.0	0.044	mg/L		11/12/20 14:39	11/18/20 19:44	1
Potassium	20		0.50	0.17	mg/L		11/12/20 14:39	11/18/20 19:44	1
Sodium	1100	D2	2.0	0.12	mg/L		12/01/20 06:48	12/02/20 14:04	2

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1 E8	0.0040	0.00017	mg/L		11/10/20 10:37	12/04/20 16:36	4
Arsenic	0.0020	D1	0.0020	0.00099	mg/L		11/10/20 10:37	12/04/20 16:36	4
Barium	0.017	D1	0.0010	0.00052	mg/L		11/10/20 10:37	11/24/20 19:35	2
Cadmium	0.0011	D1	0.00020	0.000046	mg/L		11/10/20 10:37	11/24/20 19:35	2
Chromium	0.0029	D1	0.0020	0.00087	mg/L		11/10/20 10:37	11/24/20 19:35	2
Cobalt	0.072	D1	0.0010	0.00013	mg/L		11/10/20 10:37	11/24/20 19:35	2
Lead	0.0019	D1	0.0010	0.00044	mg/L		11/10/20 10:37	11/24/20 19:35	2
Molybdenum	0.034	D1	0.0010	0.00040	mg/L		11/10/20 10:37	11/24/20 19:35	2
Selenium	0.0025	D1	0.0020	0.00030	mg/L		11/10/20 10:37	12/04/20 16:36	4
Thallium	0.00029	D1	0.00020	0.000026	mg/L		11/10/20 10:37	11/24/20 19:35	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	140		6.0	6.0	mg/L			11/12/20 10:48	1
Bicarbonate Alkalinity as CaCO3	140		6.0	6.0	mg/L			11/12/20 10:48	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:48	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 10:48	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:48	1
Total Dissolved Solids	5900	D1	100	100	mg/L			11/13/20 06:41	1
pH	7.5	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	15.6	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-MW18-1120

Lab Sample ID: 550-152659-12

Date Collected: 11/07/20 12:22

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:48	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.076		0.0010	0.00013	mg/L		11/10/20 10:37	11/24/20 19:41	2
Molybdenum	0.0024	D1	0.0020	0.00081	mg/L		11/10/20 10:37	12/04/20 16:43	4

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW19-1120

Lab Sample ID: 550-152659-13

Date Collected: 11/07/20 14:46

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.9		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 19:52	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0020	D1	0.0020	0.00025	mg/L		11/10/20 10:37	12/04/20 16:45	4
Molybdenum	0.0061	D1	0.0020	0.00081	mg/L		11/10/20 10:37	12/04/20 16:45	4

Client Sample ID: FC-CCR-MW21-1120

Lab Sample ID: 550-152659-14

Date Collected: 11/08/20 12:15

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	4.6	D1	0.10	0.0051	mg/L		11/12/20 14:39	11/24/20 01:35	2

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0054	D1	0.0020	0.00025	mg/L		11/10/20 10:37	12/04/20 16:47	4
Molybdenum	0.0035	D1	0.0020	0.00081	mg/L		11/10/20 10:37	12/04/20 16:47	4

Client Sample ID: FC-CCR-MW23R-1120

Lab Sample ID: 550-152659-15

Date Collected: 11/07/20 14:14

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	13		0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 20:00	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00068	D1 E4	0.0020	0.00025	mg/L		11/10/20 10:37	12/04/20 16:49	4
Molybdenum	0.0075	D1	0.0020	0.00081	mg/L		11/10/20 10:37	12/04/20 16:49	4

Client Sample ID: FC-CCR-MW36R-1120

Lab Sample ID: 550-152659-16

Date Collected: 11/07/20 11:40

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	53	M3	0.050	0.0025	mg/L		11/12/20 14:51	11/18/20 20:49	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.26		0.00050	0.000063	mg/L		11/10/20 10:49	11/17/20 21:24	1
Molybdenum	0.0010		0.00050	0.00020	mg/L		11/10/20 10:49	11/17/20 21:24	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW38R-1120

Lab Sample ID: 550-152659-17

Date Collected: 11/06/20 16:03

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	280	D2	200	52	mg/L			11/10/20 18:12	100
Fluoride	0.36	E4	0.40	0.047	mg/L			11/10/20 17:54	1
Sulfate	4000	D2	200	43	mg/L			11/10/20 18:12	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/12/20 14:51	11/18/20 20:52	1
Lithium	0.41		0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 09:33	1
Boron	27		0.050	0.0025	mg/L		11/12/20 14:51	11/18/20 20:52	1
Calcium	430		2.0	0.013	mg/L		11/12/20 14:51	11/18/20 20:52	1
Calcium	490		2.0	0.013	mg/L		11/12/20 14:51	11/24/20 02:24	1
Magnesium	300		2.0	0.044	mg/L		11/12/20 14:51	11/24/20 02:24	1
Potassium	16		0.50	0.17	mg/L		11/12/20 14:51	11/18/20 20:52	1
Potassium	18		0.50	0.17	mg/L		11/12/20 14:51	11/24/20 02:24	1
Sodium	970	D2	1.0	0.061	mg/L		11/12/20 14:51	11/24/20 21:55	2

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1 E8	0.0040	0.00017	mg/L		11/10/20 10:37	12/04/20 16:51	4
Arsenic	0.0013	D1 E4	0.0020	0.00099	mg/L		11/10/20 10:37	12/04/20 16:51	4
Barium	0.014	D1	0.0020	0.0010	mg/L		11/10/20 10:37	12/04/20 16:51	4
Cadmium	0.00032	D1 E4	0.00040	0.000092	mg/L		11/10/20 10:37	12/04/20 16:51	4
Chromium	0.0022	D1 E4	0.0040	0.0017	mg/L		11/10/20 10:37	12/07/20 12:02	4
Cobalt	0.28	D1	0.0020	0.00025	mg/L		11/10/20 10:37	12/04/20 16:51	4
Lead	ND	D1 E8	0.0020	0.00088	mg/L		11/10/20 10:37	12/04/20 16:51	4
Molybdenum	0.0073	D1	0.0020	0.00081	mg/L		11/10/20 10:37	12/04/20 16:51	4
Selenium	0.0026	D1	0.0020	0.00030	mg/L		11/10/20 10:37	12/07/20 12:02	4
Thallium	ND	D1 E8	0.00040	0.000053	mg/L		11/10/20 10:37	12/04/20 16:51	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	120		6.0	6.0	mg/L			11/12/20 10:56	1
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L			11/12/20 10:56	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:56	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 10:56	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 10:56	1
Total Dissolved Solids	5800	D1	100	100	mg/L			11/13/20 06:41	1
pH	7.4	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	13.6	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-MW56-1120

Lab Sample ID: 550-152659-18

Date Collected: 11/07/20 10:38

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2100	D2	400	100	mg/L			11/10/20 18:49	200
Fluoride	ND	D1 D5 E8	0.80	0.095	mg/L			11/10/20 18:30	2
Sulfate	16000	D2	400	85	mg/L			11/10/20 18:49	200

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW56-1120

Lab Sample ID: 550-152659-18

Date Collected: 11/07/20 10:38

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/12/20 14:51	11/18/20 20:56	1
Lithium	1.7		0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 09:36	1
Boron	2.0		0.050	0.0025	mg/L		11/12/20 14:51	11/18/20 20:56	1
Calcium	460		2.0	0.013	mg/L		11/12/20 14:51	11/18/20 20:56	1
Magnesium	2200	D2	20	0.44	mg/L		11/12/20 14:51	11/24/20 02:28	10
Potassium	83		0.50	0.17	mg/L		11/12/20 14:51	11/18/20 20:56	1
Sodium	4900	D2	5.0	0.31	mg/L		11/12/20 14:51	11/24/20 21:59	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00020	D1 E4	0.0040	0.00017	mg/L		11/10/20 10:37	12/04/20 16:53	4
Arsenic	0.015	D1	0.0020	0.00099	mg/L		11/10/20 10:37	12/04/20 16:53	4
Barium	0.020	D1	0.0020	0.0010	mg/L		11/10/20 10:37	12/04/20 16:53	4
Cadmium	0.00068	D1	0.00040	0.000092	mg/L		11/10/20 10:37	12/04/20 16:53	4
Chromium	0.0023	D1 E4	0.0040	0.0017	mg/L		11/10/20 10:37	12/07/20 12:05	4
Cobalt	0.00074	D1 E4	0.0020	0.00025	mg/L		11/10/20 10:37	12/04/20 16:53	4
Lead	ND	D1 E8	0.0020	0.00088	mg/L		11/10/20 10:37	12/04/20 16:53	4
Molybdenum	0.0047	D1	0.0020	0.00081	mg/L		11/10/20 10:37	12/04/20 16:53	4
Selenium	0.31	B3 D1	0.0020	0.00030	mg/L		11/10/20 10:37	12/04/20 16:53	4
Thallium	0.0011	D1	0.00040	0.000053	mg/L		11/10/20 10:37	12/04/20 16:53	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	750		6.0	6.0	mg/L			11/16/20 11:10	1
Bicarbonate Alkalinity as CaCO3	750		6.0	6.0	mg/L			11/16/20 11:10	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Total Dissolved Solids	27000	D1	200	200	mg/L			11/13/20 06:41	1
pH	7.4	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	12.9	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-MW57-1120

Lab Sample ID: 550-152659-19

Date Collected: 11/06/20 15:13

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	540	D2	200	52	mg/L			11/10/20 19:26	100
Fluoride	ND	E8	0.40	0.047	mg/L			11/10/20 19:07	1
Sulfate	8300	D2	200	43	mg/L			11/10/20 19:26	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/12/20 14:51	11/18/20 21:00	1
Lithium	0.87		0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 09:39	1
Boron	1.6		0.050	0.0025	mg/L		11/12/20 14:51	11/18/20 21:00	1
Calcium	440		2.0	0.013	mg/L		11/12/20 14:51	11/18/20 21:00	1
Magnesium	840		2.0	0.044	mg/L		11/12/20 14:51	11/24/20 02:36	1
Potassium	47		0.50	0.17	mg/L		11/12/20 14:51	11/18/20 21:00	1
Sodium	2400	D2	2.5	0.15	mg/L		11/12/20 14:51	11/24/20 22:03	5

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW57-1120

Lab Sample ID: 550-152659-19

Date Collected: 11/06/20 15:13

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00022	D1 E4	0.0040	0.00017	mg/L		11/10/20 10:37	12/04/20 16:55	4
Arsenic	0.0012	D1 E4	0.0020	0.00099	mg/L		11/10/20 10:37	12/04/20 16:55	4
Barium	0.020	D1	0.0020	0.0010	mg/L		11/10/20 10:37	12/04/20 16:55	4
Cadmium	0.00081	D1	0.00040	0.000092	mg/L		11/10/20 10:37	12/04/20 16:55	4
Chromium	0.0020	D1 E4	0.0040	0.0017	mg/L		11/10/20 10:37	12/07/20 12:07	4
Cobalt	0.0043	D1	0.0020	0.00025	mg/L		11/10/20 10:37	12/04/20 16:55	4
Lead	ND	D1 E8	0.0020	0.00088	mg/L		11/10/20 10:37	12/04/20 16:55	4
Molybdenum	0.027	D1	0.0020	0.00081	mg/L		11/10/20 10:37	12/04/20 16:55	4
Selenium	0.0030	D1	0.0020	0.00030	mg/L		11/10/20 10:37	12/07/20 12:07	4
Thallium	0.00018	D1 E4	0.00040	0.000053	mg/L		11/10/20 10:37	12/04/20 16:55	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	510		6.0	6.0	mg/L			11/12/20 12:28	1
Bicarbonate Alkalinity as CaCO3	510		6.0	6.0	mg/L			11/12/20 12:28	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 12:28	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 12:28	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 12:28	1
Total Dissolved Solids	12000	D1	100	100	mg/L			11/13/20 06:41	1
pH	7.5	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	7.6	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-FD04-1120

Lab Sample ID: 550-152659-20

Date Collected: 11/07/20 11:40

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	55		0.050	0.0025	mg/L		11/12/20 14:51	11/18/20 21:04	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.29	D1	0.0020	0.00025	mg/L		11/10/20 10:37	12/04/20 16:57	4
Molybdenum	0.0018	D1 E4	0.0020	0.00081	mg/L		11/10/20 10:37	12/04/20 16:57	4

Client Sample ID: FC-CCR-MW60-1120

Lab Sample ID: 550-152659-21

Date Collected: 11/08/20 10:07

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	61		0.050	0.0025	mg/L		11/12/20 14:51	11/18/20 21:07	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.26	D1	0.0050	0.00063	mg/L		11/10/20 10:37	12/04/20 17:01	10
Molybdenum	0.20	D1	0.0050	0.0020	mg/L		11/10/20 10:37	12/04/20 17:01	10

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW81-1120

Lab Sample ID: 550-152659-22

Date Collected: 11/08/20 13:28

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	38		0.050	0.0025	mg/L		11/12/20 14:51	11/18/20 21:11	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.018		0.00050	0.000063	mg/L		11/10/20 10:49	11/18/20 10:50	1
Molybdenum	0.0077		0.00050	0.00020	mg/L		11/10/20 10:49	11/18/20 10:50	1

Client Sample ID: FC-CCR-MW82S-1120

Lab Sample ID: 550-152659-23

Date Collected: 11/08/20 13:56

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	60		0.050	0.0025	mg/L		11/12/20 14:51	11/18/20 21:15	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.10		0.00050	0.000063	mg/L		11/10/20 10:49	11/18/20 10:53	1
Molybdenum	0.0028		0.00050	0.00020	mg/L		11/10/20 10:49	11/17/20 21:28	1

Client Sample ID: FC-CCR-CM01-1120

Lab Sample ID: 550-152659-24

Date Collected: 11/04/20 13:07

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700	D2	400	100	mg/L			11/10/20 20:03	200
Fluoride	3.7	D1	0.80	0.095	mg/L			11/10/20 19:44	2
Sulfate	12000	D2	400	85	mg/L			11/10/20 20:03	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	2700	D2	10	0.22	mg/L		11/12/20 14:51	11/24/20 02:39	5
Potassium	39		0.50	0.17	mg/L		11/12/20 14:51	11/18/20 21:19	1
Sodium	700		0.50	0.031	mg/L		11/12/20 14:51	11/18/20 21:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	400		6.0	6.0	mg/L			11/12/20 12:38	1
Bicarbonate Alkalinity as CaCO3	400		6.0	6.0	mg/L			11/12/20 12:38	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 12:38	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 12:38	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 12:38	1
Total Dissolved Solids	19000	D2 H1	100	100	mg/L			11/12/20 07:49	1
pH	7.3	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	8.1	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-CM02-1120

Lab Sample ID: 550-152659-25

Date Collected: 11/04/20 13:54

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800	D2	400	100	mg/L			11/10/20 22:11	200
Fluoride	6.8	D1	0.80	0.095	mg/L			11/10/20 21:53	2
Sulfate	12000	D2	400	85	mg/L			11/10/20 22:11	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	2700	D2	10	0.22	mg/L		11/12/20 14:51	11/24/20 02:43	5
Potassium	42		0.50	0.17	mg/L		11/12/20 14:51	11/18/20 21:22	1
Sodium	700		0.50	0.031	mg/L		11/12/20 14:51	11/18/20 21:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	280		6.0	6.0	mg/L			11/12/20 12:47	1
Bicarbonate Alkalinity as CaCO3	280		6.0	6.0	mg/L			11/12/20 12:47	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 12:47	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 12:47	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 12:47	1
Total Dissolved Solids	19000	D2 H1	100	100	mg/L			11/12/20 07:49	1
pH	7.4	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	8.0	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-CM03-1120

Lab Sample ID: 550-152659-26

Date Collected: 11/04/20 10:33

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1600	D2	400	100	mg/L			11/10/20 22:48	200
Fluoride	16	D1	0.80	0.095	mg/L			11/10/20 22:30	2
Sulfate	14000	D2	400	85	mg/L			11/10/20 22:48	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	3000	D2	10	0.22	mg/L		11/12/20 14:51	11/24/20 02:55	5
Potassium	55		0.50	0.17	mg/L		11/12/20 14:51	11/18/20 21:34	1
Sodium	780		0.50	0.031	mg/L		11/12/20 14:51	11/18/20 21:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	490		6.0	6.0	mg/L			11/12/20 12:58	1
Bicarbonate Alkalinity as CaCO3	490		6.0	6.0	mg/L			11/12/20 12:58	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 12:58	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 12:58	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 12:58	1
Total Dissolved Solids	21000	D2 H1	200	200	mg/L			11/12/20 07:49	1
pH	7.4	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	9.2	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-CM04-1120

Lab Sample ID: 550-152659-27

Date Collected: 11/04/20 09:42

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700	D2	400	100	mg/L			11/10/20 23:25	200
Fluoride	10	D1	0.80	0.095	mg/L			11/10/20 23:07	2
Sulfate	11000	D2	400	85	mg/L			11/10/20 23:25	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	2300	D2	10	0.22	mg/L		11/12/20 14:51	11/24/20 02:58	5
Potassium	43		0.50	0.17	mg/L		11/12/20 14:51	11/18/20 21:38	1
Sodium	850	D2	2.5	0.15	mg/L		11/12/20 14:51	11/24/20 22:07	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	300		6.0	6.0	mg/L			11/12/20 13:06	1
Bicarbonate Alkalinity as CaCO3	300		6.0	6.0	mg/L			11/12/20 13:06	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 13:06	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 13:06	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 13:06	1
Total Dissolved Solids	17000	D2 H1	100	100	mg/L			11/12/20 07:49	1
pH	7.4	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	9.3	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-225199/2
Matrix: Water
Analysis Batch: 225199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND	E8	2.0	0.52	mg/L			11/10/20 10:46	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/10/20 10:46	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/10/20 10:46	1

Lab Sample ID: LCS 550-225199/5
Matrix: Water
Analysis Batch: 225199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.12		mg/L		103	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-225199/6
Matrix: Water
Analysis Batch: 225199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	4.00	4.11		mg/L		103	90 - 110	0	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-152659-7 MS
Matrix: Water
Analysis Batch: 225199

Client Sample ID: FC-CCR-MW06-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: 550-152659-7 MS
Matrix: Water
Analysis Batch: 225199

Client Sample ID: FC-CCR-MW06-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	23000	D2	10000	30800	D2	mg/L		80	80 - 120

Lab Sample ID: 550-152659-7 MSD
Matrix: Water
Analysis Batch: 225199

Client Sample ID: FC-CCR-MW06-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-152659-7 MSD
Matrix: Water
Analysis Batch: 225199

Client Sample ID: FC-CCR-MW06-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2700	D2	10000	13800	D2	mg/L		111	80 - 120	0	20
Sulfate	23000	D2	10000	31000	D2	mg/L		82	80 - 120	1	20

Lab Sample ID: MB 550-225203/2
Matrix: Water
Analysis Batch: 225203

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	E8	2.0	0.52	mg/L			11/10/20 10:47	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/10/20 10:47	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/10/20 10:47	1

Lab Sample ID: LCS 550-225203/5
Matrix: Water
Analysis Batch: 225203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.7		mg/L		104	90 - 110
Fluoride	4.00	4.32		mg/L		108	90 - 110
Sulfate	20.0	21.7		mg/L		109	90 - 110

Lab Sample ID: LCSD 550-225203/6
Matrix: Water
Analysis Batch: 225203

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.8		mg/L		104	90 - 110	0	20
Fluoride	4.00	4.33		mg/L		108	90 - 110	0	20
Sulfate	20.0	21.7		mg/L		108	90 - 110	0	20

Lab Sample ID: 550-152659-1 MS
Matrix: Water
Analysis Batch: 225203

Client Sample ID: FC-CCR-DMX03-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.31	E4 R13 M2	4.00	0.852	M2 R13	mg/L		13	80 - 120

Lab Sample ID: 550-152659-1 MS
Matrix: Water
Analysis Batch: 225203

Client Sample ID: FC-CCR-DMX03-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1100	D2	4000	5580	D2	mg/L		112	80 - 120
Sulfate	13000	M1 D2	4000	18300	D2 M1	mg/L		127	80 - 120

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-152659-1 MSD
Matrix: Water
Analysis Batch: 225203

Client Sample ID: FC-CCR-DMX03-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.31	E4 R13 M2	4.00	2.40	M2 R13	mg/L		52	80 - 120	95	20

Lab Sample ID: 550-152659-1 MSD
Matrix: Water
Analysis Batch: 225203

Client Sample ID: FC-CCR-DMX03-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1100	D2	4000	5570	D2	mg/L		112	80 - 120	0	20
Sulfate	13000	M1 D2	4000	18000	D2 M1	mg/L		122	80 - 120	1	20

Lab Sample ID: MB 550-225442/2
Matrix: Water
Analysis Batch: 225442

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	E8	2.0	0.52	mg/L			11/12/20 10:54	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/12/20 10:54	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/12/20 10:54	1

Lab Sample ID: LCS 550-225442/5
Matrix: Water
Analysis Batch: 225442

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	22.0		mg/L		110	90 - 110
Fluoride	4.00	4.26		mg/L		106	90 - 110
Sulfate	20.0	21.3		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-225442/6
Matrix: Water
Analysis Batch: 225442

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	22.1		mg/L		110	90 - 110	0	20
Fluoride	4.00	4.27		mg/L		107	90 - 110	0	20
Sulfate	20.0	21.3		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-152765-B-2 MS ^10
Matrix: Water
Analysis Batch: 225442

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10	E4 D2	200	230	D2	mg/L		110	80 - 120
Fluoride	5.2	D2	40.0	47.6	D2	mg/L		106	80 - 120
Sulfate	310	D2	200	532	D2	mg/L		109	80 - 120

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-152765-B-2 MSD ^10
Matrix: Water
Analysis Batch: 225442

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10	E4 D2	200	231	D2	mg/L		110	80 - 120	0	20
Fluoride	5.2	D2	40.0	47.9	D2	mg/L		107	80 - 120	1	20
Sulfate	310	D2	200	531	D2	mg/L		108	80 - 120	0	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-225414/1-A
Matrix: Water
Analysis Batch: 226075

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225414

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.000140	E4	0.0010	0.000067	mg/L		11/12/20 14:39	11/18/20 18:40	1
Boron	ND	E8	0.050	0.0025	mg/L		11/12/20 14:39	11/18/20 18:40	1
Calcium	ND	E8	2.0	0.013	mg/L		11/12/20 14:39	11/18/20 18:40	1
Magnesium	ND	E8	2.0	0.044	mg/L		11/12/20 14:39	11/18/20 18:40	1
Sodium	0.0548	E4	0.50	0.031	mg/L		11/12/20 14:39	11/18/20 18:40	1

Lab Sample ID: MB 550-225414/1-A
Matrix: Water
Analysis Batch: 226403

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225414

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND	E8	0.50	0.17	mg/L		11/12/20 14:39	11/24/20 00:46	1

Lab Sample ID: LCS 550-225414/2-A
Matrix: Water
Analysis Batch: 226075

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225414

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	0.905		mg/L		90	85 - 115
Boron	1.00	0.965		mg/L		96	85 - 115
Calcium	20.0	20.1		mg/L		100	85 - 115
Magnesium	20.0	18.5		mg/L		92	85 - 115
Sodium	20.0	20.2		mg/L		101	85 - 115

Lab Sample ID: LCS 550-225414/2-A
Matrix: Water
Analysis Batch: 226403

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225414

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	20.0	19.5		mg/L		98	85 - 115

Lab Sample ID: LCSD 550-225414/3-A
Matrix: Water
Analysis Batch: 226075

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225414

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	1.00	0.903		mg/L		90	85 - 115	0	20
Boron	1.00	0.987		mg/L		99	85 - 115	2	20
Calcium	20.0	20.6		mg/L		103	85 - 115	3	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-225414/3-A
Matrix: Water
Analysis Batch: 226075

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225414

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Magnesium	20.0	20.0		mg/L		100	85 - 115	8	20

Lab Sample ID: LCSD 550-225414/3-A
Matrix: Water
Analysis Batch: 226403

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225414

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Potassium	20.0	19.7		mg/L		98	85 - 115	1	20

Lab Sample ID: 550-152659-4 MS
Matrix: Water
Analysis Batch: 226075

Client Sample ID: FC-CCR-MW01-1120
Prep Type: Total/NA
Prep Batch: 225414

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	56	M3	1.00	53.7	M3	mg/L		-250	70 - 130		

Lab Sample ID: 550-152659-4 MSD
Matrix: Water
Analysis Batch: 226075

Client Sample ID: FC-CCR-MW01-1120
Prep Type: Total/NA
Prep Batch: 225414

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	56	M3	1.00	53.2	M3	mg/L		-296	70 - 130	1	20

Lab Sample ID: MB 550-225416/1-A
Matrix: Water
Analysis Batch: 226076

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.000230	E4	0.0010	0.000067	mg/L		11/12/20 14:51	11/18/20 20:30	1
Boron	0.00695	E4	0.050	0.0025	mg/L		11/12/20 14:51	11/18/20 20:30	1
Calcium	0.0259	E4	2.0	0.013	mg/L		11/12/20 14:51	11/18/20 20:30	1
Potassium	ND	E8	0.50	0.17	mg/L		11/12/20 14:51	11/18/20 20:30	1
Sodium	0.385	E4	0.50	0.031	mg/L		11/12/20 14:51	11/18/20 20:30	1

Lab Sample ID: MB 550-225416/1-A
Matrix: Water
Analysis Batch: 226404

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	0.169	E4	2.0	0.013	mg/L		11/12/20 14:51	11/24/20 01:54	1
Magnesium	0.155	E4	2.0	0.044	mg/L		11/12/20 14:51	11/24/20 01:54	1
Potassium	ND	E8	0.50	0.17	mg/L		11/12/20 14:51	11/24/20 01:54	1

Lab Sample ID: MB 550-225416/1-A
Matrix: Water
Analysis Batch: 226534

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	0.0244	E4	2.0	0.013	mg/L		11/12/20 14:51	11/24/20 21:33	1
Magnesium	ND	E8	2.0	0.044	mg/L		11/12/20 14:51	11/24/20 21:33	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 550-225416/1-A
Matrix: Water
Analysis Batch: 226534

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225416

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Potassium	ND	E8	0.50	0.17	mg/L		11/12/20 14:51	11/24/20 21:33	1
Sodium	0.111	E4	0.50	0.031	mg/L		11/12/20 14:51	11/24/20 21:33	1

Lab Sample ID: LCS 550-225416/2-A
Matrix: Water
Analysis Batch: 226076

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.963		mg/L		96	85 - 115
Calcium	20.0	20.4		mg/L		102	85 - 115
Potassium	20.0	18.2		mg/L		91	85 - 115
Sodium	20.0	21.1		mg/L		105	85 - 115

Lab Sample ID: LCS 550-225416/2-A
Matrix: Water
Analysis Batch: 226404

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	20.0	20.2		mg/L		101	85 - 115
Potassium	20.0	20.4		mg/L		102	85 - 115

Lab Sample ID: LCS 550-225416/2-A
Matrix: Water
Analysis Batch: 226534

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	20.0	20.1		mg/L		101	85 - 115
Potassium	20.0	19.8		mg/L		99	85 - 115
Sodium	20.0	23.1		mg/L		115	85 - 115

Lab Sample ID: LCSD 550-225416/3-A
Matrix: Water
Analysis Batch: 226076

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
Beryllium	1.00	0.926		mg/L		93	85 - 115	3	20
Boron	1.00	0.952		mg/L		95	85 - 115	1	20
Calcium	20.0	19.9		mg/L		99	85 - 115	3	20
Potassium	20.0	17.7		mg/L		89	85 - 115	3	20
Sodium	20.0	20.3		mg/L		101	85 - 115	4	20

Lab Sample ID: LCSD 550-225416/3-A
Matrix: Water
Analysis Batch: 226404

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
Calcium	20.0	22.1		mg/L		110	85 - 115	2	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-225416/3-A
Matrix: Water
Analysis Batch: 226404

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Magnesium	20.0	19.9		mg/L		99	85 - 115	2	20
Potassium	20.0	20.2		mg/L		101	85 - 115	1	20

Lab Sample ID: LCSD 550-225416/3-A
Matrix: Water
Analysis Batch: 226534

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	20.0	21.3		mg/L		106	85 - 115	2	20
Magnesium	20.0	19.8		mg/L		99	85 - 115	2	20
Potassium	20.0	19.5		mg/L		97	85 - 115	2	20
Sodium	20.0	22.4		mg/L		112	85 - 115	3	20

Lab Sample ID: 550-152659-16 MS
Matrix: Water
Analysis Batch: 226076

Client Sample ID: FC-CCR-MW36R-1120
Prep Type: Total/NA
Prep Batch: 225416

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	53	M3	1.00	50.3	M3	mg/L		-241	70 - 130		

Lab Sample ID: 550-152659-16 MSD
Matrix: Water
Analysis Batch: 226076

Client Sample ID: FC-CCR-MW36R-1120
Prep Type: Total/NA
Prep Batch: 225416

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	53	M3	1.00	49.7	M3	mg/L		-297	70 - 130	1	20

Lab Sample ID: MB 550-226876/1-A
Matrix: Water
Analysis Batch: 227094

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226876

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND	E8	0.50	0.031	mg/L		12/01/20 06:48	12/02/20 13:19	1

Lab Sample ID: LCS 550-226876/2-A
Matrix: Water
Analysis Batch: 227094

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226876

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	20.0	19.6		mg/L		98	85 - 115		

Lab Sample ID: LCSD 550-226876/3-A
Matrix: Water
Analysis Batch: 227094

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 226876

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	20.0	19.4		mg/L		97	85 - 115	1	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 280-517824/1-A
Matrix: Water
Analysis Batch: 518022

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 517824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND	E8	0.020	0.0091	mg/L		11/23/20 15:45	11/24/20 08:05	1

Lab Sample ID: LCS 280-517824/2-A
Matrix: Water
Analysis Batch: 518022

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 517824

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.01		mg/L		101	90 - 112

Lab Sample ID: 280-143037-F-1-B MS
Matrix: Water
Analysis Batch: 518022

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 517824

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.030		1.00	1.05		mg/L		102	70 - 130

Lab Sample ID: 280-143037-F-1-C MSD
Matrix: Water
Analysis Batch: 518022

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 517824

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.030		1.00	1.05		mg/L		102	70 - 130	0	20

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-225157/1-A
Matrix: Water
Analysis Batch: 225999

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225157

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	E8	0.0010	0.000043	mg/L		11/10/20 10:37	11/18/20 19:39	1
Cadmium	ND	E8	0.00010	0.000023	mg/L		11/10/20 10:37	11/18/20 19:39	1
Cobalt	ND	E8	0.00050	0.000063	mg/L		11/10/20 10:37	11/18/20 19:39	1
Lead	ND	E8	0.00050	0.00022	mg/L		11/10/20 10:37	11/18/20 19:39	1
Molybdenum	ND	E8	0.00050	0.00020	mg/L		11/10/20 10:37	11/18/20 19:39	1
Thallium	ND	E8	0.00010	0.000013	mg/L		11/10/20 10:37	11/18/20 19:39	1

Lab Sample ID: MB 550-225157/1-A
Matrix: Water
Analysis Batch: 226263

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225157

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.00050	0.00025	mg/L		11/10/20 10:37	11/20/20 18:01	1
Barium	ND	E8	0.00050	0.00026	mg/L		11/10/20 10:37	11/20/20 18:01	1
Chromium	ND	E8	0.0010	0.00043	mg/L		11/10/20 10:37	11/20/20 18:01	1
Lead	ND	E8	0.00050	0.00022	mg/L		11/10/20 10:37	11/20/20 18:01	1
Thallium	ND	E8	0.00010	0.000013	mg/L		11/10/20 10:37	11/20/20 18:01	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-225157/1-A
Matrix: Water
Analysis Batch: 227337

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225157

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.000224	E4	0.00050	0.000074	mg/L		11/10/20 10:37	12/04/20 15:54	1

Lab Sample ID: LCS 550-225157/2-A
Matrix: Water
Analysis Batch: 225999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225157

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.101		mg/L		101	85 - 115
Cadmium	0.100	0.0997		mg/L		100	85 - 115
Cobalt	0.100	0.111		mg/L		111	85 - 115
Lead	0.100	0.0943		mg/L		94	85 - 115
Molybdenum	0.100	0.110		mg/L		110	85 - 115
Thallium	0.100	0.0918		mg/L		92	85 - 115

Lab Sample ID: LCS 550-225157/2-A
Matrix: Water
Analysis Batch: 226263

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225157

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.100		mg/L		100	85 - 115
Barium	0.100	0.109		mg/L		109	85 - 115
Chromium	0.100	0.0946		mg/L		95	85 - 115
Lead	0.100	0.0963		mg/L		96	85 - 115
Thallium	0.100	0.0966		mg/L		97	85 - 115

Lab Sample ID: LCS 550-225157/2-A
Matrix: Water
Analysis Batch: 227337

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225157

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.100	0.107		mg/L		107	85 - 115

Lab Sample ID: LCSD 550-225157/3-A
Matrix: Water
Analysis Batch: 225999

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225157

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.100	0.0974		mg/L		97	85 - 115	4	20
Cadmium	0.100	0.0959		mg/L		96	85 - 115	4	20
Cobalt	0.100	0.103		mg/L		103	85 - 115	7	20
Lead	0.100	0.0917		mg/L		92	85 - 115	3	20
Molybdenum	0.100	0.105		mg/L		105	85 - 115	4	20
Thallium	0.100	0.0898		mg/L		90	85 - 115	2	20

Lab Sample ID: LCSD 550-225157/3-A
Matrix: Water
Analysis Batch: 226263

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225157

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.102		mg/L		102	85 - 115	2	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-225157/3-A
Matrix: Water
Analysis Batch: 226263

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225157

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.100	0.112		mg/L		112	85 - 115	2	20
Chromium	0.100	0.0957		mg/L		96	85 - 115	1	20
Lead	0.100	0.0971		mg/L		97	85 - 115	1	20
Thallium	0.100	0.0975		mg/L		97	85 - 115	1	20

Lab Sample ID: LCSD 550-225157/3-A
Matrix: Water
Analysis Batch: 227337

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225157

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.100	0.102		mg/L		102	85 - 115	5	20

Lab Sample ID: 550-152659-4 MS
Matrix: Water
Analysis Batch: 225999

Client Sample ID: FC-CCR-MW01-1120
Prep Type: Total/NA
Prep Batch: 225157

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	0.0015		0.100	0.100		mg/L		99	70 - 130		
Molybdenum	0.00051		0.100	0.109		mg/L		109	70 - 130		

Lab Sample ID: 550-152659-4 MSD
Matrix: Water
Analysis Batch: 225999

Client Sample ID: FC-CCR-MW01-1120
Prep Type: Total/NA
Prep Batch: 225157

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	0.0015		0.100	0.0980		mg/L		97	70 - 130	2	20
Molybdenum	0.00051		0.100	0.106		mg/L		105	70 - 130	3	20

Lab Sample ID: MB 550-225158/1-A
Matrix: Water
Analysis Batch: 225862

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225158

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	E8	0.00050	0.000063	mg/L		11/10/20 10:49	11/17/20 21:14	1
Molybdenum	ND	E8	0.00050	0.00020	mg/L		11/10/20 10:49	11/17/20 21:14	1

Lab Sample ID: LCS 550-225158/2-A
Matrix: Water
Analysis Batch: 225862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	0.100	0.103		mg/L		103	85 - 115		
Molybdenum	0.100	0.102		mg/L		102	85 - 115		

Lab Sample ID: LCSD 550-225158/3-A
Matrix: Water
Analysis Batch: 225862

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	0.100	0.103		mg/L		103	85 - 115	0	20

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QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-225158/3-A
Matrix: Water
Analysis Batch: 225862

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	0.100	0.104		mg/L		104	85 - 115	2	20

Lab Sample ID: 550-152659-16 MS
Matrix: Water
Analysis Batch: 225862

Client Sample ID: FC-CCR-MW36R-1120
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	0.26		0.100	0.354		mg/L		91	70 - 130		
Molybdenum	0.0010		0.100	0.107		mg/L		106	70 - 130		

Lab Sample ID: 550-152659-16 MSD
Matrix: Water
Analysis Batch: 225862

Client Sample ID: FC-CCR-MW36R-1120
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	0.26		0.100	0.354		mg/L		91	70 - 130	0	20
Molybdenum	0.0010		0.100	0.106		mg/L		105	70 - 130	0	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-225412/5
Matrix: Water
Analysis Batch: 225412

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 09:13	1
Bicarbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 09:13	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 09:13	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 09:13	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 09:13	1

Lab Sample ID: LCS 550-225412/4
Matrix: Water
Analysis Batch: 225412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	252		mg/L		101	90 - 110		

Lab Sample ID: LCSD 550-225412/17
Matrix: Water
Analysis Batch: 225412

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	252		mg/L		101	90 - 110	0	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 550-152654-F-1 DU
Matrix: Water
Analysis Batch: 225412

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
Alkalinity as CaCO3	9.0		10.3		mg/L			13	20
Bicarbonate Alkalinity as CaCO3	9.0		10.3		mg/L			13	20
Carbonate Alkalinity as CaCO3	ND	E8	ND	E8	mg/L			NC	20
Alkalinity, Phenolphthalein	ND	E8	ND	E8	mg/L			NC	20
Hydroxide Alkalinity as CaCO3	ND	E8	ND	E8	mg/L			NC	20

Lab Sample ID: 550-152660-A-2 DU
Matrix: Water
Analysis Batch: 225412

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
Alkalinity as CaCO3	540		536		mg/L			0.5	20
Bicarbonate Alkalinity as CaCO3	540		536		mg/L			0.5	20
Carbonate Alkalinity as CaCO3	ND	E8	ND	E8	mg/L			NC	20
Alkalinity, Phenolphthalein	ND	E8	ND	E8	mg/L			NC	20
Hydroxide Alkalinity as CaCO3	ND	E8	ND	E8	mg/L			NC	20

Lab Sample ID: MB 550-225657/1
Matrix: Water
Analysis Batch: 225657

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Bicarbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1

Lab Sample ID: LCS 550-225657/2
Matrix: Water
Analysis Batch: 225657

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: LCSD 550-225657/3
Matrix: Water
Analysis Batch: 225657

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit

Lab Sample ID: 550-152659-1 DU
Matrix: Water
Analysis Batch: 225658

Client Sample ID: FC-CCR-DMX03-1120
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
Alkalinity as CaCO3	750		700		mg/L			7	20
Bicarbonate Alkalinity as CaCO3	750		700		mg/L			7	20
Carbonate Alkalinity as CaCO3	ND	E8	ND	E8	mg/L			NC	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 550-152659-1 DU
 Matrix: Water
 Analysis Batch: 225658

Client Sample ID: FC-CCR-DMX03-1120
 Prep Type: Total/NA

Analyte	Sample		DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Alkalinity, Phenolphthalein	ND	E8	ND	E8	mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND	E8	ND	E8	mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-225350/1
 Matrix: Water
 Analysis Batch: 225350

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Dissolved Solids	ND	E8	20	20	mg/L			11/12/20 07:49	1

Lab Sample ID: LCS 550-225350/2
 Matrix: Water
 Analysis Batch: 225350

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: LCSD 550-225350/3
 Matrix: Water
 Analysis Batch: 225350

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit

Lab Sample ID: 550-152659-24 DU
 Matrix: Water
 Analysis Batch: 225350

Client Sample ID: FC-CCR-CM01-1120
 Prep Type: Total/NA

Analyte	Sample		DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Total Dissolved Solids	19000	H1 D2	18800	D2	mg/L		1	10

Lab Sample ID: MB 550-225459/1
 Matrix: Water
 Analysis Batch: 225459

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Dissolved Solids	ND	E8	20	20	mg/L			11/13/20 06:41	1

Lab Sample ID: LCS 550-225459/2
 Matrix: Water
 Analysis Batch: 225459

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCSD 550-225459/3
Matrix: Water
Analysis Batch: 225459

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	958		mg/L		96	90 - 110	1	10

Lab Sample ID: 550-152622-B-8 DU
Matrix: Water
Analysis Batch: 225459

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	3000	D1	2920	D1	mg/L		1	10

Lab Sample ID: 550-152659-1 DU
Matrix: Water
Analysis Batch: 225459

Client Sample ID: FC-CCR-DMX03-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	19000	D1	18900	D1	mg/L		2	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-225697/13
Matrix: Water
Analysis Batch: 225697

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	7.1		SU		101.3	98.5 - 101.5		

Lab Sample ID: LCSSRM 550-225697/25
Matrix: Water
Analysis Batch: 225697

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	7.1		SU		101.3	98.5 - 101.5		

Lab Sample ID: LCSSRM 550-225697/37
Matrix: Water
Analysis Batch: 225697

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	7.1		SU		100.7	98.5 - 101.5		

Lab Sample ID: 550-152448-B-1 DU
Matrix: Water
Analysis Batch: 225697

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.0	H5	7.9	H5	SU		1	5
Temperature	7.9	H5	8.3	H5	Degrees C		5	

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: 550-152659-19 DU
 Matrix: Water
 Analysis Batch: 225697

Client Sample ID: FC-CCR-MW57-1120
 Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
pH	7.5	H5	7.5	H5	SU		0.4		5
Temperature	7.6	H5	7.8	H5	Degrees C		3		

- 1
- 2
- 3
- 4
- 5
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- 7
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- 14

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

HPLC/IC

Analysis Batch: 225199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	300.0	
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	300.0	
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	300.0	
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	300.0	
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	300.0	
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	300.0	
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	300.0	
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	300.0	
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	300.0	
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	300.0	
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	300.0	
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	300.0	
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	300.0	
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	300.0	
550-152659-24	FC-CCR-CM01-1120	Total/NA	Water	300.0	
550-152659-24	FC-CCR-CM01-1120	Total/NA	Water	300.0	
550-152659-25	FC-CCR-CM02-1120	Total/NA	Water	300.0	
550-152659-25	FC-CCR-CM02-1120	Total/NA	Water	300.0	
550-152659-26	FC-CCR-CM03-1120	Total/NA	Water	300.0	
550-152659-26	FC-CCR-CM03-1120	Total/NA	Water	300.0	
550-152659-27	FC-CCR-CM04-1120	Total/NA	Water	300.0	
550-152659-27	FC-CCR-CM04-1120	Total/NA	Water	300.0	
MB 550-225199/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225199/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-225199/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152659-7 MS	FC-CCR-MW06-1120	Total/NA	Water	300.0	
550-152659-7 MS	FC-CCR-MW06-1120	Total/NA	Water	300.0	
550-152659-7 MSD	FC-CCR-MW06-1120	Total/NA	Water	300.0	
550-152659-7 MSD	FC-CCR-MW06-1120	Total/NA	Water	300.0	

Analysis Batch: 225203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	300.0	
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	300.0	
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	300.0	
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	300.0	
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	300.0	
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	300.0	
MB 550-225203/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225203/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-225203/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152659-1 MS	FC-CCR-DMX03-1120	Total/NA	Water	300.0	
550-152659-1 MS	FC-CCR-DMX03-1120	Total/NA	Water	300.0	
550-152659-1 MSD	FC-CCR-DMX03-1120	Total/NA	Water	300.0	
550-152659-1 MSD	FC-CCR-DMX03-1120	Total/NA	Water	300.0	

Analysis Batch: 225442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	300.0	
MB 550-225442/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225442/5	Lab Control Sample	Total/NA	Water	300.0	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

HPLC/IC (Continued)

Analysis Batch: 225442 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-225442/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152765-B-2 MS ^10	Matrix Spike	Total/NA	Water	300.0	
550-152765-B-2 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 225157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.8	
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.8	
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.8	
550-152659-4	FC-CCR-MW01-1120	Total/NA	Water	200.8	
550-152659-5	FC-CCR-MW03-1120	Total/NA	Water	200.8	
550-152659-6	FC-CCR-MW05-1120	Total/NA	Water	200.8	
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.8	
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.8	
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.8	
550-152659-10	FC-CCR-FD03-1120	Total/NA	Water	200.8	
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	200.8	
550-152659-12	FC-CCR-MW18-1120	Total/NA	Water	200.8	
550-152659-13	FC-CCR-MW19-1120	Total/NA	Water	200.8	
550-152659-14	FC-CCR-MW21-1120	Total/NA	Water	200.8	
550-152659-15	FC-CCR-MW23R-1120	Total/NA	Water	200.8	
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	200.8	
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	200.8	
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	200.8	
550-152659-20	FC-CCR-FD04-1120	Total/NA	Water	200.8	
550-152659-21	FC-CCR-MW60-1120	Total/NA	Water	200.8	
MB 550-225157/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-225157/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-225157/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-152659-4 MS	FC-CCR-MW01-1120	Total/NA	Water	200.8	
550-152659-4 MSD	FC-CCR-MW01-1120	Total/NA	Water	200.8	

Prep Batch: 225158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-16	FC-CCR-MW36R-1120	Total/NA	Water	200.8	
550-152659-22	FC-CCR-MW81-1120	Total/NA	Water	200.8	
550-152659-23	FC-CCR-MW82S-1120	Total/NA	Water	200.8	
MB 550-225158/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-225158/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-225158/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-152659-16 MS	FC-CCR-MW36R-1120	Total/NA	Water	200.8	
550-152659-16 MSD	FC-CCR-MW36R-1120	Total/NA	Water	200.8	

Prep Batch: 225414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.7	
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.7	
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.7	
550-152659-4	FC-CCR-MW01-1120	Total/NA	Water	200.7	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Metals (Continued)

Prep Batch: 225414 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-5	FC-CCR-MW03-1120	Total/NA	Water	200.7	
550-152659-6	FC-CCR-MW05-1120	Total/NA	Water	200.7	
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.7	
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.7	
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.7	
550-152659-10	FC-CCR-FD03-1120	Total/NA	Water	200.7	
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	200.7	
550-152659-12	FC-CCR-MW18-1120	Total/NA	Water	200.7	
550-152659-13	FC-CCR-MW19-1120	Total/NA	Water	200.7	
550-152659-14	FC-CCR-MW21-1120	Total/NA	Water	200.7	
550-152659-15	FC-CCR-MW23R-1120	Total/NA	Water	200.7	
MB 550-225414/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-225414/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-225414/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-152659-4 MS	FC-CCR-MW01-1120	Total/NA	Water	200.7	
550-152659-4 MSD	FC-CCR-MW01-1120	Total/NA	Water	200.7	

Prep Batch: 225416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-16	FC-CCR-MW36R-1120	Total/NA	Water	200.7	
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	200.7	
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	200.7	
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	200.7	
550-152659-20	FC-CCR-FD04-1120	Total/NA	Water	200.7	
550-152659-21	FC-CCR-MW60-1120	Total/NA	Water	200.7	
550-152659-22	FC-CCR-MW81-1120	Total/NA	Water	200.7	
550-152659-23	FC-CCR-MW82S-1120	Total/NA	Water	200.7	
550-152659-24	FC-CCR-CM01-1120	Total/NA	Water	200.7	
550-152659-25	FC-CCR-CM02-1120	Total/NA	Water	200.7	
550-152659-26	FC-CCR-CM03-1120	Total/NA	Water	200.7	
550-152659-27	FC-CCR-CM04-1120	Total/NA	Water	200.7	
MB 550-225416/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-225416/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-225416/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-152659-16 MS	FC-CCR-MW36R-1120	Total/NA	Water	200.7	
550-152659-16 MSD	FC-CCR-MW36R-1120	Total/NA	Water	200.7	

Analysis Batch: 225862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-16	FC-CCR-MW36R-1120	Total/NA	Water	200.8 LL	225158
550-152659-23	FC-CCR-MW82S-1120	Total/NA	Water	200.8 LL	225158
MB 550-225158/1-A	Method Blank	Total/NA	Water	200.8 LL	225158
LCS 550-225158/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	225158
LCSD 550-225158/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	225158
550-152659-16 MS	FC-CCR-MW36R-1120	Total/NA	Water	200.8 LL	225158
550-152659-16 MSD	FC-CCR-MW36R-1120	Total/NA	Water	200.8 LL	225158

Analysis Batch: 225910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-22	FC-CCR-MW81-1120	Total/NA	Water	200.8 LL	225158
550-152659-23	FC-CCR-MW82S-1120	Total/NA	Water	200.8 LL	225158

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Metals

Analysis Batch: 225999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.8 LL	225157
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.8 LL	225157
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.8 LL	225157
550-152659-4	FC-CCR-MW01-1120	Total/NA	Water	200.8 LL	225157
550-152659-5	FC-CCR-MW03-1120	Total/NA	Water	200.8 LL	225157
550-152659-6	FC-CCR-MW05-1120	Total/NA	Water	200.8 LL	225157
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.8 LL	225157
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.8 LL	225157
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.8 LL	225157
550-152659-10	FC-CCR-FD03-1120	Total/NA	Water	200.8 LL	225157
MB 550-225157/1-A	Method Blank	Total/NA	Water	200.8 LL	225157
LCS 550-225157/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	225157
LCS 550-225157/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	225157
550-152659-4 MS	FC-CCR-MW01-1120	Total/NA	Water	200.8 LL	225157
550-152659-4 MSD	FC-CCR-MW01-1120	Total/NA	Water	200.8 LL	225157

Analysis Batch: 226075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-4	FC-CCR-MW01-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-5	FC-CCR-MW03-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-6	FC-CCR-MW05-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-10	FC-CCR-FD03-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-12	FC-CCR-MW18-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-13	FC-CCR-MW19-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-15	FC-CCR-MW23R-1120	Total/NA	Water	200.7 Rev 4.4	225414
MB 550-225414/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225414
LCS 550-225414/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225414
LCS 550-225414/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-4 MS	FC-CCR-MW01-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-4 MSD	FC-CCR-MW01-1120	Total/NA	Water	200.7 Rev 4.4	225414

Analysis Batch: 226076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-16	FC-CCR-MW36R-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-20	FC-CCR-FD04-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-21	FC-CCR-MW60-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-22	FC-CCR-MW81-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-23	FC-CCR-MW82S-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-24	FC-CCR-CM01-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-25	FC-CCR-CM02-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-26	FC-CCR-CM03-1120	Total/NA	Water	200.7 Rev 4.4	225416

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Metals (Continued)

Analysis Batch: 226076 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-27	FC-CCR-CM04-1120	Total/NA	Water	200.7 Rev 4.4	225416
MB 550-225416/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225416
LCS 550-225416/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225416
LCSD 550-225416/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-16 MS	FC-CCR-MW36R-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-16 MSD	FC-CCR-MW36R-1120	Total/NA	Water	200.7 Rev 4.4	225416

Analysis Batch: 226263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.8 LL	225157
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.8 LL	225157
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.8 LL	225157
550-152659-5	FC-CCR-MW03-1120	Total/NA	Water	200.8 LL	225157
MB 550-225157/1-A	Method Blank	Total/NA	Water	200.8 LL	225157
LCS 550-225157/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	225157
LCSD 550-225157/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	225157

Analysis Batch: 226403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.7 Rev 4.4	225414
550-152659-14	FC-CCR-MW21-1120	Total/NA	Water	200.7 Rev 4.4	225414
MB 550-225414/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225414
LCS 550-225414/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225414
LCSD 550-225414/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225414

Analysis Batch: 226404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-24	FC-CCR-CM01-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-25	FC-CCR-CM02-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-26	FC-CCR-CM03-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-27	FC-CCR-CM04-1120	Total/NA	Water	200.7 Rev 4.4	225416
MB 550-225416/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225416
LCS 550-225416/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225416
LCSD 550-225416/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225416

Analysis Batch: 226492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-6	FC-CCR-MW05-1120	Total/NA	Water	200.8 LL	225157
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.8 LL	225157
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.8 LL	225157
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	200.8 LL	225157
550-152659-12	FC-CCR-MW18-1120	Total/NA	Water	200.8 LL	225157

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Metals

Analysis Batch: 226534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	200.7 Rev 4.4	225416
550-152659-27	FC-CCR-CM04-1120	Total/NA	Water	200.7 Rev 4.4	225416
MB 550-225416/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225416
LCS 550-225416/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225416
LCSD 550-225416/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225416

Prep Batch: 226876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.7	
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.7	
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.7	
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.7	
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.7	
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.7	
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	200.7	
MB 550-226876/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-226876/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-226876/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	

Analysis Batch: 227094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.7 Rev 4.4	226876
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.7 Rev 4.4	226876
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.7 Rev 4.4	226876
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.7 Rev 4.4	226876
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.7 Rev 4.4	226876
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.7 Rev 4.4	226876
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	200.7 Rev 4.4	226876
MB 550-226876/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	226876
LCS 550-226876/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	226876
LCSD 550-226876/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	226876

Analysis Batch: 227337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.8 LL	225157
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.8 LL	225157
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.8 LL	225157
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.8 LL	225157
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.8 LL	225157
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.8 LL	225157
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	200.8 LL	225157
550-152659-12	FC-CCR-MW18-1120	Total/NA	Water	200.8 LL	225157
550-152659-13	FC-CCR-MW19-1120	Total/NA	Water	200.8 LL	225157
550-152659-14	FC-CCR-MW21-1120	Total/NA	Water	200.8 LL	225157
550-152659-15	FC-CCR-MW23R-1120	Total/NA	Water	200.8 LL	225157
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	200.8 LL	225157
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	200.8 LL	225157
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	200.8 LL	225157
550-152659-20	FC-CCR-FD04-1120	Total/NA	Water	200.8 LL	225157

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Metals (Continued)

Analysis Batch: 227337 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-21	FC-CCR-MW60-1120	Total/NA	Water	200.8 LL	225157
MB 550-225157/1-A	Method Blank	Total/NA	Water	200.8 LL	225157
LCS 550-225157/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	225157
LCSD 550-225157/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	225157

Analysis Batch: 227375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.8 LL	225157
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.8 LL	225157
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.8 LL	225157
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.8 LL	225157
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.8 LL	225157
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	200.8 LL	225157
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	200.8 LL	225157
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	200.8 LL	225157

Prep Batch: 517824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.7	
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.7	
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.7	
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.7	
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.7	
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.7	
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	200.7	
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	200.7	
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	200.7	
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	200.7	
MB 280-517824/1-A	Method Blank	Total/NA	Water	200.7	
LCS 280-517824/2-A	Lab Control Sample	Total/NA	Water	200.7	
280-143037-F-1-B MS	Matrix Spike	Total/NA	Water	200.7	
280-143037-F-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Analysis Batch: 518022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	200.7 Rev 4.4	517824
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	200.7 Rev 4.4	517824
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	200.7 Rev 4.4	517824
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	200.7 Rev 4.4	517824
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	200.7 Rev 4.4	517824
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	200.7 Rev 4.4	517824
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	200.7 Rev 4.4	517824
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	200.7 Rev 4.4	517824
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	200.7 Rev 4.4	517824
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	200.7 Rev 4.4	517824
MB 280-517824/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	517824
LCS 280-517824/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	517824
280-143037-F-1-B MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	517824
280-143037-F-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	517824

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

General Chemistry

Analysis Batch: 225350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-24	FC-CCR-CM01-1120	Total/NA	Water	SM 2540C	
550-152659-25	FC-CCR-CM02-1120	Total/NA	Water	SM 2540C	
550-152659-26	FC-CCR-CM03-1120	Total/NA	Water	SM 2540C	
550-152659-27	FC-CCR-CM04-1120	Total/NA	Water	SM 2540C	
MB 550-225350/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-225350/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-225350/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-152659-24 DU	FC-CCR-CM01-1120	Total/NA	Water	SM 2540C	

Analysis Batch: 225412

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	SM 2320B	
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	SM 2320B	
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	SM 2320B	
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	SM 2320B	
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	SM 2320B	
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	SM 2320B	
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	SM 2320B	
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	SM 2320B	
550-152659-24	FC-CCR-CM01-1120	Total/NA	Water	SM 2320B	
550-152659-25	FC-CCR-CM02-1120	Total/NA	Water	SM 2320B	
550-152659-26	FC-CCR-CM03-1120	Total/NA	Water	SM 2320B	
550-152659-27	FC-CCR-CM04-1120	Total/NA	Water	SM 2320B	
MB 550-225412/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-225412/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-225412/17	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-152654-F-1 DU	Duplicate	Total/NA	Water	SM 2320B	
550-152660-A-2 DU	Duplicate	Total/NA	Water	SM 2320B	

Analysis Batch: 225459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	SM 2540C	
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	SM 2540C	
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	SM 2540C	
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	SM 2540C	
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	SM 2540C	
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	SM 2540C	
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	SM 2540C	
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	SM 2540C	
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	SM 2540C	
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	SM 2540C	
MB 550-225459/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-225459/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-225459/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-152622-B-8 DU	Duplicate	Total/NA	Water	SM 2540C	
550-152659-1 DU	FC-CCR-DMX03-1120	Total/NA	Water	SM 2540C	

Analysis Batch: 225657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-225657/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-225657/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

General Chemistry (Continued)

Analysis Batch: 225657 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-225657/3	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 225658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	SM 2320B	
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	SM 2320B	
550-152659-1 DU	FC-CCR-DMX03-1120	Total/NA	Water	SM 2320B	

Analysis Batch: 225697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152659-1	FC-CCR-DMX03-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-2	FC-CCR-DMX04-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-3	FC-CCR-DMX06-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-7	FC-CCR-MW06-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-8	FC-CCR-MW15-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-9	FC-CCR-MW16-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-11	FC-CCR-MW17R-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-17	FC-CCR-MW38R-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-18	FC-CCR-MW56-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-19	FC-CCR-MW57-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-24	FC-CCR-CM01-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-25	FC-CCR-CM02-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-26	FC-CCR-CM03-1120	Total/NA	Water	SM 4500 H+ B	
550-152659-27	FC-CCR-CM04-1120	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-225697/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-225697/25	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-225697/37	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-152448-B-1 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	
550-152659-19 DU	FC-CCR-MW57-1120	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-DMX03-1120

Lab Sample ID: 550-152659-1

Date Collected: 11/07/20 13:31

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225203	11/10/20 13:20	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225203	11/10/20 18:50	RDC	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:03	MGM	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226403	11/24/20 01:09	MGM	TAL PHX
Total/NA	Prep	200.7			226876	12/01/20 06:48	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		4	227094	12/02/20 13:42	MGM	TAL PHX
Total/NA	Prep	200.7			517824	11/23/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	518022	11/24/20 08:56	LMT	TAL DEN
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225999	11/18/20 19:51	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226263	11/20/20 18:13	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:13	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227375	12/07/20 11:52	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	225658	11/16/20 11:10	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459		YET	TAL PHX
					(Start)	11/13/20 06:41		
					(End)	11/16/20 07:50		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-DMX04-1120

Lab Sample ID: 550-152659-2

Date Collected: 11/07/20 09:19

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225203	11/10/20 16:05	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225203	11/10/20 16:33	RDC	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:07	MGM	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226403	11/24/20 01:12	MGM	TAL PHX
Total/NA	Prep	200.7			226876	12/01/20 06:48	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		4	227094	12/02/20 13:46	MGM	TAL PHX
Total/NA	Prep	200.7			517824	11/23/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	518022	11/24/20 08:59	LMT	TAL DEN
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225999	11/18/20 19:53	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226263	11/20/20 18:15	ARE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-DMX04-1120

Lab Sample ID: 550-152659-2

Date Collected: 11/07/20 09:19

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:24	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227375	12/07/20 11:54	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 09:51	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459		YET	TAL PHX
					(Start)	11/13/20 06:41		
					(End)	11/16/20 07:50		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-DMX06-1120

Lab Sample ID: 550-152659-3

Date Collected: 11/06/20 13:36

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225203	11/10/20 17:00	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225203	11/10/20 17:27	RDC	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:10	MGM	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226403	11/24/20 01:16	MGM	TAL PHX
Total/NA	Prep	200.7			226876	12/01/20 06:48	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		4	227094	12/02/20 13:49	MGM	TAL PHX
Total/NA	Prep	200.7			517824	11/23/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	518022	11/24/20 09:02	LMT	TAL DEN
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225999	11/18/20 19:55	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226263	11/20/20 18:17	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:26	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227375	12/07/20 11:56	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 10:03	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459		YET	TAL PHX
					(Start)	11/13/20 06:41		
					(End)	11/16/20 07:50		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW01-1120

Lab Sample ID: 550-152659-4

Date Collected: 11/08/20 10:36

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 18:59	MGM	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225999	11/18/20 19:49	ARE	TAL PHX

Client Sample ID: FC-CCR-MW03-1120

Lab Sample ID: 550-152659-5

Date Collected: 11/08/20 11:31

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:14	MGM	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225999	11/18/20 19:57	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226263	11/20/20 18:19	ARE	TAL PHX

Client Sample ID: FC-CCR-MW05-1120

Lab Sample ID: 550-152659-6

Date Collected: 11/07/20 13:05

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:18	MGM	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225999	11/18/20 20:00	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226492	11/24/20 19:26	ARE	TAL PHX

Client Sample ID: FC-CCR-MW06-1120

Lab Sample ID: 550-152659-7

Date Collected: 11/07/20 08:33

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225199	11/10/20 13:36	RDC	TAL PHX
Total/NA	Analysis	300.0		500	225199	11/10/20 20:58	RDC	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:22	MGM	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226403	11/24/20 01:20	MGM	TAL PHX
Total/NA	Prep	200.7			226876	12/01/20 06:48	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	227094	12/02/20 13:53	MGM	TAL PHX
Total/NA	Prep	200.7			517824	11/23/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	518022	11/24/20 09:06	LMT	TAL DEN

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW06-1120

Lab Sample ID: 550-152659-7

Date Collected: 11/07/20 08:33

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225999	11/18/20 20:02	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:30	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227375	12/07/20 11:58	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 10:16	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459		YET	TAL PHX
					(Start)	11/13/20 06:41		
					(End)	11/16/20 07:50		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-MW15-1120

Lab Sample ID: 550-152659-8

Date Collected: 11/06/20 12:45

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225199	11/10/20 15:26	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225199	11/10/20 15:45	RDC	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:26	MGM	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226403	11/24/20 01:24	MGM	TAL PHX
Total/NA	Prep	200.7			226876	12/01/20 06:48	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		4	227094	12/02/20 13:57	MGM	TAL PHX
Total/NA	Prep	200.7			517824	11/23/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	518022	11/24/20 09:09	LMT	TAL DEN
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225999	11/18/20 20:04	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226492	11/24/20 19:30	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:32	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 10:27	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459		YET	TAL PHX
					(Start)	11/13/20 06:41		
					(End)	11/16/20 07:50		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW16-1120

Lab Sample ID: 550-152659-9

Date Collected: 11/06/20 11:42

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225199	11/10/20 16:03	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225199	11/10/20 16:22	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225442	11/12/20 16:26	RDC	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:29	MGM	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226403	11/24/20 01:27	MGM	TAL PHX
Total/NA	Prep	200.7			226876	12/01/20 06:48	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		4	227094	12/02/20 14:01	MGM	TAL PHX
Total/NA	Prep	200.7			517824	11/23/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	518022	11/24/20 09:26	LMT	TAL DEN
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225999	11/18/20 20:06	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226492	11/24/20 19:32	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:34	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227375	12/07/20 12:00	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 10:39	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459		YET	TAL PHX
					(Start)	11/13/20 06:41		
					(End)	11/16/20 07:50		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-FD03-1120

Lab Sample ID: 550-152659-10

Date Collected: 11/08/20 10:36

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:33	MGM	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225999	11/18/20 20:08	ARE	TAL PHX

Client Sample ID: FC-CCR-MW17R-1120

Lab Sample ID: 550-152659-11

Date Collected: 11/07/20 10:01

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225199	11/10/20 17:17	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225199	11/10/20 17:35	RDC	TAL PHX
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:44	MGM	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW17R-1120
Date Collected: 11/07/20 10:01
Date Received: 11/09/20 15:15

Lab Sample ID: 550-152659-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			226876	12/01/20 06:48	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	227094	12/02/20 14:04	MGM	TAL PHX
Total/NA	Prep	200.7			517824	11/23/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	518022	11/24/20 09:29	LMT	TAL DEN
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226492	11/24/20 19:35	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:36	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 10:48	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459	(Start) 11/13/20 06:41 (End) 11/16/20 07:50	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-MW18-1120
Date Collected: 11/07/20 12:22
Date Received: 11/09/20 15:15

Lab Sample ID: 550-152659-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:48	MGM	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226492	11/24/20 19:41	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:43	ARE	TAL PHX

Client Sample ID: FC-CCR-MW19-1120
Date Collected: 11/07/20 14:46
Date Received: 11/09/20 15:15

Lab Sample ID: 550-152659-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 19:52	MGM	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:45	ARE	TAL PHX

Client Sample ID: FC-CCR-MW21-1120
Date Collected: 11/08/20 12:15
Date Received: 11/09/20 15:15

Lab Sample ID: 550-152659-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	226403	11/24/20 01:35	MGM	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:47	ARE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW23R-1120
Date Collected: 11/07/20 14:14
Date Received: 11/09/20 15:15

Lab Sample ID: 550-152659-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225414	11/12/20 14:39	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226075	11/18/20 20:00	MGM	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:49	ARE	TAL PHX

Client Sample ID: FC-CCR-MW36R-1120
Date Collected: 11/07/20 11:40
Date Received: 11/09/20 15:15

Lab Sample ID: 550-152659-16
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 20:49	MGM	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225862	11/17/20 21:24	ARE	TAL PHX

Client Sample ID: FC-CCR-MW38R-1120
Date Collected: 11/06/20 16:03
Date Received: 11/09/20 15:15

Lab Sample ID: 550-152659-17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225199	11/10/20 17:54	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225199	11/10/20 18:12	RDC	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 20:52	MGM	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226404	11/24/20 02:24	MGM	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	226534	11/24/20 21:55	MGM	TAL PHX
Total/NA	Prep	200.7			517824	11/23/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	518022	11/24/20 09:33	LMT	TAL DEN
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:51	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227375	12/07/20 12:02	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 10:56	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459		YET	TAL PHX
					(Start)	11/13/20 06:41		
					(End)	11/16/20 07:50		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-MW56-1120

Lab Sample ID: 550-152659-18

Date Collected: 11/07/20 10:38

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225199	11/10/20 18:30	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225199	11/10/20 18:49	RDC	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 20:56	MGM	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	226404	11/24/20 02:28	MGM	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	226534	11/24/20 21:59	MGM	TAL PHX
Total/NA	Prep	200.7			517824	11/23/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	518022	11/24/20 09:36	LMT	TAL DEN
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:53	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227375	12/07/20 12:05	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	225658	11/16/20 11:10	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459		YET	TAL PHX
					(Start)	11/13/20 06:41		
					(End)	11/16/20 07:50		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-MW57-1120

Lab Sample ID: 550-152659-19

Date Collected: 11/06/20 15:13

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225199	11/10/20 19:07	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225199	11/10/20 19:26	RDC	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 21:00	MGM	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226404	11/24/20 02:36	MGM	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	226534	11/24/20 22:03	MGM	TAL PHX
Total/NA	Prep	200.7			517824	11/23/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	518022	11/24/20 09:39	LMT	TAL DEN
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:55	ARE	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227375	12/07/20 12:07	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 12:28	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459		YET	TAL PHX
					(Start)	11/13/20 06:41		
					(End)	11/16/20 07:50		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-FD04-1120

Lab Sample ID: 550-152659-20

Date Collected: 11/07/20 11:40

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 21:04	MGM	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227337	12/04/20 16:57	ARE	TAL PHX

Client Sample ID: FC-CCR-MW60-1120

Lab Sample ID: 550-152659-21

Date Collected: 11/08/20 10:07

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 21:07	MGM	TAL PHX
Total/NA	Prep	200.8			225157	11/10/20 10:37	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	227337	12/04/20 17:01	ARE	TAL PHX

Client Sample ID: FC-CCR-MW81-1120

Lab Sample ID: 550-152659-22

Date Collected: 11/08/20 13:28

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 21:11	MGM	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225910	11/18/20 10:50	ARE	TAL PHX

Client Sample ID: FC-CCR-MW82S-1120

Lab Sample ID: 550-152659-23

Date Collected: 11/08/20 13:56

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 21:15	MGM	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225862	11/17/20 21:28	ARE	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225910	11/18/20 10:53	ARE	TAL PHX

Client Sample ID: FC-CCR-CM01-1120

Lab Sample ID: 550-152659-24

Date Collected: 11/04/20 13:07

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225199	11/10/20 19:44	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225199	11/10/20 20:03	RDC	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 21:19	MGM	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-CM01-1120

Lab Sample ID: 550-152659-24

Date Collected: 11/04/20 13:07

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	226404	11/24/20 02:39	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 12:38	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225350	(Start) 11/12/20 07:49 (End) 11/13/20 08:20	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-CM02-1120

Lab Sample ID: 550-152659-25

Date Collected: 11/04/20 13:54

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225199	11/10/20 21:53	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225199	11/10/20 22:11	RDC	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 21:22	MGM	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	226404	11/24/20 02:43	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 12:47	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225350	(Start) 11/12/20 07:49 (End) 11/13/20 08:20	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-CM03-1120

Lab Sample ID: 550-152659-26

Date Collected: 11/04/20 10:33

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225199	11/10/20 22:30	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225199	11/10/20 22:48	RDC	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 21:34	MGM	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	226404	11/24/20 02:55	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 12:58	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225350	(Start) 11/12/20 07:49 (End) 11/13/20 08:20	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Client Sample ID: FC-CCR-CM04-1120

Lab Sample ID: 550-152659-27

Date Collected: 11/04/20 09:42

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225199	11/10/20 23:07	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225199	11/10/20 23:25	RDC	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	226076	11/18/20 21:38	MGM	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	226404	11/24/20 02:58	MGM	TAL PHX
Total/NA	Prep	200.7			225416	11/12/20 14:51	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	226534	11/24/20 22:07	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 13:06	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225350		YET	TAL PHX
					(Start)	11/12/20 07:49		
					(End)	11/13/20 08:20		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340



Accreditation/Certification Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 2320B		Water	Alkalinity, Phenolphthalein
SM 4500 H+ B		Water	Temperature

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-21
Arizona	State	AZ0713	12-20-20
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-21
Connecticut	State	PH-0686	09-30-20 *
Florida	NELAP	E87667-57	07-01-21
Georgia	State	4025-011	01-09-21
Illinois	NELAP	2000172019-1	04-30-21
Iowa	State	IA#370	12-01-20
Kansas	NELAP	E-10166	04-30-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Maine	State	2019011 (231)	03-03-21
Minnesota	NELAP	1788752	12-31-20
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-21
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-21
North Carolina (WW/SW)	State	358	12-31-20
North Dakota	State	R-034	01-08-21
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-21
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-21
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-18-00099	03-26-21
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-21
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-20
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Phoenix

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152659-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	EPA	TAL DEN
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
SM 2320B	Alkalinity	SM	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL DEN
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix

4625 E Cotton Center Blvd
 Suite 189
 Phoenix, AZ 85040
 phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

152659

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: DW NPDES RCRA Other: CCR

Client Contact: **Natalie Chrisman** 602-250-3608
 Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
 TAT if different from Below: 2 weeks 1 week 2 days 1 day

Arizona Public Service
 PO Box 355, MS 4915
 Fruiland, NM 87416
 Phone: _____
 FAX: _____
 Project Name: CCR Groundwater Monitoring
 Site: APS Four Corners Power Plant (Other)
 Project #: _____

Date: 1/24/20
 Carrier: _____
 COC No: 1 of 3 COCs
 Sample #: _____
 For Lab Use Only:
 Walk-in Client: _____
 Lab Sampling: _____
 Job / SDG No.: _____

Sample Identification	Sample Date	Sample Time	Sample Type (G-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Be, Li, K, Mg, Na)	EPA 200.7 - Totals (B)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)	EPA 200.8 - Totals (Co, Mo)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)	Sample Specific Notes:	
FC-CCR-DMX03-1120	11/7/2020	13:31	G	W	2	N	N	X	X	X	X	X	X	X	X		-1
FC-CCR-DMX04-1120	11/7/2020	9:19	G	W	2	N	N	X	X	X	X	X	X	X	X		-2
FC-CCR-DMX06-1120	11/6/2020	13:36	G	W	2	N	N	X	X	X	X	X	X	X	X		-3
FC-CCR-MMW01-1120	11/8/2020	10:36	G	W	1	N	Y	X	X	X	X	X	X	X	X		-4
FC-CCR-MMW03-1120	11/8/2020	11:31	G	W	1	N	N	X	X	X	X	X	X	X	X		-5
FC-CCR-MMW05-1120	11/7/2020	13:05	G	W	1	N	N	X	X	X	X	X	X	X	X		-6
FC-CCR-MMW06-1120	11/7/2020	8:33	G	W	2	N	N	X	X	X	X	X	X	X	X		-7
FC-CCR-MMW15-1120	11/6/2020	12:45	G	W	2	N	N	X	X	X	X	X	X	X	X		-8
FC-CCR-MMW16-1120	11/6/2020	11:42	G	W	2	N	N	X	X	X	X	X	X	X	X		-9
FC-CCR-FD03-1120	11/8/2020	10:36	G	W	1	N	N	X	X	X	X	X	X	X	X		-10
FC-CCR-MMW01-1120-MS	11/8/2020	10:36	G	W	1	N	N	X	X	X	X	X	X	X	X		-4
FC-CCR-MMW01-1120-SD	11/8/2020	10:36	G	W	1	N	N	X	X	X	X	X	X	X	X		-4

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other _____
 Possible Hazard Identification: _____
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:
 Method 200.8 with collision cell
 2.4/34 | 2.1 | 2.2/23

Custody Seal Intact: Yes No
 Cooler Temp. (C): Obs'd: _____
 Term ID No.: _____

Relinquished by: _____
 Date/Time: _____
 Received by: _____
 Date/Time: _____

Relinquished by: _____
 Date/Time: _____
 Received in Laboratory by: _____
 Date/Time: _____

Relinquished by: _____
 Date/Time: _____
 Received in Laboratory by: _____
 Date/Time: _____

Relinquished by: _____
 Date/Time: _____
 Received in Laboratory by: _____
 Date/Time: _____



550-152659 Chain of Custody

152659



THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Phoenix
 4625 E Cotton Center Blvd
 Suite 189
 Phoenix, AZ 85040
 phone 602.437.3340 fax 602.454.9303

Regulatory Program: DW NPDES RCRA Other: CCR

TestAmerica Lab

Client Contact: Natalie Chrisman 602-250-3608
 Arizona Public Service
 PO Box 355, MS 4915
 Fruitland, NM 87416
 Date: 11/19/20
 Carrier: [Signature]

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below: _____
 2 weeks
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Be, Li, K, Mg, Na)	EPA 200.7 - Totals (B)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)	EPA 200.8 - Totals (Co, Mo)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)	COG No.:	Sampler:	For Lab Use Only:	Job / SDG No.:
FC-CCR-MW17R-1120	11/7/2020	10:01	G	W	2	N	N	X			X		X		X	2 of 3		11/19/20	
FC-CCR-MW18-1120	11/7/2020	12:22	G	W	1	N	N			X		X							
FC-CCR-MW19-1120	11/7/2020	14:46	G	W	1	N	N			X		X							
FC-CCR-MW21-1120	11/8/2020	12:15	G	W	1	N	N			X		X							
FC-CCR-MW23R-1120	11/7/2020	14:14	G	W	1	N	N			X		X							
FC-CCR-MW36R-1120	11/7/2020	11:40	G	W	1	N	Y			X		X							
FC-CCR-MW38R-1120	11/6/2020	16:03	G	W	2	N	N	X			X		X						
FC-CCR-MW56-1120	11/7/2020	10:38	G	W	2	N	N	X			X		X						
FC-CCR-MW57-1120	11/6/2020	15:13	G	W	2	N	N	X			X		X						
FC-CCR-FD04-1120	11/7/2020	11:40	G	W	1	N	N			X		X							
FC-CCR-MW36R-1120-MS	11/7/2020	11:40	G	W	1	N	N			X		X							
FC-CCR-MW36R-1120-SD	11/7/2020	11:40	G	W	1	N	N			X		X							

Preservation Used: 1= Ice, 2= HCI, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other _____
 Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:
 Non-Hazard Flammable Skin Irritant Poison B Unknown
 Return to Client Disposal by Lab Archive for _____ Months

Method 200.8 with collision cell
 Cooler Temp. (°C): Obs'd: _____
 Date: 2/6/20
 Time: 11:22:23

Custody Seal Intact: Yes No
 Relinquished by: [Signature] Isaac Torres
 Relinquished by: [Signature]
 Relinquished by: [Signature]
 Company: [Signature]
 Date/Time: [Signature]
 Received in Laboratory by: [Signature]
 Date/Time: [Signature]

TestAmerica Phoenix
4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

152659

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Arizona Public Service
PO Box 355, MS 4915
Fountain, NM 87416

Client Contact
Natalie Chrisman
602-250-3608

Regulatory Program: DW NPDES RCRA Other: CCR

TestAmerica Laboratories, Inc.
COC No. 3 of 3 COCs

Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (Other)
Project #:

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
TAT if different from Below
 2 weeks
 1 week
 2 days
 1 day

Lab Contact: Ken Baker
Date: 1/05/20
Carrier:

Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	EPA 200.7 - Totals (B)	EPA 200.8 - Totals (Co, Mo)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (K, Mg, Na)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)	Sample Specific Notes:
FC-CCR-MW60-1120	11/8/2020	10:07	G	W	1	N	N	X	X						-21 Low Flow -24
FC-CCR-MW81-1120	11/8/2020	13:28	G	W	1	N	N	X	X						-22 " -26
FC-CCR-MW82S-1120	11/8/2020	13:56	G	W	1	N	N	X	X						-23 " -27
FC-CCR-CM01-1120	11/4/2020	13:07	G	W	2	N	N			X	X	X			-24 " -28
FC-CCR-CM02-1120	11/4/2020	13:54	G	W	2	N	N			X	X	X			-25 " -29
FC-CCR-CM03-1120	11/4/2020	10:33	G	W	2	N	N			X	X	X			-26 " -30
FC-CCR-CM04-1120	11/4/2020	9:42	G	W	2	N	N			X	X	X			-27 " -31

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:
Method 200.8 with collision cell

26/34/21/22/23

Custody Seals Intact: Yes No

Relinquished by: *Isaac Lopez* Company: *Woods* Date/Time: *12/15/20* Received by: *Ken Baker* Date/Time: *1/5/20* Company: *TAPPHK* Date/Time: *1/9/20 15:15*

Relinquished by: _____ Company: _____ Date/Time: _____ Received by: _____ Date/Time: _____ Company: _____ Date/Time: _____

Relinquished by: _____ Company: _____ Date/Time: _____ Received by: _____ Date/Time: _____ Company: _____ Date/Time: _____

Chain of Custody Record



Environment Testing
America



Client Information (Sub Contract Lab) Client Contact: Shipping/Receiving Company: TestAmerica Laboratories, Inc. Address: 4955 Yarrow Street, City: Arvada State, Zip: CO, 80002 Phone: 303-736-0100(Tel) 303-431-7171(Fax) Email:		Lab PM: Baker, Ken E-Mail: Ken.Baker@Eurofinset.com Carrier Tracking No(s): State of Origin: Arizona	
Due Date Requested: 11/27/2020 TAT Requested (days): PO #: WO #: Project #: 55009706 SSOW#:		Accreditions Required (See note): State - Arizona	
Analysis Requested:			
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)			
Special Instructions/Note:			
Total Number of Containers			
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab) Preservation Code
FC-CCR-DMX03-1120 (550-152659-1)	11/7/20	13:31 Arizona	Water
FC-CCR-DMX04-1120 (550-152659-2)	11/7/20	09:19 Arizona	Water
FC-CCR-DMX06-1120 (550-152659-3)	11/6/20	13:36 Arizona	Water
FC-CCR-MW06-1120 (550-152659-7)	11/7/20	08:33 Arizona	Water
FC-CCR-MW15-1120 (550-152659-8)	11/6/20	12:45 Arizona	Water
FC-CCR-MW16-1120 (550-152659-9)	11/6/20	11:42 Arizona	Water
FC-CCR-MW17R-1120 (550-152659-11)	11/7/20	10:01 Arizona	Water
FC-CCR-MW38R-1120 (550-152659-17)	11/6/20	16:03 Arizona	Water
FC-CCR-MW56-1120 (550-152659-18)	11/7/20	10:38 Arizona	Water
Perform MS/MSD (Yes or No)		Field Filtered Sample (Yes or No)	
X		X	
Cooler Temperature(s) °C and Other Remarks: 1-3 ER11-03 50 11/21/2020			

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: *Eric 11-20-20 14:40* Date/Time: _____
 Relinquished by: _____ Date/Time: _____
 Relinquished by: _____ Date/Time: _____

Received by: *Fedex* Company: _____
 Received by: *Dot* Company: _____
 Received by: _____ Company: _____

Custody Seals Intact: _____
 Δ Yes Δ No

Custody Seal No.: _____

Chain of Custody Record



Client Information (Sub Contract Lab)	Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Shipping/Receiving	Baker, Ken	Baker, Ken	State of Origin: Arizona	550-29266.2
Company: TestAmerica Laboratories, Inc.	E-Mail: Ken Baker@Eurofinsnet.com	Ken Baker@Eurofinsnet.com	Job #:	550-152659-1
Address: 4955 Yarrow Street, City: State, Zip CO, 80002	Due Date Requested: 11/27/2020	Analysis Requested	Preservation Codes:	M - Hexane N - None O - As/NaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	TAT Requested (days):	Field Filtered Sample (Yes or No)	Perform M/MSD (Yes or No)	Total Number of Containers
Email:	PO #:	200.7/200.7.P.TOT.Lithium-ICP	X	1
Project #: 55009706	WO #:	Field Filtered Sample (Yes or No)	X	
Site: Arizona Public Service	Sample Date	Sample Time	Matrix (W=water, S=solid, O=wastewater, BT=Time, A=Al)	Special Instructions/Note:
	11/6/20	15:13 Arizona	Water	AZ Sample
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Preservation Code	
FC-CCR-MW57-1120 (550-152659-19)	11/6/20	15:13 Arizona	Water	
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica</p>				
Possible Hazard Identification				
Unconfirmed				
Deliverable Requested: I, II, III, IV, Other (specify)				
Primary Deliverable Rank: 2				
Empty Kit Relinquished by:				
Date:				
Relinquished by: <i>[Signature]</i> Company: <i>[Signature]</i>				
Date/Time: 11/21/2020 09:45 Company: STADEN				
Relinquished by: <i>[Signature]</i> Company: <i>[Signature]</i>				
Date/Time: 11/21/2020 09:45 Company: STADEN				
Custody Seals Intact Δ Yes Δ No				
Custody Seal No.:				
Cooler Temperature(s) °C and Other Remarks: 1.3 IR11-0-3 5011 2/1/2020				



Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-152659-1

Login Number: 152659

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Maycock, Lisa

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-152659-1

Login Number: 152659

List Number: 2

Creator: Pottruff, Reed W

List Source: Eurofins TestAmerica, Denver

List Creation: 11/21/20 04:43 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-152660-1

Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
12/15/2020 1:07:09 PM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

Metals

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

1

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Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Job ID: 550-152660-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-152660-1

Comments

No additional comments.

Receipt

The samples were received on 11/9/2020 3:15 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 2.1° C, 2.2° C, 2.3° C, 2.6° C and 3.4° C.

Receipt Exceptions

FC-CCR-MW07-1120 (550-152660-1), FC-CCR-MW08-1120 (550-152660-2), FC-CCR-MW49-1120 (550-152660-3), FC-CCR-MW61-1120 (550-152660-5), FC-CCR-MW75-1120 (550-152660-6) and FC-CCR-MW87-1120 (550-152660-7)

Containers have about 100 ml of sample.

HPLC/IC

Method 300.0: The following sample was diluted for Fluoride due to the nature of the sample matrix: (550-152659-A-7 ^2). Elevated reporting limits (RLs) have been provided.

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for 550-225199 were outside control limits for Fluoride. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-225605 contained Beryllium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The following sample was diluted to bring the concentration of target analytes within the calibration range: FC-CCR-MW87-1120 (550-152660-7). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The following sample was diluted to bring the concentration of target analytes within the calibration range: FC-CCR-MW87-1120 (550-152660-7). Elevated reporting limits (RLs) are provided.

Method 200.8: Insufficient amount of sample. Remaining volume was prepped at a 4x dilution.

Method 200.8 LL: The following sample was diluted due to the nature of the sample matrix: FC-CCR-MW49-1120 (550-152660-3). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-152660-1	FC-CCR-MW07-1120	Water	11/06/20 09:41	11/09/20 15:15	
550-152660-2	FC-CCR-MW08-1120	Water	11/06/20 10:37	11/09/20 15:15	
550-152660-3	FC-CCR-MW49-1120	Water	11/06/20 08:41	11/09/20 15:15	
550-152660-4	FC-CCR-MW52-1120	Water	11/08/20 08:10	11/09/20 15:15	
550-152660-5	FC-CCR-MW61-1120	Water	11/08/20 08:45	11/09/20 15:15	
550-152660-6	FC-CCR-MW75-1120	Water	11/08/20 09:23	11/09/20 15:15	
550-152660-7	FC-CCR-MW87-1120	Water	11/06/20 14:26	11/09/20 15:15	
550-152660-8	FC-CCR-FD05-1120	Water	11/06/20 09:41	11/09/20 15:15	

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW07-1120

Lab Sample ID: 550-152660-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	600	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.33	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	5600	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.90		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	8.6		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	400		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.0057	E4	0.020	0.00081	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00024	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0017		0.00050	0.00025	mg/L	1		200.8 LL	Total/NA
Barium	0.014		0.0020	0.0010	mg/L	1		200.8 LL	Total/NA
Cadmium	0.000069	E4	0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.00055	E4	0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.00050		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0052		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.0076		0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00010		0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	9400	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.7	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW08-1120

Lab Sample ID: 550-152660-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	830	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.58	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	9100	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	1.1		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	21		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	470		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	940		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	47		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2700	D1	2.5	0.15	mg/L	5		200.7 Rev 4.4	Total/NA
Antimony	0.00034	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0025		0.0020	0.00099	mg/L	1		200.8 LL	Total/NA
Barium	0.011		0.0020	0.0010	mg/L	1		200.8 LL	Total/NA
Cadmium	0.00029		0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Cobalt	0.00070	E4	0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.013		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.0048		0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00016	E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	540		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	540		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	14000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.2	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW49-1120

Lab Sample ID: 550-152660-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	430	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.66	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	14000	D2	400	85	mg/L	200		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW49-1120 (Continued)

Lab Sample ID: 550-152660-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0074	E4	0.020	0.00081	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.83		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	5.6		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	420		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00064	E4	0.0040	0.00017	mg/L	4		200.8 LL	Total/NA
Arsenic	0.0025		0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Cadmium	0.00023	E4	0.00040	0.000092	mg/L	4		200.8 LL	Total/NA
Cobalt	0.0014		0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.058		0.0020	0.00081	mg/L	4		200.8 LL	Total/NA
Selenium	0.0056		0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.0013		0.00040	0.000053	mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	18000	D2	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.5	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW52-1120

Lab Sample ID: 550-152660-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	7.8		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.11		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0024		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA

Client Sample ID: FC-CCR-MW61-1120

Lab Sample ID: 550-152660-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	340	D2 E4	400	100	mg/L	200		300.0	Total/NA
Fluoride	1.3	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	3700	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.42		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	41		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	540		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	140		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	25		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1100	D1	1.0	0.061	mg/L	2		200.7 Rev 4.4	Total/NA
Barium	0.012	E4	0.020	0.00081	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00022	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0018		0.00050	0.00025	mg/L	1		200.8 LL	Total/NA
Barium	0.017		0.0020	0.0010	mg/L	1		200.8 LL	Total/NA
Cadmium	0.0011		0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.00049	E4	0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.024		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Lead	0.00093		0.00050	0.00022	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.11		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.0028		0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00017		0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	94		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	61		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Carbonate Alkalinity as CaCO3	33		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Alkalinity, Phenolphthalein	17		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	5100	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	8.6	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.1	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW75-1120

Lab Sample ID: 550-152660-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	290	D2	200	52	mg/L	100		300.0	Total/NA
Fluoride	1.3		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	4800	D2	200	43	mg/L	100		300.0	Total/NA
Barium	0.013	E4	0.020	0.00081	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.43		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	25		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	25		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	470		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	470		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	250		2.0	0.044	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	27		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1300	D2	2.5	0.15	mg/L	5		200.7 Rev 4.4	Total/NA
Barium	0.013	E4	0.020	0.00081	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00012	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0013		0.00050	0.00025	mg/L	1		200.8 LL	Total/NA
Cadmium	0.0019		0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.00072	E4	0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.047		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Lead	0.0029		0.00050	0.00022	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.19		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.0060		0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00020		0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	99		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	99		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	6600	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	8.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.6	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW87-1120

Lab Sample ID: 550-152660-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2400	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.56	D2 E4 M2	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	23000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	1.7		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	1.2		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	480		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2000	D2	20	0.44	mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	130		0.50	0.17	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	8300	D2	10	0.61	mg/L	20		200.7 Rev 4.4	Total/NA
Antimony	0.0016	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0048		0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.016		0.0020	0.0010	mg/L	1		200.8 LL	Total/NA
Cadmium	0.00023		0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.012		0.0040	0.0017	mg/L	1		200.8 LL	Total/NA
Cobalt	0.014		0.0020	0.00025	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.051		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.019		0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00014	E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	800		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	800		6.0	6.0	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW87-1120 (Continued)

Lab Sample ID: 550-152660-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	38000	D2	1000	1000	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.0	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD05-1120

Lab Sample ID: 550-152660-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	540	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.37	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	5800	D2	400	85	mg/L	200		300.0	Total/NA
Barium	0.0060	E4	0.020	0.00081	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.92		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	8.5		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	400		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00020	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0025		0.00050	0.00025	mg/L	1		200.8 LL	Total/NA
Cadmium	0.000062	E4	0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.00062	E4	0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.00059		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0052		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.011		0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00012	E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	8800	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.8	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW07-1120

Lab Sample ID: 550-152660-1

Date Collected: 11/06/20 09:41

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	600	D2	400	100	mg/L			11/10/20 23:43	200
Fluoride	0.33	D1 E4	0.80	0.095	mg/L			11/11/20 00:39	2
Sulfate	5600	D2	400	85	mg/L			11/10/20 23:43	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:04	11/13/20 22:23	1
Lithium	0.90		0.020	0.0091	mg/L		11/19/20 16:05	11/20/20 17:12	1
Boron	8.6		0.050	0.0025	mg/L		11/11/20 11:04	11/13/20 22:23	1
Calcium	400		2.0	0.013	mg/L		11/11/20 11:04	11/13/20 22:23	1
Barium	0.0057	E4	0.020	0.00081	mg/L		11/11/20 11:04	11/13/20 22:23	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00024	E4	0.0010	0.000043	mg/L		11/10/20 10:49	11/17/20 21:35	1
Arsenic	0.0017		0.00050	0.00025	mg/L		11/10/20 10:49	11/17/20 21:35	1
Barium	0.014		0.0020	0.0010	mg/L		12/03/20 09:50	12/04/20 18:36	1
Cadmium	0.000069	E4	0.00010	0.000023	mg/L		11/10/20 10:49	11/17/20 21:35	1
Chromium	0.00055	E4	0.0010	0.00043	mg/L		11/10/20 10:49	11/17/20 21:35	1
Cobalt	0.00050		0.00050	0.000063	mg/L		11/10/20 10:49	11/17/20 21:35	1
Lead	ND	E8	0.00050	0.00022	mg/L		11/10/20 10:49	11/17/20 21:35	1
Molybdenum	0.0052		0.00050	0.00020	mg/L		11/10/20 10:49	11/17/20 21:35	1
Selenium	0.0076		0.0010	0.00015	mg/L		11/10/20 10:49	11/18/20 16:02	2
Thallium	0.00010		0.00010	0.000013	mg/L		11/10/20 10:49	11/17/20 21:35	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 18:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	9400	D2	100	100	mg/L			11/13/20 06:39	1
pH	7.3	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	9.7	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW08-1120

Lab Sample ID: 550-152660-2

Date Collected: 11/06/20 10:37

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	830	D2	400	100	mg/L			11/11/20 01:15	200
Fluoride	0.58	D1 E4	0.80	0.095	mg/L			11/11/20 00:57	2
Sulfate	9100	D2	400	85	mg/L			11/11/20 01:15	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:04	11/13/20 22:27	1
Lithium	1.1		0.020	0.0091	mg/L		11/19/20 16:05	11/20/20 17:15	1
Boron	21		0.050	0.0025	mg/L		11/11/20 11:04	11/13/20 22:27	1
Calcium	470		2.0	0.013	mg/L		11/11/20 11:04	11/13/20 22:27	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW08-1120

Lab Sample ID: 550-152660-2

Date Collected: 11/06/20 10:37

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	940		2.0	0.044	mg/L		11/11/20 11:04	11/13/20 22:27	1
Potassium	47		0.50	0.17	mg/L		11/11/20 11:04	11/13/20 22:27	1
Sodium	2700	D1	2.5	0.15	mg/L		11/11/20 11:04	11/19/20 20:33	5
Barium	ND	E8	0.020	0.00081	mg/L		11/11/20 11:04	11/13/20 22:27	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00034	E4	0.0020	0.000087	mg/L		11/10/20 10:49	11/18/20 16:04	2
Arsenic	0.0025		0.0020	0.00099	mg/L		12/03/20 09:50	12/04/20 18:38	1
Barium	0.011		0.0020	0.0010	mg/L		12/03/20 09:50	12/04/20 18:38	1
Cadmium	0.00029		0.00020	0.000046	mg/L		11/10/20 10:49	11/18/20 16:04	2
Chromium	ND	E8	0.0010	0.00043	mg/L		11/10/20 10:49	11/18/20 11:14	1
Cobalt	0.00070	E4	0.0010	0.00013	mg/L		11/10/20 10:49	11/18/20 16:04	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/10/20 10:49	11/18/20 16:04	2
Molybdenum	0.013		0.00050	0.00020	mg/L		11/10/20 10:49	11/18/20 11:14	1
Selenium	0.0048		0.0010	0.00015	mg/L		11/10/20 10:49	11/18/20 16:04	2
Thallium	0.00016	E4	0.00020	0.000026	mg/L		11/10/20 10:49	11/18/20 16:04	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	540		6.0	6.0	mg/L			11/12/20 11:37	1
Bicarbonate Alkalinity as CaCO3	540		6.0	6.0	mg/L			11/12/20 11:37	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 11:37	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 11:37	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 11:37	1
Total Dissolved Solids	14000	D2	100	100	mg/L			11/13/20 06:39	1
pH	7.2	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	9.2	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW49-1120

Lab Sample ID: 550-152660-3

Date Collected: 11/06/20 08:41

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	430	D2	400	100	mg/L			11/11/20 01:52	200
Fluoride	0.66	D1 E4	0.80	0.095	mg/L			11/11/20 01:34	2
Sulfate	14000	D2	400	85	mg/L			11/11/20 01:52	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0074	E4	0.020	0.00081	mg/L		11/11/20 11:04	11/13/20 22:30	1
Lithium	0.83		0.020	0.0091	mg/L		11/19/20 16:05	11/20/20 17:19	1
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:04	11/13/20 22:30	1
Boron	5.6		0.050	0.0025	mg/L		11/11/20 11:04	11/13/20 22:30	1
Calcium	420		2.0	0.013	mg/L		11/11/20 11:04	11/13/20 22:30	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW49-1120

Lab Sample ID: 550-152660-3

Date Collected: 11/06/20 08:41

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00064	E4	0.0040	0.00017	mg/L		11/10/20 10:49	12/15/20 09:28	4
Arsenic	0.0025		0.0020	0.00099	mg/L		11/10/20 10:49	12/15/20 09:28	4
Cadmium	0.00023	E4	0.00040	0.000092	mg/L		11/10/20 10:49	12/15/20 09:28	4
Chromium	ND	E8	0.0020	0.00087	mg/L		11/10/20 10:49	11/18/20 16:06	2
Cobalt	0.0014		0.0010	0.00013	mg/L		11/10/20 10:49	11/18/20 16:06	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/10/20 10:49	11/18/20 16:06	2
Molybdenum	0.058		0.0020	0.00081	mg/L		11/10/20 10:49	12/15/20 09:28	4
Selenium	0.0056		0.0010	0.00015	mg/L		11/10/20 10:49	11/18/20 16:06	2
Thallium	0.0013		0.00040	0.000053	mg/L		11/10/20 10:49	12/15/20 09:28	4

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	18000	D2	200	200	mg/L			11/13/20 06:39	1
pH	7.5	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	8.5	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW52-1120

Lab Sample ID: 550-152660-4

Date Collected: 11/08/20 08:10

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	7.8		0.050	0.0025	mg/L		11/11/20 11:04	11/13/20 22:34	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.11		0.00050	0.000063	mg/L		11/10/20 10:49	11/17/20 21:41	1
Molybdenum	0.0024		0.00050	0.00020	mg/L		11/10/20 10:49	11/17/20 21:41	1

Client Sample ID: FC-CCR-MW61-1120

Lab Sample ID: 550-152660-5

Date Collected: 11/08/20 08:45

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	340	D2 E4	400	100	mg/L			11/11/20 02:29	200
Fluoride	1.3	D1	0.80	0.095	mg/L			11/11/20 02:11	2
Sulfate	3700	D2	400	85	mg/L			11/11/20 02:29	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:04	11/13/20 22:46	1
Lithium	0.42		0.020	0.0091	mg/L		11/19/20 16:05	11/20/20 17:22	1
Boron	41		0.050	0.0025	mg/L		11/11/20 11:04	11/13/20 22:46	1
Calcium	540		2.0	0.013	mg/L		11/11/20 11:04	11/13/20 22:46	1
Magnesium	140		2.0	0.044	mg/L		11/11/20 11:04	11/13/20 22:46	1
Potassium	25		0.50	0.17	mg/L		11/11/20 11:04	11/13/20 22:46	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW61-1120

Lab Sample ID: 550-152660-5

Date Collected: 11/08/20 08:45

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	1100	D1	1.0	0.061	mg/L		11/11/20 11:04	11/19/20 20:37	2
Barium	0.012	E4	0.020	0.00081	mg/L		11/11/20 11:04	11/13/20 22:46	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00022	E4	0.0010	0.000043	mg/L		11/10/20 10:49	11/17/20 21:43	1
Arsenic	0.0018		0.00050	0.00025	mg/L		11/10/20 10:49	11/17/20 21:43	1
Barium	0.017		0.0020	0.0010	mg/L		12/03/20 09:50	12/04/20 18:40	1
Cadmium	0.0011		0.00010	0.000023	mg/L		11/10/20 10:49	11/17/20 21:43	1
Chromium	0.00049	E4	0.0010	0.00043	mg/L		11/10/20 10:49	11/17/20 21:43	1
Cobalt	0.024		0.00050	0.000063	mg/L		11/10/20 10:49	11/17/20 21:43	1
Lead	0.00093		0.00050	0.00022	mg/L		11/10/20 10:49	11/17/20 21:43	1
Molybdenum	0.11		0.00050	0.00020	mg/L		11/10/20 10:49	11/17/20 21:43	1
Selenium	0.0028		0.0010	0.00015	mg/L		11/10/20 10:49	11/18/20 16:08	2
Thallium	0.00017		0.00010	0.000013	mg/L		11/10/20 10:49	11/17/20 21:43	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	94		6.0	6.0	mg/L			11/12/20 11:56	1
Bicarbonate Alkalinity as CaCO3	61		6.0	6.0	mg/L			11/12/20 11:56	1
Carbonate Alkalinity as CaCO3	33		6.0	6.0	mg/L			11/12/20 11:56	1
Alkalinity, Phenolphthalein	17		6.0	6.0	mg/L			11/12/20 11:56	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 11:56	1
Total Dissolved Solids	5100	D1	100	100	mg/L			11/13/20 06:41	1
pH	8.6	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	9.1	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW75-1120

Lab Sample ID: 550-152660-6

Date Collected: 11/08/20 09:23

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	290	D2	200	52	mg/L			11/16/20 19:03	100
Fluoride	1.3		0.40	0.047	mg/L			11/16/20 18:35	1
Sulfate	4800	D2	200	43	mg/L			11/16/20 19:03	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.013	E4	0.020	0.00081	mg/L		11/11/20 11:04	11/13/20 22:49	1
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:04	11/13/20 22:49	1
Lithium	0.43		0.020	0.0091	mg/L		11/19/20 16:05	11/20/20 17:25	1
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:04	11/13/20 22:49	1
Boron	25		0.050	0.0025	mg/L		11/11/20 11:04	11/13/20 22:49	1
Boron	25		0.050	0.0025	mg/L		11/11/20 11:04	11/13/20 22:49	1
Calcium	470		2.0	0.013	mg/L		11/11/20 11:04	11/13/20 22:49	1
Calcium	470		2.0	0.013	mg/L		11/11/20 11:04	11/13/20 22:49	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW75-1120

Lab Sample ID: 550-152660-6

Date Collected: 11/08/20 09:23

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	250		2.0	0.044	mg/L		11/11/20 11:04	11/13/20 22:49	1
Potassium	27		0.50	0.17	mg/L		11/11/20 11:04	11/13/20 22:49	1
Sodium	1300	D2	2.5	0.15	mg/L		11/11/20 11:04	11/19/20 20:41	5
Barium	0.013	E4	0.020	0.00081	mg/L		11/11/20 11:04	11/13/20 22:49	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00012	E4	0.0010	0.000043	mg/L		11/10/20 10:49	11/17/20 21:45	1
Arsenic	0.0013		0.00050	0.00025	mg/L		11/10/20 10:49	11/17/20 21:45	1
Cadmium	0.0019		0.00010	0.000023	mg/L		11/10/20 10:49	11/17/20 21:45	1
Chromium	0.00072	E4	0.0010	0.00043	mg/L		11/10/20 10:49	11/17/20 21:45	1
Cobalt	0.047		0.00050	0.000063	mg/L		11/10/20 10:49	11/17/20 21:45	1
Lead	0.0029		0.00050	0.00022	mg/L		11/10/20 10:49	11/17/20 21:45	1
Molybdenum	0.19		0.00050	0.00020	mg/L		11/10/20 10:49	11/17/20 21:45	1
Selenium	0.0060		0.0010	0.00015	mg/L		11/10/20 10:49	11/18/20 16:10	2
Thallium	0.00020		0.00010	0.000013	mg/L		11/10/20 10:49	11/17/20 21:45	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	99		6.0	6.0	mg/L			11/12/20 12:04	1
Bicarbonate Alkalinity as CaCO3	99		6.0	6.0	mg/L			11/12/20 12:04	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 12:04	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 12:04	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 12:04	1
Total Dissolved Solids	6600	D1	100	100	mg/L			11/13/20 06:41	1
pH	8.4	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	9.6	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW87-1120

Lab Sample ID: 550-152660-7

Date Collected: 11/06/20 14:26

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2400	D2	400	100	mg/L			11/17/20 03:43	200
Fluoride	0.56	D2 E4 M2	0.80	0.095	mg/L			11/16/20 14:56	2
Sulfate	23000	D2	400	85	mg/L			11/17/20 03:43	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:04	11/13/20 22:53	1
Lithium	1.7		0.020	0.0091	mg/L		11/19/20 16:05	11/20/20 17:29	1
Boron	1.2		0.050	0.0025	mg/L		11/11/20 11:04	11/13/20 22:53	1
Calcium	480		2.0	0.013	mg/L		11/11/20 11:04	11/13/20 22:53	1
Magnesium	2000	D2	20	0.44	mg/L		11/11/20 11:04	11/16/20 20:38	10
Potassium	130		0.50	0.17	mg/L		11/11/20 11:04	11/13/20 22:53	1
Sodium	8300	D2	10	0.61	mg/L		11/11/20 11:04	11/23/20 23:57	20

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW87-1120

Lab Sample ID: 550-152660-7

Date Collected: 11/06/20 14:26

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND	E8	0.020	0.00081	mg/L		11/11/20 11:04	11/13/20 22:53	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0016	E4	0.0020	0.000087	mg/L		11/10/20 10:49	11/18/20 16:12	2
Arsenic	0.0048		0.0020	0.00099	mg/L		11/10/20 10:49	11/19/20 13:37	4
Barium	0.016		0.0020	0.0010	mg/L		12/03/20 09:50	12/04/20 18:42	1
Cadmium	0.00023		0.00020	0.000046	mg/L		11/10/20 10:49	11/18/20 16:12	2
Chromium	0.012		0.0040	0.0017	mg/L		12/03/20 09:50	12/07/20 12:31	1
Cobalt	0.014		0.0020	0.00025	mg/L		12/03/20 09:50	12/04/20 18:42	1
Lead	ND	E8	0.0010	0.00044	mg/L		11/10/20 10:49	11/18/20 16:12	2
Molybdenum	0.051		0.0010	0.00040	mg/L		11/10/20 10:49	11/18/20 16:12	2
Selenium	0.019		0.0020	0.00030	mg/L		11/10/20 10:49	11/19/20 13:37	4
Thallium	0.00014	E4	0.00020	0.000026	mg/L		11/10/20 10:49	11/18/20 16:12	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	800		6.0	6.0	mg/L			11/16/20 11:10	1
Bicarbonate Alkalinity as CaCO3	800		6.0	6.0	mg/L			11/16/20 11:10	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Total Dissolved Solids	38000	D2	1000	1000	mg/L			11/13/20 06:39	1
pH	7.4	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	9.0	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-FD05-1120

Lab Sample ID: 550-152660-8

Date Collected: 11/06/20 09:41

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	540	D2	400	100	mg/L			11/11/20 03:06	200
Fluoride	0.37	D1 E4	0.80	0.095	mg/L			11/11/20 02:47	2
Sulfate	5800	D2	400	85	mg/L			11/11/20 03:06	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0060	E4	0.020	0.00081	mg/L		11/11/20 11:04	11/13/20 22:57	1
Lithium	0.92		0.020	0.0091	mg/L		11/19/20 16:05	11/20/20 17:32	1
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:04	11/13/20 22:57	1
Boron	8.5		0.050	0.0025	mg/L		11/11/20 11:04	11/13/20 22:57	1
Calcium	400		2.0	0.013	mg/L		11/11/20 11:04	11/13/20 22:57	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00020	E4	0.0010	0.000043	mg/L		11/10/20 10:49	11/17/20 21:49	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-FD05-1120

Lab Sample ID: 550-152660-8

Date Collected: 11/06/20 09:41

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0025		0.00050	0.00025	mg/L		11/10/20 10:49	11/17/20 21:49	1
Cadmium	0.000062	E4	0.00010	0.000023	mg/L		11/10/20 10:49	11/17/20 21:49	1
Chromium	0.00062	E4	0.0010	0.00043	mg/L		11/10/20 10:49	11/17/20 21:49	1
Cobalt	0.00059		0.00050	0.000063	mg/L		11/10/20 10:49	11/17/20 21:49	1
Lead	ND	E8	0.0010	0.00044	mg/L		11/10/20 10:49	11/18/20 16:14	2
Molybdenum	0.0052		0.00050	0.00020	mg/L		11/10/20 10:49	11/17/20 21:49	1
Selenium	0.011		0.0010	0.00015	mg/L		11/10/20 10:49	11/18/20 16:14	2
Thallium	0.00012	E4	0.00020	0.000026	mg/L		11/10/20 10:49	11/18/20 16:14	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	8800	D2	100	100	mg/L			11/13/20 06:39	1
pH	7.4	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	8.8	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-225199/2
Matrix: Water
Analysis Batch: 225199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND	E8	2.0	0.52	mg/L			11/10/20 10:46	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/10/20 10:46	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/10/20 10:46	1

Lab Sample ID: LCS 550-225199/5
Matrix: Water
Analysis Batch: 225199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.12		mg/L		103	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-225199/6
Matrix: Water
Analysis Batch: 225199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Fluoride	4.00	4.11		mg/L		103	90 - 110	0	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-152659-A-7 MS ^2
Matrix: Water
Analysis Batch: 225199

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: 550-152659-A-7 MS ^500
Matrix: Water
Analysis Batch: 225199

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	23000	D2	10000	30800	D2	mg/L		80	80 - 120

Lab Sample ID: 550-152659-A-7 MSD ^2
Matrix: Water
Analysis Batch: 225199

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-152659-A-7 MSD ^500
Matrix: Water
Analysis Batch: 225199

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2700	D2	10000	13800	D2	mg/L		111	80 - 120	0	20
Sulfate	23000	D2	10000	31000	D2	mg/L		82	80 - 120	1	20

Lab Sample ID: MB 550-225705/2
Matrix: Water
Analysis Batch: 225705

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	E8	2.0	0.52	mg/L			11/16/20 12:39	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/16/20 12:39	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/16/20 12:39	1

Lab Sample ID: LCS 550-225705/5
Matrix: Water
Analysis Batch: 225705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.5		mg/L		108	90 - 110
Fluoride	4.00	4.38		mg/L		109	90 - 110
Sulfate	20.0	22.0		mg/L		110	90 - 110

Lab Sample ID: LCSD 550-225705/6
Matrix: Water
Analysis Batch: 225705

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.6		mg/L		108	90 - 110	0	20
Fluoride	4.00	4.35		mg/L		109	90 - 110	1	20
Sulfate	20.0	22.1		mg/L		110	90 - 110	0	20

Lab Sample ID: 550-152953-A-1 MS
Matrix: Water
Analysis Batch: 225705

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	240	E2 M3	20.0	249	E2 M3	mg/L		53	80 - 120
Fluoride	7.9		4.00	12.4		mg/L		112	80 - 120
Sulfate	190	M3	20.0	207	E2 M3	mg/L		73	80 - 120

Lab Sample ID: 550-152953-A-1 MSD
Matrix: Water
Analysis Batch: 225705

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	240	E2 M3	20.0	250	E2 M3	mg/L		55	80 - 120	0	20
Fluoride	7.9		4.00	12.4		mg/L		112	80 - 120	0	20
Sulfate	190	M3	20.0	207	E2 M3	mg/L		74	80 - 120	0	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-225707/2
Matrix: Water
Analysis Batch: 225707

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND	E8	2.0	0.52	mg/L			11/16/20 12:39	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/16/20 12:39	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/16/20 12:39	1

Lab Sample ID: LCS 550-225707/5
Matrix: Water
Analysis Batch: 225707

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.35		mg/L		109	90 - 110
Sulfate	20.0	21.2		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-225707/6
Matrix: Water
Analysis Batch: 225707

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Fluoride	4.00	4.36		mg/L		109	90 - 110	0	20
Sulfate	20.0	21.2		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-152660-7 MS
Matrix: Water
Analysis Batch: 225707

Client Sample ID: FC-CCR-MW87-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.56	E4 M2 D2	8.00	2.80	D2 M2	mg/L		28	80 - 120
Sulfate	5600	E2 M3	40.0	5550	D2 E2 M3	mg/L		-33	80 - 120

Lab Sample ID: 550-152660-7 MS
Matrix: Water
Analysis Batch: 225707

Client Sample ID: FC-CCR-MW87-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND	E8	800	854	D2	mg/L		107	80 - 120
Sulfate	23000	D2	4000	27400	D2 M3	mg/L		100	80 - 120

Lab Sample ID: 550-152660-7 MSD
Matrix: Water
Analysis Batch: 225707

Client Sample ID: FC-CCR-MW87-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Fluoride	0.56	E4 M2 D2	8.00	2.60	D2 M2	mg/L		26	80 - 120	7	20
Sulfate	5600	E2 M3	40.0	5500	D2 E2 M3	mg/L		-157	80 - 120	1	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-152660-7 MSD
Matrix: Water
Analysis Batch: 225707

Client Sample ID: FC-CCR-MW87-1120
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloride	2400	D2	4000	7260	D2	mg/L		120	80 - 120	1	20
Fluoride	ND	E8	800	872	D2	mg/L		109	80 - 120	2	20
Sulfate	23000	D2	4000	28100	D2 M3	mg/L		117	80 - 120	3	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-225253/1-A
Matrix: Water
Analysis Batch: 225605

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225253

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Beryllium	0.000600	E4	0.0010	0.000067	mg/L		11/11/20 11:04	11/13/20 21:49	1
Boron	0.00760	E4	0.050	0.0025	mg/L		11/11/20 11:04	11/13/20 21:49	1
Calcium	0.0526	E4	2.0	0.013	mg/L		11/11/20 11:04	11/13/20 21:49	1
Magnesium	ND	E8	2.0	0.044	mg/L		11/11/20 11:04	11/13/20 21:49	1
Potassium	ND	E8	0.50	0.17	mg/L		11/11/20 11:04	11/13/20 21:49	1
Sodium	0.455	E4	0.50	0.031	mg/L		11/11/20 11:04	11/13/20 21:49	1
Barium	0.00156	E4	0.020	0.00081	mg/L		11/11/20 11:04	11/13/20 21:49	1

Lab Sample ID: MB 550-225253/1-A
Matrix: Water
Analysis Batch: 225726

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225253

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Beryllium	0.000140	E4	0.0010	0.000067	mg/L		11/11/20 11:04	11/16/20 20:04	1
Boron	0.0182	E4	0.050	0.0025	mg/L		11/11/20 11:04	11/16/20 20:04	1
Calcium	ND	E8	2.0	0.013	mg/L		11/11/20 11:04	11/16/20 20:04	1
Magnesium	ND	E8	2.0	0.044	mg/L		11/11/20 11:04	11/16/20 20:04	1

Lab Sample ID: MB 550-225253/1-A
Matrix: Water
Analysis Batch: 226236

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225253

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Sodium	0.0380	E4	0.50	0.031	mg/L		11/11/20 11:04	11/19/20 20:11	1
Barium	0.00137	E4	0.020	0.00081	mg/L		11/11/20 11:04	11/19/20 20:11	1

Lab Sample ID: LCS 550-225253/2-A
Matrix: Water
Analysis Batch: 225605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
							Added
Beryllium	1.00	1.02		mg/L		102	85 - 115
Boron	1.00	1.02		mg/L		102	85 - 115
Calcium	20.0	21.8		mg/L		109	85 - 115
Magnesium	20.0	20.6		mg/L		103	85 - 115
Potassium	20.0	20.4		mg/L		102	85 - 115
Sodium	20.0	22.3		mg/L		112	85 - 115
Barium	1.00	1.10		mg/L		110	85 - 115

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-225253/2-A
Matrix: Water
Analysis Batch: 225726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Beryllium	1.00	1.02		mg/L		102	85 - 115
Boron	1.00	1.05		mg/L		105	85 - 115
Calcium	20.0	21.8		mg/L		109	85 - 115
Magnesium	20.0	20.3		mg/L		101	85 - 115

Lab Sample ID: LCS 550-225253/2-A
Matrix: Water
Analysis Batch: 226236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Sodium	20.0	21.7		mg/L		108	85 - 115
Barium	1.00	1.07		mg/L		107	85 - 115

Lab Sample ID: LCSD 550-225253/3-A
Matrix: Water
Analysis Batch: 225605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Beryllium	1.00	1.03		mg/L		103	85 - 115	0	20
Boron	1.00	1.00		mg/L		100	85 - 115	2	20
Calcium	20.0	21.6		mg/L		108	85 - 115	1	20
Magnesium	20.0	20.3		mg/L		102	85 - 115	1	20
Potassium	20.0	20.2		mg/L		101	85 - 115	1	20
Sodium	20.0	22.1		mg/L		110	85 - 115	1	20
Barium	1.00	1.14		mg/L		114	85 - 115	4	20

Lab Sample ID: LCSD 550-225253/3-A
Matrix: Water
Analysis Batch: 225726

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Beryllium	1.00	1.02		mg/L		102	85 - 115	1	20
Boron	1.00	1.03		mg/L		103	85 - 115	2	20
Calcium	20.0	21.4		mg/L		107	85 - 115	2	20
Magnesium	20.0	19.9		mg/L		99	85 - 115	2	20

Lab Sample ID: LCSD 550-225253/3-A
Matrix: Water
Analysis Batch: 226236

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Sodium	20.0	21.4		mg/L		107	85 - 115	1	20
Barium	1.00	1.13		mg/L		113	85 - 115	5	20

Lab Sample ID: 550-152543-K-1-A MS
Matrix: Water
Analysis Batch: 225605

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Beryllium	0.00046	E4	1.00	1.08		mg/L		108	70 - 130

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-152543-K-1-A MS
Matrix: Water
Analysis Batch: 225605

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	Limits
Boron	0.34		1.00	1.37		mg/L		103	70 - 130	
Calcium	170		20.0	189	M3	mg/L		90	70 - 130	
Magnesium	24		20.0	44.5		mg/L		102	70 - 130	
Potassium	6.4		20.0	28.3		mg/L		110	70 - 130	
Sodium	170	M3	20.0	191	M3	mg/L		83	70 - 130	
Barium	0.13		1.00	1.25		mg/L		112	70 - 130	

Lab Sample ID: 550-152543-K-1-A MS
Matrix: Water
Analysis Batch: 225726

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	Limits
Beryllium	0.00036	E4	1.00	1.05		mg/L		105	70 - 130	
Boron	0.35		1.00	1.39		mg/L		105	70 - 130	
Calcium	180	M3	20.0	185	M3	mg/L		52	70 - 130	
Magnesium	24		20.0	42.8		mg/L		93	70 - 130	

Lab Sample ID: 550-152543-K-1-A MS
Matrix: Water
Analysis Batch: 226236

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	Limits
Sodium	170	M3	20.0	184	M3	mg/L		72	70 - 130	
Barium	0.13		1.00	1.21		mg/L		109	70 - 130	

Lab Sample ID: 550-152543-K-1-B MSD
Matrix: Water
Analysis Batch: 225605

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	Limit
Beryllium	0.00046	E4	1.00	1.07		mg/L		107	70 - 130	1	20	
Boron	0.34		1.00	1.33		mg/L		100	70 - 130	3	20	
Calcium	170		20.0	186	M3	mg/L		73	70 - 130	2	20	
Magnesium	24		20.0	44.2		mg/L		101	70 - 130	1	20	
Potassium	6.4		20.0	28.0		mg/L		108	70 - 130	1	20	
Sodium	170	M3	20.0	187	M3	mg/L		59	70 - 130	2	20	
Barium	0.13		1.00	1.23		mg/L		110	70 - 130	1	20	

Lab Sample ID: 550-152543-K-1-B MSD
Matrix: Water
Analysis Batch: 225726

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	Limit
Beryllium	0.00036	E4	1.00	1.03		mg/L		103	70 - 130	2	20	
Boron	0.35		1.00	1.36		mg/L		102	70 - 130	2	20	
Calcium	180	M3	20.0	180	M3	mg/L		23	70 - 130	3	20	
Magnesium	24		20.0	41.8		mg/L		88	70 - 130	2	20	

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-152543-K-1-B MSD
Matrix: Water
Analysis Batch: 226236

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225253

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD		
Sodium	170	M3	20.0	176	M3	mg/L		33	70 - 130	4	20	
Barium	0.13		1.00	1.17		mg/L		104	70 - 130	4	20	

Lab Sample ID: MB 280-517308/1-A
Matrix: Water
Analysis Batch: 517768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 517308

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Lithium	ND	E8	0.020	0.0091	mg/L		11/19/20 16:05	11/20/20 16:32	1

Lab Sample ID: LCS 280-517308/2-A
Matrix: Water
Analysis Batch: 517768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 517308

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	RPD
Lithium	1.00	0.963		mg/L		96	90 - 112	

Lab Sample ID: 280-142748-A-1-C MS
Matrix: Water
Analysis Batch: 517768

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 517308

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD
Lithium	0.021		1.00	1.00		mg/L		98	70 - 130	

Lab Sample ID: 280-142748-A-1-D MSD
Matrix: Water
Analysis Batch: 517768

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 517308

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD		
Lithium	0.021		1.00	0.977		mg/L		96	70 - 130	2	20	

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-225158/1-A
Matrix: Water
Analysis Batch: 225862

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225158

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	ND	E8	0.0010	0.000043	mg/L		11/10/20 10:49	11/17/20 21:14	1
Arsenic	0.000338	E4	0.00050	0.00025	mg/L		11/10/20 10:49	11/17/20 21:14	1
Cadmium	ND	E8	0.00010	0.000023	mg/L		11/10/20 10:49	11/17/20 21:14	1
Chromium	ND	E8	0.0010	0.00043	mg/L		11/10/20 10:49	11/17/20 21:14	1
Cobalt	ND	E8	0.00050	0.000063	mg/L		11/10/20 10:49	11/17/20 21:14	1
Lead	ND	E8	0.00050	0.00022	mg/L		11/10/20 10:49	11/17/20 21:14	1
Molybdenum	ND	E8	0.00050	0.00020	mg/L		11/10/20 10:49	11/17/20 21:14	1
Thallium	ND	E8	0.00010	0.000013	mg/L		11/10/20 10:49	11/17/20 21:14	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-225158/1-A
Matrix: Water
Analysis Batch: 226061

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225158

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000460	E4	0.0010	0.000043	mg/L		11/10/20 10:49	11/19/20 13:33	1
Selenium	0.000193	E4	0.00050	0.000074	mg/L		11/10/20 10:49	11/19/20 13:33	1

Lab Sample ID: LCS 550-225158/2-A
Matrix: Water
Analysis Batch: 225862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.101		mg/L		101	85 - 115
Arsenic	0.100	0.103		mg/L		103	85 - 115
Cadmium	0.100	0.101		mg/L		101	85 - 115
Chromium	0.100	0.106		mg/L		106	85 - 115
Cobalt	0.100	0.103		mg/L		103	85 - 115
Lead	0.100	0.0957		mg/L		96	85 - 115
Molybdenum	0.100	0.102		mg/L		102	85 - 115
Thallium	0.100	0.0992		mg/L		99	85 - 115

Lab Sample ID: LCS 550-225158/2-A
Matrix: Water
Analysis Batch: 225994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.100	0.105		mg/L		105	85 - 115

Lab Sample ID: LCSD 550-225158/3-A
Matrix: Water
Analysis Batch: 225862

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	0.100	0.103		mg/L		103	85 - 115	2	20
Arsenic	0.100	0.103		mg/L		103	85 - 115	0	20
Cadmium	0.100	0.102		mg/L		102	85 - 115	2	20
Chromium	0.100	0.105		mg/L		105	85 - 115	1	20
Cobalt	0.100	0.103		mg/L		103	85 - 115	0	20
Lead	0.100	0.100		mg/L		100	85 - 115	5	20
Molybdenum	0.100	0.104		mg/L		104	85 - 115	2	20
Thallium	0.100	0.100		mg/L		100	85 - 115	1	20

Lab Sample ID: LCSD 550-225158/3-A
Matrix: Water
Analysis Batch: 225994

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Selenium	0.100	0.104		mg/L		104	85 - 115	0	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-152659-A-16-A MS
Matrix: Water
Analysis Batch: 225862

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Antimony	0.00010	E4	0.100	0.103		mg/L		103		70 - 130
Arsenic	0.0014		0.100	0.115		mg/L		113		70 - 130
Cadmium	0.0011		0.100	0.0955		mg/L		94		70 - 130
Chromium	0.0013		0.100	0.0977		mg/L		96		70 - 130
Cobalt	0.26		0.100	0.354		mg/L		91		70 - 130
Lead	0.0026		0.100	0.0928		mg/L		90		70 - 130
Molybdenum	0.0010		0.100	0.107		mg/L		106		70 - 130
Thallium	0.00031		0.100	0.0943		mg/L		94		70 - 130

Lab Sample ID: 550-152659-A-16-A MS
Matrix: Water
Analysis Batch: 225994

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Selenium	0.0021	M1	0.100	0.130		mg/L		128		70 - 130

Lab Sample ID: 550-152659-A-16-B MSD
Matrix: Water
Analysis Batch: 225862

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Antimony	0.00010	E4	0.100	0.103		mg/L		103		70 - 130	0	20
Arsenic	0.0014		0.100	0.119		mg/L		117		70 - 130	3	20
Cadmium	0.0011		0.100	0.0938		mg/L		93		70 - 130	2	20
Chromium	0.0013		0.100	0.0994		mg/L		98		70 - 130	2	20
Cobalt	0.26		0.100	0.354		mg/L		91		70 - 130	0	20
Lead	0.0026		0.100	0.0923		mg/L		90		70 - 130	0	20
Molybdenum	0.0010		0.100	0.106		mg/L		105		70 - 130	0	20
Thallium	0.00031		0.100	0.0897		mg/L		89		70 - 130	5	20

Lab Sample ID: 550-152659-A-16-B MSD
Matrix: Water
Analysis Batch: 225994

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225158

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Selenium	0.0021	M1	0.100	0.135	M1	mg/L		133		70 - 130	4	20

Lab Sample ID: MB 550-227133/1-A
Matrix: Water
Analysis Batch: 227343

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 227133

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND	E8	0.00050	0.00025	mg/L		12/03/20 09:50	12/04/20 18:21	1
Barium	ND	E8	0.00050	0.00026	mg/L		12/03/20 09:50	12/04/20 18:21	1
Cobalt	ND	E8	0.00050	0.000063	mg/L		12/03/20 09:50	12/04/20 18:21	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-227133/1-A
Matrix: Water
Analysis Batch: 227389

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 227133

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND	E8	0.0010	0.00043	mg/L		12/03/20 09:50	12/07/20 12:18	1

Lab Sample ID: LCS 550-227133/2-A
Matrix: Water
Analysis Batch: 227343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 227133

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0951		mg/L		95	85 - 115
Barium	0.100	0.0935		mg/L		93	85 - 115
Cobalt	0.100	0.0968		mg/L		97	85 - 115

Lab Sample ID: LCS 550-227133/2-A
Matrix: Water
Analysis Batch: 227389

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 227133

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.100	0.103		mg/L		103	85 - 115

Lab Sample ID: LCSD 550-227133/3-A
Matrix: Water
Analysis Batch: 227343

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 227133

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	0.100	0.0984		mg/L		98	85 - 115	3	20
Barium	0.100	0.0988		mg/L		99	85 - 115	5	20
Cobalt	0.100	0.0989		mg/L		99	85 - 115	2	20

Lab Sample ID: LCSD 550-227133/3-A
Matrix: Water
Analysis Batch: 227389

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 227133

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chromium	0.100	0.106		mg/L		106	85 - 115	3	20

Lab Sample ID: 550-153861-E-1-A MS
Matrix: Water
Analysis Batch: 227343

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 227133

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0044		0.100	0.109		mg/L		105	70 - 130
Barium	0.13		0.100	0.235		mg/L		105	70 - 130
Cobalt	0.00018	E4	0.100	0.0979		mg/L		98	70 - 130

Lab Sample ID: 550-153861-E-1-A MS
Matrix: Water
Analysis Batch: 227389

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 227133

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.0055		0.100	0.110		mg/L		105	70 - 130

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-153861-E-1-B MSD
Matrix: Water
Analysis Batch: 227343

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 227133

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Arsenic	0.0044		0.100	0.118		mg/L		114		70 - 130	8	20
Barium	0.13		0.100	0.256		mg/L		126		70 - 130	8	20
Cobalt	0.00018	E4	0.100	0.106		mg/L		105		70 - 130	8	20

Lab Sample ID: 550-153861-E-1-B MSD
Matrix: Water
Analysis Batch: 227389

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 227133

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Chromium	0.0055		0.100	0.117		mg/L		111		70 - 130	6	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 550-225425/1-A
Matrix: Water
Analysis Batch: 225450

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225425

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 18:49	1

Lab Sample ID: LCS 550-225425/2-A
Matrix: Water
Analysis Batch: 225450

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225425

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits

Lab Sample ID: LCSD 550-225425/3-A
Matrix: Water
Analysis Batch: 225450

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225425

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	Limits	RPD	Limit

Lab Sample ID: 550-152543-N-1-A MS
Matrix: Water
Analysis Batch: 225450

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225425

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Hg	ND	E8	0.00500	0.00461		mg/L		92		70 - 130

Lab Sample ID: 550-152543-N-1-B MSD
Matrix: Water
Analysis Batch: 225450

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225425

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Hg	ND	E8	0.00500	0.00477		mg/L		95		70 - 130	3	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-225412/5
Matrix: Water
Analysis Batch: 225412

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 09:13	1
Bicarbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 09:13	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 09:13	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/12/20 09:13	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/12/20 09:13	1

Lab Sample ID: LCS 550-225412/4
Matrix: Water
Analysis Batch: 225412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: LCSD 550-225412/17
Matrix: Water
Analysis Batch: 225412

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit

Lab Sample ID: 550-152660-2 DU
Matrix: Water
Analysis Batch: 225412

Client Sample ID: FC-CCR-MW08-1120
Prep Type: Total/NA

Analyte	Sample Sample		DU DU		Unit	D	RPD	RPD Limit
	Result	Qualifier	Result	Qualifier				
Alkalinity as CaCO3	540		536		mg/L		0.5	20
Bicarbonate Alkalinity as CaCO3	540		536		mg/L		0.5	20
Carbonate Alkalinity as CaCO3	ND	E8	ND	E8	mg/L		NC	20
Alkalinity, Phenolphthalein	ND	E8	ND	E8	mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND	E8	ND	E8	mg/L		NC	20

Lab Sample ID: MB 550-225657/1
Matrix: Water
Analysis Batch: 225657

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Bicarbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			11/16/20 11:10	1

Lab Sample ID: LCS 550-225657/2
Matrix: Water
Analysis Batch: 225657

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCSD 550-225657/3
Matrix: Water
Analysis Batch: 225657

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	238		mg/L		95	90 - 110	3	20

Lab Sample ID: 550-152659-A-1 DU
Matrix: Water
Analysis Batch: 225658

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	750		700		mg/L		7	20
Bicarbonate Alkalinity as CaCO3	750		700		mg/L		7	20
Carbonate Alkalinity as CaCO3	ND	E8	ND	E8	mg/L		NC	20
Alkalinity, Phenolphthalein	ND	E8	ND	E8	mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND	E8	ND	E8	mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-225458/1
Matrix: Water
Analysis Batch: 225458

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	E8	20	20	mg/L			11/13/20 06:39	1

Lab Sample ID: LCS 550-225458/2
Matrix: Water
Analysis Batch: 225458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	942		mg/L		94	90 - 110

Lab Sample ID: LCSD 550-225458/3
Matrix: Water
Analysis Batch: 225458

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	994		mg/L		99	90 - 110	5	10

Lab Sample ID: 550-152606-E-1 DU
Matrix: Water
Analysis Batch: 225458

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1800		1800		mg/L		2	10

Lab Sample ID: MB 550-225459/1
Matrix: Water
Analysis Batch: 225459

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	E8	20	20	mg/L			11/13/20 06:41	1

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QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 550-225459/2
Matrix: Water
Analysis Batch: 225459

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	944		mg/L		94	90 - 110

Lab Sample ID: LCSD 550-225459/3
Matrix: Water
Analysis Batch: 225459

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	958		mg/L		96	90 - 110	1	10

Lab Sample ID: 550-152659-A-1 DU
Matrix: Water
Analysis Batch: 225459

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	19000	D1	18900	D1	mg/L		2	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-225378/1
Matrix: Water
Analysis Batch: 225378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.1	98.5 - 101.5

Lab Sample ID: 550-152660-1 DU
Matrix: Water
Analysis Batch: 225378

Client Sample ID: FC-CCR-MW07-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.3	H5	7.3	H5	SU		0.1	5
Temperature	9.7	H5	10.2	H5	Degrees C		5	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

HPLC/IC

Analysis Batch: 225199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	300.0	
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	300.0	
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	300.0	
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	300.0	
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	300.0	
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	300.0	
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	300.0	
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	300.0	
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	300.0	
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	300.0	
MB 550-225199/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225199/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-225199/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152659-A-7 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-152659-A-7 MS ^500	Matrix Spike	Total/NA	Water	300.0	
550-152659-A-7 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-152659-A-7 MSD ^500	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 225705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	300.0	
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	300.0	
MB 550-225705/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225705/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-225705/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152953-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-152953-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 225707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	300.0	
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	300.0	
MB 550-225707/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225707/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-225707/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152660-7 MS	FC-CCR-MW87-1120	Total/NA	Water	300.0	
550-152660-7 MS	FC-CCR-MW87-1120	Total/NA	Water	300.0	
550-152660-7 MSD	FC-CCR-MW87-1120	Total/NA	Water	300.0	
550-152660-7 MSD	FC-CCR-MW87-1120	Total/NA	Water	300.0	

Metals

Prep Batch: 225158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	200.8	
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	200.8	
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	200.8	
550-152660-4	FC-CCR-MW52-1120	Total/NA	Water	200.8	
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	200.8	
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	200.8	
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.8	

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QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Metals (Continued)

Prep Batch: 225158 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	200.8	
MB 550-225158/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-225158/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-225158/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-152659-A-16-A MS	Matrix Spike	Total/NA	Water	200.8	
550-152659-A-16-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

Prep Batch: 225253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	200.7	
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	200.7	
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	200.7	
550-152660-4	FC-CCR-MW52-1120	Total/NA	Water	200.7	
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	200.7	
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	200.7	
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.7	
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	200.7	
MB 550-225253/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-225253/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-225253/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-152543-K-1-A MS	Matrix Spike	Total/NA	Water	200.7	
550-152543-K-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Prep Batch: 225425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	245.1	
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	245.1	
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	245.1	
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	245.1	
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	245.1	
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	245.1	
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	245.1	
MB 550-225425/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-225425/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-225425/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-152543-N-1-A MS	Matrix Spike	Total/NA	Water	245.1	
550-152543-N-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Analysis Batch: 225450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	245.1	225425
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	245.1	225425
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	245.1	225425
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	245.1	225425
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	245.1	225425
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	245.1	225425
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	245.1	225425
MB 550-225425/1-A	Method Blank	Total/NA	Water	245.1	225425
LCS 550-225425/2-A	Lab Control Sample	Total/NA	Water	245.1	225425
LCSD 550-225425/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	225425
550-152543-N-1-A MS	Matrix Spike	Total/NA	Water	245.1	225425

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Metals (Continued)

Analysis Batch: 225450 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152543-N-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	225425

Analysis Batch: 225605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	200.7 Rev 4.4	225253
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	200.7 Rev 4.4	225253
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	200.7 Rev 4.4	225253
550-152660-4	FC-CCR-MW52-1120	Total/NA	Water	200.7 Rev 4.4	225253
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	200.7 Rev 4.4	225253
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	200.7 Rev 4.4	225253
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.7 Rev 4.4	225253
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	200.7 Rev 4.4	225253
MB 550-225253/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225253
LCS 550-225253/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225253
LCSD 550-225253/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225253
550-152543-K-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	225253
550-152543-K-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	225253

Analysis Batch: 225726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.7 Rev 4.4	225253
MB 550-225253/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225253
LCS 550-225253/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225253
LCSD 550-225253/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225253
550-152543-K-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	225253
550-152543-K-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	225253

Analysis Batch: 225862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	200.8 LL	225158
550-152660-4	FC-CCR-MW52-1120	Total/NA	Water	200.8 LL	225158
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	200.8 LL	225158
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	200.8 LL	225158
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	200.8 LL	225158
MB 550-225158/1-A	Method Blank	Total/NA	Water	200.8 LL	225158
LCS 550-225158/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	225158
LCSD 550-225158/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	225158
550-152659-A-16-A MS	Matrix Spike	Total/NA	Water	200.8 LL	225158
550-152659-A-16-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	225158

Analysis Batch: 225910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	200.8 LL	225158

Analysis Batch: 225994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	200.8 LL	225158
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	200.8 LL	225158
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	200.8 LL	225158
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	200.8 LL	225158
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	200.8 LL	225158

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Metals (Continued)

Analysis Batch: 225994 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.8 LL	225158
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	200.8 LL	225158
LCS 550-225158/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	225158
LCSD 550-225158/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	225158
550-152659-A-16-A MS	Matrix Spike	Total/NA	Water	200.8 LL	225158
550-152659-A-16-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	225158

Analysis Batch: 226061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.8 LL	225158
MB 550-225158/1-A	Method Blank	Total/NA	Water	200.8 LL	225158

Analysis Batch: 226236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	200.7 Rev 4.4	225253
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	200.7 Rev 4.4	225253
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	200.7 Rev 4.4	225253
MB 550-225253/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225253
LCS 550-225253/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225253
LCSD 550-225253/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225253
550-152543-K-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	225253
550-152543-K-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	225253

Analysis Batch: 226397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.7 Rev 4.4	225253

Prep Batch: 227133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	200.8	
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	200.8	
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	200.8	
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.8	
MB 550-227133/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-227133/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-227133/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-153861-E-1-A MS	Matrix Spike	Total/NA	Water	200.8	
550-153861-E-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

Analysis Batch: 227343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	200.8 LL	227133
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	200.8 LL	227133
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	200.8 LL	227133
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.8 LL	227133
MB 550-227133/1-A	Method Blank	Total/NA	Water	200.8 LL	227133
LCS 550-227133/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	227133
LCSD 550-227133/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	227133
550-153861-E-1-A MS	Matrix Spike	Total/NA	Water	200.8 LL	227133
550-153861-E-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	227133

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Metals

Analysis Batch: 227389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.8 LL	227133
MB 550-227133/1-A	Method Blank	Total/NA	Water	200.8 LL	227133
LCS 550-227133/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	227133
LCSD 550-227133/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	227133
550-153861-E-1-A MS	Matrix Spike	Total/NA	Water	200.8 LL	227133
550-153861-E-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	227133

Analysis Batch: 228109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	200.8 LL	225158

Prep Batch: 517308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	200.7	
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	200.7	
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	200.7	
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	200.7	
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	200.7	
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.7	
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	200.7	
MB 280-517308/1-A	Method Blank	Total/NA	Water	200.7	
LCS 280-517308/2-A	Lab Control Sample	Total/NA	Water	200.7	
280-142748-A-1-C MS	Matrix Spike	Total/NA	Water	200.7	
280-142748-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Analysis Batch: 517768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	200.7 Rev 4.4	517308
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	200.7 Rev 4.4	517308
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	200.7 Rev 4.4	517308
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	200.7 Rev 4.4	517308
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	200.7 Rev 4.4	517308
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	200.7 Rev 4.4	517308
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	200.7 Rev 4.4	517308
MB 280-517308/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	517308
LCS 280-517308/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	517308
280-142748-A-1-C MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	517308
280-142748-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	517308

General Chemistry

Analysis Batch: 225378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	SM 4500 H+ B	
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	SM 4500 H+ B	
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	SM 4500 H+ B	
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	SM 4500 H+ B	
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	SM 4500 H+ B	
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	SM 4500 H+ B	
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-225378/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

General Chemistry (Continued)

Analysis Batch: 225378 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1 DU	FC-CCR-MW07-1120	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 225412

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	SM 2320B	
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	SM 2320B	
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	SM 2320B	
MB 550-225412/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-225412/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-225412/17	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-152660-2 DU	FC-CCR-MW08-1120	Total/NA	Water	SM 2320B	

Analysis Batch: 225458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-1	FC-CCR-MW07-1120	Total/NA	Water	SM 2540C	
550-152660-2	FC-CCR-MW08-1120	Total/NA	Water	SM 2540C	
550-152660-3	FC-CCR-MW49-1120	Total/NA	Water	SM 2540C	
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	SM 2540C	
550-152660-8	FC-CCR-FD05-1120	Total/NA	Water	SM 2540C	
MB 550-225458/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-225458/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-225458/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-152606-E-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 225459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-5	FC-CCR-MW61-1120	Total/NA	Water	SM 2540C	
550-152660-6	FC-CCR-MW75-1120	Total/NA	Water	SM 2540C	
MB 550-225459/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-225459/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-225459/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-152659-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 225657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-225657/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-225657/2	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-225657/3	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 225658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152660-7	FC-CCR-MW87-1120	Total/NA	Water	SM 2320B	
550-152659-A-1 DU	Duplicate	Total/NA	Water	SM 2320B	

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW07-1120

Lab Sample ID: 550-152660-1

Date Collected: 11/06/20 09:41

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		200	225199	11/10/20 23:43	RDC	TAL PHX
Total/NA	Analysis	300.0		2	225199	11/11/20 00:39	RDC	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225605	11/13/20 22:23	MGM	TAL PHX
Total/NA	Prep	200.7			517308	11/19/20 16:05	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 17:12	LMT	TAL DEN
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225862	11/17/20 21:35	ARE	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225994	11/18/20 16:02	ARE	TAL PHX
Total/NA	Prep	200.8			227133	12/03/20 09:50	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	227343	12/04/20 18:36	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 18:58	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225458	(Start) 11/13/20 06:39 (End) 11/16/20 07:50	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW08-1120

Lab Sample ID: 550-152660-2

Date Collected: 11/06/20 10:37

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225199	11/11/20 00:57	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225199	11/11/20 01:15	RDC	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225605	11/13/20 22:27	MGM	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	226236	11/19/20 20:33	MGM	TAL PHX
Total/NA	Prep	200.7			517308	11/19/20 16:05	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 17:15	LMT	TAL DEN
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225910	11/18/20 11:14	ARE	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225994	11/18/20 16:04	ARE	TAL PHX
Total/NA	Prep	200.8			227133	12/03/20 09:50	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	227343	12/04/20 18:38	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:00	SRR	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 11:37	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225458	(Start) 11/13/20 06:39 (End) 11/16/20 07:50	YET	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW08-1120

Lab Sample ID: 550-152660-2

Date Collected: 11/06/20 10:37

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW49-1120

Lab Sample ID: 550-152660-3

Date Collected: 11/06/20 08:41

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225199	11/11/20 01:34	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225199	11/11/20 01:52	RDC	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225605	11/13/20 22:30	MGM	TAL PHX
Total/NA	Prep	200.7			517308	11/19/20 16:05	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 17:19	LMT	TAL DEN
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225994	11/18/20 16:06	ARE	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	228109	12/15/20 09:28	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:01	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225458	(Start) 11/13/20 06:39 (End) 11/16/20 07:50	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW52-1120

Lab Sample ID: 550-152660-4

Date Collected: 11/08/20 08:10

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225605	11/13/20 22:34	MGM	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225862	11/17/20 21:41	ARE	TAL PHX

Client Sample ID: FC-CCR-MW61-1120

Lab Sample ID: 550-152660-5

Date Collected: 11/08/20 08:45

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225199	11/11/20 02:11	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225199	11/11/20 02:29	RDC	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225605	11/13/20 22:46	MGM	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	226236	11/19/20 20:37	MGM	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW61-1120

Lab Sample ID: 550-152660-5

Date Collected: 11/08/20 08:45

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			517308	11/19/20 16:05	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 17:22	LMT	TAL DEN
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225862	11/17/20 21:43	ARE	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225994	11/18/20 16:08	ARE	TAL PHX
Total/NA	Prep	200.8			227133	12/03/20 09:50	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	227343	12/04/20 18:40	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:03	SRR	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 11:56	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459	(Start) 11/13/20 06:41 (End) 11/16/20 07:50	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW75-1120

Lab Sample ID: 550-152660-6

Date Collected: 11/08/20 09:23

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225705	11/16/20 18:35	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225705	11/16/20 19:03	RDC	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225605	11/13/20 22:49	MGM	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	226236	11/19/20 20:41	MGM	TAL PHX
Total/NA	Prep	200.7			517308	11/19/20 16:05	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 17:25	LMT	TAL DEN
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225862	11/17/20 21:45	ARE	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225994	11/18/20 16:10	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:04	SRR	TAL PHX
Total/NA	Analysis	SM 2320B		1	225412	11/12/20 12:04	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225459	(Start) 11/13/20 06:41 (End) 11/16/20 07:50	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-MW87-1120

Lab Sample ID: 550-152660-7

Date Collected: 11/06/20 14:26

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225707	11/16/20 14:56	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225707	11/17/20 03:43	RDC	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225605	11/13/20 22:53	MGM	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	225726	11/16/20 20:38	MGM	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		20	226397	11/23/20 23:57	MGM	TAL PHX
Total/NA	Prep	200.7			517308	11/19/20 16:05	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 17:29	LMT	TAL DEN
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225994	11/18/20 16:12	ARE	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226061	11/19/20 13:37	ARE	TAL PHX
Total/NA	Prep	200.8			227133	12/03/20 09:50	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	227343	12/04/20 18:42	ARE	TAL PHX
Total/NA	Prep	200.8			227133	12/03/20 09:50	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	227389	12/07/20 12:31	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:06	SRR	TAL PHX
Total/NA	Analysis	SM 2320B		1	225658	11/16/20 11:10	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	225458	(Start) 11/13/20 06:39 (End) 11/16/20 07:50	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-FD05-1120

Lab Sample ID: 550-152660-8

Date Collected: 11/06/20 09:41

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225199	11/11/20 02:47	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225199	11/11/20 03:06	RDC	TAL PHX
Total/NA	Prep	200.7			225253	11/11/20 11:04	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225605	11/13/20 22:57	MGM	TAL PHX
Total/NA	Prep	200.7			517308	11/19/20 16:05	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 17:32	LMT	TAL DEN
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	225862	11/17/20 21:49	ARE	TAL PHX
Total/NA	Prep	200.8			225158	11/10/20 10:49	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225994	11/18/20 16:14	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:07	SRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Client Sample ID: FC-CCR-FD05-1120

Lab Sample ID: 550-152660-8

Date Collected: 11/06/20 09:41

Matrix: Water

Date Received: 11/09/20 15:15

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Analysis	SM 2540C		1	225458		YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340



Accreditation/Certification Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 2320B		Water	Alkalinity, Phenolphthalein
SM 4500 H+ B		Water	Temperature

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-21
Arizona	State	AZ0713	12-20-20
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-21
Connecticut	State	PH-0686	09-30-20 *
Florida	NELAP	E87667-57	07-01-21
Georgia	State	4025-011	01-09-21
Illinois	NELAP	2000172019-1	04-30-21
Iowa	State	IA#370	12-01-20
Kansas	NELAP	E-10166	04-30-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Maine	State	2019011 (231)	03-03-21
Minnesota	NELAP	1788752	12-31-20
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-21
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-21
North Carolina (WW/SW)	State	358	12-31-20
North Dakota	State	R-034	01-08-21
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-21
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-21
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-18-00099	03-26-21
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-21
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-20
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Phoenix

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152660-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	EPA	TAL DEN
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
245.1	Mercury (CVAA)	EPA	TAL PHX
SM 2320B	Alkalinity	SM	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL DEN
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX
245.1	Preparation, Mercury	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Chain of Custody Record

TestAmerica Phoenix
 4625 E Cotton Center Blvd
 Suite 189
 Phoenix, AZ 85040
 phone 602.437.3340 fax 602.454.9303

152660
TestAm
 THE LEADER IN ENVIRON

Arizona Public Service
 PO Box 355, MS 4915
 Fulliland, NM 87416

Client Contact: Natalie Chrisman
 602-250-3608

Regulatory Program: DW NPDES RCRA Other: CCR

Project Name: CCR Groundwater Monitoring

Analysis Turnaround Time

Jim Edwards / (928) 288-1241
 Lab Contact: Ken Baker

Date: 1/09/20

TestAmerica Lab
 COC No: 1 of 1

Project #: _____

CALENDAR DAYS WORKING DAYS

Carrier: _____

Sampler: _____
 For Lab Use Only:
 Walk-in Client: _____
 Lab Sampling: _____

Site: APS Four Corners Power Plant (Multiunit)

TAT if different from Below

Job / SDG No.: _____

Project Name: CCR Groundwater Monitoring
 Site: APS Four Corners Power Plant (Multiunit)

2 weeks
 1 week
 2 days
 1 day

Sample Identification

Sample Date

Sample Time

Sample Type (C=Comp, G=Grab)

Matrix

of Cont.

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Be, Li)	EPA 200.7 - Totals (B, Ca, Be, Li, K, Mg, Na)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)	EPA 200.8 - Totals (Co, Mo)	EPA 245.1 - Totals (Hg)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)	EPA 200.7 - Totals (B)	Sample Specific
FC-CCR-MMW07-1120	11/6/2020	9:41	G	W	2	N	N	X	X	X	X	X	X	X	X	X	X	-1 Low Flow
FC-CCR-MMW08-1120	11/6/2020	10:37	G	W	2	N	N	X	X	X	X	X	X	X	X	X	X	-2
FC-CCR-MMW49-1120	11/6/2020	8:41	G	W	2	N	N	X	X	X	X	X	X	X	X	X	X	-3
FC-CCR-MMW52-1120	11/8/2020	8:10	G	W	1	N	N	X	X	X	X	X	X	X	X	X	X	-4
FC-CCR-MMW61-1120	11/8/2020	8:45	G	W	2	N	N	X	X	X	X	X	X	X	X	X	X	-5
FC-CCR-MMW75-1120	11/8/2020	9:23	G	W	2	N	N	X	X	X	X	X	X	X	X	X	X	-6
FC-CCR-MMW87-1120	11/6/2020	14:26	G	W	2	N	N	X	X	X	X	X	X	X	X	X	X	-7
FC-CCR-FD05-1120	11/6/2020	9:41	G	W	2	N	N	X	X	X	X	X	X	X	X	X	X	-8



Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other _____

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Possible Hazard Identification:
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Method 200.8 with collision cell

Custody Seals Intact: Yes No

Cooler Temp. (°C): Obs'd: _____

Therm ID No.: _____

Relinquished by: _____

Company: _____

Date/Time: _____

Received by: _____

Received in Laboratory by: _____

Company: _____

Date/Time: _____

Relinquished by: _____

Company: _____

Date/Time: _____

Received by: _____

Received in Laboratory by: _____

Company: _____

Date/Time: _____

Relinquished by: _____

Company: _____

Date/Time: _____

Received by: _____

Received in Laboratory by: _____

Company: _____

Date/Time: _____

2.6/3.4/2.1/2.2/2.3



Chain of Custody Record

Client Information (Sub Contract Lab)		Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:	
Client Contact Shipping/Receiving		Baker, Ken		Baker, Ken				550-29223-1	
Company: TestAmerica Laboratories, Inc.		E-Mail: Ken.Baker@Eurofins.com		E-Mail: Ken.Baker@Eurofins.com		State of Origin: Arizona		Page: Page 1 of 1	
Address: 4955 Yarrow Street,		Due Date Requested: 11/25/2020		Accreditations Required (See note): State Program - Arizona		Job #: 550-152660-1		Preservation Codes:	
City: Arvada		IAT Requested (days):		Analysis Requested		M - Hexane		A - HCL	
State, Zip: CO, 80002		PO #:		Field Filtered Sample (Yes or No)		N - None		B - NaOH	
Phone: 303-736-0100(Tel) 303-431-7171(Fax)		WO #:		Perform MS/MSD (Yes or No)		O - AsNaO2		C - Zn Acetate	
Email:		Project #: 55009706		200.7/200.7_P_TOT Lithium-ICP		P - Na2O4S		D - Nitric Acid	
Project Name: CCR Groundwater Monitoring		SSOW#:		Total Number of Containers		Q - NaHSO4		E - NaHSO4	
Site: Arizona Public Service		Sample Date		Sample Time		R - Na2SO3		F - MeOH	
Sample Identification - Client ID (Lab ID)		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastefoil, BT=RESUR, A=Air)		S - H2SO4		G - Amchlor	
Sample Date		Sample Time		Preservation Code:		H - Ascorbic Acid		I - Ice	
Sample Time		Sample Date		Sample Time		J - DI Water		U - Acetone	
Sample Date		Sample Time		Sample Date		K - EDTA		V - MCAA	
Sample Time		Sample Date		Sample Time		L - EDA		W - pH 4-5	
Sample Date		Sample Time		Sample Date		Other:		Z - other (specify)	
Sample Time		Sample Date		Sample Time		Special Instructions/Note:			
FC-CCR-MW07-1120 (550-152660-1)	11/6/20	09:41 Arizona	Water	X	X	1	AZ Sample		
FC-CCR-MW08-1120 (550-152660-2)	11/6/20	10:37 Arizona	Water	X	X	1	AZ Sample		
FC-CCR-MW49-1120 (550-152660-3)	11/6/20	08:41 Arizona	Water	X	X	1	AZ Sample		
FC-CCR-MW61-1120 (550-152660-5)	11/8/20	08:45 Arizona	Water	X	X	1	AZ Sample		
FC-CCR-MW75-1120 (550-152660-6)	11/8/20	09:23 Arizona	Water	X	X	1	AZ Sample		
FC-CCR-MW87-1120 (550-152660-7)	11/6/20	14:26 Arizona	Water	X	X	1	AZ Sample		
FC-CCR-FD05-1120 (550-152660-8)	11/6/20	09:41 Arizona	Water	X	X	1	AZ Sample		

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
 Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: _____ Date/Time: 11-17-20 14:00 TA Company
 Relinquished by: _____ Date/Time: _____ Company
 Relinquished by: _____ Date/Time: _____ Company
 Custody Seals Intact: _____ Custody Seal No.: _____
 Δ Yes Δ No

Received by: *Fedex* Date/Time: 11/18/2020 09:30 Company: *ETA DEN*
 Received by: *got* Date/Time: _____ Company: _____
 Cooler Temperature(s) °C and Other Remarks: 1.4 FICH -0.3 TO 11/18/2020

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months
 Special Instructions/QC Requirements:



Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-152660-1

Login Number: 152660

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.



Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-152660-1

Login Number: 152660

List Number: 2

Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

List Creation: 11/18/20 08:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-152663-1

Laboratory SDG: APS Four Corners Power Plant (CWTP)
Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
11/20/2020 1:23:17 PM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
SDG: APS Four Corners Power Plant (CWTP)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

Metals

Qualifier	Qualifier Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
SDG: APS Four Corners Power Plant (CWTP)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
SDG: APS Four Corners Power Plant (CWTP)

Job ID: 550-152663-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

**Job Narrative
550-152663-1**

Comments

No additional comments.

Receipt

The samples were received on 11/9/2020 3:15 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 2.1° C, 2.2° C, 2.3° C, 2.6° C and 3.4° C.

HPLC/IC

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for 550-225203 were outside control limits for Fluoride. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

Method 300.0: The following sample was diluted for Fluoride due to the nature of the sample matrix: (550-152788-A-3 ^100). Elevated reporting limits (RLs) have been provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.



Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
SDG: APS Four Corners Power Plant (CWTP)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-152663-1	FC-CCR-MW62-1120	Water	11/05/20 13:44	11/09/20 15:15	
550-152663-2	FC-CCR-MW63-1120	Water	11/05/20 14:21	11/09/20 15:15	
550-152663-3	FC-CCR-MW64-1120	Water	11/05/20 14:58	11/09/20 15:15	
550-152663-4	FC-CCR-MW65-1120	Water	11/05/20 13:11	11/09/20 15:15	

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Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
SDG: APS Four Corners Power Plant (CWTP)

Client Sample ID: FC-CCR-MW62-1120

Lab Sample ID: 550-152663-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	130		4.0	1.0	mg/L	2		300.0	Total/NA
Fluoride	1.8	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	3500	D2	400	85	mg/L	200		300.0	Total/NA
Boron	2.1		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	510		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	5300	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	6.9	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.1	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW63-1120

Lab Sample ID: 550-152663-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	85		2.0	0.52	mg/L	1		300.0	Total/NA
Fluoride	2.2		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	2800	D2	200	43	mg/L	100		300.0	Total/NA
Boron	1.7		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	550	M3	2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	4200	D2	40	40	mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.9	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW64-1120

Lab Sample ID: 550-152663-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	53		2.0	0.52	mg/L	1		300.0	Total/NA
Fluoride	1.6		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	270	D2	40	8.5	mg/L	20		300.0	Total/NA
Boron	0.51		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	73		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	720		20	20	mg/L	1		SM 2540C	Total/NA
pH	7.8	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.6	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW65-1120

Lab Sample ID: 550-152663-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	52		2.0	0.52	mg/L	1		300.0	Total/NA
Fluoride	2.1		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	350	D2	40	8.5	mg/L	20		300.0	Total/NA
Boron	0.61		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	82		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	780		20	20	mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.5	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
 SDG: APS Four Corners Power Plant (CWTP)

Client Sample ID: FC-CCR-MW62-1120

Lab Sample ID: 550-152663-1

Date Collected: 11/05/20 13:44

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	130		4.0	1.0	mg/L			11/10/20 20:12	2
Fluoride	1.8	D1	0.80	0.095	mg/L			11/10/20 20:12	2
Sulfate	3500	D2	400	85	mg/L			11/10/20 20:39	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.1		0.050	0.0025	mg/L		11/16/20 08:33	11/17/20 17:53	1
Calcium	510		2.0	0.013	mg/L		11/16/20 08:33	11/17/20 17:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5300	D2	100	100	mg/L			11/11/20 06:41	1
pH	6.9	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	9.1	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW63-1120

Lab Sample ID: 550-152663-2

Date Collected: 11/05/20 14:21

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	85		2.0	0.52	mg/L			11/11/20 18:24	1
Fluoride	2.2		0.40	0.047	mg/L			11/11/20 18:24	1
Sulfate	2800	D2	200	43	mg/L			11/11/20 18:52	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7		0.050	0.0025	mg/L		11/16/20 08:33	11/17/20 17:41	1
Calcium	550	M3	2.0	0.013	mg/L		11/16/20 08:33	11/17/20 17:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4200	D2	40	40	mg/L			11/11/20 06:41	1
pH	7.1	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	9.9	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW64-1120

Lab Sample ID: 550-152663-3

Date Collected: 11/05/20 14:58

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	53		2.0	0.52	mg/L			11/11/20 19:19	1
Fluoride	1.6		0.40	0.047	mg/L			11/11/20 19:19	1
Sulfate	270	D2	40	8.5	mg/L			11/11/20 19:46	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.51		0.050	0.0025	mg/L		11/16/20 08:33	11/17/20 17:45	1
Calcium	73		2.0	0.013	mg/L		11/16/20 08:33	11/17/20 17:45	1

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
 SDG: APS Four Corners Power Plant (CWTP)

Client Sample ID: FC-CCR-MW64-1120

Lab Sample ID: 550-152663-3

Date Collected: 11/05/20 14:58

Matrix: Water

Date Received: 11/09/20 15:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	720		20	20	mg/L			11/11/20 06:41	1
pH	7.8	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	10.6	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW65-1120

Lab Sample ID: 550-152663-4

Date Collected: 11/05/20 13:11

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52		2.0	0.52	mg/L			11/11/20 20:14	1
Fluoride	2.1		0.40	0.047	mg/L			11/11/20 20:14	1
Sulfate	350	D2	40	8.5	mg/L			11/11/20 20:41	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.61		0.050	0.0025	mg/L		11/16/20 08:33	11/17/20 17:49	1
Calcium	82		2.0	0.013	mg/L		11/16/20 08:33	11/17/20 17:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	780		20	20	mg/L			11/11/20 06:41	1
pH	7.7	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	11.5	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
 SDG: APS Four Corners Power Plant (CWTP)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-225203/2
Matrix: Water
Analysis Batch: 225203

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND	E8	2.0	0.52	mg/L			11/10/20 10:47	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/10/20 10:47	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/10/20 10:47	1

Lab Sample ID: LCS 550-225203/5
Matrix: Water
Analysis Batch: 225203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.32		mg/L		108	90 - 110
Sulfate	20.0	21.7		mg/L		109	90 - 110

Lab Sample ID: LCSD 550-225203/6
Matrix: Water
Analysis Batch: 225203

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Fluoride	4.00	4.33		mg/L		108	90 - 110	0	20
Sulfate	20.0	21.7		mg/L		108	90 - 110	0	20

Lab Sample ID: 550-152659-A-1 MS
Matrix: Water
Analysis Batch: 225203

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: 550-152659-A-1 MS ^200
Matrix: Water
Analysis Batch: 225203

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	13000	M1 D2	4000	18300	D2 M1	mg/L		127	80 - 120

Lab Sample ID: 550-152659-A-1 MSD
Matrix: Water
Analysis Batch: 225203

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
 SDG: APS Four Corners Power Plant (CWTP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-152659-A-1 MSD ^200
Matrix: Water
Analysis Batch: 225203

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1100	D2	4000	5570	D2	mg/L		112	80 - 120	0	20
Sulfate	13000	M1 D2	4000	18000	D2 M1	mg/L		122	80 - 120	1	20

Lab Sample ID: MB 550-225306/2
Matrix: Water
Analysis Batch: 225306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	E8	2.0	0.52	mg/L			11/11/20 10:03	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/11/20 10:03	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/11/20 10:03	1

Lab Sample ID: LCS 550-225306/5
Matrix: Water
Analysis Batch: 225306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.0		mg/L		105	90 - 110
Fluoride	4.00	4.38		mg/L		110	90 - 110
Sulfate	20.0	21.9		mg/L		110	90 - 110

Lab Sample ID: LCSD 550-225306/6
Matrix: Water
Analysis Batch: 225306

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.0		mg/L		105	90 - 110	0	20
Fluoride	4.00	4.38		mg/L		110	90 - 110	0	20
Sulfate	20.0	22.0		mg/L		110	90 - 110	0	20

Lab Sample ID: 550-152788-A-3 MS ^100
Matrix: Water
Analysis Batch: 225306

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	55	E4 D2	2000	2180	D2	mg/L		106	80 - 120
Fluoride	ND	E8 D1 D5	400	446	D1	mg/L		111	80 - 120
Sulfate	460	D2	2000	2680	D2	mg/L		111	80 - 120

Lab Sample ID: 550-152788-A-3 MSD ^100
Matrix: Water
Analysis Batch: 225306

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	55	E4 D2	2000	2170	D2	mg/L		106	80 - 120	0	20
Fluoride	ND	E8 D1 D5	400	444	D1	mg/L		111	80 - 120	0	20
Sulfate	460	D2	2000	2670	D2	mg/L		110	80 - 120	0	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
 SDG: APS Four Corners Power Plant (CWTP)

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-225257/1-A
Matrix: Water
Analysis Batch: 225604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225257

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Boron	0.0179	E4	0.050	0.0025	mg/L		11/11/20 11:23	11/13/20 20:15	1

Lab Sample ID: 550-152663-1 MS
Matrix: Water
Analysis Batch: 225604

Client Sample ID: FC-CCR-MW62-1120
Prep Type: Total/NA
Prep Batch: 225257

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Boron	2.2	L4 R6 M2	1.00	2.00	M2	mg/L		-22	70 - 130

Lab Sample ID: 550-152663-1 MSD
Matrix: Water
Analysis Batch: 225604

Client Sample ID: FC-CCR-MW62-1120
Prep Type: Total/NA
Prep Batch: 225257

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
				Result	Qualifier						
Boron	2.2	L4 R6 M2	1.00	2.08	M2	mg/L		-14	70 - 130	4	20

Lab Sample ID: MB 550-225624/1-A
Matrix: Water
Analysis Batch: 225921

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225624

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Boron	ND	E8	0.050	0.0025	mg/L		11/16/20 08:33	11/17/20 17:22	1
Calcium	ND	E8	2.0	0.013	mg/L		11/16/20 08:33	11/17/20 17:22	1

Lab Sample ID: LCS 550-225624/2-A
Matrix: Water
Analysis Batch: 225921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225624

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Boron	1.00	0.969		mg/L		97	85 - 115
Calcium	20.0	22.2		mg/L		111	85 - 115

Lab Sample ID: LCSD 550-225624/3-A
Matrix: Water
Analysis Batch: 225921

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225624

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
		Result	Qualifier						
Boron	1.00	0.976		mg/L		98	85 - 115	1	20
Calcium	20.0	22.2		mg/L		111	85 - 115	0	20

Lab Sample ID: 550-152663-2 MS
Matrix: Water
Analysis Batch: 225921

Client Sample ID: FC-CCR-MW63-1120
Prep Type: Total/NA
Prep Batch: 225624

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Boron	1.7		1.00	2.58		mg/L		91	70 - 130
Calcium	550	M3	20.0	529	M3	mg/L		-126	70 - 130

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
 SDG: APS Four Corners Power Plant (CWTP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-152663-2 MSD
Matrix: Water
Analysis Batch: 225921

Client Sample ID: FC-CCR-MW63-1120
Prep Type: Total/NA
Prep Batch: 225624

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Boron	1.7		1.00	2.58		mg/L		92	70 - 130	0	20
Calcium	550	M3	20.0	533	M3	mg/L		-102	70 - 130	1	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-225220/1
Matrix: Water
Analysis Batch: 225220

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Total Dissolved Solids	ND	E8	20	20	mg/L			11/11/20 06:41		1

Lab Sample ID: LCS 550-225220/2
Matrix: Water
Analysis Batch: 225220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
Total Dissolved Solids	1000	976		mg/L		98	90 - 110	

Lab Sample ID: LCSD 550-225220/3
Matrix: Water
Analysis Batch: 225220

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
Total Dissolved Solids	1000	1020		mg/L		102	90 - 110	5	10	

Lab Sample ID: 550-152422-G-1 DU
Matrix: Water
Analysis Batch: 225220

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Total Dissolved Solids	7200	D2	6950	D2	mg/L		3	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-225378/12
Matrix: Water
Analysis Batch: 225378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike	LCSSRM	LCSSRM	Unit	D	%Rec	%Rec.	Limits
pH	7.00	7.1		SU		101.3	98.5 - 101.5	

Lab Sample ID: LCSSRM 550-225378/24
Matrix: Water
Analysis Batch: 225378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike	LCSSRM	LCSSRM	Unit	D	%Rec	%Rec.	Limits
pH	7.00	7.0		SU		100.4	98.5 - 101.5	

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
 SDG: APS Four Corners Power Plant (CWTP)

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: 550-152663-1 DU
 Matrix: Water
 Analysis Batch: 225378

Client Sample ID: FC-CCR-MW62-1120
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.9	H5	6.9	H5	SU		0.6	5
Temperature	9.1	H5	9.2	H5	Degrees C		1	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
SDG: APS Four Corners Power Plant (CWTP)

HPLC/IC

Analysis Batch: 225203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152663-1	FC-CCR-MW62-1120	Total/NA	Water	300.0	
550-152663-1	FC-CCR-MW62-1120	Total/NA	Water	300.0	
MB 550-225203/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225203/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-225203/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152659-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-152659-A-1 MS ^200	Matrix Spike	Total/NA	Water	300.0	
550-152659-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-152659-A-1 MSD ^200	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 225306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152663-2	FC-CCR-MW63-1120	Total/NA	Water	300.0	
550-152663-2	FC-CCR-MW63-1120	Total/NA	Water	300.0	
550-152663-3	FC-CCR-MW64-1120	Total/NA	Water	300.0	
550-152663-3	FC-CCR-MW64-1120	Total/NA	Water	300.0	
550-152663-4	FC-CCR-MW65-1120	Total/NA	Water	300.0	
550-152663-4	FC-CCR-MW65-1120	Total/NA	Water	300.0	
MB 550-225306/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225306/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-225306/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152788-A-3 MS ^100	Matrix Spike	Total/NA	Water	300.0	
550-152788-A-3 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 225257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-225257/1-A	Method Blank	Total/NA	Water	200.7	
550-152663-1 MS	FC-CCR-MW62-1120	Total/NA	Water	200.7	
550-152663-1 MSD	FC-CCR-MW62-1120	Total/NA	Water	200.7	

Analysis Batch: 225604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-225257/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225257
550-152663-1 MS	FC-CCR-MW62-1120	Total/NA	Water	200.7 Rev 4.4	225257
550-152663-1 MSD	FC-CCR-MW62-1120	Total/NA	Water	200.7 Rev 4.4	225257

Prep Batch: 225624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152663-1	FC-CCR-MW62-1120	Total/NA	Water	200.7	
550-152663-2	FC-CCR-MW63-1120	Total/NA	Water	200.7	
550-152663-3	FC-CCR-MW64-1120	Total/NA	Water	200.7	
550-152663-4	FC-CCR-MW65-1120	Total/NA	Water	200.7	
MB 550-225624/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-225624/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-225624/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-152663-2 MS	FC-CCR-MW63-1120	Total/NA	Water	200.7	
550-152663-2 MSD	FC-CCR-MW63-1120	Total/NA	Water	200.7	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
SDG: APS Four Corners Power Plant (CWTP)

Metals

Analysis Batch: 225921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152663-1	FC-CCR-MW62-1120	Total/NA	Water	200.7 Rev 4.4	225624
550-152663-2	FC-CCR-MW63-1120	Total/NA	Water	200.7 Rev 4.4	225624
550-152663-3	FC-CCR-MW64-1120	Total/NA	Water	200.7 Rev 4.4	225624
550-152663-4	FC-CCR-MW65-1120	Total/NA	Water	200.7 Rev 4.4	225624
MB 550-225624/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225624
LCS 550-225624/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225624
LCSD 550-225624/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225624
550-152663-2 MS	FC-CCR-MW63-1120	Total/NA	Water	200.7 Rev 4.4	225624
550-152663-2 MSD	FC-CCR-MW63-1120	Total/NA	Water	200.7 Rev 4.4	225624

General Chemistry

Analysis Batch: 225220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152663-1	FC-CCR-MW62-1120	Total/NA	Water	SM 2540C	
550-152663-2	FC-CCR-MW63-1120	Total/NA	Water	SM 2540C	
550-152663-3	FC-CCR-MW64-1120	Total/NA	Water	SM 2540C	
550-152663-4	FC-CCR-MW65-1120	Total/NA	Water	SM 2540C	
MB 550-225220/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-225220/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-225220/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-152422-G-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 225378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152663-1	FC-CCR-MW62-1120	Total/NA	Water	SM 4500 H+ B	
550-152663-2	FC-CCR-MW63-1120	Total/NA	Water	SM 4500 H+ B	
550-152663-3	FC-CCR-MW64-1120	Total/NA	Water	SM 4500 H+ B	
550-152663-4	FC-CCR-MW65-1120	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-225378/12	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-225378/24	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-152663-1 DU	FC-CCR-MW62-1120	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
 SDG: APS Four Corners Power Plant (CWTP)

Client Sample ID: FC-CCR-MW62-1120

Lab Sample ID: 550-152663-1

Date Collected: 11/05/20 13:44

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225203	11/10/20 20:12	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225203	11/10/20 20:39	RDC	TAL PHX
Total/NA	Prep	200.7			225624	11/16/20 08:33	CXK	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225921	11/17/20 17:53	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	225220	(Start) 11/11/20 06:41 (End) 11/12/20 08:25	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW63-1120

Lab Sample ID: 550-152663-2

Date Collected: 11/05/20 14:21

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225306	11/11/20 18:24	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225306	11/11/20 18:52	RDC	TAL PHX
Total/NA	Prep	200.7			225624	11/16/20 08:33	CXK	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225921	11/17/20 17:41	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	225220	(Start) 11/11/20 06:41 (End) 11/12/20 08:25	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW64-1120

Lab Sample ID: 550-152663-3

Date Collected: 11/05/20 14:58

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225306	11/11/20 19:19	RDC	TAL PHX
Total/NA	Analysis	300.0		20	225306	11/11/20 19:46	RDC	TAL PHX
Total/NA	Prep	200.7			225624	11/16/20 08:33	CXK	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225921	11/17/20 17:45	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	225220	(Start) 11/11/20 06:41 (End) 11/12/20 08:25	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW65-1120

Lab Sample ID: 550-152663-4

Date Collected: 11/05/20 13:11

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225306	11/11/20 20:14	RDC	TAL PHX
Total/NA	Analysis	300.0		20	225306	11/11/20 20:41	RDC	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
SDG: APS Four Corners Power Plant (CWTP)

Client Sample ID: FC-CCR-MW65-1120

Lab Sample ID: 550-152663-4

Date Collected: 11/05/20 13:11

Matrix: Water

Date Received: 11/09/20 15:15

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Prep	200.7			225624	11/16/20 08:33	CXK	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225921	11/17/20 17:49	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	225220		YET	TAL PHX
					(Start)	11/11/20 06:41		
					(End)	11/12/20 08:25		
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
SDG: APS Four Corners Power Plant (CWTP)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	Temperature



Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152663-1
SDG: APS Four Corners Power Plant (CWTP)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix

Chain of Custody Record

4625 E Cotton Center Blvd

Suite 189
Phoenix, AZ 85040

phone 602.437.3340 fax 602.454.9303

Regulatory Program: DW NPDES RCRA Other: CCR

152463

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TestAmerica Laboratories, Inc.

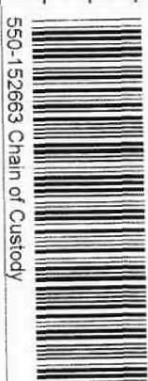
Client Contact: Natalie Chrisman 602-250-3608
Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
TAT if different from Below: 2 weeks 1 week 2 days 1 day

Arizona Public Service
PO Box 355, MS 4915
Fruiland, NM 87416
Phone
FAX
Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (CWTP)
Project #:

Lab Contact: Ken Baker
Date: 11/09/20
Carrier:
COC No.: 1 of 1 COCs
Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca)	SM 4500-HB (pH)	SM 2540C (TDS)	Sample Specific Notes:
1 FC-CCR-MW62-1120	11/5/2020	13:44	G	W	2	N	N	X	X	X	X	Low Flow -1
2 FC-CCR-MW63-1120	11/5/2020	14:21	G	W	2	N	N	X	X	X	X	-2
3 FC-CCR-MW64-1120	11/5/2020	14:58	G	W	2	N	N	X	X	X	X	-3
4 FC-CCR-MW65-1120	11/5/2020	13:11	G	W	2	N	N	X	X	X	X	-4

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other
Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazard Flammable Skin Irritant Poison B Unknown
 Return to Client Disposal by Lab Archive for _____ Months



Method 200.8 with collision cell

Custody Seals Intact: Yes No

Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: 11/05/20 Received by: *[Signature]* Date/Time: 11/05/20 Company: TAPMIX

Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: 11/19/20 Received in Laboratory by: *[Signature]* Date/Time: 11/19/20 Company: TAPMIX

26/34/21/22/23

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-152663-1
SDG Number: APS Four Corners Power Plant (CWTP)

Login Number: 152663

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-152664-1

Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
11/30/2020 3:29:44 PM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

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Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Metals

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
B3	Target analyte detected in calibration blank at or above the method reporting limit.
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the blank.
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

General Chemistry

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Job ID: 550-152664-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-152664-1

Comments

No additional comments.

Receipt

The samples were received on 11/9/2020 3:15 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 2.1° C, 2.2° C, 2.3° C, 2.6° C and 3.4° C.

Receipt Exceptions

FC-CCR-MW66-1120 (550-152664-1), FC-CCR-MW67-1120 (550-152664-2), FC-CCR-MW68-1120 (550-152664-3), FC-CCR-MW69-1120 (550-152664-4), FC-CCR-MW70-1120 (550-152664-5), FC-CCR-MW71-1120 (550-152664-6), FC-CCR-MW72-1120 (550-152664-7), FC-CCR-MW73-1120 (550-152664-8), FC-CCR-MW83-1120 (550-152664-9), FC-CCR-MW84-1120 (550-152664-10), FC-CCR-FD01-1120 (550-152664-11), FC-CCR-MW85-1120 (550-152664-12), FC-CCR-MW86-1120 (550-152664-13) and FC-CCR-FD02-1120 (550-152664-14)

Containers have about 100 ml of sample

HPLC/IC

Method 300.0: The following sample was diluted for Fluoride due to the nature of the sample matrix: (550-152788-A-3 ^100). Elevated reporting limits (RLs) have been provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: FC-CCR-MW66-1120 (550-152664-1), FC-CCR-MW68-1120 (550-152664-3), FC-CCR-FD01-1120 (550-152664-11), FC-CCR-MW86-1120 (550-152664-13) and FC-CCR-FD02-1120 (550-152664-14). Elevated reporting limits (RLs) are provided.

Method 200.8 LL: The continuing calibration blank (CCB) for analytical batch 550-226260 contained Selenium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method SM 2540C:

Method SM 2540C:

Method SM 2540C: The following sample(s) was received with 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: (550-152659-A-24) and (550-152659-A-24 DU).

Method SM 2540C:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-152664-1	FC-CCR-MW66-1120	Water	11/05/20 11:33	11/09/20 15:15	
550-152664-2	FC-CCR-MW67-1120	Water	11/04/20 12:02	11/09/20 15:15	
550-152664-3	FC-CCR-MW68-1120	Water	11/04/20 11:18	11/09/20 15:15	
550-152664-4	FC-CCR-MW69-1120	Water	11/04/20 08:50	11/09/20 15:15	
550-152664-5	FC-CCR-MW70-1120	Water	11/05/20 10:32	11/09/20 15:15	
550-152664-6	FC-CCR-MW71-1120	Water	11/05/20 08:52	11/09/20 15:15	
550-152664-7	FC-CCR-MW72-1120	Water	11/05/20 09:35	11/09/20 15:15	
550-152664-8	FC-CCR-MW73-1120	Water	11/05/20 16:05	11/09/20 15:15	
550-152664-9	FC-CCR-MW83-1120	Water	11/04/20 15:15	11/09/20 15:15	
550-152664-10	FC-CCR-MW84-1120	Water	11/04/20 14:30	11/09/20 15:15	
550-152664-11	FC-CCR-FD01-1120	Water	11/04/20 12:02	11/09/20 15:15	
550-152664-12	FC-CC-MW85-1120	Water	11/04/20 16:18	11/09/20 15:15	
550-152664-13	FC-CCR-MW86-1120	Water	11/05/20 12:33	11/09/20 15:15	
550-152664-14	FC-CCR-FD02-1120	Water	11/05/20 11:33	11/09/20 15:15	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW66-1120

Lab Sample ID: 550-152664-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1700	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	26	D2	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	13000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.36		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	140	D2	0.10	0.0051	mg/L	2		200.7 Rev 4.4	Total/NA
Calcium	490		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.000078	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0037		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.016		0.00050	0.00026	mg/L	1		200.8 LL	Total/NA
Cadmium	0.00018		0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.0014	E4	0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.010		0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0014		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.0041	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00038		0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	18000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.8	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW67-1120

Lab Sample ID: 550-152664-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2000	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	15	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	14000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.40		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	160		0.25	0.013	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	470		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00027	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0027		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.0079		0.00050	0.00026	mg/L	1		200.8 LL	Total/NA
Cadmium	0.00025		0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Cobalt	0.00090		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.011		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.0054	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00031		0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	20000	D2	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.0	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW68-1120

Lab Sample ID: 550-152664-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1300	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	10	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	11000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.41		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	110	D2	0.10	0.0051	mg/L	2		200.7 Rev 4.4	Total/NA
Calcium	470		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00014	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0038		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.012		0.00050	0.00026	mg/L	1		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW68-1120 (Continued)

Lab Sample ID: 550-152664-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.00012		0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.0012		0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.00066		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0045		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.069	B3 B7	0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.000079	E4	0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	17000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.3	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW69-1120

Lab Sample ID: 550-152664-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	890	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	5.8	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	6000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.26		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	63		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	550		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00014	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0058		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.0081		0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00012	E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.00092	E4	0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0028		0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0075	D1	0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.11	B3 B7	0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00034		0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	9600	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.5	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW70-1120

Lab Sample ID: 550-152664-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1100	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	2.0	D2	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	6300	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.36		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	93		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	510		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0078		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.011		0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00011	E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.0010	E4	0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0035		0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0054	D1	0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.21	B3 B7	0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00034		0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	10000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.5	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW71-1120

Lab Sample ID: 550-152664-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	490	D2	200	52	mg/L	100		300.0	Total/NA
Sulfate	10000	D2	200	43	mg/L	100		300.0	Total/NA
Lithium	0.35		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.59		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	460		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.012		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.0092		0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.000058	E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Cobalt	0.00026	E4	0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.00061	D1 E4	0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.28	B3 B7	0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00023		0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	16000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	18.6	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW72-1120

Lab Sample ID: 550-152664-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	430	D2	200	52	mg/L	100		300.0	Total/NA
Sulfate	10000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.38		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.24		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	470		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00012	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0053		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.018		0.00050	0.00026	mg/L	1		200.8 LL	Total/NA
Cadmium	0.000060	E4	0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.00071	E4	0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.0013		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0020		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.11	B3 B7	0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00011		0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	16000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.7	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW73-1120

Lab Sample ID: 550-152664-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	530	D2	200	52	mg/L	100		300.0	Total/NA
Fluoride	0.063	E4	0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	7100	D2	200	43	mg/L	100		300.0	Total/NA
Lithium	0.29		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	1.6		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	480		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00018	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0012		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.020		0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00018	E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.00073	E4	0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.0067		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW73-1120 (Continued)

Lab Sample ID: 550-152664-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.0016		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.0099	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00022		0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	12000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.0	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.5	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW83-1120

Lab Sample ID: 550-152664-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	84		2.0	0.52	mg/L	1		300.0	Total/NA
Fluoride	0.98		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	1500	D2	200	43	mg/L	100		300.0	Total/NA
Beryllium	0.000080	E4	0.0010	0.000067	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.20		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	2.2		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	300		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00018	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0029		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.017		0.00050	0.00026	mg/L	1		200.8 LL	Total/NA
Cadmium	0.0011		0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.0020		0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.068		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Lead	0.0016		0.00050	0.00022	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.035		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.0025	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00026		0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	2700		20	20	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.7	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW84-1120

Lab Sample ID: 550-152664-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	630	D2	200	52	mg/L	100		300.0	Total/NA
Fluoride	0.71		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	7200	D2	200	43	mg/L	100		300.0	Total/NA
Lithium	0.35		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	32		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	490		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00010	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0033		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.019		0.00050	0.00026	mg/L	1		200.8 LL	Total/NA
Cadmium	0.0015		0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.00058	E4	0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.075		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Lead	0.0024		0.00050	0.00022	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0014		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.066	B3 B7	0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00028		0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	11000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW84-1120 (Continued)

Lab Sample ID: 550-152664-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature	12.3	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD01-1120

Lab Sample ID: 550-152664-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1900	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	15	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	14000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.40		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	170	D2	0.25	0.013	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	470		10	0.065	mg/L	5		200.7 Rev 4.4	Total/NA
Arsenic	0.0040		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.014		0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00011	E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.0018	E4	0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0078		0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.038		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.0069	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.0010		0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	20000	D2	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.7	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CC-MW85-1120

Lab Sample ID: 550-152664-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	670	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.35	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	5000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.29		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	35		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	540		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0097		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.016		0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.000064	E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.0030		0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.00065	E4	0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.049		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.22	B3 B7	0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.00020		0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	8400	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.0	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.9	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW86-1120

Lab Sample ID: 550-152664-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1500	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.63	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	9400	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.33		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	120	D2	0.10	0.0051	mg/L	2		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW86-1120 (Continued)

Lab Sample ID: 550-152664-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	470		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0035		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.013		0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00010	E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.0018	E4	0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0057		0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0013		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.0053	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00076		0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	15000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.5	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD02-1120

Lab Sample ID: 550-152664-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1800	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	21	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	13000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.35		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	140	D2	0.10	0.0051	mg/L	2		200.7 Rev 4.4	Total/NA
Calcium	490		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.000084	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0031		0.0010	0.00049	mg/L	2		200.8 LL	Total/NA
Barium	0.021		0.00050	0.00026	mg/L	1		200.8 LL	Total/NA
Cadmium	0.00014		0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.00082	E4	0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.00058		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0067		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.0053	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00090		0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	20000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.3	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW66-1120

Lab Sample ID: 550-152664-1

Date Collected: 11/05/20 11:33

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700	D2	400	100	mg/L			11/11/20 21:36	200
Fluoride	26	D2	0.80	0.095	mg/L			11/11/20 21:09	2
Sulfate	13000	D2	400	85	mg/L			11/11/20 21:36	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 18:51	1
Lithium	0.36		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 18:12	1
Boron	140	D2	0.10	0.0051	mg/L		11/11/20 11:13	11/16/20 18:56	2
Calcium	490		2.0	0.013	mg/L		11/11/20 11:13	11/13/20 18:51	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000078	E4	0.0010	0.000043	mg/L		11/12/20 11:18	11/18/20 18:50	1
Arsenic	0.0037		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:29	2
Barium	0.016		0.00050	0.00026	mg/L		11/12/20 11:18	11/18/20 18:50	1
Cadmium	0.00018		0.00010	0.000023	mg/L		11/12/20 11:18	11/18/20 18:50	1
Chromium	0.0014	E4	0.0020	0.00087	mg/L		11/12/20 11:18	11/20/20 15:29	2
Cobalt	0.010		0.0010	0.00013	mg/L		11/12/20 11:18	11/20/20 15:29	2
Lead	ND	E8	0.00050	0.00022	mg/L		11/12/20 11:18	11/18/20 18:50	1
Molybdenum	0.0014		0.00050	0.00020	mg/L		11/12/20 11:18	11/18/20 18:50	1
Selenium	0.0041	D1	0.0020	0.00030	mg/L		11/12/20 11:18	11/30/20 12:19	4
Thallium	0.00038		0.00010	0.000013	mg/L		11/12/20 11:18	11/18/20 18:50	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	18000	D2	100	100	mg/L			11/11/20 06:41	1
pH	7.3	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	10.8	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW67-1120

Lab Sample ID: 550-152664-2

Date Collected: 11/04/20 12:02

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	D2	400	100	mg/L			11/11/20 16:05	200
Fluoride	15	D1	0.80	0.095	mg/L			11/11/20 15:47	2
Sulfate	14000	D2	400	85	mg/L			11/11/20 16:05	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 18:55	1
Lithium	0.40		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 18:29	1
Boron	160		0.25	0.013	mg/L		11/11/20 11:13	11/17/20 20:12	5
Calcium	470		2.0	0.013	mg/L		11/11/20 11:13	11/13/20 18:55	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW67-1120

Lab Sample ID: 550-152664-2

Date Collected: 11/04/20 12:02

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00027	E4	0.0010	0.000043	mg/L		11/12/20 11:18	11/18/20 18:53	1
Arsenic	0.0027		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:31	2
Barium	0.0079		0.00050	0.00026	mg/L		11/12/20 11:18	11/18/20 18:53	1
Cadmium	0.00025		0.00010	0.000023	mg/L		11/12/20 11:18	11/18/20 18:53	1
Chromium	ND	E8	0.0010	0.00043	mg/L		11/12/20 11:18	11/18/20 18:53	1
Cobalt	0.00090		0.00050	0.000063	mg/L		11/12/20 11:18	11/18/20 18:53	1
Lead	ND	E8	0.00050	0.00022	mg/L		11/12/20 11:18	11/18/20 18:53	1
Molybdenum	0.011		0.00050	0.00020	mg/L		11/12/20 11:18	11/18/20 18:53	1
Selenium	0.0054	D1	0.0020	0.00030	mg/L		11/12/20 11:18	11/30/20 12:21	4
Thallium	0.00031		0.00010	0.000013	mg/L		11/12/20 11:18	11/18/20 18:53	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/11/20 16:47	11/11/20 20:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	20000	D2	200	200	mg/L			11/10/20 08:56	1
pH	7.4	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	11.0	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW68-1120

Lab Sample ID: 550-152664-3

Date Collected: 11/04/20 11:18

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1300	D2	400	100	mg/L			11/11/20 16:42	200
Fluoride	10	D1	0.80	0.095	mg/L			11/11/20 16:24	2
Sulfate	11000	D2	400	85	mg/L			11/11/20 16:42	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 18:59	1
Lithium	0.41		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 18:33	1
Boron	110	D2	0.10	0.0051	mg/L		11/11/20 11:13	11/16/20 19:03	2
Calcium	470		2.0	0.013	mg/L		11/11/20 11:13	11/13/20 18:59	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00014	E4	0.0010	0.000043	mg/L		11/12/20 11:18	11/18/20 18:55	1
Arsenic	0.0038		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:34	2
Barium	0.012		0.00050	0.00026	mg/L		11/12/20 11:18	11/18/20 18:55	1
Cadmium	0.00012		0.00010	0.000023	mg/L		11/12/20 11:18	11/18/20 18:55	1
Chromium	0.0012		0.0010	0.00043	mg/L		11/12/20 11:18	11/18/20 18:55	1
Cobalt	0.00066		0.00050	0.000063	mg/L		11/12/20 11:18	11/18/20 18:55	1
Lead	ND	E8	0.00050	0.00022	mg/L		11/12/20 11:18	11/18/20 18:55	1
Molybdenum	0.0045		0.00050	0.00020	mg/L		11/12/20 11:18	11/18/20 18:55	1
Selenium	0.069	B3 B7	0.0010	0.00015	mg/L		11/12/20 11:18	11/20/20 15:34	2
Thallium	0.000079	E4	0.00010	0.000013	mg/L		11/12/20 11:18	11/18/20 18:55	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW68-1120

Lab Sample ID: 550-152664-3

Date Collected: 11/04/20 11:18

Matrix: Water

Date Received: 11/09/20 15:15

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/11/20 16:47	11/11/20 20:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	17000	D2	100	100	mg/L			11/10/20 08:56	1
pH	7.2	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	12.3	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW69-1120

Lab Sample ID: 550-152664-4

Date Collected: 11/04/20 08:50

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	890	D2	400	100	mg/L			11/11/20 17:19	200
Fluoride	5.8	D1	0.80	0.095	mg/L			11/11/20 17:00	2
Sulfate	6000	D2	400	85	mg/L			11/11/20 17:19	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:03	1
Lithium	0.26		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 18:36	1
Boron	63		0.050	0.0025	mg/L		11/11/20 11:13	11/13/20 19:03	1
Calcium	550		2.0	0.013	mg/L		11/11/20 11:13	11/13/20 19:03	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00014	E4	0.0020	0.000087	mg/L		11/12/20 11:18	11/20/20 15:36	2
Arsenic	0.0058		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:36	2
Barium	0.0081		0.0010	0.00052	mg/L		11/12/20 11:18	11/20/20 15:36	2
Cadmium	0.00012	E4	0.00020	0.000046	mg/L		11/12/20 11:18	11/20/20 15:36	2
Chromium	0.00092	E4	0.0020	0.00087	mg/L		11/12/20 11:18	11/20/20 15:36	2
Cobalt	0.0028		0.0010	0.00013	mg/L		11/12/20 11:18	11/20/20 15:36	2
Lead	ND	E8	0.00050	0.00022	mg/L		11/12/20 11:18	11/18/20 18:57	1
Molybdenum	0.0075	D1	0.0010	0.00040	mg/L		11/12/20 11:18	11/24/20 16:50	2
Selenium	0.11	B3 B7	0.0010	0.00015	mg/L		11/12/20 11:18	11/20/20 15:36	2
Thallium	0.00034		0.00010	0.000013	mg/L		11/12/20 11:18	11/18/20 18:57	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/11/20 16:47	11/11/20 20:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	9600	D2	100	100	mg/L			11/10/20 08:56	1
pH	7.3	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	11.5	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW70-1120

Lab Sample ID: 550-152664-5

Date Collected: 11/05/20 10:32

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100	D2	400	100	mg/L			11/11/20 22:31	200
Fluoride	2.0	D2	0.80	0.095	mg/L			11/11/20 22:03	2
Sulfate	6300	D2	400	85	mg/L			11/11/20 22:31	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:07	1
Lithium	0.36		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 18:39	1
Boron	93		0.050	0.0025	mg/L		11/11/20 11:13	11/13/20 19:07	1
Calcium	510		2.0	0.013	mg/L		11/11/20 11:13	11/13/20 19:07	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	E8	0.0020	0.000087	mg/L		11/12/20 11:18	11/20/20 15:38	2
Arsenic	0.0078		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:38	2
Barium	0.011		0.0010	0.00052	mg/L		11/12/20 11:18	11/20/20 15:38	2
Cadmium	0.00011	E4	0.00020	0.000046	mg/L		11/12/20 11:18	11/20/20 15:38	2
Chromium	0.0010	E4	0.0020	0.00087	mg/L		11/12/20 11:18	11/20/20 15:38	2
Cobalt	0.0035		0.0010	0.00013	mg/L		11/12/20 11:18	11/20/20 15:38	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/12/20 11:18	11/20/20 15:38	2
Molybdenum	0.0054	D1	0.0010	0.00040	mg/L		11/12/20 11:18	11/24/20 16:52	2
Selenium	0.21	B3 B7	0.0010	0.00015	mg/L		11/12/20 11:18	11/20/20 15:38	2
Thallium	0.00034		0.00020	0.000026	mg/L		11/12/20 11:18	11/20/20 15:38	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10000	D2	100	100	mg/L			11/11/20 06:41	1
pH	7.1	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	11.5	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW71-1120

Lab Sample ID: 550-152664-6

Date Collected: 11/05/20 08:52

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	490	D2	200	52	mg/L			11/11/20 17:56	100
Fluoride	ND	E8	0.40	0.047	mg/L			11/11/20 17:37	1
Sulfate	10000	D2	200	43	mg/L			11/11/20 17:56	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:10	1
Lithium	0.35		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 18:43	1
Boron	0.59		0.050	0.0025	mg/L		11/11/20 11:13	11/13/20 19:10	1
Calcium	460		2.0	0.013	mg/L		11/11/20 11:13	11/13/20 19:10	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW71-1120

Lab Sample ID: 550-152664-6

Date Collected: 11/05/20 08:52

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	E8	0.0020	0.000087	mg/L		11/12/20 11:18	11/20/20 15:40	2
Arsenic	0.012		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:40	2
Barium	0.0092		0.0010	0.00052	mg/L		11/12/20 11:18	11/20/20 15:40	2
Cadmium	0.000058	E4	0.00020	0.000046	mg/L		11/12/20 11:18	11/20/20 15:40	2
Chromium	ND	E8	0.0020	0.00087	mg/L		11/12/20 11:18	11/20/20 15:40	2
Cobalt	0.00026	E4	0.0010	0.00013	mg/L		11/12/20 11:18	11/20/20 15:40	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/12/20 11:18	11/20/20 15:40	2
Molybdenum	0.00061	D1 E4	0.0010	0.00040	mg/L		11/12/20 11:18	11/24/20 16:54	2
Selenium	0.28	B3 B7	0.0010	0.00015	mg/L		11/12/20 11:18	11/20/20 15:40	2
Thallium	0.00023		0.00020	0.000026	mg/L		11/12/20 11:18	11/20/20 15:40	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	16000	D2	100	100	mg/L			11/12/20 07:49	1
pH	7.2	H5	1.7	1.7	SU			11/12/20 09:28	1
Temperature	18.6	H5	0.1	0.1	Degrees C			11/12/20 09:28	1

Client Sample ID: FC-CCR-MW72-1120

Lab Sample ID: 550-152664-7

Date Collected: 11/05/20 09:35

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	430	D2	200	52	mg/L			11/11/20 18:32	100
Fluoride	ND	E8	0.40	0.047	mg/L			11/11/20 18:14	1
Sulfate	10000	D2	400	85	mg/L			11/16/20 16:18	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:14	1
Lithium	0.38		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 18:46	1
Boron	0.24		0.050	0.0025	mg/L		11/11/20 11:13	11/13/20 19:14	1
Calcium	470		2.0	0.013	mg/L		11/11/20 11:13	11/13/20 19:14	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00012	E4	0.0010	0.000043	mg/L		11/12/20 11:18	11/18/20 19:03	1
Arsenic	0.0053		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:46	2
Barium	0.018		0.00050	0.00026	mg/L		11/12/20 11:18	11/18/20 19:03	1
Cadmium	0.000060	E4	0.00010	0.000023	mg/L		11/12/20 11:18	11/18/20 19:03	1
Chromium	0.00071	E4	0.0010	0.00043	mg/L		11/12/20 11:18	11/18/20 19:03	1
Cobalt	0.0013		0.00050	0.000063	mg/L		11/12/20 11:18	11/18/20 19:03	1
Lead	ND	E8	0.00050	0.00022	mg/L		11/12/20 11:18	11/18/20 19:03	1
Molybdenum	0.0020		0.00050	0.00020	mg/L		11/12/20 11:18	11/18/20 19:03	1
Selenium	0.11	B3 B7	0.0010	0.00015	mg/L		11/12/20 11:18	11/20/20 15:46	2
Thallium	0.00011		0.00010	0.000013	mg/L		11/12/20 11:18	11/18/20 19:03	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW72-1120

Lab Sample ID: 550-152664-7

Date Collected: 11/05/20 09:35

Matrix: Water

Date Received: 11/09/20 15:15

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	16000	D2	100	100	mg/L			11/12/20 07:49	1
pH	7.1	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	7.7	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-MW73-1120

Lab Sample ID: 550-152664-8

Date Collected: 11/05/20 16:05

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	530	D2	200	52	mg/L			11/11/20 19:46	100
Fluoride	0.063	E4	0.40	0.047	mg/L			11/11/20 19:28	1
Sulfate	7100	D2	200	43	mg/L			11/11/20 19:46	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:18	1
Lithium	0.29		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 18:49	1
Boron	1.6		0.050	0.0025	mg/L		11/11/20 11:13	11/13/20 19:18	1
Calcium	480		2.0	0.013	mg/L		11/11/20 11:13	11/13/20 19:18	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00018	E4	0.0020	0.000087	mg/L		11/12/20 11:18	11/20/20 15:48	2
Arsenic	0.0012		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:48	2
Barium	0.020		0.0010	0.00052	mg/L		11/12/20 11:18	11/20/20 15:48	2
Cadmium	0.00018	E4	0.00020	0.000046	mg/L		11/12/20 11:18	11/20/20 15:48	2
Chromium	0.00073	E4	0.0010	0.00043	mg/L		11/12/20 11:18	11/18/20 19:05	1
Cobalt	0.0067		0.00050	0.000063	mg/L		11/12/20 11:18	11/18/20 19:05	1
Lead	ND	E8	0.0010	0.00044	mg/L		11/12/20 11:18	11/20/20 15:48	2
Molybdenum	0.0016		0.0010	0.00040	mg/L		11/12/20 11:18	11/20/20 15:48	2
Selenium	0.0099	D1	0.0020	0.00030	mg/L		11/12/20 11:18	11/30/20 12:23	4
Thallium	0.00022		0.00020	0.000026	mg/L		11/12/20 11:18	11/20/20 15:48	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	12000	D2	100	100	mg/L			11/12/20 07:49	1
pH	7.0	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	13.5	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW83-1120

Lab Sample ID: 550-152664-9

Date Collected: 11/04/20 15:15

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	84		2.0	0.52	mg/L			11/11/20 20:04	1
Fluoride	0.98		0.40	0.047	mg/L			11/11/20 20:04	1
Sulfate	1500	D2	200	43	mg/L			11/11/20 20:23	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.000080	E4	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:29	1
Lithium	0.20		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 19:08	1
Boron	2.2		0.050	0.0025	mg/L		11/11/20 11:13	11/13/20 19:29	1
Calcium	300		2.0	0.013	mg/L		11/11/20 11:13	11/16/20 19:07	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00018	E4	0.0010	0.000043	mg/L		11/12/20 11:18	11/18/20 19:07	1
Arsenic	0.0029		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:50	2
Barium	0.017		0.00050	0.00026	mg/L		11/12/20 11:18	11/18/20 19:07	1
Cadmium	0.0011		0.00010	0.000023	mg/L		11/12/20 11:18	11/18/20 19:07	1
Chromium	0.0020		0.0010	0.00043	mg/L		11/12/20 11:18	11/18/20 19:07	1
Cobalt	0.068		0.00050	0.000063	mg/L		11/12/20 11:18	11/18/20 19:07	1
Lead	0.0016		0.00050	0.00022	mg/L		11/12/20 11:18	11/18/20 19:07	1
Molybdenum	0.035		0.00050	0.00020	mg/L		11/12/20 11:18	11/18/20 19:07	1
Selenium	0.0025	D1	0.0020	0.00030	mg/L		11/12/20 11:18	11/30/20 12:25	4
Thallium	0.00026		0.00010	0.000013	mg/L		11/12/20 11:18	11/18/20 19:07	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/11/20 16:47	11/11/20 20:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2700		20	20	mg/L			11/10/20 08:56	1
pH	7.3	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	12.7	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-MW84-1120

Lab Sample ID: 550-152664-10

Date Collected: 11/04/20 14:30

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	630	D2	200	52	mg/L			11/11/20 21:00	100
Fluoride	0.71		0.40	0.047	mg/L			11/11/20 20:41	1
Sulfate	7200	D2	200	43	mg/L			11/11/20 21:00	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:33	1
Lithium	0.35		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 19:11	1
Boron	32		0.050	0.0025	mg/L		11/11/20 11:13	11/13/20 19:33	1
Calcium	490		2.0	0.013	mg/L		11/11/20 11:13	11/16/20 19:11	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW84-1120

Lab Sample ID: 550-152664-10

Date Collected: 11/04/20 14:30

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00010	E4	0.0010	0.000043	mg/L		11/12/20 11:18	11/18/20 19:13	1
Arsenic	0.0033		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:52	2
Barium	0.019		0.00050	0.00026	mg/L		11/12/20 11:18	11/18/20 19:13	1
Cadmium	0.0015		0.00010	0.000023	mg/L		11/12/20 11:18	11/18/20 19:13	1
Chromium	0.00058	E4	0.0010	0.00043	mg/L		11/12/20 11:18	11/18/20 19:13	1
Cobalt	0.075		0.00050	0.000063	mg/L		11/12/20 11:18	11/18/20 19:13	1
Lead	0.0024		0.00050	0.00022	mg/L		11/12/20 11:18	11/18/20 19:13	1
Molybdenum	0.0014		0.00050	0.00020	mg/L		11/12/20 11:18	11/18/20 19:13	1
Selenium	0.066	B3 B7	0.0010	0.00015	mg/L		11/12/20 11:18	11/20/20 15:52	2
Thallium	0.00028		0.00010	0.000013	mg/L		11/12/20 11:18	11/18/20 19:13	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/11/20 16:47	11/11/20 20:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	11000	D2	100	100	mg/L			11/10/20 08:56	1
pH	7.2	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	12.3	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-FD01-1120

Lab Sample ID: 550-152664-11

Date Collected: 11/04/20 12:02

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1900	D2	400	100	mg/L			11/11/20 21:36	200
Fluoride	15	D1	0.80	0.095	mg/L			11/11/20 21:18	2
Sulfate	14000	D2	400	85	mg/L			11/11/20 21:36	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:37	1
Lithium	0.40		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 19:14	1
Boron	170	D2	0.25	0.013	mg/L		11/11/20 11:13	11/16/20 19:15	5
Calcium	470		10	0.065	mg/L		11/11/20 11:13	11/16/20 19:15	5

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	E8	0.0020	0.000087	mg/L		11/12/20 11:18	11/20/20 15:54	2
Arsenic	0.0040		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:54	2
Barium	0.014		0.0010	0.00052	mg/L		11/12/20 11:18	11/20/20 15:54	2
Cadmium	0.00011	E4	0.00020	0.000046	mg/L		11/12/20 11:18	11/20/20 15:54	2
Chromium	0.0018	E4	0.0020	0.00087	mg/L		11/12/20 11:18	11/20/20 15:54	2
Cobalt	0.0078		0.0010	0.00013	mg/L		11/12/20 11:18	11/20/20 15:54	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/12/20 11:18	11/20/20 15:54	2
Molybdenum	0.038		0.0010	0.00040	mg/L		11/12/20 11:18	11/20/20 15:54	2
Selenium	0.0069	D1	0.0020	0.00030	mg/L		11/12/20 11:18	11/30/20 12:27	4
Thallium	0.0010		0.00020	0.000026	mg/L		11/12/20 11:18	11/20/20 15:54	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-FD01-1120

Lab Sample ID: 550-152664-11

Date Collected: 11/04/20 12:02

Matrix: Water

Date Received: 11/09/20 15:15

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/11/20 16:47	11/11/20 20:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	20000	D2	200	200	mg/L			11/10/20 08:56	1
pH	7.4	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	11.7	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CC-MW85-1120

Lab Sample ID: 550-152664-12

Date Collected: 11/04/20 16:18

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	670	D2	400	100	mg/L			11/11/20 22:13	200
Fluoride	0.35	D1 E4	0.80	0.095	mg/L			11/11/20 21:55	2
Sulfate	5000	D2	400	85	mg/L			11/11/20 22:13	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:41	1
Lithium	0.29		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 19:18	1
Boron	35		0.050	0.0025	mg/L		11/11/20 11:13	11/13/20 19:41	1
Calcium	540		2.0	0.013	mg/L		11/11/20 11:13	11/16/20 19:30	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	E8	0.0020	0.000087	mg/L		11/12/20 11:18	11/20/20 15:57	2
Arsenic	0.0097		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:57	2
Barium	0.016		0.0010	0.00052	mg/L		11/12/20 11:18	11/20/20 15:57	2
Cadmium	0.000064	E4	0.00020	0.000046	mg/L		11/12/20 11:18	11/20/20 15:57	2
Chromium	0.0030		0.0020	0.00087	mg/L		11/12/20 11:18	11/20/20 15:57	2
Cobalt	0.00065	E4	0.0010	0.00013	mg/L		11/12/20 11:18	11/20/20 15:57	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/12/20 11:18	11/20/20 15:57	2
Molybdenum	0.049		0.0010	0.00040	mg/L		11/12/20 11:18	11/20/20 15:57	2
Selenium	0.22	B3 B7	0.0010	0.00015	mg/L		11/12/20 11:18	11/20/20 15:57	2
Thallium	0.00020		0.00020	0.000026	mg/L		11/12/20 11:18	11/20/20 15:57	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/11/20 16:47	11/11/20 20:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	8400	D2	100	100	mg/L			11/10/20 08:56	1
pH	7.0	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	12.9	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW86-1120

Lab Sample ID: 550-152664-13

Date Collected: 11/05/20 12:33

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500	D2	400	100	mg/L			11/11/20 23:27	200
Fluoride	0.63	D1 E4	0.80	0.095	mg/L			11/11/20 23:08	2
Sulfate	9400	D2	400	85	mg/L			11/11/20 23:27	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:44	1
Lithium	0.33		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 19:21	1
Boron	120	D2	0.10	0.0051	mg/L		11/11/20 11:13	11/16/20 19:34	2
Calcium	470		2.0	0.013	mg/L		11/11/20 11:13	11/16/20 19:37	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	E8	0.0020	0.000087	mg/L		11/12/20 11:18	11/20/20 15:59	2
Arsenic	0.0035		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 15:59	2
Barium	0.013		0.0010	0.00052	mg/L		11/12/20 11:18	11/20/20 15:59	2
Cadmium	0.00010	E4	0.00020	0.000046	mg/L		11/12/20 11:18	11/20/20 15:59	2
Chromium	0.0018	E4	0.0020	0.00087	mg/L		11/12/20 11:18	11/20/20 15:59	2
Cobalt	0.0057		0.0010	0.00013	mg/L		11/12/20 11:18	11/20/20 15:59	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/12/20 11:18	11/20/20 15:59	2
Molybdenum	0.0013		0.0010	0.00040	mg/L		11/12/20 11:18	11/20/20 15:59	2
Selenium	0.0053	D1	0.0020	0.00030	mg/L		11/12/20 11:18	11/30/20 12:29	4
Thallium	0.00076		0.00020	0.000026	mg/L		11/12/20 11:18	11/20/20 15:59	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/11/20 16:47	11/11/20 20:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	15000	D2	100	100	mg/L			11/12/20 07:49	1
pH	7.2	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	12.5	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

Client Sample ID: FC-CCR-FD02-1120

Lab Sample ID: 550-152664-14

Date Collected: 11/05/20 11:33

Matrix: Water

Date Received: 11/09/20 15:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800	D2	400	100	mg/L			11/12/20 00:04	200
Fluoride	21	D1	0.80	0.095	mg/L			11/11/20 23:45	2
Sulfate	13000	D2	400	85	mg/L			11/12/20 00:04	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 19:48	1
Lithium	0.35		0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 19:24	1
Boron	140	D2	0.10	0.0051	mg/L		11/11/20 11:13	11/16/20 19:41	2
Calcium	490		2.0	0.013	mg/L		11/11/20 11:13	11/16/20 19:45	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-FD02-1120

Lab Sample ID: 550-152664-14

Date Collected: 11/05/20 11:33

Matrix: Water

Date Received: 11/09/20 15:15

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000084	E4	0.0010	0.000043	mg/L		11/12/20 11:18	11/18/20 19:22	1
Arsenic	0.0031		0.0010	0.00049	mg/L		11/12/20 11:18	11/20/20 16:01	2
Barium	0.021		0.00050	0.00026	mg/L		11/12/20 11:18	11/18/20 19:22	1
Cadmium	0.00014		0.00010	0.000023	mg/L		11/12/20 11:18	11/18/20 19:22	1
Chromium	0.00082	E4	0.0010	0.00043	mg/L		11/12/20 11:18	11/18/20 19:22	1
Cobalt	0.00058		0.00050	0.000063	mg/L		11/12/20 11:18	11/18/20 19:22	1
Lead	ND	E8	0.0010	0.00044	mg/L		11/12/20 11:18	11/20/20 16:01	2
Molybdenum	0.0067		0.00050	0.00020	mg/L		11/12/20 11:18	11/18/20 19:22	1
Selenium	0.0053	D1	0.0020	0.00030	mg/L		11/12/20 11:18	11/30/20 12:31	4
Thallium	0.00090		0.00020	0.000026	mg/L		11/12/20 11:18	11/20/20 16:01	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 19:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	20000	D2	100	100	mg/L			11/12/20 07:49	1
pH	7.3	H5	1.7	1.7	SU			11/16/20 16:23	1
Temperature	13.3	H5	0.1	0.1	Degrees C			11/16/20 16:23	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-225304/2
Matrix: Water
Analysis Batch: 225304

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND	E8	2.0	0.52	mg/L			11/11/20 10:30	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/11/20 10:30	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/11/20 10:30	1

Lab Sample ID: LCS 550-225304/5
Matrix: Water
Analysis Batch: 225304

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.18		mg/L		105	90 - 110
Sulfate	20.0	20.9		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-225304/6
Matrix: Water
Analysis Batch: 225304

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Fluoride	4.00	4.18		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.8		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-152760-C-10 MS
Matrix: Water
Analysis Batch: 225304

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Sample		Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier							
Chloride	ND	E8	20.0	22.0		mg/L		110	80 - 120
Fluoride	ND	E8	4.00	4.26		mg/L		106	80 - 120
Sulfate	ND	E8	20.0	21.1		mg/L		105	80 - 120

Lab Sample ID: 550-152760-C-10 MSD
Matrix: Water
Analysis Batch: 225304

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Sample		Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
	Result	Qualifier									
Chloride	ND	E8	20.0	22.0		mg/L		110	80 - 120	0	20
Fluoride	ND	E8	4.00	4.28		mg/L		107	80 - 120	1	20
Sulfate	ND	E8	20.0	21.3		mg/L		107	80 - 120	1	20

Lab Sample ID: MB 550-225306/2
Matrix: Water
Analysis Batch: 225306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND	E8	2.0	0.52	mg/L			11/11/20 10:03	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/11/20 10:03	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/11/20 10:03	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-225306/5
Matrix: Water
Analysis Batch: 225306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.0		mg/L		105	90 - 110
Fluoride	4.00	4.38		mg/L		110	90 - 110
Sulfate	20.0	21.9		mg/L		110	90 - 110

Lab Sample ID: LCSD 550-225306/6
Matrix: Water
Analysis Batch: 225306

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.0		mg/L		105	90 - 110	0	20
Fluoride	4.00	4.38		mg/L		110	90 - 110	0	20
Sulfate	20.0	22.0		mg/L		110	90 - 110	0	20

Lab Sample ID: 550-152788-A-3 MS ^100
Matrix: Water
Analysis Batch: 225306

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	55	E4 D2	2000	2180	D2	mg/L		106	80 - 120
Fluoride	ND	E8 D1 D5	400	446	D1	mg/L		111	80 - 120
Sulfate	460	D2	2000	2680	D2	mg/L		111	80 - 120

Lab Sample ID: 550-152788-A-3 MSD ^100
Matrix: Water
Analysis Batch: 225306

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	55	E4 D2	2000	2170	D2	mg/L		106	80 - 120	0	20
Fluoride	ND	E8 D1 D5	400	444	D1	mg/L		111	80 - 120	0	20
Sulfate	460	D2	2000	2670	D2	mg/L		110	80 - 120	0	20

Lab Sample ID: MB 550-225705/2
Matrix: Water
Analysis Batch: 225705

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	E8	2.0	0.52	mg/L			11/16/20 12:39	1
Fluoride	ND	E8	0.40	0.047	mg/L			11/16/20 12:39	1
Sulfate	ND	E8	2.0	0.43	mg/L			11/16/20 12:39	1

Lab Sample ID: LCS 550-225705/5
Matrix: Water
Analysis Batch: 225705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.5		mg/L		108	90 - 110
Fluoride	4.00	4.38		mg/L		109	90 - 110
Sulfate	20.0	22.0		mg/L		110	90 - 110

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 550-225705/6
Matrix: Water
Analysis Batch: 225705

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.6		mg/L		108	90 - 110	0	20
Fluoride	4.00	4.35		mg/L		109	90 - 110	1	20
Sulfate	20.0	22.1		mg/L		110	90 - 110	0	20

Lab Sample ID: 550-152953-A-1 MS
Matrix: Water
Analysis Batch: 225705

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	240	E2 M3	20.0	249	E2 M3	mg/L		53	80 - 120
Fluoride	7.9		4.00	12.4		mg/L		112	80 - 120
Sulfate	190	M3	20.0	207	E2 M3	mg/L		73	80 - 120

Lab Sample ID: 550-152953-A-1 MSD
Matrix: Water
Analysis Batch: 225705

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	240	E2 M3	20.0	250	E2 M3	mg/L		55	80 - 120	0	20
Fluoride	7.9		4.00	12.4		mg/L		112	80 - 120	0	20
Sulfate	190	M3	20.0	207	E2 M3	mg/L		74	80 - 120	0	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-225256/1-A
Matrix: Water
Analysis Batch: 225603

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.000180	E4	0.0010	0.000067	mg/L		11/11/20 11:13	11/13/20 18:29	1
Boron	0.00719	E4	0.050	0.0025	mg/L		11/11/20 11:13	11/13/20 18:29	1
Calcium	ND	E8	2.0	0.013	mg/L		11/11/20 11:13	11/13/20 18:29	1

Lab Sample ID: MB 550-225256/1-A
Matrix: Water
Analysis Batch: 225725

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.000110	E4	0.0010	0.000067	mg/L		11/11/20 11:13	11/16/20 18:33	1
Boron	ND	E8	0.050	0.0025	mg/L		11/11/20 11:13	11/16/20 18:33	1
Calcium	ND	E8	2.0	0.013	mg/L		11/11/20 11:13	11/16/20 18:33	1

Lab Sample ID: MB 550-225256/1-A
Matrix: Water
Analysis Batch: 225923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND	E8	0.050	0.0025	mg/L		11/11/20 11:13	11/17/20 19:50	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-225256/2-A
Matrix: Water
Analysis Batch: 225603

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Beryllium	1.00	0.933		mg/L		93	85 - 115
Boron	1.00	0.974		mg/L		97	85 - 115
Calcium	20.0	19.7		mg/L		99	85 - 115

Lab Sample ID: LCS 550-225256/2-A
Matrix: Water
Analysis Batch: 225725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Beryllium	1.00	0.972		mg/L		97	85 - 115
Boron	1.00	0.991		mg/L		99	85 - 115
Calcium	20.0	20.5		mg/L		102	85 - 115

Lab Sample ID: LCS 550-225256/2-A
Matrix: Water
Analysis Batch: 225923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	0.943		mg/L		94	85 - 115

Lab Sample ID: LCSD 550-225256/3-A
Matrix: Water
Analysis Batch: 225603

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Beryllium	1.00	0.988		mg/L		99	85 - 115	6	20
Boron	1.00	0.995		mg/L		100	85 - 115	2	20
Calcium	20.0	21.1		mg/L		105	85 - 115	7	20

Lab Sample ID: LCSD 550-225256/3-A
Matrix: Water
Analysis Batch: 225725

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Beryllium	1.00	0.989		mg/L		99	85 - 115	2	20
Boron	1.00	1.01		mg/L		101	85 - 115	2	20
Calcium	20.0	21.4		mg/L		107	85 - 115	5	20

Lab Sample ID: LCSD 550-225256/3-A
Matrix: Water
Analysis Batch: 225923

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	1.00	0.960		mg/L		96	85 - 115	2	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-152734-A-1-A MS
Matrix: Water
Analysis Batch: 225603

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Beryllium	0.00031	E4	1.00	1.01		mg/L		101	70 - 130
Boron	1.6		1.00	2.56		mg/L		97	70 - 130
Calcium	65		20.0	83.5		mg/L		92	70 - 130

Lab Sample ID: 550-152734-A-1-A MS
Matrix: Water
Analysis Batch: 225725

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Beryllium	0.00024	E4	1.00	0.989		mg/L		99	70 - 130
Boron	1.6		1.00	2.60		mg/L		98	70 - 130
Calcium	65		20.0	83.6		mg/L		95	70 - 130

Lab Sample ID: 550-152734-A-1-A MS
Matrix: Water
Analysis Batch: 225923

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	1.5		1.00	2.45		mg/L		92	70 - 130

Lab Sample ID: 550-152734-A-1-B MSD
Matrix: Water
Analysis Batch: 225603

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Beryllium	0.00031	E4	1.00	1.02		mg/L		102	70 - 130	1	20
Boron	1.6		1.00	2.51		mg/L		91	70 - 130	2	20
Calcium	65		20.0	84.1		mg/L		95	70 - 130	1	20

Lab Sample ID: 550-152734-A-1-B MSD
Matrix: Water
Analysis Batch: 225725

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Beryllium	0.00024	E4	1.00	1.01		mg/L		101	70 - 130	2	20
Boron	1.6		1.00	2.57		mg/L		94	70 - 130	1	20
Calcium	65		20.0	84.5		mg/L		100	70 - 130	1	20

Lab Sample ID: 550-152734-A-1-B MSD
Matrix: Water
Analysis Batch: 225923

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225256
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	1.5		1.00	2.43		mg/L		90	70 - 130	1	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 280-517312/1-A
Matrix: Water
Analysis Batch: 517768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 517312

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND	E8	0.020	0.0091	mg/L		11/20/20 07:52	11/20/20 17:49	1

Lab Sample ID: LCS 280-517312/2-A
Matrix: Water
Analysis Batch: 517768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 517312

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.999		mg/L		100	90 - 112

Lab Sample ID: 280-142838-D-1-C MS
Matrix: Water
Analysis Batch: 517768

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 517312

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	ND	E8	1.00	0.997		mg/L		100	70 - 130

Lab Sample ID: 280-142838-D-1-D MSD
Matrix: Water
Analysis Batch: 517768

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 517312

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lithium	ND	E8	1.00	0.996		mg/L		100	70 - 130	0	20

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-225389/1-A
Matrix: Water
Analysis Batch: 225998

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225389

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000430	E4	0.0010	0.000043	mg/L		11/12/20 11:18	11/18/20 18:38	1
Barium	ND	E8	0.00050	0.00026	mg/L		11/12/20 11:18	11/18/20 18:38	1
Cadmium	0.0000510	E4	0.00010	0.000023	mg/L		11/12/20 11:18	11/18/20 18:38	1
Chromium	ND	E8	0.0010	0.00043	mg/L		11/12/20 11:18	11/18/20 18:38	1
Cobalt	ND	E8	0.00050	0.000063	mg/L		11/12/20 11:18	11/18/20 18:38	1
Lead	ND	E8	0.00050	0.00022	mg/L		11/12/20 11:18	11/18/20 18:38	1
Molybdenum	ND	E8	0.00050	0.00020	mg/L		11/12/20 11:18	11/18/20 18:38	1
Thallium	0.0000360	E4	0.00010	0.000013	mg/L		11/12/20 11:18	11/18/20 18:38	1

Lab Sample ID: MB 550-225389/1-A
Matrix: Water
Analysis Batch: 226260

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225389

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.00050	0.00025	mg/L		11/12/20 11:18	11/20/20 15:02	1
Selenium	0.000516	B1 B7	0.00050	0.000074	mg/L		11/12/20 11:18	11/20/20 15:02	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-225389/1-A
Matrix: Water
Analysis Batch: 226441

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225389

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND	E8	0.00050	0.000074	mg/L		11/12/20 11:18	11/24/20 12:55	1

Lab Sample ID: LCS 550-225389/2-A
Matrix: Water
Analysis Batch: 225998

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0986		mg/L		99	85 - 115
Barium	0.100	0.105		mg/L		105	85 - 115
Cadmium	0.100	0.0987		mg/L		99	85 - 115
Chromium	0.100	0.107		mg/L		107	85 - 115
Cobalt	0.100	0.103		mg/L		103	85 - 115
Lead	0.100	0.0938		mg/L		94	85 - 115
Molybdenum	0.100	0.103		mg/L		103	85 - 115
Thallium	0.100	0.0962		mg/L		96	85 - 115

Lab Sample ID: LCS 550-225389/2-A
Matrix: Water
Analysis Batch: 226260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.101		mg/L		101	85 - 115
Selenium	0.100	0.104		mg/L		104	85 - 115

Lab Sample ID: LCS 550-225389/2-A
Matrix: Water
Analysis Batch: 226441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.100	0.103		mg/L		103	85 - 115

Lab Sample ID: LCSD 550-225389/3-A
Matrix: Water
Analysis Batch: 225998

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.100	0.0987		mg/L		99	85 - 115	0	20
Barium	0.100	0.107		mg/L		107	85 - 115	2	20
Cadmium	0.100	0.0999		mg/L		100	85 - 115	1	20
Chromium	0.100	0.108		mg/L		108	85 - 115	2	20
Cobalt	0.100	0.101		mg/L		101	85 - 115	2	20
Lead	0.100	0.0944		mg/L		94	85 - 115	1	20
Molybdenum	0.100	0.104		mg/L		104	85 - 115	1	20
Thallium	0.100	0.0965		mg/L		97	85 - 115	0	20

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-225389/3-A
Matrix: Water
Analysis Batch: 226260

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.101		mg/L		101	85 - 115	0	20
Selenium	0.100	0.104		mg/L		104	85 - 115	0	20

Lab Sample ID: LCSD 550-225389/3-A
Matrix: Water
Analysis Batch: 226441

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.100	0.101		mg/L		101	85 - 115	1	20

Lab Sample ID: 550-152543-K-1-D MS
Matrix: Water
Analysis Batch: 225998

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00024	E4	0.100	0.102		mg/L		102	70 - 130
Barium	0.017		0.100	0.134		mg/L		117	70 - 130
Cadmium	0.0011		0.100	0.0926		mg/L		92	70 - 130
Chromium	0.0019		0.100	0.0961		mg/L		94	70 - 130
Cobalt	0.068		0.100	0.158		mg/L		90	70 - 130
Lead	0.0018		0.100	0.0923		mg/L		90	70 - 130
Molybdenum	0.034		0.100	0.137		mg/L		103	70 - 130
Thallium	0.00040		0.100	0.0920		mg/L		92	70 - 130

Lab Sample ID: 550-152543-K-1-D MS
Matrix: Water
Analysis Batch: 226260

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0014		0.100	0.104		mg/L		103	70 - 130
Selenium	0.00077	B1	0.100	0.103		mg/L		102	70 - 130

Lab Sample ID: 550-152543-K-1-D MS
Matrix: Water
Analysis Batch: 226441

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.00047	E4	0.100	0.101		mg/L		100	70 - 130

Lab Sample ID: 550-152543-K-1-E MSD
Matrix: Water
Analysis Batch: 225998

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00024	E4	0.100	0.106		mg/L		106	70 - 130	4	20
Barium	0.017		0.100	0.130		mg/L		113	70 - 130	3	20
Cadmium	0.0011		0.100	0.0960		mg/L		95	70 - 130	4	20
Chromium	0.0019		0.100	0.0989		mg/L		97	70 - 130	3	20
Cobalt	0.068		0.100	0.168		mg/L		99	70 - 130	6	20
Lead	0.0018		0.100	0.0931		mg/L		91	70 - 130	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-152543-K-1-E MSD
Matrix: Water
Analysis Batch: 225998

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	0.034		0.100	0.140		mg/L		106	70 - 130	2	20
Thallium	0.00040		0.100	0.0949		mg/L		94	70 - 130	3	20

Lab Sample ID: 550-152543-K-1-E MSD
Matrix: Water
Analysis Batch: 226260

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0014		0.100	0.102		mg/L		101	70 - 130	2	20
Selenium	0.00077	B1	0.100	0.102		mg/L		101	70 - 130	1	20

Lab Sample ID: 550-152543-K-1-E MSD
Matrix: Water
Analysis Batch: 226441

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225389

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.00047	E4	0.100	0.0992		mg/L		99	70 - 130	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 550-225293/1-A
Matrix: Water
Analysis Batch: 225318

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225293

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/11/20 16:47	11/11/20 19:48	1

Lab Sample ID: LCS 550-225293/2-A
Matrix: Water
Analysis Batch: 225318

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225293

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.00500	0.00492		mg/L		98	85 - 115

Lab Sample ID: LCSD 550-225293/3-A
Matrix: Water
Analysis Batch: 225318

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225293

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	0.00500	0.00493		mg/L		99	85 - 115	0	20

Lab Sample ID: 550-152379-D-14-B MS
Matrix: Water
Analysis Batch: 225318

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225293

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	ND	E8	0.00500	0.00489		mg/L		98	70 - 130

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 550-152379-D-14-C MSD
Matrix: Water
Analysis Batch: 225318

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225293

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND	E8	0.00500	0.00498		mg/L		100	70 - 130	2	20

Lab Sample ID: MB 550-225425/1-A
Matrix: Water
Analysis Batch: 225450

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225425

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		11/12/20 16:35	11/12/20 18:49	1

Lab Sample ID: LCS 550-225425/2-A
Matrix: Water
Analysis Batch: 225450

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225425

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.00500	0.00507		mg/L		101	85 - 115

Lab Sample ID: LCSD 550-225425/3-A
Matrix: Water
Analysis Batch: 225450

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225425

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	0.00500	0.00520		mg/L		104	85 - 115	2	20

Lab Sample ID: 550-152543-N-1-A MS
Matrix: Water
Analysis Batch: 225450

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225425

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	ND	E8	0.00500	0.00461		mg/L		92	70 - 130

Lab Sample ID: 550-152543-N-1-B MSD
Matrix: Water
Analysis Batch: 225450

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225425

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND	E8	0.00500	0.00477		mg/L		95	70 - 130	3	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-225152/1
Matrix: Water
Analysis Batch: 225152

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	E8	20	20	mg/L			11/10/20 08:56	1

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 550-225152/2
Matrix: Water
Analysis Batch: 225152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1030		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-225152/3
Matrix: Water
Analysis Batch: 225152

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1040		mg/L		104	90 - 110	1	10

Lab Sample ID: 550-152664-2 DU
Matrix: Water
Analysis Batch: 225152

Client Sample ID: FC-CCR-MW67-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	20000	D2	20900	D2	mg/L		3	10

Lab Sample ID: MB 550-225220/1
Matrix: Water
Analysis Batch: 225220

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	E8	20	20	mg/L			11/11/20 06:41	1

Lab Sample ID: LCS 550-225220/2
Matrix: Water
Analysis Batch: 225220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	976		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-225220/3
Matrix: Water
Analysis Batch: 225220

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	90 - 110	5	10

Lab Sample ID: 550-152422-G-2 DU
Matrix: Water
Analysis Batch: 225220

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	7200	D2	6950	D2	mg/L		3	10

Lab Sample ID: MB 550-225350/1
Matrix: Water
Analysis Batch: 225350

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	E8	20	20	mg/L			11/12/20 07:49	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: LCS 550-225350/2
Matrix: Water
Analysis Batch: 225350

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1030		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-225350/3
Matrix: Water
Analysis Batch: 225350

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1050		mg/L		105	90 - 110	2	10

Lab Sample ID: 550-152659-A-24 DU
Matrix: Water
Analysis Batch: 225350

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	19000	D2	18800	D2	mg/L		1	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-225378/12
Matrix: Water
Analysis Batch: 225378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.3	98.5 - 101.5

Lab Sample ID: LCSSRM 550-225378/24
Matrix: Water
Analysis Batch: 225378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.4	98.5 - 101.5

Lab Sample ID: 550-152663-A-1 DU
Matrix: Water
Analysis Batch: 225378

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.9	H5	6.9	H5	SU		0.6	5
Temperature	9.1	H5	9.2	H5	Degrees C		1	

Lab Sample ID: LCSSRM 550-225697/1
Matrix: Water
Analysis Batch: 225697

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.0	98.5 - 101.5

QC Sample Results

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: LCSSRM 550-225697/13
Matrix: Water
Analysis Batch: 225697

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.3	98.5 - 101.5

Lab Sample ID: 550-152664-7 DU
Matrix: Water
Analysis Batch: 225697

Client Sample ID: FC-CCR-MW72-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.1	H5	7.1	H5	SU		0	5
Temperature	7.7	H5	8.4	H5	Degrees C		9	

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

HPLC/IC

Analysis Batch: 225304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	300.0	
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	300.0	
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	300.0	
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	300.0	
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	300.0	
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	300.0	
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	300.0	
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	300.0	
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	300.0	
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	300.0	
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	300.0	
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	300.0	
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	300.0	
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	300.0	
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	300.0	
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	300.0	
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	300.0	
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	300.0	
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	300.0	
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	300.0	
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	300.0	
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	300.0	
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	300.0	
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	300.0	
MB 550-225304/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225304/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-225304/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152760-C-10 MS	Matrix Spike	Total/NA	Water	300.0	
550-152760-C-10 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 225306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	300.0	
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	300.0	
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	300.0	
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	300.0	
MB 550-225306/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225306/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-225306/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152788-A-3 MS ^100	Matrix Spike	Total/NA	Water	300.0	
550-152788-A-3 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 225705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	300.0	
MB 550-225705/2	Method Blank	Total/NA	Water	300.0	
LCS 550-225705/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-225705/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152953-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-152953-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Metals

Prep Batch: 225256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	200.7	
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	200.7	
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	200.7	
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	200.7	
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	200.7	
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	200.7	
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	200.7	
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	200.7	
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	200.7	
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	200.7	
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	200.7	
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	200.7	
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	200.7	
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	200.7	
MB 550-225256/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-225256/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-225256/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-152734-A-1-A MS	Matrix Spike	Total/NA	Water	200.7	
550-152734-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Prep Batch: 225293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	245.1	
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	245.1	
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	245.1	
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	245.1	
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	245.1	
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	245.1	
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	245.1	
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	245.1	
MB 550-225293/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-225293/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-225293/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-152379-D-14-B MS	Matrix Spike	Total/NA	Water	245.1	
550-152379-D-14-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Analysis Batch: 225318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	245.1	225293
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	245.1	225293
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	245.1	225293
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	245.1	225293
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	245.1	225293
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	245.1	225293
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	245.1	225293
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	245.1	225293
MB 550-225293/1-A	Method Blank	Total/NA	Water	245.1	225293
LCS 550-225293/2-A	Lab Control Sample	Total/NA	Water	245.1	225293
LCSD 550-225293/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	225293
550-152379-D-14-B MS	Matrix Spike	Total/NA	Water	245.1	225293
550-152379-D-14-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	225293

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Metals

Prep Batch: 225389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	200.8	
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	200.8	
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	200.8	
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	200.8	
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	200.8	
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	200.8	
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	200.8	
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	200.8	
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	200.8	
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	200.8	
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	200.8	
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	200.8	
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	200.8	
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	200.8	
MB 550-225389/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-225389/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-225389/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-152543-K-1-D MS	Matrix Spike	Total/NA	Water	200.8	
550-152543-K-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

Prep Batch: 225425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	245.1	
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	245.1	
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	245.1	
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	245.1	
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	245.1	
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	245.1	
MB 550-225425/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-225425/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-225425/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-152543-N-1-A MS	Matrix Spike	Total/NA	Water	245.1	
550-152543-N-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Analysis Batch: 225450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	245.1	225425
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	245.1	225425
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	245.1	225425
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	245.1	225425
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	245.1	225425
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	245.1	225425
MB 550-225425/1-A	Method Blank	Total/NA	Water	245.1	225425
LCS 550-225425/2-A	Lab Control Sample	Total/NA	Water	245.1	225425
LCSD 550-225425/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	225425
550-152543-N-1-A MS	Matrix Spike	Total/NA	Water	245.1	225425
550-152543-N-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	225425

Analysis Batch: 225603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	200.7 Rev 4.4	225256

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Metals (Continued)

Analysis Batch: 225603 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	200.7 Rev 4.4	225256
MB 550-225256/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225256
LCS 550-225256/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225256
LCSD 550-225256/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225256
550-152734-A-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	225256
550-152734-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	225256

Analysis Batch: 225725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	200.7 Rev 4.4	225256
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	200.7 Rev 4.4	225256
MB 550-225256/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225256
LCS 550-225256/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225256
LCSD 550-225256/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225256
550-152734-A-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	225256
550-152734-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	225256

Analysis Batch: 225923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	200.7 Rev 4.4	225256
MB 550-225256/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	225256
LCS 550-225256/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	225256
LCSD 550-225256/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	225256
550-152734-A-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	225256
550-152734-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	225256

Analysis Batch: 225998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	200.8 LL	225389
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	200.8 LL	225389
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	200.8 LL	225389

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Metals (Continued)

Analysis Batch: 225998 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	200.8 LL	225389
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	200.8 LL	225389
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	200.8 LL	225389
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	200.8 LL	225389
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	200.8 LL	225389
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	200.8 LL	225389
MB 550-225389/1-A	Method Blank	Total/NA	Water	200.8 LL	225389
LCS 550-225389/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	225389
LCSD 550-225389/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	225389
550-152543-K-1-D MS	Matrix Spike	Total/NA	Water	200.8 LL	225389
550-152543-K-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	225389

Analysis Batch: 226260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	200.8 LL	225389
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	200.8 LL	225389
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	200.8 LL	225389
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	200.8 LL	225389
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	200.8 LL	225389
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	200.8 LL	225389
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	200.8 LL	225389
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	200.8 LL	225389
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	200.8 LL	225389
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	200.8 LL	225389
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	200.8 LL	225389
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	200.8 LL	225389
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	200.8 LL	225389
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	200.8 LL	225389
MB 550-225389/1-A	Method Blank	Total/NA	Water	200.8 LL	225389
LCS 550-225389/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	225389
LCSD 550-225389/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	225389
550-152543-K-1-D MS	Matrix Spike	Total/NA	Water	200.8 LL	225389
550-152543-K-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	225389

Analysis Batch: 226441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-225389/1-A	Method Blank	Total/NA	Water	200.8 LL	225389
LCS 550-225389/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	225389
LCSD 550-225389/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	225389
550-152543-K-1-D MS	Matrix Spike	Total/NA	Water	200.8 LL	225389
550-152543-K-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	225389

Analysis Batch: 226484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	200.8 LL	225389
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	200.8 LL	225389
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	200.8 LL	225389

Analysis Batch: 226806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	200.8 LL	225389

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Metals (Continued)

Analysis Batch: 226806 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	200.8 LL	225389
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	200.8 LL	225389
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	200.8 LL	225389
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	200.8 LL	225389
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	200.8 LL	225389
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	200.8 LL	225389

Prep Batch: 517312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	200.7	
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	200.7	
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	200.7	
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	200.7	
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	200.7	
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	200.7	
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	200.7	
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	200.7	
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	200.7	
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	200.7	
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	200.7	
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	200.7	
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	200.7	
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	200.7	
MB 280-517312/1-A	Method Blank	Total/NA	Water	200.7	
LCS 280-517312/2-A	Lab Control Sample	Total/NA	Water	200.7	
280-142838-D-1-C MS	Matrix Spike	Total/NA	Water	200.7	
280-142838-D-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Analysis Batch: 517768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	200.7 Rev 4.4	517312
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	200.7 Rev 4.4	517312
MB 280-517312/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	517312
LCS 280-517312/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	517312
280-142838-D-1-C MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	517312
280-142838-D-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	517312

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

General Chemistry

Analysis Batch: 225152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	SM 2540C	
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	SM 2540C	
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	SM 2540C	
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	SM 2540C	
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	SM 2540C	
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	SM 2540C	
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	SM 2540C	
MB 550-225152/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-225152/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-225152/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-152664-2 DU	FC-CCR-MW67-1120	Total/NA	Water	SM 2540C	

Analysis Batch: 225220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	SM 2540C	
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	SM 2540C	
MB 550-225220/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-225220/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-225220/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-152422-G-2 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 225350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	SM 2540C	
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	SM 2540C	
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	SM 2540C	
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	SM 2540C	
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	SM 2540C	
MB 550-225350/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-225350/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-225350/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-152659-A-24 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 225378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-1	FC-CCR-MW66-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-2	FC-CCR-MW67-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-3	FC-CCR-MW68-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-4	FC-CCR-MW69-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-5	FC-CCR-MW70-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-6	FC-CCR-MW71-1120	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-225378/12	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-225378/24	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-152663-A-1 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 225697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-7	FC-CCR-MW72-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-8	FC-CCR-MW73-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-9	FC-CCR-MW83-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-10	FC-CCR-MW84-1120	Total/NA	Water	SM 4500 H+ B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

General Chemistry (Continued)

Analysis Batch: 225697 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-152664-11	FC-CCR-FD01-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-12	FC-CC-MW85-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-13	FC-CCR-MW86-1120	Total/NA	Water	SM 4500 H+ B	
550-152664-14	FC-CCR-FD02-1120	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-225697/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-225697/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-152664-7 DU	FC-CCR-MW72-1120	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW66-1120

Lab Sample ID: 550-152664-1

Date Collected: 11/05/20 11:33

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225306	11/11/20 21:09	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225306	11/11/20 21:36	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 18:51	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	225725	11/16/20 18:56	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 18:12	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	225998	11/18/20 18:50	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:29	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		4	226806	11/30/20 12:19	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:09	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225220		YET	TAL PHX
					(Start)	11/11/20 06:41		
					(End)	11/12/20 08:25		
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW67-1120

Lab Sample ID: 550-152664-2

Date Collected: 11/04/20 12:02

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225304	11/11/20 15:47	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225304	11/11/20 16:05	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 18:55	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	225923	11/17/20 20:12	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 18:29	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	225998	11/18/20 18:53	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:31	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		4	226806	11/30/20 12:21	ARE	TAL PHX
Total/NA	Prep	245.1			225293	11/11/20 16:47	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225318	11/11/20 20:16	SRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW67-1120

Lab Sample ID: 550-152664-2

Date Collected: 11/04/20 12:02

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	225152		YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW68-1120

Lab Sample ID: 550-152664-3

Date Collected: 11/04/20 11:18

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225304	11/11/20 16:24	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225304	11/11/20 16:42	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 18:59	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	225725	11/16/20 19:03	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 18:33	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	225998	11/18/20 18:55	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:34	ARE	TAL PHX
Total/NA	Prep	245.1			225293	11/11/20 16:47	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225318	11/11/20 20:18	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225152		YET	TAL PHX
					(Start)	11/10/20 08:56		
					(End)	11/11/20 08:10		
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW69-1120

Lab Sample ID: 550-152664-4

Date Collected: 11/04/20 08:50

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225304	11/11/20 17:00	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225304	11/11/20 17:19	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:03	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 18:36	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	225998	11/18/20 18:57	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:36	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226484	11/24/20 16:50	ARE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW69-1120

Lab Sample ID: 550-152664-4

Date Collected: 11/04/20 08:50

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	245.1			225293	11/11/20 16:47	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225318	11/11/20 20:19	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225152	11/10/20 08:56 (Start) 11/11/20 08:10 (End)	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW70-1120

Lab Sample ID: 550-152664-5

Date Collected: 11/05/20 10:32

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225306	11/11/20 22:03	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225306	11/11/20 22:31	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:07	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 18:39	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:38	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226484	11/24/20 16:52	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:10	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225220	11/11/20 06:41 (Start) 11/12/20 08:25 (End)	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW71-1120

Lab Sample ID: 550-152664-6

Date Collected: 11/05/20 08:52

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225304	11/11/20 17:37	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225304	11/11/20 17:56	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:10	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 18:43	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:40	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226484	11/24/20 16:54	ARE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW71-1120

Lab Sample ID: 550-152664-6

Date Collected: 11/05/20 08:52

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:15	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225350	11/12/20 07:49 (Start)	YET	TAL PHX
						11/13/20 08:20 (End)		
Total/NA	Analysis	SM 4500 H+ B		1	225378	11/12/20 09:28	MRR	TAL PHX

Client Sample ID: FC-CCR-MW72-1120

Lab Sample ID: 550-152664-7

Date Collected: 11/05/20 09:35

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225304	11/11/20 18:14	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225304	11/11/20 18:32	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225705	11/16/20 16:18	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:14	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 18:46	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	225998	11/18/20 19:03	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:46	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:16	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225350	11/12/20 07:49 (Start)	YET	TAL PHX
						11/13/20 08:20 (End)		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-MW73-1120

Lab Sample ID: 550-152664-8

Date Collected: 11/05/20 16:05

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225304	11/11/20 19:28	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225304	11/11/20 19:46	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:18	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 18:49	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	225998	11/18/20 19:05	ARE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW73-1120

Lab Sample ID: 550-152664-8

Date Collected: 11/05/20 16:05

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:48	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		4	226806	11/30/20 12:23	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:18	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225350	(Start) 11/12/20 07:49 (End) 11/13/20 08:20	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-MW83-1120

Lab Sample ID: 550-152664-9

Date Collected: 11/04/20 15:15

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225304	11/11/20 20:04	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225304	11/11/20 20:23	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:29	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225725	11/16/20 19:07	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 19:08	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	225998	11/18/20 19:07	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:50	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		4	226806	11/30/20 12:25	ARE	TAL PHX
Total/NA	Prep	245.1			225293	11/11/20 16:47	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225318	11/11/20 20:21	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225152	(Start) 11/10/20 08:56 (End) 11/11/20 08:10	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-MW84-1120

Lab Sample ID: 550-152664-10

Date Collected: 11/04/20 14:30

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	225304	11/11/20 20:41	RDC	TAL PHX
Total/NA	Analysis	300.0		100	225304	11/11/20 21:00	RDC	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-MW84-1120

Lab Sample ID: 550-152664-10

Date Collected: 11/04/20 14:30

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:33	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225725	11/16/20 19:11	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 19:11	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	225998	11/18/20 19:13	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:52	ARE	TAL PHX
Total/NA	Prep	245.1			225293	11/11/20 16:47	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225318	11/11/20 20:24	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225152		YET	TAL PHX
					(Start)	11/10/20 08:56		
					(End)	11/11/20 08:10		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-FD01-1120

Lab Sample ID: 550-152664-11

Date Collected: 11/04/20 12:02

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225304	11/11/20 21:18	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225304	11/11/20 21:36	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:37	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	225725	11/16/20 19:15	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 19:14	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:54	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		4	226806	11/30/20 12:27	ARE	TAL PHX
Total/NA	Prep	245.1			225293	11/11/20 16:47	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225318	11/11/20 20:22	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225152		YET	TAL PHX
					(Start)	11/10/20 08:56		
					(End)	11/11/20 08:10		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CC-MW85-1120

Lab Sample ID: 550-152664-12

Date Collected: 11/04/20 16:18

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225304	11/11/20 21:55	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225304	11/11/20 22:13	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:41	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225725	11/16/20 19:30	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 19:18	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:57	ARE	TAL PHX
Total/NA	Prep	245.1			225293	11/11/20 16:47	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225318	11/11/20 20:25	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225152		YET	TAL PHX
					(Start)	11/10/20 08:56		
					(End)	11/11/20 08:10		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Client Sample ID: FC-CCR-MW86-1120

Lab Sample ID: 550-152664-13

Date Collected: 11/05/20 12:33

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225304	11/11/20 23:08	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225304	11/11/20 23:27	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:44	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	225725	11/16/20 19:34	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225725	11/16/20 19:37	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 19:21	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 15:59	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		4	226806	11/30/20 12:29	ARE	TAL PHX
Total/NA	Prep	245.1			225293	11/11/20 16:47	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225318	11/11/20 20:27	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225350		YET	TAL PHX
					(Start)	11/12/20 07:49		
					(End)	11/13/20 08:20		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Client Sample ID: FC-CCR-FD02-1120

Lab Sample ID: 550-152664-14

Date Collected: 11/05/20 11:33

Matrix: Water

Date Received: 11/09/20 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	225304	11/11/20 23:45	RDC	TAL PHX
Total/NA	Analysis	300.0		200	225304	11/12/20 00:04	RDC	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225603	11/13/20 19:48	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	225725	11/16/20 19:41	MGM	TAL PHX
Total/NA	Prep	200.7			225256	11/11/20 11:13	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225725	11/16/20 19:45	MGM	TAL PHX
Total/NA	Prep	200.7			517312	11/20/20 07:52	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517768	11/20/20 19:24	LMT	TAL DEN
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	225998	11/18/20 19:22	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		2	226260	11/20/20 16:01	ARE	TAL PHX
Total/NA	Prep	200.8			225389	11/12/20 11:18	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		4	226806	11/30/20 12:31	ARE	TAL PHX
Total/NA	Prep	245.1			225425	11/12/20 16:35	SRR	TAL PHX
Total/NA	Analysis	245.1		1	225450	11/12/20 19:19	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	225350		YET	TAL PHX
					(Start)	11/12/20 07:49		
					(End)	11/13/20 08:20		
Total/NA	Analysis	SM 4500 H+ B		1	225697	11/16/20 16:23	MRR	TAL PHX

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
 Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 4500 H+ B		Water	Temperature

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-21
Arizona	State	AZ0713	12-20-20
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-21
Connecticut	State	PH-0686	09-30-20 *
Florida	NELAP	E87667-57	07-01-21
Georgia	State	4025-011	01-09-21
Illinois	NELAP	2000172019-1	04-30-21
Iowa	State	IA#370	12-01-20
Kansas	NELAP	E-10166	04-30-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Maine	State	2019011 (231)	03-03-21
Minnesota	NELAP	1788752	12-31-20
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-21
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-21
North Carolina (WW/SW)	State	358	12-31-20
North Dakota	State	R-034	01-08-21
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-21
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-21
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-18-00099	03-26-21
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-21
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-20
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-152664-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	EPA	TAL DEN
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
245.1	Mercury (CVAA)	EPA	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL DEN
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX
245.1	Preparation, Mercury	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

152664



Regulatory Program: DW NPDES RCRA Other: CCR

Client Contact

Natalie Chrisman
602-250-3608

Jim Edwards / (928) 288-1241
Lab Contact: Ken Baker

Date: 1/05/20
Carrier:

TestAmerica Lab
COC No: 1 of 2

Arizona Public Service
PO Box 355, MS 4915
Fruitland, NM 87416

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS

Sampler: 1 of 2
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

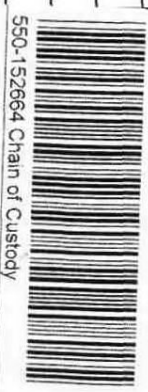
Phone
FAX

TAT if different from Below
 2 weeks
 1 week
 2 days
 1 day

Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (URS)
Project #:

Sample Identification

Sample ID	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Be, Li)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)	SM 4500-HB (pH)	SM 2540C (TDS)	EPA 245.1 - Totals (Hg)
1	FC-CCR-MW66-1120	11/5/2020	G	W	2	N	N	X	X	X	X	X	X
2	FC-CCR-MW67-1120	11/4/2020	G	W	2	N	N	X	X	X	X	X	X
3	FC-CCR-MW68-1120	11/4/2020	G	W	2	N	N	X	X	X	X	X	X
4	FC-CCR-MW69-1120	11/4/2020	G	W	2	N	N	X	X	X	X	X	X
5	FC-CCR-MW70-1120	11/5/2020	G	W	2	N	N	X	X	X	X	X	X
6	FC-CCR-MW71-1120	11/5/2020	G	W	2	N	N	X	X	X	X	X	X
7	FC-CCR-MW72-1120	11/5/2020	G	W	2	N	N	X	X	X	X	X	X
8	FC-CCR-MW73-1120	11/5/2020	G	W	2	N	N	X	X	X	X	X	X
9	FC-CCR-MW83-1120	11/4/2020	G	W	2	N	N	X	X	X	X	X	X
10	FC-CCR-MW84-1120	11/4/2020	G	W	2	N	N	X	X	X	X	X	X
11	FC-CCR-FD01-1120	11/4/2020	G	W	2	N	N	X	X	X	X	X	X



Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please list any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments: Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months

Method 200.8 with collision cell

26/3.4/2.1/2.2/2.3

Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: *[Signature]*

Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: *[Signature]*

Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: *[Signature]*

Relinquished by: *[Signature]* Company: *[Signature]* Date/Time: *[Signature]*

152664



TestAmerica Phoenix
4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

Regulatory Program: DW NPDES RCRA Other: CCR

TestAmerica Lab

Client Contact

Natalie Chrisman
602-250-3608

Jim Edwards / (928) 288-1241
Lab Contact: Ken Baker

Date: 1/25/20
Carrier:

COC No: 2 of 2

Arizona Public Service
PO Box 355, MS 4915
Fruitland, NM 87416

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
TAT if different from Below: 2 weeks 1 week 2 days 1 day

Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Phone
FAX

Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (URS)
Project #:

Sample Identification

Sample Date

Sample Time

Sample Type (G=Camp, G=Grab)

Matrix

of Cont.

Filtered Sample (Y/N)

Perform MS / MSD (Y/N)

EPA 300.0 (Cl, F, SO4)

EPA 200.7 - Totals (B, Ca, Be, Li)

EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)

SM 4500-HB (pH)

SM 2540C (TDS)

12 FC-CCR-MW85-1120

11/4/2020

16:18

G

W

2

N

N

X

X

X

X

X

X

X

X

X

13 FC-CCR-MW86-1120

11/5/2020

12:33

G

W

2

N

N

X

X

X

X

X

X

X

X

X

14 FC-CCR-FD02-1120

11/5/2020

11:33

G

W

2

N

N

X

X

X

X

X

X

X

X

X

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Method 200.8 with collision cell

Cooler Temp. (°C): Obs'd: 2.6 / 3.4 / 2.1 (2.2/2.7)

Custody Seal Intact: Yes No
Custody Seal No.:
Company: TA-PHX

Relinquished by: [Signature]
Date/Time: 11/9/20

Relinquished by: [Signature]
Date/Time: 11/9/20

Relinquished by: [Signature]
Date/Time: 11/9/20

TestAmerica Phoenix

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

152664



THE LEADER IN ENVIRON

TestAmerica Lab

Client Contact

Natalie Chrisman
602-250-3608

Regulatory Program: DW NPDES RCRA Other: CCR

Date: 1/05/20

COC No: 1 of 2

Arizona Public Service
PO Box 355, MS 4915
Ft. Huachuca, NM 87416

Analysis Turnaround Time

Lab Contact: Ken Baker

Carrier:

Sampler: 1 of 2

Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (URS)
Project #:

CALENDAR DAYS WORKING DAYS
TAT if different from Below

EPA 300.0 (Cl, F, SO4)
EPA 200.7 - Totals (B, Ca, Be, Li)
EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)
SM 4500-HB (pH)
SM 2540C (TDS)
EPA 245.1 - Totals (Hg)

For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (URS)
Project #:

2 weeks
1 week
2 days
1 day

Filtered Sample (Y / N)
Perform MS / MSD (Y / N)

Carrier:

Sample Specific

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Be, Li)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)	SM 4500-HB (pH)	SM 2540C (TDS)	EPA 245.1 - Totals (Hg)	Sample Specific
1 FC-CCR-MW66-1120	11/5/2020	11:33	G	W	2	N	N	X	X	X	X	X	X	Low Flow
2 FC-CCR-MW67-1120	11/4/2020	12:02	G	W	2	N	N	X	X	X	X	X	X	"
3 FC-CCR-MW68-1120	11/4/2020	11:18	G	W	2	N	N	X	X	X	X	X	X	"
4 FC-CCR-MW69-1120	11/4/2020	8:50	G	W	2	N	N	X	X	X	X	X	X	"
5 FC-CCR-MW70-1120	11/5/2020	10:32	G	W	2	N	N	X	X	X	X	X	X	"
6 FC-CCR-MW71-1120	11/5/2020	8:52	G	W	2	N	N	X	X	X	X	X	X	"
7 FC-CCR-MW72-1120	11/5/2020	9:35	G	W	2	N	N	X	X	X	X	X	X	"
8 FC-CCR-MW73-1120	11/5/2020	16:05	G	W	2	N	N	X	X	X	X	X	X	"
9 FC-CCR-MW83-1120	11/4/2020	15:15	G	W	2	N	N	X	X	X	X	X	X	"
10 FC-CCR-MW84-1120	11/4/2020	14:30	G	W	2	N	N	X	X	X	X	X	X	"
11 FC-CCR-FD01-1120	11/4/2020	12:02	G	W	2	N	N	X	X	X	X	X	X	"



Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:
Method 200.8 with collision cell

Refrigerated by: Yes No

Refrigerated by: *TA-SMX* Company: *TA-SMX* Date/Time: *11/9/20*

Refrigerated by: *TA-SMX* Company: *TA-SMX* Date/Time: *11/9/20*

Refrigerated by: *TA-SMX* Company: *TA-SMX* Date/Time: *11/9/20*

Refrigerated by: *TA-SMX* Company: *TA-SMX* Date/Time: *11/9/20*

Refrigerated by: *TA-SMX* Company: *TA-SMX* Date/Time: *11/9/20*

Chain of Custody Record

1522664



TestAmerica Phoenix
4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

Regulatory Program: DW NPDES RCRA Other: CCR

TestAmerica Lab

Client Contact

Natalie Chrisman
602-250-3608

Jim Edwards / (928) 288-1241
Lab Contact: Ken Baker

Date: 11/9/20
Carrier:

COC No.: 2 of 2

Arizona Public Service
PO Box 355, MS 4915
Fruitland, NM 87416

Analysis Turnaround Time

Filtered Sample (Y / N)
Perform MS / MSD (Y / N)
EPA 300.0 (Cl, F, SO4)
EPA 200.7 - Totals (B, Ca, Be, Li)
EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)
SM 4500-HB (pH)
SM 2540C (TDS)
EPA 245.1 - Totals (Hg)

Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Project Name: CCR Groundwater Monitoring
Site: APS Four Corners Power Plant (URS)
Project #:

CALENDAR DAYS WORKING DAYS
TAT if different from Below _____
 2 weeks
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Be, Li)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Tl)	SM 4500-HB (pH)	SM 2540C (TDS)	EPA 245.1 - Totals (Hg)	Sample Specific
FC-CCR-MW85-1120	11/4/2020	16:18	G	W	2	N	N	X	X	X	X	X	X	Low Flow
FC-CCR-MW86-1120	11/5/2020	12:33	G	W	2	N	N	X	X	X	X	X	X	"
FC-CCR-FD02-1120	11/5/2020	11:33	G	W	2	N	N	X	X	X	X	X	X	"

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other _____
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:
 Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months

Method 200.8 with collision cell

Custody Seal Intact: Yes No
Cooler Temp. (°C): Obs'd: 2.6 / 3.4 / 2.1 (2.2 / 2.7)
Term ID No.:

Relinquished by: [Signature]
Date/Time: 11/9/20
Received by: [Signature]
Date/Time: 11/9/20
Company: TA-PHX

Relinquished by: [Signature]
Date/Time: 11/9/20
Received by: [Signature]
Date/Time: 11/9/20
Company: TA-PHX

Relinquished by: [Signature]
Date/Time: 11/9/20
Received by: [Signature]
Date/Time: 11/9/20
Company: TA-PHX



Chain of Custody Record

Client Information (Sub Contract Lab)		Lab PM: Baker, Ken		Carrier Tracking No(s):		COC No: 550-29223.1	
Shipping/Receiving		E-Mail: Ken.Baker@Eurofins.com		State of Origin: Arizona		Page: Page 1 of 2	
Company: TestAmerica Laboratories, Inc.		Address: 4955 Yarrow Street, Arvada, CO, 80002		Accreditations Required (See note): State Program - Arizona		Job #: 550-152664-1	
Due Date Requested: 11/25/2020		TAT Requested (days):		Analysis Requested		Preservation Codes:	
PO #:		WO #:		Field Filtered Sample (Yes or No)		Total Number of Containers	
Project #: 55009706		SSOW#:		Perform M/MSD (Yes or No)		Special Instructions/Note:	
Site: Arizona Public Service		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
FC-CCR-MW66-1120 (550-152664-1)		11/5/20		11:33 Arizona		Water	
FC-CCR-MW67-1120 (550-152664-2)		11/4/20		12:02 Arizona		Water	
FC-CCR-MW68-1120 (550-152664-3)		11/4/20		11:18 Arizona		Water	
FC-CCR-MW69-1120 (550-152664-4)		11/4/20		08:50 Arizona		Water	
FC-CCR-MW70-1120 (550-152664-5)		11/5/20		10:32 Arizona		Water	
FC-CCR-MW71-1120 (550-152664-6)		11/5/20		08:52 Arizona		Water	
FC-CCR-MW72-1120 (550-152664-7)		11/5/20		09:35 Arizona		Water	
FC-CCR-MW73-1120 (550-152664-8)		11/5/20		16:05 Arizona		Water	
FC-CCR-MW83-1120 (550-152664-9)		11/4/20		15:15 Arizona		Water	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification
 Unconfirmed
 Return To Client
 Disposal By Lab
 Archive For
 Months

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Empty Kit Relinquished by: _____ Date: _____ Method of Shipment: _____

Relinquished by: *Timothy M. Peltz* Company: _____ Received by: *Federico* Date/Time: _____ Company: _____
 Relinquished by: _____ Date/Time: _____ Received by: *John* Date/Time: 11/18/2020 09:30 Company: *ETA DEN*
 Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: _____ Custody Seal No.: _____
 Δ Yes Δ No
 Cooler Temperature(s) °C and Other Remarks: 1.9 FEB -0.3 @ 11/18/2020



Chain of Custody Record

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:				
Client Contact:		Baker, Ken	Baker, Ken		550-29223.2				
Shipping/Receiving		Phone:	E-Mail:	State of Origin:	Page:				
Company:		Ken Baker@Eurofinset.com	Ken Baker@Eurofinset.com	Arizona	Page 2 of 2				
Address:		Accreditations Required (See note):		Job #:	550-152664-1				
4955 Yarrow Street,		State Program - Arizona		Preservation Codes:					
City:		Due Date Requested:		A - HCL	M - Hexane				
Arivada		11/25/2020		B - NaOH	N - None				
State, Zip:		TAT Requested (days):		C - Zn Acetate	O - AsNaO2				
CO, 80002		1		D - Nitric Acid	P - Na2O4S				
Phone:		PO #:		E - NaHSO4	Q - Na2SO3				
303-736-0100(Tel) 303-431-7171(Fax)		WO #:		F - MeOH	R - Na2S2O3				
Email:		Project #:		G - Amchlor	S - H2SO4				
		55009706		H - Ascorbic Acid	T - TSP Dodecahydrate				
Project Name:		SSOW#:		I - Ice	U - Acetone				
CCR Groundwater Monitoring				J - DI Water	V - MCAA				
Site:				K - EDTA	W - pH 4-5				
Arizona Public Service				L - EDA	Z - other (specify)				
				Other:					
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform M/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:
FC-CCR-MW84-1120 (550-152664-10)	11/4/20	14:30 Arizona	Water	X	X	1	AZ Sample		
FC-CCR-FD01-1120 (550-152664-11)	11/4/20	12:02 Arizona	Water	X	X	1	AZ Sample		
FC-CC-MW85-1120 (550-152664-12)	11/4/20	16:18 Arizona	Water	X	X	1	AZ Sample		
FC-CCR-MW86-1120 (550-152664-13)	11/5/20	12:33 Arizona	Water	X	X	1	AZ Sample		
FC-CCR-FD02-1120 (550-152664-14)	11/5/20	11:33 Arizona	Water	X	X	1	AZ Sample		
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.</p>									
Possible Hazard Identification									
Unconfirmed									
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2									
Special Instructions/QC Requirements:									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)									
Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months									
Method of Shipment:									
Time:									
Date:									
Relinquished by: <i>Eric H-17-92</i> Company: <i>Fedex</i>									
Relinquished by: <i>14:00 TAT</i> Company: <i>Fedex</i>									
Relinquished by: <i>11/17/2020 09:30</i> Company: <i>ETA JAN</i>									
Relinquished by: <i>11/17/2020 09:30</i> Company: <i>ETA JAN</i>									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No									
Custody Seal No.: <i>119 2011-03 2011171000</i>									



Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-152664-1

Login Number: 152664

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Maycock, Lisa

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-152664-1

Login Number: 152664

List Number: 2

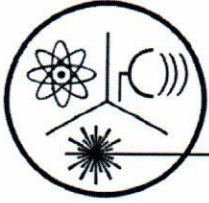
Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

List Creation: 11/18/20 08:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

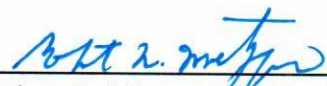
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 06, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW07-1120	< 0.4	1.4 ± 0.4	1.4 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 6, 2020 9:41 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	1.4 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	1.4 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65482 _____

Lab ID Number: AZ0462 _____

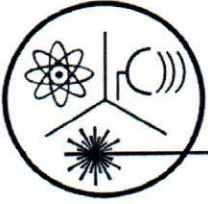
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW07-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 06, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW08-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 6, 2020 10:37 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006			µg/L
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65483

Lab ID Number: AZ0462

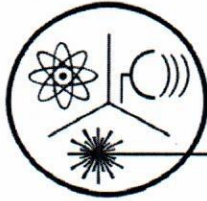
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW08-1120

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 06, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW49-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 6, 2020 8:41 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Quarterly

Composite of four quarterly samples

Date Q1 collected: _____

Date Q2 collected: _____

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65484 _____

Lab ID Number: AZ0462 _____

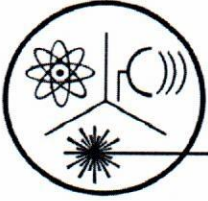
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW49-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 08, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW61-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 8, 2020 8:45 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:


- Reduced Monitoring Date Q1 collected: _____
- Quarterly Date Q2 collected: _____
- Composite of four quarterly samples Date Q3 collected: _____
- Date Q4 collected: _____

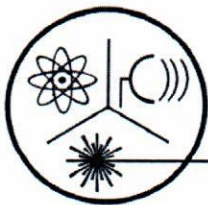
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006			
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65485
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW61-1120
 Authorized Signature: 
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

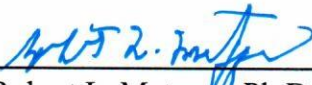
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 08, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW75-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020
Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 8, 2020 9:23 (24 hour clock) _____

Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

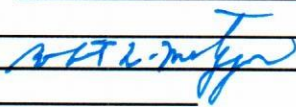
- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

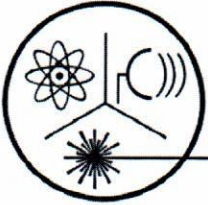
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65486 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW75-1120 _____
 Authorized Signature:  _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: November 06, 2020

Sample Received: November 10, 2020

Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW87-1120	1.0 ± 0.2	2.7 ± 0.4	3.7 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 6, 2020 14:26 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Quarterly

Composite of four quarterly samples

Date Q1 collected: _____

Date Q2 collected: _____

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	3.7 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	1.0 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	2.7 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65487 _____

Lab ID Number: AZ0462 _____

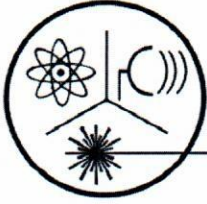
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW87-1120

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 06, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-FD05-1120	0.4 ± 0.2	1.0 ± 0.4	1.4 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 6, 2020 9:41 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	1.4 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	0.4 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	1.0 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65488 _____

Lab ID Number: AZ0462 _____

Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

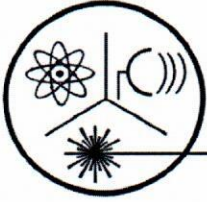
Comments: FC-CCR-FD05-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____

Client Information		Radiation Safety Engineering, Inc.																											
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241 Company: Arizona Public Service		3245 North Washington Street Chandler, Arizona 85225																											
Address: PO Box 355, MS 4915 Fruitland, NM 87416		Drinking Water Compliance		Gross Alpha		Gross Beta		Total Uranium		Isotopic Uranium		Ra-226		Ra-228		Ra-226 + Ra-228, Combined		H-3		Gamma Spectroscopy		Sr-89/Sr-90		Radon in Water		Radon in Air			
Sample ID & Location (DWR#)	Collection	Media (DW*, WW*, Other)		Date	Time	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	X	X	X	X	X	X	X	X	X	X	X	
		DW*	WW*																										Other
FC-CCR-MW07-1120	11/6/2020	9:41	GW												X	X	X	X	X	X	X	X	X	X	X	X	X	X	65483
FC-CCR-MW08-1120	11/6/2020	10:37	GW												X	X	X	X	X	X	X	X	X	X	X	X	X	X	65483
FC-CCR-MW49-1120	11/6/2020	8:41	GW												X	X	X	X	X	X	X	X	X	X	X	X	X	X	65484
FC-CCR-MW61-1120	11/8/2020	8:45	GW												X	X	X	X	X	X	X	X	X	X	X	X	X	X	65485
FC-CCR-MW75-1120	11/8/2020	9:23	GW												X	X	X	X	X	X	X	X	X	X	X	X	X	X	65486
FC-CCR-MW87-1120	11/6/2020	14:26	GW												X	X	X	X	X	X	X	X	X	X	X	X	X	X	65487
FC-CCR-FD05-1120	11/6/2020	9:41	GW												X	X	X	X	X	X	X	X	X	X	X	X	X	X	65488
Sample Receipt		Total No. of Containers		Chain of Custody Seals		Container Condition		Lab No.		Invoice to:		Instructions/Comments		Method HPGe															
Relinquished By: MWI Wviolet		Company: Wood		Date/Time: 11/10/20		Received By: Pat Fleming		Date/Time: 09:41		Received By:		Date/Time:		Company: TRSE		Date/Time: 11-10-20												9:41	
Relinquished By:		Company:		Date/Time:		Received By:		Date/Time:		Received By:		Date/Time:		Company:		Date/Time:													
Relinquished By:		Company:		Date/Time:		Received By:		Date/Time:		Received By:		Date/Time:		Company:		Date/Time:													

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 07, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-DMX03-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 7, 2020 13:31 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

_____ Owner/Contact Fax Number _____ Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- Reduced Monitoring Date Q1 collected: _____
 Quarterly Date Q2 collected: _____
 Composite of four quarterly samples Date Q3 collected: _____
 Date Q4 collected: _____

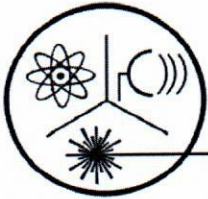
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65472 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-DMX03-1120 _____
 Authorized Signature: Robert L. Metzger _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 07, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-DMX04-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P. 11/30/2020
Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 7, 2020 9:19 (24 hour clock) _____

Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:


- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

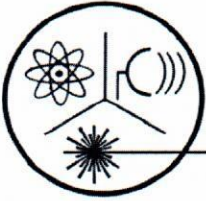
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006			µg/L
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65473
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-DMX04-1120
 Authorized Signature: 
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

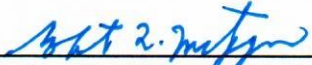
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 06, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-DMX06-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P. 11/30/2020
Date
Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 6, 2020 13:36 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006			µg/L
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65474 _____

Lab ID Number: AZ0462 _____

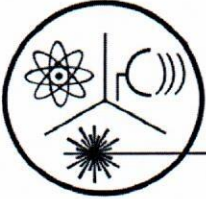
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-DMX06-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 06, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW06-1120	1.0 ± 0.2	1.1 ± 0.4	2.1 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 6, 2020 13:36 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

 Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

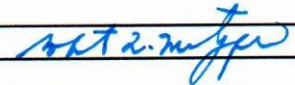
- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

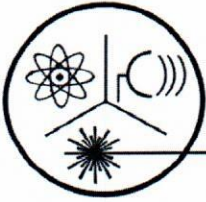
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	2.1 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	1.0 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	1.1 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65475
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW06-1120
 Authorized Signature: 
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

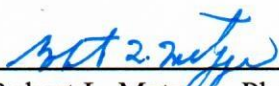
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 06, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW15-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P. 11/30/2020 Date
Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 6, 2020 12:45 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65476 _____

Lab ID Number: AZ0462 _____

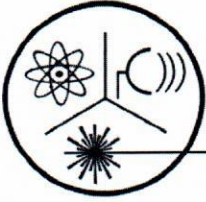
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW15-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

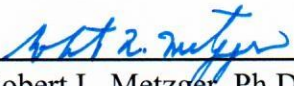
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 06, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW16-1120	0.9 ± 0.2	2.7 ± 0.4	3.6 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P. 11/30/2020 Date
Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 6, 2020 11:42 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

 Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

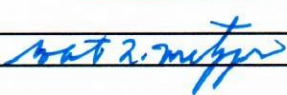
- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

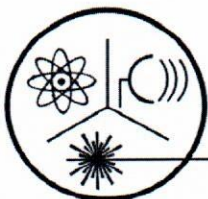
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	3.6 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	0.9 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	2.7 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65477
 Lab ID Number: AZ0462
 Lab Name: Radiation Safety Engineering, Inc.
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459
 Comments: FC-CCR-MW16-1120
 Authorized Signature: 
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

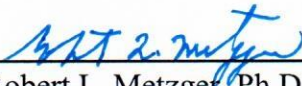
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 07, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW17R-1120	0.8 ± 0.2	1.2 ± 0.4	2.0 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 7, 2020 10:01 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	2.0 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	0.8 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	1.2 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65478 _____

Lab ID Number: AZ0462 _____

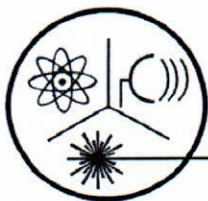
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW17R-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: November 06, 2020

Sample Received: November 10, 2020

Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW38R-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 6, 2020 16:03 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65479

Lab ID Number: AZ0462

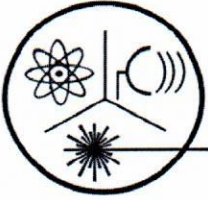
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW38R-1120

Authorized Signature: _____ 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 07, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW56-1120	< 0.4	2.2 ± 0.4	2.2 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 7, 2020 10:38 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	2.2 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	2.2 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65480 _____

Lab ID Number: AZ0462 _____

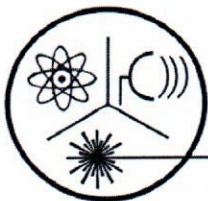
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW56-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: November 06, 2020

Sample Received: November 10, 2020

Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW57-1120	< 0.4	2.2 ± 0.4	2.2 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 6, 2020 15:13 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

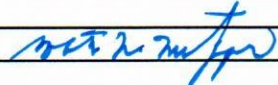
- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	2.2 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	2.2 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

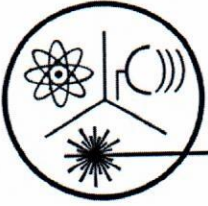
Specimen Number: RSE65481 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW57-1120 _____
 Authorized Signature:  _____
 Date Public Water System Notified: _____

Client Information				Radiation Safety Engineering, Inc.				Analysis Request				
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241				3245 North Washington Street				Chandler, Arizona 85225				
Company: Arizona Public Service				Drinking Water Compliance								
Address: PO Box 355, MS 4915 Fruitland, NM 87416				Total Uranium								
Phone:				Gross Beta								
Site: APS Four Corners Power Plant (Other)				Gross Alpha								
Sample ID & Location (DWR#)	Collection		Media (DW+, WW+, Other)	Ra-226	Ra-228	Ra-226 + Ra-228, Combined	H-3	Gamma Spectroscopy	Sr-89/Sr-90	Radon in Water	Radon in Air	
	Date	Time										
FC-CCR-DMX03-1120	11/7/2020	13:31	GW	X	X	X					65472	
FC-CCR-DMX04-1120	11/7/2020	9:19	GW	X	X	X					65473	
FC-CCR-DMX06-1120	11/6/2020	13:36	GW	X	X	X					65474	
FC-CCR-MW06-1120	11/7/2020	8:33	GW	X	X	X					65475	
FC-CCR-MW15-1120	11/6/2020	12:45	GW	X	X	X					65476	
FC-CCR-MW16-1120	11/6/2020	11:42	GW	X	X	X					65477	
FC-CCR-MW17R-1120	11/7/2020	10:01	GW	X	X	X					65478	
FC-CCR-MW38R-1120	11/6/2020	16:03	GW	X	X	X					65479	
Sample Receipt Total No. of Containers Chain of Custody Seals Container Condition Lab No.												
Invoice to: Instructions/Comments Method HPGe												
Relinquished By: MOM WOOD				Received By: [Signature]				Company: RSE				Date/time: 11-10-20
Relinquished By:				Received By:				Company:				Date/time:
Relinquished By:				Received By:				Company:				Date/time:

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.
uclient/forms/cofc frm

Client Information Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241 Company: Arizona Public Service Address: PO Box 355, MS 4915 Fruitland, NM 87416 Phone: Site: APS Four Corners Power Plant (Other)			3245 North Washington Street Chandler, Arizona 85225			Radiation Safety Engineering, Inc. Analysis Request				
Sample ID & Location (DWR#)	Collection		Media (DW+ WW+ Other)	Ra-226 Ra-228 Ra-226 + Ra-228, Combined H-3 Gamma Spectroscopy Sr-89/Sr-90 Radon in Water Radon in Air	X X X X X X	X X X X X X	X X X X X X	65 57 480 481		
	Date	Time							GW GW	
FC-CCR-MW56-1120	11/7/2020	10:38	GW							
FC-CCR-MW57-1120	11/6/2020	15:13	GW							
Sample Receipt Total No. of Containers Chain of Custody Seals Container Condition Lab No.				Invoice to: Received By: MAM WOLLER Date/time: 11/10/20 09:41 Company: Wood						
Relinquished By: MAM WOLLER Date/time: 11/10/20 Company: Wood				Received By: Pat Blanning Date/time: 11:10 Company: RSE						
Relinquished By: Date/time: Company:				Received By: Date/time: Company:						

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.
 u/client/forms/cofc frm



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

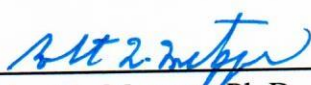
(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 05, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW66-1120	1.2 ± 0.2	1.2 ± 0.4	2.4 ± 0.4
Date of Analysis	11/13/2020	11/13/2020	11/13/2020


Robert L. Metzger, Ph.D., C.H.P. 11/30/2020
Date
Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 5, 2020 11:33 (24 hour clock)
 Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

- Reduced Monitoring
- Quarterly
- Composite of four quarterly samples

Date Q1 collected: _____
 Date Q2 collected: _____
 Date Q3 collected: _____
 Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	2.4 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	1.2 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	1.2 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65459

Lab ID Number: AZ0462

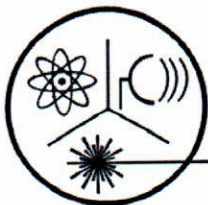
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW66-1120

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 04, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW67-1120	0.7 ± 0.2	2.9 ± 0.4	3.6 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P. 11/30/2020
Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 4, 2020 12:02 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Quarterly

Composite of four quarterly samples

Date Q1 collected: _____

Date Q2 collected: _____

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	3.6 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	0.7 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	2.9 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65460

Lab ID Number: AZ0462

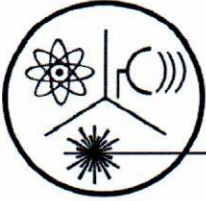
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW67-1120

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 04, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW68-1120	0.7 ± 0.2	1.1 ± 0.4	1.8 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 4, 2020 11:18 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

 Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:


- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

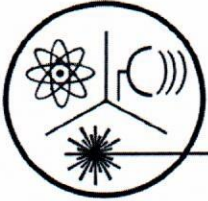
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	1.8 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	0.7 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	1.1 ± 0.4	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65461 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW68-1120 _____
 Authorized Signature:  _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 04, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW69-1120	< 0.4	1.3 ± 0.4	1.3 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 4, 2020 8:50 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	1.3 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	1.3 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65462 _____

Lab ID Number: AZ0462 _____

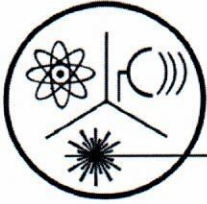
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW69-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

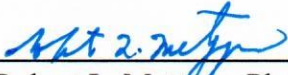
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 05, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW70-1120	< 0.5	1.8 ± 0.4	1.8 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 5, 2020 10:32 (24 hour clock) _____

Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	1.8 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.5	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	1.8 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65463 _____

Lab ID Number: AZ0462 _____

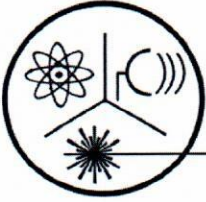
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW70-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446


Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 05, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW71-1120	< 0.5	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P. 11/30/2020
Date
Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 5, 2020 8:52 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

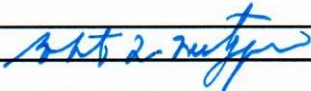
- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

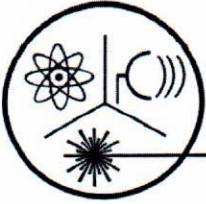
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006			µg/L
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.5	
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65464 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW71-1120 _____
 Authorized Signature:  _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 05, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW72-1120	0.7 ± 0.2	1.7 ± 0.4	2.4 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 5, 2020 9:35 (24 hour clock) _____

Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	2.4 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	0.7 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	1.7 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65465 _____

Lab ID Number: AZ0462 _____

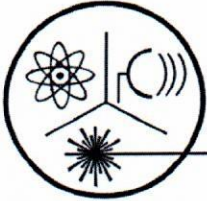
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW72-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 05, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW73-1120	0.6 ± 0.2	2.2 ± 0.4	2.8 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 5, 2020 16:05 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Quarterly

Composite of four quarterly samples

Date Q1 collected: _____

Date Q2 collected: _____

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	2.8 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	0.6 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	2.2 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65466 _____

Lab ID Number: AZ0462 _____

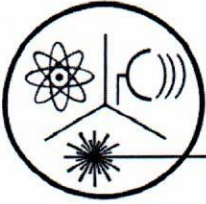
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW73-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

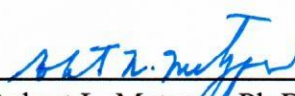
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 04, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW83-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P. 11/30/2020
Date
Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 4, 2020 15:15 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65467 _____

Lab ID Number: AZ0462 _____

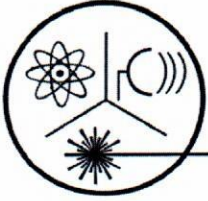
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: FC-CCR-MW83-1120 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446


Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 04, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW84-1120	< 0.4	< 0.8	< 0.8

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P. 11/30/2020 Date
Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 4, 2020 14:30 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65468

Lab ID Number: AZ0462

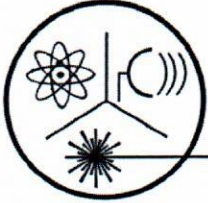
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-MW84-1120

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 04, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW85-1120	0.7 ± 0.2	< 0.8	0.7 ± 0.2

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 4, 2020 16:18 (24 hour clock) _____

Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

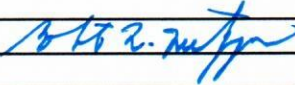
- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

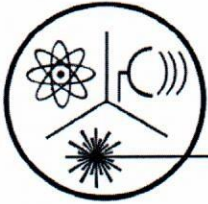
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	0.7 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	0.7 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65469 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW85-1120 _____
 Authorized Signature:  _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 05, 2020
Sample Received: November 10, 2020
Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-MW86-1120	0.6 ± 0.2	< 0.8	0.6 ± 0.2

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

November 5, 2020 12:33 (24 hour clock) _____
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number _____ Owner/Contact Phone Number _____

Sample Collection Point
 EPDS # _____

Compliance Sample Type:

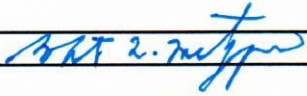
- | | |
|--|--------------------------|
| <input type="checkbox"/> Reduced Monitoring | Date Q1 collected: _____ |
| <input type="checkbox"/> Quarterly | Date Q2 collected: _____ |
| <input type="checkbox"/> Composite of four quarterly samples | Date Q3 collected: _____ |
| | Date Q4 collected: _____ |

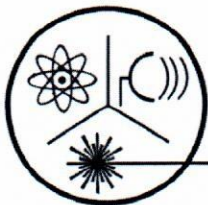
*****RADIOCHEMICAL ANALYSIS*****
 >>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	0.6 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	0.6 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	< 0.8	_____

*****LABORATORY INFORMATION*****
 >>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65470 _____
 Lab ID Number: AZ0462 _____
 Lab Name: Radiation Safety Engineering, Inc. _____
 Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____
 Comments: FC-CCR-MW86-1120 _____
 Authorized Signature:  _____
 Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: November 04, 2020

Sample Received: November 10, 2020

Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-FD01-1120	< 0.4	3.5 ± 0.5	3.5 ± 0.5

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 4, 2020 12:02 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006			
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	3.5 ± 0.5	
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	3.5 ± 0.5	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65471

Lab ID Number: AZ0462

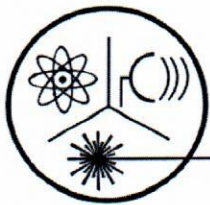
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-FD01-1120

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: November 05, 2020

Sample Received: November 10, 2020

Analysis Completed: November 30, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
FC-CCR-FD02-1120	0.9 ± 0.2	1.1 ± 0.4	2.0 ± 0.4

Date of Analysis	11/13/2020	11/13/2020	11/13/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/30/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

November 5, 2020 11:33 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

EPDS # _____

Compliance Sample Type:

Reduced Monitoring

Date Q1 collected: _____

Quarterly

Date Q2 collected: _____

Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/13/2020	2.0 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/13/2020	0.9 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/13/2020	1.1 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65489

Lab ID Number: AZ0462

Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: FC-CCR-FD02-1120

Authorized Signature: 

Date Public Water System Notified: _____

Client Information			Radiation Safety Engineering, Inc.										
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241			Chandler, Arizona 85225										
Company: Arizona Public Service			3245 North Washington Street										
Address: PO Box 355, MS 4915 Fruitland, NM 87416			Analysis Request										
Phone:			Drinking Water Compliance										
Site: APS Four Corners Power Plant (URS)			Ra-226 + Ra-228, Combined										
Sample ID & Location (DWR#)	Collection Date	Time	Media		Total Uranium	Isotopic Uranium	Ra-226	Ra-228	H-3	Gamma Spectroscopy	Sr-89/Sr-90	Radon in Water	Radon in Air
			DW*	Other†									
FC-CCR-MW66-1120	11/5/2020	11:33	GW				X	X	X				65459
FC-CCR-MW67-1120	11/4/2020	12:02	GW				X	X	X				65460
FC-CCR-MW68-1120	11/4/2020	11:18	GW				X	X	X				65461
FC-CCR-MW69-1120	11/4/2020	8:50	GW				X	X	X				65462
FC-CCR-MW70-1120	11/5/2020	10:32	GW				X	X	X				65463
FC-CCR-MW71-1120	11/5/2020	8:52	GW				X	X	X				65464
FC-CCR-MW72-1120	11/5/2020	9:35	GW				X	X	X				65465
FC-CCR-MW73-1120	11/5/2020	16:05	GW				X	X	X				65466
FC-CCR-MW83-1120	11/4/2020	15:15	GW				X	X	X				65467
FC-CCR-MW84-1120	11/4/2020	14:30	GW				X	X	X				65468

Sample Receipt		Instructions/Comments	
Total No. of Containers		Method HPGc	
Chain of Custody Seals			
Container Condition			
Lab No.			
Relinquished By: <i>Mawi Wvolut</i>	Company: Wood	Received By: <i>Pat Blomery</i>	Company: TRSE
Relinquished By:	Company:	Received By:	Company:
Relinquished By:	Company:	Received By:	Company:

Date/time: 11/10/20	Date/time: 11:10
Date/time: 09:41	Date/time:
Date/time:	Date/time:

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.
uclient/forms/cofc frm

Client Information				Radiation Safety Engineering, Inc. Analysis Request												
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241 Company: Arizona Public Service				3245 North Washington Street Chandler, Arizona 85225												
Address: PO Box 355, MS 4915 Fruitland, NM 87416																
Phone:																
Site: APS Four Corners Power Plant (URS)																
Sample ID & Location (DWR#)	Collection		Media (DW, WW, Other)	Drinking Water Compliance	Gross Alpha	Gross Beta	Total Uranium	Isotopic Uranium	Ra-226	Ra-228	Ra-226 + Ra-228, Combined	H-3	Gamma Spectroscopy	Sr-89/Sr-90	Radon in Water	Radon in Air
	Date	Time														
FC-CCR-MW85-1120	11/4/2020	16:18	GW						X	X	X					65469
FC-CCR-MW86-1120	11/5/2020	12:33	GW						X	X	X					65470
FC-CCR-FD01-1120	11/4/2020	12:02	GW						X	X	X					65471
FC-CCR-FD02-1120	11/5/2020	11:33	GW						X	X	X					65489*

Sample Receipt		Invoice to:	
Total No. of Containers			
Chain of Custody Seals			
Container Condition			
Lab No.			
Relinquished By: <u>Maria Vuolava</u>	Company: <u>Wood</u>	Received By:	Received By: <u>Pat Flannery</u>
Relinquished By:	Company:	Received By:	Received By:
Relinquished By:	Company:	Received By:	Received By:

Date/time: 11/01/20 09:41
Date/time: 11/10/20 9:41

* 65489 - out of Sequence

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.
u:\client\forms\cofc frm

APPENDIX D
2020 DATA VALIDATION REPORT





2020 DATA VALIDATION REPORT
CCR Rule Compliance Groundwater Monitoring Data
Arizona Public Service Cholla
Farmington, New Mexico

Submitted by:

Wood Environment & Infrastructure Solutions, Inc.
Phoenix, Arizona

January 31, 2021

Project No. 1420202015



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Table 2	Field Duplicate Detections
Table 3	Qualifiers Added During Data Validation

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List of Abbreviations

%	percent
APS	Arizona Public Service Company
BTV(s)	background threshold value(s)
CCR	coal combustion residuals
CLP	Contract Laboratory Program
COC	chain of custody
EPA	United States Environmental Protection Agency
GWPS(s)	Groundwater Protection Standard(s) identification
ID	laboratory control sample
LCS	laboratory control sample
LCSD	maximum contaminant level
MCL	milligrams per liter
mg/L	matrix spike
MS	matrix spike duplicate
MSD	quality control
QC	reporting limit
RL	relative percent difference
RPD	sampling and analysis plan
SAP	sample delivery group
SDG	Standard Method
SM	total dissolved solids
TDS	Wood Environment & Infrastructure Solutions,
Wood	Inc.

1.0 INTRODUCTION

Arizona Public Service (APS) collected groundwater Detection and Assessment Monitoring samples to support Coal Combustion Residuals (CCR) Rule Compliance during the 2020 calendar year (the reporting period) at the APS Four Corners Power Plant, located near Farmington, New Mexico. This report presents the standard methods used to validate reporting period data and documents the results of the data validation process in summary tables and checklists generated as the samples were collected throughout the year.

2.0 DATA VALIDATION METHODOLOGY

Wood Environment & Infrastructure Solutions, Inc. (Wood) performed a United States Environmental Protection Agency (EPA) Stage 2A validation on samples collected by APS during the 2020 calendar year. This is equivalent to a Level I data evaluation as defined in the project sampling and analysis plan (SAP). The Stage 2A validation includes review of the quality control (QC) results in laboratory analytical reports and does not include review or validation of the raw analytical data. Data validation activities have been performed in general accordance with:

- APS, 2018. Sampling and Analysis Plan, Coal Combustion Residual (CCR) Groundwater Monitoring, Four Corners Power Plant, Arizona Public Service, Farmington, New Mexico, (originally prepared by AECOM, Inc. in December 2015 and updated by APS in January 2018).
- EPA, 2004. SW 846 Test Methods for Evaluating Solid Wastes, Update IIIB.
- EPA, 2017. EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-2017-001.

The CLP guidelines were written specifically for the CLP, and have been modified for the purposes of data reviews conducted during the reporting period where they differ from method-specific QC requirements.

During each groundwater monitoring round conducted during the reporting period, the laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

- Data package and electronic data deliverable completeness;
- Chain of custody (COC) compliance;
- Holding time compliance;
- Presence or absence of laboratory contamination as demonstrated by laboratory blanks;
- Accuracy and bias as demonstrated by recovery of laboratory control sample (LCS) and matrix spike (MS) samples;
- Analytical precision as relative percent difference (RPD) of analyte concentration between laboratory duplicates, LCS/LCS duplicates (LCSDs), or MSs/MS duplicates (MSDs);
- Insofar as possible, the degree of conformance to method requirements and good laboratory practices.

Appendix A presents data assessment checklists generated for each sample delivery group submitted to the analytical laboratory during the reporting period. The laboratory performing the analyses as well as the

methods of analysis are presented in the individual checklists. Table 1 presents a comprehensive listing of reporting period samples and Table 2 summarizes field duplicate detections at concentrations greater than analytical reporting limits.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all QC audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

3.0 EXPLANATION OF DATA QUALITY INDICATORS

Summary explanations of the specific data quality indicators reviewed during data validation are presented below.

3.1 Laboratory Control Sample Recoveries

LCSs are aliquots of analyte free matrices that are spiked with the analytes of interest for an analytical method, or a representative subset of those analytes. The spiked matrix is then processed through the same analytical procedures as the samples it accompanies. LCS recovery is an indication of a laboratory's ability to successfully perform an analytical method in an interference free matrix.

3.2 Matrix Spike Recoveries

MSs and MSDs are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch.

MS recovery and precision are an indication of a laboratory's ability to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related.

3.3 Blank Concentrations

Blank samples are aliquots of analyte free matrix that are used as negative controls to verify that the sample collection, storage, preparation, and analysis system does not produce false positive results.

Laboratory blanks are processed by the laboratory using exactly the same procedures as the field samples. Target analytes should not be found in laboratory blanks.

When target analytes are detected in blanks, analyte concentrations in associated samples less than five times the concentration detected in the blank will be U qualified as being not detected.

3.4 Laboratory Duplicates

Laboratory duplicate analysis verifies acceptable method precision by the laboratory at the time of preparation and analysis and/or sampling precision at the time of collection.

4.0 DEFINITIONS OF DATA VALIDATION QUALIFIERS

The following qualifiers may be added to the data during data validation:

- J** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- R** The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- U** The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- UJ** The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

Unless otherwise noted in the Data Assessment Checklists included in Appendix A, the samples were received at the laboratories under proper COC, intact, properly preserved, and at temperatures less than the SAP-specified maximum of 6 degrees Celsius.

6.0 SPECIFIC DATA VALIDATION FINDINGS

Results for groundwater monitoring samples collected in 2020 may be considered usable with the limitations and exceptions summarized in Table 3. The following sections identify requirements used in data assessment.

6.1 Metals By EPA Methods 200.7, 200.8, and 245.1

6.1.1 Holding Times

Samples must be analyzed for metals within the SAP-specified holding time of 28 days for mercury and 180 days for additional metals.

6.1.2 Laboratory Blanks

Target analytes must not be detected in the laboratory blanks associated with the analysis of site samples.

6.1.3 Laboratory Control Sample Accuracy and Precision

LCS and LCSD recoveries must be within the laboratory-specified 85 to 115 percent (%) limits and RPDs between the LCS and LCSD results must be less than the laboratory-specified maximum of 20%.

6.1.4 Matrix Spikes/Matrix Spike Duplicates

Laboratories performed MS and MSD analysis on the project samples specified in the Data Assessment Checklists included in Appendix A. MS/MSD recoveries must be within laboratory-specified limits of 70 to 130% and RPDs between MS and MSD results must be less than the laboratory-specified maximum of 20%.

6.1.5 Analytical Sensitivity

RLs for antimony, arsenic, barium, beryllium, cadmium, chromium, mercury, selenium, and thallium must be sufficiently low to meet the National Primary Drinking Water Regulation Maximum Contamination Limits (MCLs). RLs for cobalt, lead, lithium, and molybdenum must be sufficiently low to meet alternative Groundwater Protection Standards (GWPSs).

Boron and calcium are not EPA-regulated analytes in groundwater and it is not possible to evaluate the RLs for these analytes against the National Primary Drinking Water Regulation MCLs.

6.2 Anions by EPA Method 300.0

6.2.1 Holding Times

Samples must be analyzed for anions within the SAP-specified holding time of 28 days.

6.2.2 Laboratory Blanks

Fluoride, chloride, and sulfate must not be detected in the laboratory blanks associated with the analysis of these samples.

6.2.3 Laboratory Control Samples

LCS and LCSD recoveries must be within the laboratory-specified limits of 90 to 110% and RPDs between the LCS and LCSD results must be less than the laboratory-specified maximum values.

6.2.4 Matrix Spikes/Matrix Spike Duplicates

Laboratories performed MS and MSD analysis on the project samples specified in the Data Assessment Checklists included in Appendix A. Recoveries must be within the laboratory-specified limits of 80 to 120%, and RPDs between MS and MSD results must be less than the laboratory-specified limit of 20%.

6.2.5 Laboratory Duplicates

Laboratories performed duplicate analysis on the project samples specified in the Data Assessment Checklists included in Appendix A. The RPDs between duplicate results must be less than the laboratory-specified 20% limit.

6.2.6 Analytical Sensitivity

Fluoride RLs must be sufficiently low to meet the 4 mg/L MCL. Chloride and sulfate are not EPA-regulated analytes in groundwater and it is not possible to evaluate the RLs for these analytes against the Primary Drinking Water Regulation MCLs.

There are applicable CCR Groundwater Monitoring Program Background Threshold Values (BTVs) for fluoride, chloride, and sulfate for the site. Analytical sensitivity must also be evaluated for these site-specific comparison criteria.

6.3 Total Dissolved Solids by SM 2540C

6.3.1 Holding Times

All samples must be analyzed for TDS within the SAP-specified holding time of 7 days.

6.3.2 Laboratory Blanks

TDS must not be detected in the laboratory blanks at concentrations above the reporting limit.

6.3.3 Laboratory Control Sample Accuracy and Precision

LCS and LCSD recoveries must be within the laboratory-specified limits of 90 to 110% and RPDs between the LCS and LCSD results must be less than the laboratory-specified maximum of 10%.

6.3.4 Laboratory Duplicates

Laboratories performed duplicate analysis for TDS on the project samples specified in the Data Assessment Checklists included in Appendix A. RPDs between primary sample and laboratory duplicate results must be less than the laboratory-specified 10% limit.

6.4 pH by SM 4500B

6.4.1 Holding Times

All samples must be analyzed for pH within 15 minutes of sample collection.

6.4.2 Laboratory Control Sample Accuracy

LCS recoveries must be within the laboratory-specified limits of 98.5 to 101.5%.

6.4.3 Laboratory Duplicates

Laboratories performed duplicate analysis for pH on the project samples specified in the Data Assessment Checklists included in Appendix A. RPDs between primary sample and laboratory duplicate results must be less than the laboratory-specified 5% limit.

6.5 Radium by EPA Methods 903.0 and 904.0

6.5.1 Holding Time

All samples must be analyzed for radium within the EPA-recommended holding time of 6 months.

6.5.2 Laboratory Blanks

Radium must not be detected in the laboratory blanks at concentrations above the reporting limit.

6.5.3 Laboratory Control Sample Accuracy

LCS and LCSD recoveries must be within laboratory-specified limits.

6.5.4 Carrier Accuracy

Carrier recoveries must be within the laboratory-specified 40 to 110% limits.

6.5.5 Analytical Sensitivity

Total radium RLs must be sufficiently low to meet the MCL of 5 picocuries per liter. Pending development of applicable CCR Groundwater Monitoring Program BTVs and/or GPSs for the site, analytical sensitivity must also be evaluated for these site-specific comparison criteria.

7.0 FIELD DUPLICATES

APS collected field duplicate samples of the specified field original samples as specified in Table 1. Target analyte detections are summarized in Table 2. Precision values must be less than the SAP-specified maximum of 20%, or the differences between the detected concentrations must be less than the RLs.

8.0 SUMMARY AND CONCLUSIONS

Data are usable with the addition of qualifiers as presented in Table 3.

9.0 REFERENCES

APS, 2018. Sampling and Analysis Plan CCR Groundwater Monitoring Four Corners Power Plant Arizona Public Service, Farmington, New Mexico. Originally prepared by AECOM in December 2015 and updated by APS in January 2018.

EPA, 2017. EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-2017-001.

EPA, 2004. SW 846 Test Methods for Evaluating Solid Wastes, Update IIIB.

10.0 LIMITATIONS

This report was prepared exclusively for Arizona Public Service by Wood Environment & Infrastructure Solutions, Inc. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in Wood services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This data validation report is intended to be used by Arizona Public Service for the Four Corners Power Plant site only, subject to the terms and conditions of its contract with Wood. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

wood.

TABLES



TABLE 1
FIELD SAMPLES SUBMITTED TO ANALYTICAL LABORATORIES
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sampling Program	CCR Unit	Collection Date and Time	Field Sample Identification	Eurofins TestAmerica Phoenix Sample Identification	Radiation Safety Engineering Sample Identification	Notes
Detection	CWTP	6/19/2020 15:43	FC-CCR-MW62-0620	550-143999-1	--	
Detection	CWTP	6/19/2020 16:49	FC-CCR-MW63-0620	550-143999-2	--	
Detection	CWTP	6/19/2020 16:10	FC-CCR-MW64-0620	550-143999-3	--	
Detection	CWTP	6/19/2020 9:11	FC-CCR-MW65-0620	550-143999-4	--	
Assessment	URS	6/18/2020 16:35	FC-CCR-MW66-0620	550-144000-1	64583	
Assessment	URS	6/19/2020 13:46	FC-CCR-MW67-0620	550-144000-2	64584	
Assessment	URS	6/19/2020 14:32	FC-CCR-MW68-0620	550-144000-3	64585	
Assessment	URS	6/19/2020 11:40	FC-CCR-MW69-0620	550-144000-4	64586	
Assessment	URS	6/19/2020 9:53	FC-CCR-MW70-0620	550-144000-5	64587	
Assessment	URS/CWTP	6/20/2020 9:18	FC-CCR-MW71-0620	550-144000-6	64588	
Assessment	URS/CWTP	6/19/2020 14:50	FC-CCR-MW72-0620	550-144000-7	64589	
Assessment	URS/CWTP	6/20/2020 10:12	FC-CCR-MW73-0620	550-144000-8	64590	
Assessment	URS/CWTP	6/19/2020 15:32	FC-CCR-MW83-0620	550-144000-9	64591	
Assessment	URS	6/20/2020 8:07	FC-CCR-MW84-0620	550-144000-10	64592	
Assessment	URS/CWTP	6/19/2020 15:32	FC-CCR-FD01-0620	550-144000-11	64613	Time recorded on RSE's COC is 14:50 Field duplicate of FC-CCR-MW83-0620
Assessment	URS	6/19/2020 13:03	FC-CCR-MW85-0620	550-144000-12	64611	
Assessment	URS	6/19/2020 8:17	FC-CCR-MW86-0620	550-144000-13	64612	
Assessment	URS	6/20/2020 8:07	FC-CCR-FD02-0620	550-144000-14	64614	Field duplicate of FC-CCR-MW84-0620
Assessment	Multiunit 1	6/23/2020 10:28	FC-CCR-MW07-0620	550-144001-1	64603	
Assessment	Multiunit 1	6/23/2020 9:34	FC-CCR-MW08-0620	550-144001-2	64604	
Assessment	Multiunit 1	6/23/2020 8:23	FC-CCR-MW49A-0620	550-144001-3	64605	
Assessment	Multiunit 1	6/20/2020 13:02	FC-CCR-MW52-0620	550-144001-4	--	
Assessment	Multiunit 1	6/21/2020 9:35	FC-CCR-MW61-0620	550-144001-5	64606	
Assessment	Multiunit 1	6/20/2020 11:51	FC-CCR-MW74-0620	550-144001-6	64607	
Assessment	Multiunit 1	6/21/2020 10:25	FC-CCR-MW75-0620	550-144001-7	64608	
Assessment	Multiunit 1	6/23/2020 15:02	FC-CCR-MW87-0620	550-144001-8	64609	
Assessment	Multiunit 1	6/23/2020 9:34	FC-CCR-FD04-0620	550-144001-9	64610	Field duplicate of FC-CCR-MW08-0620
Assessment	Multiunit 1	6/23/2020 13:00	FC-CCR-EW01-0620	550-144001-10	64615	

TABLE 1
FIELD SAMPLES SUBMITTED TO ANALYTICAL LABORATORIES
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sampling Program	CCR Unit	Collection Date and Time	Field Sample Identification	Eurofins TestAmerica Phoenix Sample Identification	Radiation Safety Engineering Sample Identification	Notes
Assessment	Multiunit 1	6/23/2020 13:55	FC-CCR-EW05-0620	550-144001-11	64616	
Assessment	Multiunit 1	6/23/2020 15:28	FC-CCR-EW14-0620	550-144001-12	64617	
Assessment	Multiunit 1	6/21/2020 16:11	FC-CCR-MW34-0620	550-144001-13	64618	
Assessment	Multiunit 1	6/20/2020 17:00	FC-CCR-EW15-0620	550-144001-14	64619	
Assessment	Multiunit 1	6/22/2020 8:54	FC-CCR-DMX03-0620	550-144002-1	--	
Assessment	Multiunit 1	6/22/2020 13:00	FC-CCR-DMX04-0620	550-144002-2	64593	
Assessment	Multiunit 1	6/23/2020 12:38	FC-CCR-DMX06-0620	550-144002-3	64594	Time recorded on RSE's COC is 11:58
Assessment	Multiunit 1	6/21/2020 11:58	FC-CCR-MW01-0620	550-144002-4	--	
Assessment	Multiunit 1	6/21/2020 12:40	FC-CCR-MW03-0620	550-144002-5	--	
Assessment	Multiunit 1	6/22/2020 9:30	FC-CCR-MW05-0620	550-144002-6	--	
Assessment	Multiunit 1	6/22/2020 13:54	FC-CCR-MW06-0620	550-144002-7	64595	
Assessment	Multiunit 1	6/23/2020 11:57	FC-CCR-MW15-0620	550-144002-8	64596	
Assessment	Multiunit 1	6/23/2020 11:15	FC-CCR-MW16-0620	550-144002-9	64597	
Assessment	Multiunit 1	6/21/2020 11:58	FC-CCR-FD03-0620	550-144002-10	--	Field duplicate of FC-CCR-MW-01-0620
Assessment	Multiunit 1	6/22/2020 12:10	FC-CCR-MW17R-0620	550-144002-11	64598	
Assessment	Multiunit 1	6/22/2020 10:18	FC-CCR-MW18-0620	550-144002-12	--	
Assessment	Multiunit 1	6/21/2020 15:37	FC-CCR-MW19-0620	550-144002-13	--	
Assessment	Multiunit 1	6/21/2020 13:20	FC-CCR-MW21-0620	550-144002-14	--	
Assessment	Multiunit 1	6/21/2020 16:15	FC-CCR-MW23R-0620	550-144002-15	--	
Assessment	Multiunit 1	6/21/2020 16:49	FC-CCR-MW36R-0620	550-144002-16	--	
Assessment	Multiunit 1	6/22/2020 15:26	FC-CCR-MW38R-0620	550-144002-17	64599	
Assessment	Multiunit 1	6/22/2020 10:54	FC-CCR-MW56-0620	550-144002-18	64600	
Assessment	Multiunit 1	6/22/2020 14:46	FC-CCR-MW57-0620	550-144002-19	64601	
Assessment	Multiunit 1	6/22/2020 15:26	FC-CCR-FD05-0620	550-144002-20	64602	Field duplicate of FC-CCR-MW38R-0620
Assessment	Multiunit 1	6/21/2020 11:11	FC-CCR-MW60-0620	550-144002-21	--	
Assessment	Multiunit 1	6/21/2020 14:00	FC-CCR-MW78S-0620	550-144002-22	--	
Assessment	Multiunit 1	6/21/2020 14:32	FC-CCR-MW81-0620	550-144002-23	--	
Assessment	Multiunit 1	6/21/2020 15:06	FC-CCR-MW82S-0620	550-144002-24	--	
Assessment	Multiunit 1	11/7/2020 13:31	FC-CCR-DMX03-1120	550-152659-1	65472	
Assessment	Multiunit 1	11/7/2020 9:19	FC-CCR-DMX04-1120	550-152659-2	65473	

**TABLE 1
FIELD SAMPLES SUBMITTED TO ANALYTICAL LABORATORIES
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data**

Sampling Program	CCR Unit	Collection Date and Time	Field Sample Identification	Eurofins TestAmerica Phoenix Sample Identification	Radiation Safety Engineering Sample Identification	Notes
Assessment	Multiunit 1	11/6/2020 13:36	FC-CCR-DMX06-1120	550-152659-3	65474	
Assessment	Multiunit 1	11/8/2020 10:36	FC-CCR-MW01-1120	550-152659-4	--	
Assessment	Multiunit 1	11/8/2020 11:31	FC-CCR-MW03-1120	550-152659-5	--	
Assessment	Multiunit 1	11/7/2020 13:05	FC-CCR-MW05-1120	550-152659-6	--	
Assessment	Multiunit 1	11/7/2020 8:33	FC-CCR-MW06-1120	550-152659-7	65475	
Assessment	Multiunit 1	11/6/2020 12:45	FC-CCR-MW15-1120	550-152659-8	65476	
Assessment	Multiunit 1	11/6/2020 11:42	FC-CCR-MW16-1120	550-152659-9	65477	
Assessment	Multiunit 1	11/8/2020 10:36	FC-CCR-FD03-1120	550-152659-10	--	Field duplicate of FC-CCR-MW01-1120
Assessment	Multiunit 1	11/7/2020 10:01	FC-CCR-MW17R-1120	550-152659-11	65478	
Assessment	Multiunit 1	11/7/2020 12:22	FC-CCR-MW18-1120	550-152659-12	--	
Assessment	Multiunit 1	11/7/2020 14:46	FC-CCR-MW19-1120	550-152659-13	--	
Assessment	Multiunit 1	11/8/2020 12:15	FC-CCR-MW21-1120	550-152659-14	--	
Assessment	Multiunit 1	11/7/2020 14:14	FC-CCR-MW23R-1120	550-152659-15	--	
Assessment	Multiunit 1	11/7/2020 11:40	FC-CCR-MW36R-1120	550-152659-16	--	
Assessment	Multiunit 1	11/6/2020 16:03	FC-CCR-MW38R-1120	550-152659-17	65479	
Assessment	Multiunit 1	11/7/2020 10:38	FC-CCR-MW56-1120	550-152659-18	65480	
Assessment	Multiunit 1	11/6/2020 15:13	FC-CCR-MW57-1120	550-152659-19	65481	
Assessment	Multiunit 1	11/7/2020 11:40	FC-CCR-FD04-1120	550-152659-20	--	Field duplicate of FC-CCR-MW36R-1120
Assessment	Multiunit 1	11/8/2020 10:07	FC-CCR-MW60-1120	550-152659-21	--	
Assessment	Multiunit 1	11/8/2020 13:28	FC-CCR-MW81-1120	550-152659-22	--	
Assessment	Multiunit 1	11/8/2020 13:56	FC-CCR-MW82S-1120	550-152659-23	--	
Assessment	Multiunit 1	11/4/2020 13:07	FC-CCR-CM01-1120	550-152659-24	--	
Assessment	Multiunit 1	11/4/2020 13:54	FC-CCR-CM02-1120	550-152659-25	--	
Assessment	Multiunit 1	11/4/2020 10:33	FC-CCR-CM03-1120	550-152659-26	--	
Assessment	Multiunit 1	11/4/2020 9:42	FC-CCR-CM04-1120	550-152659-27	--	
Assessment	Multiunit 1	11/6/2020 9:41	FC-CCR-MW07-1120	550-152660-1	65482	
Assessment	Multiunit 1	11/6/2020 10:37	FC-CCR-MW08-1120	550-152660-2	65483	
Assessment	Multiunit 1	11/6/2020 8:41	FC-CCR-MW49-1120	550-152660-3	65484	
Assessment	Multiunit 1	11/8/2020 8:10	FC-CCR-MW52-1120	550-152660-4	--	
Assessment	Multiunit 1	11/8/2020 8:45	FC-CCR-MW61-1120	550-152660-5	65485	
Assessment	Multiunit 1	11/8/2020 9:23	FC-CCR-MW75-1120	550-152660-6	65486	
Assessment	Multiunit 1	11/6/2020 14:26	FC-CCR-MW87-1120	550-152660-7	65487	

TABLE 1
FIELD SAMPLES SUBMITTED TO ANALYTICAL LABORATORIES
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sampling Program	CCR Unit	Collection Date and Time	Field Sample Identification	Eurofins TestAmerica Phoenix Sample Identification	Radiation Safety Engineering Sample Identification	Notes
Assessment	Multiunit 1	11/6/2020 9:41	FC-CCR-FD05-1120	550-152660-8	65488	Field duplicate of FC-CCR-MW07-1120
Detection	CWTP	11/5/2020 13:44	FC-CCR-MW62-1120	550-152663-1	--	
Detection	CWTP	11/5/2020 14:21	FC-CCR-MW63-1120	550-152663-2	--	
Detection	CWTP	11/5/2020 14:58	FC-CCR-MW64-1120	550-152663-3	--	
Detection	CWTP	11/5/2020 13:11	FC-CCR-MW65-1120	550-152663-4	--	
Assessment	URS	11/5/2020 11:33	FC-CCR-MW66-1120	550-152664-1	65459	
Assessment	URS	11/4/2020 12:02	FC-CCR-MW67-1120	550-152664-2	65460	
Assessment	URS	11/4/2020 11:18	FC-CCR-MW68-1120	550-152664-3	65461	
Assessment	URS	11/4/2020 8:50	FC-CCR-MW69-1120	550-152664-4	65462	
Assessment	URS	11/5/2020 10:32	FC-CCR-MW70-1120	550-152664-5	65463	
Assessment	URS	11/5/2020 8:52	FC-CCR-MW71-1120	550-152664-6	65464	
Assessment	URS	11/5/2020 9:35	FC-CCR-MW72-1120	550-152664-7	65465	
Assessment	URS	11/5/2020 16:05	FC-CCR-MW73-1120	550-152664-8	65466	
Assessment	URS	11/4/2020 15:15	FC-CCR-MW83-1120	550-152664-9	65467	
Assessment	URS	11/4/2020 14:30	FC-CCR-MW84-1120	550-152664-10	65468	
Assessment	URS	11/4/2020 12:02	FC-CCR-FD01-1120	550-152664-11	65471	Field duplicate of FC-CCR-MW67-1120
Assessment	URS	11/4/2020 16:18	FC-CC-MW85-1120	550-152664-12	65469	
Assessment	URS	11/5/2020 12:33	FC-CCR-MW86-1120	550-152664-13	65470	
Assessment	URS	11/5/2020 11:33	FC-CCR-FD02-1120	550-152664-14	65489	Field duplicate of FC-CCR-MW66-1120

TABLE 2
FIELD DUPLICATE DETECTIONS
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
FC-CCR-MW83-0620 and FC-CCR-FD01-0620					
Chloride	4.0 mg/L	83	83	0.0%	
Fluoride	0.80 mg/L	1.0	1.0	0.0%	
Sulfate	400 mg/L	1,500	1,500	0.0%	
Boron	0.050 mg/L	2.1	2.2	4.7%	
Calcium	2.0 mg/L	290	340	16%	
Lithium	0.20 mg/L	0.27	0.30	11%	
Arsenic	0.0020 mg/L	0.0021	0.0020	4.9%	
Barium	0.0020 mg/L	0.012	0.038	104%	J-FD
Molybdenum	0.0020 mg/L	0.044	0.046	4.4%	
Total Dissolved Solids	20 mg/L	2,800	2,800	0.0%	
pH	1.7 S.U.	7.4	7.3	1.4%	
FC-CCR-MW84-0620 and FC-CCR-FD02-0620					
Radium 228	0.6 pCi/L	1.0 ± 0.4	0.9 ± 0.3	11%	
Total Radium	0.6 pCi/L	1.0 ± 0.4	0.9 ± 0.3	11%	
Chloride	400 mg/L	590	620	5.0%	
Fluoride	0.80 mg/L	0.83	0.83	0.0%	
Sulfate	400 mg/L	6,000	6,100	1.7%	
Boron	0.050 mg/L	45	46	2.2%	
Calcium	2.0 mg/L	480	460	4.3%	
Lithium	0.20 mg/L	0.61	0.46	28%	± RL
Arsenic	0.0020 mg/L	0.0020 U	0.0022	NC	± RL
Barium	0.0013 mg/L	0.037	0.020	60%	J-FD
Cobalt	0.0020 mg/L	0.0022	0.0022	0.0%	
Molybdenum	0.0020 mg/L	0.0027	0.0025	7.7%	
Selenium	0.0020 mg/L	0.024	0.023	4.3%	
Thallium	0.00040 mg/L	0.00067	0.00069	2.9%	
Total Dissolved Solids	100 mg/L	9,600	9,700	1.0%	
pH	1.7 S.U.	7.3	7.1	2.8%	
FC-CCR-MW01-0620 and FC-CCR-FD03-0620					
Cobalt	0.00050 mg/L	0.073	0.073	0.0%	
Molybdenum	0.00050 mg/L	0.045	0.041	9.3%	
FC-CCR-MW08-0620 and FC-CCR-FD04-0620					
Radium 228	0.6 pCi/L	0.7 ± 0.3	0.7 ± 0.3	0.0%	
Total Radium	0.6 pCi/L	0.7 ± 0.3	0.7 ± 0.3	0.0%	
Chloride	400 mg/L	1,000	970	3.0%	
Sulfate	400 mg/L	9,500	9,300	2.1%	
Boron	0.05 mg/L	18	19	5.4%	
Calcium	20 mg/L	440	460	4.4%	
Magnesium	20 mg/L	830	830	0.0%	

TABLE 2
FIELD DUPLICATE DETECTIONS
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Potassium	5.0 mg/L	35	37	5.6%	
Sodium	5.0 mg/L	3,100	3100	0.0%	
Arsenic	0.0013 mg/L	0.002 U	0.00077	NC	± RL
Barium	0.0010 mg/L	0.0050	0.0097	64%	J-FD
Cadmium	0.00025 mg/L	0.0004 U	0.00021	NC	± RL
Lead	0.0013 mg/L	0.0020 U	0.00074	NC	± RL
Molybdenum	0.0013 mg/L	0.014	0.011	24%	J-FD
Selenium	0.00050 mg/L	0.00050 U	0.00080	NC	± RL
Alkalinity	6.0 mg/L	490	490	0.0%	
Bicarbonate Alkalinity	6.0 mg/L	490	490	0.0%	
Total Dissolved Solids	100 mg/L	15,000	14,000	6.9%	
pH	1.7 S.U.	7.4	7.3	1.4%	
FC-CCR-MW38R-0620 and FC-CCR-FD05-0620					
Radium 226	0.4 pCi/L	0.4 ±0.2	0.4 U	NC	± RL
Radium 228	0.8 pCi/L	0.8 U	1.1 ± 0.4	NC	± RL
Total Radium	0.8 pCi/L	0.4 ±0.2	1.1 ± 0.4	93%	± RL
Chloride	4.0 mg/L	290	290	0.0%	
Sulfate	400 mg/L	3,700	3,800	2.7%	
Boron	0.050 mg/L	29	30	3.4%	
Calcium	2.0 mg/L	450	440	2.2%	
Lithium	0.20 mg/L	0.49	0.49	0.0%	
Magnesium	2.0 mg/L	290	300	3.4%	
Potassium	0.50 mg/L	20	19	5.1%	
Sodium	5.0 mg/L	920	910	1.1%	
Barium	0.0010 mg/L	0.014	0.016	13%	
Cobalt	0.0010 mg/L	0.24	0.28	15%	
Molybdenum	0.0010 mg/L	0.0057	0.0063	10%	
Alkalinity	5.0 mg/L	120	130	8.0%	
Bicarbonate Alkalinity	5.0 mg/L	120	130	8.0%	
Total Dissolved Solids	100 mg/L	5,600	5,400	3.6%	
pH	1.7 S.U.	7.2	7.4	2.7%	
FC-CCR-MW67-1120 and FC-CCR-FD01-1120					
Chloride	400 mg/L	2,000	1,900	5.1%	
Fluoride	0.80 mg/L	15	15	0.0%	
Sulfate	400 mg/L	14,000	14,000	0.0%	
Boron	0.25 mg/L	160	170	6.1%	
Calcium	2.0 mg/L	470	470	0.0%	
Lithium	0.020 mg/L	0.40	0.40	0.0%	
Antimony	0.0015 mg/L	0.00027 J	0.0020 U	NC	± RL

TABLE 2
FIELD DUPLICATE DETECTIONS
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Arsenic	0.0010 mg/L	0.0027	0.0040	39%	J-FD
Barium	0.00075 mg/L	0.0079	0.014	56%	J-FD
Cadmium	0.00015 mg/L	0.00025	0.00011 J	78%	± RL
Chromium	0.0010 mg/L	0.001 U	0.00180 J	NC	± RL
Cobalt	0.00075 mg/L	0.0009	0.0078	159%	J-FD
Molybdenum	0.00075 mg/L	0.011	0.038	110%	J-FD
Selenium	0.0020 mg/L	0.0054	0.0069	24%	± RL
Thallium	0.00015 mg/L	0.00031	0.0010	105%	J-FD
Total Dissolved Solids	200 mg/L	20,000	20,000	0.0%	
pH	1.7 S.U.	7.4	7.4	0.0%	
Radium 226	0.4 pCi/L	0.7 ± 0.2	0.4 U	NC	± RL
Radium 228	0.4 pCi/L	2.9 ± 0.4	3.5 ± 0.5	19%	
Total Radium	0.8 pCi/L	3.6 ± 0.4	3.5 ± 0.5	2.8%	
FC-CCR-MW66-1120 and FC-CCR-FD02-1120					
Chloride	400 mg/L	1,700	1,800	5.7%	
Fluoride	0.80 mg/L	26	21	21%	J-FD
Sulfate	400 mg/L	13,000	13,000	0.0%	
Boron	0.10 mg/L	140	140	0.0%	
Calcium	2.0 mg/L	490	490	0.0%	
Lithium	0.020 mg/L	0.36	0.35	2.8%	
Antimony	0.0010 mg/L	0.000078 J	0.000084 J	7.4%	
Arsenic	0.0010 mg/L	0.0037	0.0031	18%	
Barium	0.00050 mg/L	0.016	0.021	27%	J-FD
Cadmium	0.00010 mg/L	0.00018	0.00014	25%	± RL
Chromium	0.0015 mg/L	0.0014 J	0.00082 J	52%	± RL
Cobalt	0.00075 mg/L	0.010	0.00058	178%	J-FD
Molybdenum	0.00050 mg/L	0.0014	0.0067	131%	J-FD
Selenium	0.0020 mg/L	0.0041	0.0053	26%	± RL
Thallium	0.00015 mg/L	0.00038	0.00090	81%	J-FD
Total Dissolved Solids	100 mg/L	18,000	20,000	11%	
pH	1.7 S.U.	7.3	7.3	0.0%	
Radium 226	0.4 pCi/L	1.2 ± 0.2	0.9 ± 0.2	29%	± RL
Radium 228	0.4 pCi/L	1.2 ± 0.4	1.1 ± 0.4	8.7%	
Total Radium	0.8 pCi/L	2.4 ± 0.4	2.0 ± 0.4	18%	
FC-CCR-MW01-1120 and FC-CCR-FD03-1120					
Boron	0.050 mg/L	56	56	0.0%	
Cobalt	0.00050 mg/L	0.0015	0.00035	124%	J-FD
Molybdenum	0.00050 mg/L	0.00051	0.055	196%	J-FD
FC-CCR-MW36R-1120 and FC-CCR-FD04-1120					
Boron	0.050 mg/L	53	55	3.7%	
Cobalt	0.0013 mg/L	0.26	0.29	11%	

TABLE 2
FIELD DUPLICATE DETECTIONS
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Molybdenum	0.0013 mg/L	0.0010	0.0018	57%	± RL
FC-CCR-MW07-1120 and FC-CCR-FD05-1120					
Chloride	400 mg/L	600	540	11%	
Fluoride	0.80 mg/L	0.33	0.37	11%	
Sulfate	400 mg/L	5,600	5,800	3.5%	
Lithium	0.020 mg/L	0.90	0.92	2.2%	
Boron	0.050 mg/L	8.6	8.5	1.2%	
Calcium	2.0 mg/L	400	400	0.0%	
Barium	0.020 mg/L	0.0057	0.0060	5.1%	
Antimony	0.0010 mg/L	0.00024	0.00020	18%	
Arsenic	0.00050 mg/L	0.0017	0.0025	38%	J-FD
Cadmium	0.00010 mg/L	0.000069	0.000062	11%	
Chromium	0.0010 mg/L	0.00055	0.00062	12%	
Cobalt	0.00050 mg/L	0.00050	0.00059	17%	
Molybdenum	0.00050 mg/L	0.0052	0.0052	0.0%	
Selenium	0.0010 mg/L	0.0076	0.011	37%	J-FD
Thallium	0.00010 mg/L	0.00010	0.00012	18%	
Total Dissolved Solids	100 mg/L	9,400	8,800	6.6%	
pH	1.7 S.U.	7.3	7.4	1.4%	
Radium 226	0.4 pCi/L	0.4 U	0.4 ± 0.2	NC	± RL
Radium 228	0.4 pCi/L	1.4 ± 0.4	1.0 ± 0.4	33%	± RL
Total Radium	0.8 pCi/L	1.4 ± 0.4	1.4 ± 0.4	0%	

Notes:

mg/L = milligrams per liter
 NC = not calculable
 pCi/L = picoCuries per liter
 S.U. = standard units

Qualifier Definitions:

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 U = The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
 UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reason Code:

FD = Imprecision between primary and field duplicate results.

**TABLE 3
QUALIFIERS ADDED DURING DATA VALIDATION
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data**

Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
FC-CCR-MW62-0620	J143999-1	pH	6.9 S.U.	J HT
FC-CCR-MW63-0620	J143999-1	pH	7.2 S.U.	J HT
FC-CCR-MW64-0620	J143999-1	pH	7.9 S.U.	J HT
FC-CCR-MW65-0620	J143999-1	pH	7.4 S.U.	J HT
FC-CCR-FD01-0620	J144000-1	Barium	0.038 mg/L	J FD
FC-CCR-FD01-0620	J144000-1	pH	7.3 S.U.	J HT
FC-CCR-FD02-0620	J144000-1	Barium	0.020 mg/L	J FD
FC-CCR-FD02-0620	J144000-1	pH	7.1 S.U.	J HT
FC-CCR-MW66-0620	J144000-1	Barium	0.019 mg/L	J HM
FC-CCR-MW66-0620	J144000-1	pH	7.3 S.U.	J HT
FC-CCR-MW67-0620	J144000-1	pH	7.5 S.U.	J HT
FC-CCR-MW68-0620	J144000-1	pH	7.3 S.U.	J HT
FC-CCR-MW69-0620	J144000-1	pH	7.4 S.U.	J HT
FC-CCR-MW70-0620	J144000-1	pH	7.1 S.U.	J HT
FC-CCR-MW71-0620	J144000-1	pH	7.3 S.U.	J HT
FC-CCR-MW72-0620	J144000-1	pH	7.2 S.U.	J HT
FC-CCR-MW73-0620	J144000-1	pH	7.2 S.U.	J HT
FC-CCR-MW83-0620	J144000-1	Barium	0.012 mg/L	J FD
FC-CCR-MW83-0620	J144000-1	pH	7.4 S.U.	J HT
FC-CCR-MW84-0620	J144000-1	Barium	0.037 mg/L	J FD
FC-CCR-MW84-0620	J144000-1	pH	7.3 S.U.	J HT
FC-CCR-MW85-0620	J144000-1	pH	7.1 S.U.	J HT
FC-CCR-MW86-0620	J144000-1	pH	7.1 S.U.	J HT
FC-CCR-MW74-0620	J144001-1	pH	7.7 S.U.	J HT
FC-CCR-MW75-0620	J144001-1	pH	8.4 S.U.	J HT
FC-CCR-MW87-0620	J144001-1	pH	7.7 S.U.	J HT
FC-CCR-FD04-0620	J144001-1	Molybdenum	0.011 mg/L	J FD
FC-CCR-FD04-0620	J144001-1	Barium	0.0 mg/L	J FD
FC-CCR-FD04-0620	J144001-1	Fluoride	0.8 mg/L	UJ LM
FC-CCR-FD04-0620	J144001-1	pH	7.3 S.U.	J HT
FC-CCR-MW07-0620	J144001-1	pH	7.5 S.U.	J HT
FC-CCR-EW01-0620	J144001-1	pH	7.6 S.U.	J HT
FC-CCR-EW05-0620	J144001-1	pH	7.7 S.U.	J HT
FC-CCR-EW14-0620	J144001-1	pH	7.6 S.U.	J HT
FC-CCR-MW34-0620	J144001-1	pH	7.7 S.U.	J HT
FC-CCR-EW15-0620	J144001-1	pH	7.6 S.U.	J HT
FC-CCR-MW08-0620	J144001-1	Molybdenum	0.014 mg/L	J FD
FC-CCR-MW08-0620	J144001-1	Barium	0.005 mg/L	J FD
FC-CCR-MW08-0620	J144001-1	Fluoride	0.8 mg/L	UJ LM
FC-CCR-MW08-0620	J144001-1	pH	7.4 S.U.	J HT

**TABLE 3
QUALIFIERS ADDED DURING DATA VALIDATION
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data**

Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
FC-CCR-MW49A-0620	J144001-1	pH	7.6 S.U.	J HT
FC-CCR-MW61-0620	J144001-1	pH	8.6 S.U.	J HT
FC-CCR-MW15-0620	J144002-1	pH	7.0 S.U.	J HT
FC-CCR-MW16-0620	J144002-1	pH	7.3 S.U.	J HT
FC-CCR-MW17R-0620	J144002-1	pH	7.5 S.U.	J HT
FC-CCR-MW38R-0620	J144002-1	pH	7.2 S.U.	J HT
FC-CCR-MW56-0620	J144002-1	pH	7.1 S.U.	J HT
FC-CCR-MW57-0620	J144002-1	pH	7.5 S.U.	J HT
FC-CCR-DMX04-0620	J144002-1	pH	7.7 S.U.	J HT
FC-CCR-FD05-0620	J144002-1	pH	7.4 S.U.	J HT
FC-CCR-DMX06-0620	J144002-1	pH	7.3 S.U.	J HT
FC-CCR-MW06-0620	J144002-1	pH	7.5 S.U.	J HT
FC-CCR-MW62-1120	J152663-1	Boron	2.1 mg/L	J LM
FC-CCR-MW62-1120	J152663-1	pH	6.9 S.U.	J HT
FC-CCR-MW63-1120	J152663-1	pH	7.1 S.U.	J HT
FC-CCR-MW64-1120	J152663-1	pH	7.8 S.U.	J HT
FC-CCR-MW65-1120	J152663-1	pH	7.7 S.U.	J HT
FC-CCR-MW71-1120	J152664-1	pH	7.2 S.U.	J HT
FC-CCR-MW72-1120	J152664-1	Antimony	0.001 mg/L	U MB
FC-CCR-MW72-1120	J152664-1	Cadmium	0.0001 mg/L	U MB
FC-CCR-MW72-1120	J152664-1	Chromium	0.00071 mg/L	J DL
FC-CCR-MW72-1120	J152664-1	Thallium	0.00011 mg/L	U MB
FC-CCR-MW72-1120	J152664-1	pH	7.1 S.U.	J HT
FC-CCR-MW73-1120	J152664-1	Chromium	0.00073 mg/L	J DL
FC-CCR-MW73-1120	J152664-1	Antimony	0.002 mg/L	U MB
FC-CCR-MW73-1120	J152664-1	Cadmium	0.0002 mg/L	U MB
FC-CCR-MW73-1120	J152664-1	Fluoride	0.063 mg/L	J DL
FC-CCR-MW73-1120	J152664-1	pH	7 S.U.	J HT
FC-CCR-MW83-1120	J152664-1	Beryllium	0.001 mg/L	U MB
FC-CCR-MW83-1120	J152664-1	Antimony	0.001 mg/L	U MB
FC-CCR-MW83-1120	J152664-1	Selenium	0.0025 mg/L	U MB
FC-CCR-MW83-1120	J152664-1	pH	7.3 S.U.	J HT
FC-CCR-MW66-1120	J152664-1	Antimony	0.001 mg/L	U MB
FC-CCR-MW66-1120	J152664-1	Barium	0.016 mg/L	J FD
FC-CCR-MW66-1120	J152664-1	Cadmium	0.00018 mg/L	U MB
FC-CCR-MW66-1120	J152664-1	Molybdenum	0.0014 mg/L	J FD
FC-CCR-MW66-1120	J152664-1	Thallium	0.00038 mg/L	J FD
FC-CCR-MW66-1120	J152664-1	Chromium	0.0014 mg/L	J DL

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Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
FC-CCR-MW66-1120	J152664-1	Cobalt	0.01 mg/L	J FD
FC-CCR-MW66-1120	J152664-1	Fluoride	26 mg/L	J FD
FC-CCR-MW66-1120	J152664-1	pH	7.3 S.U.	J HT
FC-CCR-MW84-1120	J152664-1	Antimony	0.001 mg/L	U MB
FC-CCR-MW84-1120	J152664-1	Chromium	0.00058 mg/L	J DL
FC-CCR-MW84-1120	J152664-1	pH	7.2 S.U.	J HT
FC-CCR-FD01-1120	J152664-1	Arsenic	0.004 mg/L	J FD
FC-CCR-FD01-1120	J152664-1	Barium	0.014 mg/L	J FD
FC-CCR-FD01-1120	J152664-1	Cadmium	0.0002 mg/L	U MB
FC-CCR-FD01-1120	J152664-1	Chromium	0.0018 mg/L	J DL
FC-CCR-FD01-1120	J152664-1	Molybdenum	0.038 mg/L	J FD
FC-CCR-FD01-1120	J152664-1	Thallium	0.001 mg/L	J FD
FC-CCR-FD01-1120	J152664-1	pH	7.4 S.U.	J HT
FC-CCR-MW85-1120	J152664-1	Cadmium	0.0002 mg/L	U MB
FC-CC-MW85-1120	J152664-1	Cobalt	0.00065 mg/L	J DL
FC-CC-MW85-1120	J152664-1	Fluoride	0.35 mg/L	J DL
FC-CC-MW85-1120	J152664-1	pH	7 S.U.	J HT
FC-CCR-MW86-1120	J152664-1	Cadmium	0.0002 mg/L	U MB
FC-CCR-MW86-1120	J152664-1	Chromium	0.0018 mg/L	J DL
FC-CCR-MW86-1120	J152664-1	Fluoride	0.63 mg/L	J DL
FC-CCR-MW86-1120	J152664-1	pH	7.2 S.U.	J HT
FC-CCR-FD02-1120	J152664-1	Antimony	0.001 mg/L	U MB
FC-CCR-FD02-1120	J152664-1	Barium	0.021 mg/L	J FD
FC-CCR-FD02-1120	J152664-1	Cadmium	0.00014 mg/L	U MB
FC-CCR-FD02-1120	J152664-1	Chromium	0.00082 mg/L	J DL
FC-CCR-FD02-1120	J152664-1	Cobalt	0.00058 mg/L	J FD
FC-CCR-FD02-1120	J152664-1	Molybdenum	0.0067 mg/L	J FD
FC-CCR-FD02-1120	J152664-1	Thallium	0.0009 mg/L	J FD
FC-CCR-FD02-1120	J152664-1	Fluoride	21 mg/L	J FD
FC-CCR-FD02-1120	J152664-1	pH	7.3 S.U.	J HT
FC-CCR-MW67-1120	J152664-1	Antimony	0.00027 mg/L	J DL
FC-CCR-MW67-1120	J152664-1	Barium	0.0079 mg/L	J FD
FC-CCR-MW67-1120	J152664-1	Cadmium	0.00025 mg/L	U MB
FC-CCR-MW67-1120	J152664-1	Molybdenum	0.011 mg/L	J FD
FC-CCR-MW67-1120	J152664-1	Thallium	0.00031 mg/L	J FD
FC-CCR-MW67-1120	J152664-1	Arsenic	0.0027 mg/L	J FD
FC-CCR-MW67-1120	J152664-1	pH	7.4 S.U.	J HT
FC-CCR-MW68-1120	J152664-1	Antimony	0.001 mg/L	U MB
FC-CCR-MW68-1120	J152664-1	Cadmium	0.00012 mg/L	U MB
FC-CCR-MW68-1120	J152664-1	Thallium	0.0001 mg/L	U MB

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Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
FC-CCR-MW68-1120	J152664-1	pH	7.2 S.U.	J HT
FC-CCR-MW69-1120	J152664-1	Antimony	0.002 mg/L	U MB
FC-CCR-MW69-1120	J152664-1	Cadmium	0.0002 mg/L	U MB
FC-CCR-MW69-1120	J152664-1	Chromium	0.00092 mg/L	J DL
FC-CCR-MW69-1120	J152664-1	pH	7.3 S.U.	J HT
FC-CCR-MW70-1120	J152664-1	Cadmium	0.0002 mg/L	U MB
FC-CCR-MW70-1120	J152664-1	Chromium	0.001 mg/L	J DL
FC-CCR-MW70-1120	J152664-1	pH	7.1 S.U.	J HT
FC-CCR-MW71-1120	J152664-1	Cadmium	0.0002 mg/L	U MB
FC-CCR-MW71-1120	J152664-1	Cobalt	0.00026 mg/L	J DL
FC-CCR-MW71-1120	J152664-1	Molybdenum	0.00061 mg/L	J DL
FC-CCR-FD01-1120	J152664-1	Cobalt	0.0078 mg/L	J FD
FC-CCR-MW67-1120	J152664-1	Cobalt	0.0009 mg/L	J FD
FC-CCR-CM03-1120	J152659-1	Total Dissolved Solids	21000 mg/L	J HT
FC-CCR-CM03-1120	J152659-1	pH	7.4 S.U.	J HT
FC-CCR-CM04-1120	J152659-1	Total Dissolved Solids	17000 mg/L	J HT
FC-CCR-CM04-1120	J152659-1	pH	7.4 S.U.	J HT
FC-CCR-DMX06-1120	J152659-1	pH	7.3 S.U.	J HT
FC-CCR-MW01-1120	J152659-1	Cobalt	0.0015 mg/L	J FD
FC-CCR-MW01-1120	J152659-1	Molybdenum	0.00051 mg/L	J FD
FC-CCR-MW06-1120	J152659-1	Cobalt	0.00036 mg/L	J DL
FC-CCR-MW06-1120	J152659-1	Fluoride	0.095 mg/L	R LM
FC-CCR-MW06-1120	J152659-1	pH	7.5 S.U.	J HT
FC-CCR-MW15-1120	J152659-1	pH	7.2 S.U.	J HT
FC-CCR-MW16-1120	J152659-1	pH	7.4 S.U.	J HT
FC-CCR-DMX03-1120	J152659-1	Antimony	0.000097 mg/L	J DL
FC-CCR-DMX03-1120	J152659-1	Cadmium	0.000078 mg/L	J DL
FC-CCR-DMX03-1120	J152659-1	Fluoride	0.31 mg/L	J LM, HD
FC-CCR-DMX03-1120	J152659-1	Sulfate	13000 mg/L	J HM
FC-CCR-DMX03-1120	J152659-1	pH	7.5 S.U.	J HT
FC-CCR-FD03-1120	J152659-1	Cobalt	0.00035 mg/L	J DL, FD
FC-CCR-FD03-1120	J152659-1	Molybdenum	0.055 mg/L	J FD
FC-CCR-MW17R-1120	J152659-1	pH	7.5 S.U.	J HT
FC-CCR-MW38R-1120	J152659-1	Fluoride	0.36 mg/L	J DL
FC-CCR-MW38R-1120	J152659-1	pH	7.4 S.U.	J HT
FC-CCR-MW56-1120	J152659-1	pH	7.4 S.U.	J HT
FC-CCR-MW57-1120	J152659-1	pH	7.5 S.U.	J HT
FC-CCR-DMX04-1120	J152659-1	pH	7.7 S.U.	J HT
FC-CCR-CM01-1120	J152659-1	Total Dissolved Solids	19000 mg/L	J HT
FC-CCR-CM01-1120	J152659-1	pH	7.3 S.U.	J HT

**TABLE 3
QUALIFIERS ADDED DURING DATA VALIDATION
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data**

Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
FC-CCR-CM02-1120	J152659-1	Total Dissolved Solids	19000 mg/L	J HT
FC-CCR-CM02-1120	J152659-1	pH	7.4 S.U.	J HT
FC-CCR-MW07-1120	J152660-1	Barium	0.02 mg/L	U MB
FC-CCR-MW07-1120	J152660-1	Antimony	0.00024 mg/L	J DL
FC-CCR-MW07-1120	J152660-1	Arsenic	0.0017 mg/L	J FD
FC-CCR-MW07-1120	J152660-1	Cadmium	0.000069 mg/L	J DL
FC-CCR-MW07-1120	J152660-1	Chromium	0.00055 mg/L	J DL
FC-CCR-MW07-1120	J152660-1	Selenium	0.0076 mg/L	J FD
FC-CCR-MW07-1120	J152660-1	Fluoride	0.33 mg/L	J DL
FC-CCR-MW07-1120	J152660-1	pH	7.3 S.U.	J HT
FC-CCR-MW08-1120	J152660-1	Antimony	0.00034 mg/L	J DL
FC-CCR-MW08-1120	J152660-1	Cobalt	0.0007 mg/L	J DL
FC-CCR-MW08-1120	J152660-1	Thallium	0.00016 mg/L	J DL
FC-CCR-MW08-1120	J152660-1	Fluoride	0.58 mg/L	J DL
FC-CCR-MW08-1120	J152660-1	pH	7.2 S.U.	J HT
FC-CCR-MW49-1120	J152660-1	Barium	0.02 mg/L	U MB
FC-CCR-MW49-1120	J152660-1	Antimony	0.00064 mg/L	J DL
FC-CCR-MW49-1120	J152660-1	Cadmium	0.00023 mg/L	J DL
FC-CCR-MW49-1120	J152660-1	Fluoride	0.66 mg/L	J DL
FC-CCR-MW49-1120	J152660-1	pH	7.5 S.U.	J HT
FC-CCR-MW61-1120	J152660-1	Barium	0.012 mg/L	J DL
FC-CCR-MW61-1120	J152660-1	Antimony	0.001 mg/L	U MB
FC-CCR-MW61-1120	J152660-1	Chromium	0.00049 mg/L	J DL
FC-CCR-MW61-1120	J152660-1	Chloride	340 mg/L	J DL
FC-CCR-MW61-1120	J152660-1	pH	8.6 S.U.	J HT
FC-CCR-MW75-1120	J152660-1	Barium	0.013 mg/L	J DL
FC-CCR-MW75-1120	J152660-1	Antimony	0.001 mg/L	U MB
FC-CCR-MW75-1120	J152660-1	Arsenic	0.0013 mg/L	U MB
FC-CCR-MW75-1120	J152660-1	Chromium	0.00072 mg/L	J DL
FC-CCR-MW75-1120	J152660-1	pH	8.4 S.U.	J HT
FC-CCR-MW87-1120	J152660-1	Antimony	0.0016 mg/L	J DL
FC-CCR-MW87-1120	J152660-1	Thallium	0.00014 mg/L	J DL
FC-CCR-MW87-1120	J152660-1	Fluoride	0.56 mg/L	J DL, LM
FC-CCR-MW87-1120	J152660-1	pH	7.4 S.U.	J HT
FC-CCR-FD05-1120	J152660-1	Barium	0.006 mg/L	J DL
FC-CCR-FD05-1120	J152660-1	Antimony	0.001 mg/L	U MB
FC-CCR-FD05-1120	J152660-1	Arsenic	0.0025 mg/L	J FD
FC-CCR-FD05-1120	J152660-1	Cadmium	0.000062 mg/L	J DL
FC-CCR-FD05-1120	J152660-1	Chromium	0.00062 mg/L	J DL
FC-CCR-FD05-1120	J152660-1	Selenium	0.011 mg/L	J FD

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Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
FC-CCR-FD05-1120	J152660-1	Thallium	0.00012 mg/L	J DL
FC-CCR-FD05-1120	J152660-1	Fluoride	0.37 mg/L	J DL
FC-CCR-FD05-1120	J152660-1	pH	7.4 S.U.	J HT

Notes:

mg/L = milligrams per liter
pCi/L = picoCuries per liter
S.U. = standard units

Qualifier Definitions:

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
U = The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reason codes:

DL = The detected concentration is less than the reporting limit.
FD = Imprecision between primary sample and field duplicate results.
HM = High matrix spike recovery. Result may be biased high.
HT = The maximum recommended hold time was exceeded and the result should be considered an estimated value.
LM = Low MS recovery. Result may be biased low.
MB = The same analyte was detected in the field sample and its associated blank and the concentration detected in the sample is less than five times the concentration detected in the blank.

Appendix A - Data Assessment Checklists by Sample Delivery Group



APS Four Corners CCR Data Review

Laboratory Name:	Radiation Safety Engineering, Inc.		
Sample Delivery Group:	Samples Received 26 June 2020	Review Date:	15 July 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
FC-CCR-MW66-0620	6/18/2020 16:35	64583	
FC-CCR-MW67-0620	6/19/2020 13:46	64584	
FC-CCR-MW68-0620	6/19/2020 14:32	64585	
FC-CCR-MW69-0620	6/19/2020 11:40	64586	
FC-CCR-MW70-0620	6/19/2020 9:53	64587	
FC-CCR-MW71-0620	6/20/2020 9:18	64588	
FC-CCR-MW72-0620	6/19/2020 14:50	64589	
FC-CCR-MW73-0620	6/20/2020 10:12	64590	
FC-CCR-MW83-0620	6/19/2020 15:32	64591	
FC-CCR-MW84-0620	6/20/2020 8:07	64592	
FC-CCR-EW01-0620	6/23/2020 13:00	64615	
FC-CCR-EW05-0620	6/23/2020 13:55	64616	
FC-CCR-EW14-0620	6/23/2020 15:28	64617	
FC-CCR-MW34-0620	6/21/2020 16:11	64618	
FC-CCR-EW15-0620	6/20/2020 17:00	64619	

Analytical Methods:

Analyte	Analyte Group	Method
Radium 226, Radium 228, Total Radium	Radionuclides	GammaRay HPGE

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

APS Four Corners CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?
If No, provide details.

Yes No

Sample Login Matched COC?

Yes No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

Yes No N/A

If no, provide details.

1. Samples analyzed for radionuclides within 180 days of sampling? Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on data usability

APS Four Corners CCR Data Review

2. Target analytes detected in the blank? Yes No N/A
3. LCS recoveries within laboratory-specified limits? Yes No N/A
4. MS performed on a project-specific sample? Yes No N/A
5. Field duplicate collected? Yes No

If Yes:

Parent Sample	Field Duplicate

- a. Is the RPD between primary and duplicate detections $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes

6. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis

- a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

APS Four Corners CCR Data Review

7. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes
 No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	0.8	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

APS Four Corners CCR Data Review

Laboratory Name:	Eurofins Environment Testing America		
Sample Delivery Group:	J143999-1	Review Date:	3 August 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
FC-CCR-MW62-0620	06/19/20 15:43	550-143999-1	
FC-CCR-MW63-0620	06/19/20 16:49	550-143999-2	
FC-CCR-MW64-0620	06/19/20 16:10	550-143999-3	
FC-CCR-MW65-0620	06/19/20 09:11	550-143999-4	

Analytical Methods:

Analyte	Analyte Group	Method
Boron, Calcium	Metals	EPA Method 200.7
Chloride, Fluoride, Sulfate	Anions	EPA Method 300.0
Total dissolved solids (TDS)	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H+ B

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

APS Four Corners CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?
If No, provide details.

Yes No

Sample Login Matched COC?

Yes No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

Yes No N/A

If no, provide details.

APS Four Corners CCR Data Review

1. Samples analyzed for pH within 15 minutes of sampling? Yes No
2. Samples analyzed for TDS within 7 days of sampling? Yes No
3. Samples analyzed for chloride, fluoride, and sulfate within 28 days of sampling? Yes No
4. Samples analyzed for metals within 180 days of sampling? Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on Data Usability
FC-CCR-MW62-0620	pH	7 days, 23 hours, 22 minutes	J-HT
FC-CCR-MW63-0620	pH	7 days, 22 hours, 16 minutes	J-HT
FC-CCR-MW64-0620	pH	7 days, 22 hours, 55 minutes	J-HT
FC-CCR-MW65-0620	pH	11 days, 9 hours	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

5. Target analytes detected in the blank? Yes No N/A

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection
TDS	40.8 mg/L	None

6. LCS recoveries within laboratory-specified limits? Yes No N/A

If No:

Analyte	Recovery	Affected Samples

APS Four Corners CCR Data Review

7. MS performed on a project-specific sample?

Yes No N/A

If Yes:

Spiked Sample ID	Spiked Analyte(s)
FC-CCR-MW64-0620	Chloride, fluoride, sulfate

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes No N/A

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability

8. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate

a. Is the RPD between primary and duplicate results \leq 20% or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes

APS Four Corners CCR Data Review

9. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis
FC-CCR-MW62-0620	TDS

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

APS Four Corners CCR Data Review

10. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	0.8	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

APS Four Corners CCR Data Review

Laboratory Name:	Eurofins Environment Testing America		
Sample Delivery Group:	J144000-1	Review Date:	3 August 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
FC-CCR-MW66-0620	06/18/20 16:35	550-144000-1	
FC-CCR-MW67-0620	06/19/20 13:46	550-144000-2	
FC-CCR-MW68-0620	06/19/20 14:32	550-144000-3	
FC-CCR-MW69-0620	06/19/20 11:40	550-144000-4	
FC-CCR-MW70-0620	06/19/20 09:53	550-144000-5	
FC-CCR-MW71-0620	06/20/20 09:18	550-144000-6	
FC-CCR-MW72-0620	06/19/20 14:50	550-144000-7	
FC-CCR-MW73-0620	06/20/20 10:12	550-144000-8	
FC-CCR-MW83-0620	06/19/20 15:32	550-144000-9	
FC-CCR-MW84-0620	06/20/20 08:07	550-144000-10	
FC-CCR-FD01-0620	06/19/20 15:32	550-144000-11	Field duplicate of FC-CCR-MW83-0620
FC-CCR-MW85-0620	06/19/20 13:03	550-144000-12	
FC-CCR-MW86-0620	06/19/20 08:17	550-144000-13	
FC-CCR-FD02-0620	06/20/20 08:07	550-144000-14	Field duplicate of FC-CCR-MW84-0620

Analytical Methods:

Analyte	Analyte Group	Method
Boron, Calcium, Lithium	Metals	EPA Method 200.7
Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium	Metals	EPA Method 200.8
Chloride, Fluoride, Sulfate	Anions	EPA Method 300.0
Total dissolved solids (TDS)	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H+ B

APS Four Corners CCR Data Review

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Sample Receipt Condition:

COC Signed and Complete?

No

If No, provide details.

Sample Login Matched COC?

No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

No

N/A

If no, provide details.

APS Four Corners CCR Data Review

1. Samples analyzed for pH within 15 minutes of sampling? Yes No
2. Samples analyzed for TDS within 7 days of sampling? Yes No
3. Samples analyzed for chloride, fluoride, and sulfate within 28 days of sampling? Yes No
4. Samples analyzed for metals within 180 days of sampling? Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on Data Usability
FC-CCR-MW66-0620	pH	12 days, 1 hour, 36 minutes	J-HT
FC-CCR-MW67-0620	pH	11 days, 4 hours, 25 minutes	J-HT
FC-CCR-MW68-0620	pH	11 days, 3 hours, 39 minutes	J-HT
FC-CCR-MW69-0620	pH	11 days, 6 hours, 31 minutes	J-HT
FC-CCR-MW70-0620	pH	11 days 8 hours, 18 minutes	J-HT
FC-CCR-MW71-0620	pH	10 days, 8 hours, 53 minutes	J-HT
FC-CCR-MW72-0620	pH	11 days, 3 hours, 21 minutes	J-HT
FC-CCR-MW73-0620	pH	10 days, 7 hours, 59 minutes	J-HT
FC-CCR-MW83-0620	pH	11 days, 2 hours, 39 minutes	J-HT
FC-CCR-MW84-0620	pH	10 days, 10 hours, 4 minutes	J-HT
FC-CCR-FD01-0620	pH	16 days, 21 hours, 13 minutes	J-HT
FC-CCR-MW85-0620	pH	16 days, 23 hours, 42 minutes	J-HT
FC-CCR-MW86-0620	pH	17 days, 4 hours, 28 minutes	J-HT
FC-CCR-FD02-0620	pH	16 days, 4 hours, 38 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

5. Target analytes detected in the blank? Yes No N/A

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection
TDS	40.8 mg/L	None

Note:

mg/L = milligrams per liter

APS Four Corners CCR Data Review

6. LCS recoveries within laboratory-specified limits?

Yes No N/A

If No:

Analyte	Recovery	Affected Samples

7. MS performed on a project-specific sample?

Yes No N/A

If Yes:

Spiked Sample ID	Spiked Analyte(s)
FC-CCR-FD01-0620	Boron, Calcium, Lithium
FC-CCR-MW66-0620	Barium

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes No N/A

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability
FC-CCR-FD01-0620	Calcium	39%, -45%, 19%, -72%	70 to 130%	None-NA4
FC-CCR-MW66-0620	Barium	132%, MSD	70 to 130%	J-HM

Notes:

HM = High MS recovery. Result may be biased high.

NA4 = The concentration detected in the unspiked native sample is greater than four times the spike concentration and it is not possible to assess data usability for this analyte in this sample based on MS recovery.

APS Four Corners CCR Data Review

8. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate
FC-CCR-MW83-0620	FC-CCR-FD01-0620
FC-CCR-MW84-0620	FC-CCR-FD02-0620

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
FC-CCR-MW83-0620 and FC-CCR-FD01-0620					
Chloride	4.0 mg/L	83	83	0.0%	
Fluoride	0.80 mg/L	1.0	1.0	0.0%	
Sulfate	400 mg/L	1,500	1,500	0.0%	
Boron	0.050 mg/L	2.1	2.2	4.7%	
Calcium	2.0 mg/L	290	340	16%	
Lithium	0.20 mg/L	0.27	0.30	11%	
Arsenic	0.0020 mg/L	0.0021	0.0020	4.9%	
Barium	0.0020 mg/L	0.012	0.038	104%	J-FD
Molybdenum	0.0020 mg/L	0.044	0.046	4.4%	
Total Dissolved Solids	20 mg/L	2,800	2,800	0.0%	
pH	1.7 S.U.	7.4	7.3	1.4%	
FC-CCR-MW84-0620 and FC-CCR-FD02-0620					
Chloride	400 mg/L	590	620	5.0%	
Fluoride	0.80 mg/L	0.83	0.83	0.0%	
Sulfate	400 mg/L	6,000	6,100	1.7%	
Boron	0.050 mg/L	45	46	2.2%	
Calcium	2.0 mg/L	480	460	4.3%	
Lithium	0.20 mg/L	0.61	0.46	28%	\pm RL
Arsenic	0.0020 mg/L	0.0020 U	0.0022	NC	\pm RL
Barium	0.0013 mg/L	0.037	0.020	60%	J-FD
Cobalt	0.0020 mg/L	0.0022	0.0022	0.0%	
Molybdenum	0.0020 mg/L	0.0027	0.0025	7.7%	
Selenium	0.0020 mg/L	0.024	0.023	4.3%	
Thallium	0.00040 mg/L	0.00067	0.00069	2.9%	
Total Dissolved Solids	100 mg/L	9,600	9,700	1.0%	
pH	1.7 S.U.	7.3	7.1	2.8%	

APS Four Corners CCR Data Review

Notes:

± RL = The difference between concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

FD = Imprecision between primary and field duplicate results.

NC = not calculable

S.U. = standard units

9. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis
FC-CCR-MW72-0620	TDS
FC-CCR-MW66-0620	pH
FC-CCR-FD01-0620	pH

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

APS Four Corners CCR Data Review

10. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	0.8	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit
FC-CCR-MW86-0620	Lithium	2.0 mg/L

APS Four Corners CCR Data Review

Laboratory Name:	Eurofins Environment Testing America		
Sample Delivery Group:	J144001-1	Review Date:	3 August 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
FC-CCR-MW07-0620	06/23/20 10:28	550-144001-1	
FC-CCR-MW08-0620	06/23/20 09:34	550-144001-2	
FC-CCR-MW49A-0620	06/23/20 08:23	550-144001-3	
FC-CCR-MW52-0620	06/20/20 13:02	550-144001-4	
FC-CCR-MW61-0620	06/21/20 09:35	550-144001-5	
FC-CCR-MW74-0620	06/20/20 11:51	550-144001-6	
FC-CCR-MW75-0620	06/21/20 10:25	550-144001-7	
FC-CCR-MW87-0620	06/23/20 15:02	550-144001-8	
FC-CCR-FD04-0620	06/23/20 09:34	550-144001-9	Field duplicate of FC-CCR-MW08-0620
FC-CCR-EW01-0620	06/23/20 13:00	550-144001-10	
FC-CCR-EW05-0620	06/23/20 13:55	550-144001-11	
FC-CCR-EW14-0620	06/23/20 15:28	550-144001-12	
FC-CCR-MW34-0620	06/23/20 16:11	550-144001-13	
FC-CCR-EW15-0620	06/23/20 17:00	550-144001-14	

Analytical Methods:

Analyte	Analyte Group	Method
Boron, Calcium, Lithium, Magnesium, Potassium, Sodium	Metals	EPA Method 200.7
Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium	Metals	EPA Method 200.8
Chloride, Fluoride, Sulfate	Anions	EPA Method 300.0
Alkalinity	General Chemistry	SM 2320B
Total dissolved solids (TDS)	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H+ B

APS Four Corners CCR Data Review

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Sample Receipt Condition:

COC Signed and Complete?

No

If No, provide details.

Sample Login Matched COC?

No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

No

N/A

If no, provide details.

APS Four Corners CCR Data Review

1. Samples analyzed for pH within 15 minutes of sampling? Yes No
2. Samples analyzed for TDS within 7 days of sampling? Yes No
3. Samples analyzed for alkalinity within 14 days of sampling? Yes No
4. Samples analyzed for chloride, fluoride, and sulfate within 28 days of sampling? Yes No
5. Samples analyzed for metals within 180 days of sampling? Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on Data Usability
FC-CCR-MW07-0620	pH	13 days, 2 hours, 17 minutes	J-HT
FC-CCR-MW08-0620	pH	13 days, 3 hours, 11 minutes	J-HT
FC-CCR-MW49A-0620	pH	13 days, 4 hours, 22 minutes	J-HT
FC-CCR-MW61-0620	pH	15 days, 3 hours, 10 minutes	J-HT
FC-CCR-MW74-0620	pH	16 days, 54 minutes	J-HT
FC-CCR-MW75-0620	pH	15 days, 2 hours, 20 minutes	J-HT
FC-CCR-MW87-0620	pH	12 days, 21 hours, 43 minutes	J-HT
FC-CCR-FD04-0620	pH	13 days, 3 hours, 11 minutes	J-HT
FC-CCR-EW01-0620	pH	12 days, 23 hours, 45 minutes	J-HT
FC-CCR-EW05-0620	pH	12 days, 22 hours, 50 minutes	J-HT
FC-CCR-EW14-0620	pH	12 days, 21 hours, 17 minutes	J-HT
FC-CCR-MW34-0620	pH	12 days, 20 hours, 34 minutes	J-HT
FC-CCR-EW15-0620	pH	12 days, 19 hours, 45 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

6. Target analytes detected in the blank? Yes No N/A

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection
TDS	40.8 mg/L	None

Note:

mg/L = milligrams per liter

APS Four Corners CCR Data Review

7. LCS recoveries within laboratory-specified limits?

Yes No N/A

If No:

Analyte	Recovery	Affected Samples

8. MS performed on a project-specific sample?

Yes No N/A

If Yes:

Spiked Sample ID	Spiked Analyte(s)
FC-CCR-MW08-0620	Chloride, Fluoride, Sulfate

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes No N/A

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability
FC-CCR-MW08-0620	Fluoride	15%, 26%	80 to 120%	UJ-LM
FC-CCR-FD04-0620		41% RPD	≤ 20% RPD	None

Note:

LM = Low MS recovery. Result may be biased low.

APS Four Corners CCR Data Review

9. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate
FC-CCR-MW08-0620	FC-CCR-FD04-0620

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
FC-CCR-MW08-0620 and FC-CCR-FD04-0620					
Chloride	400 mg/L	1,000	970	3.0%	
Sulfate	400 mg/L	9,500	9,300	2.1%	
Boron	0.05 mg/L	18	19	5.4%	
Calcium	20 mg/L	440	460	4.4%	
Magnesium	20 mg/L	830	830	0.0%	
Potassium	5.0 mg/L	35	37	5.6%	
Sodium	5.0 mg/L	3,100	3100	0.0%	
Arsenic	0.0013 mg/L	0.0020 U	0.00077	NC	± RL
Barium	0.0010 mg/L	0.0050	0.0097	64%	J-FD
Cadmium	0.00025 mg/L	0.00040 U	0.00021	NC	± RL
Lead	0.0013 mg/L	0.0020 U	0.00074	NC	± RL
Molybdenum	0.0013 mg/L	0.014	0.011	24%	J-FD
Selenium	0.00050 mg/L	0.00050 U	0.00080	NC	± RL
Alkalinity	6.0 mg/L	490	490	0.0%	
Bicarbonate Alkalinity	6.0 mg/L	490	490	0.0%	
Total Dissolved Solids	100 mg/L	15,000	14,000	6.9%	
pH	1.7 S.U.	7.4	7.3	1.4%	

Notes:

± RL = The difference between concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

FD = Imprecision between primary and field duplicate results.

NC = not calculable

S.U. = standard units

APS Four Corners CCR Data Review

10. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis
FC-CCR-MW34-0620	Alkalinity
FC-CCR-MW75-0620	TDS
FC-CCR-MW07-0620	TDS
FC-CCR-MW87-0620	pH

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

APS Four Corners CCR Data Review

11. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	0.8	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

APS Four Corners CCR Data Review

Laboratory Name:	Eurofins Environment Testing America		
Sample Delivery Group:	J144002-1	Review Date:	3 August 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
FC-CCR-DMX03-0620	06/22/20 08:54	550-144002-1	
FC-CCR-DMX04-0620	06/22/20 13:00	550-144002-2	
FC-CCR-DMX06-0620	06/23/20 12:38	550-144002-3	
FC-CCR-MW01-0620	06/21/20 11:58	550-144002-4	
FC-CCR-MW03-0620	06/21/20 12:40	550-144002-5	
FC-CCR-MW05-0620	06/22/20 09:30	550-144002-6	
FC-CCR-MW06-0620	06/23/20 13:54	550-144002-7	
FC-CCR-MW15-0620	06/23/20 11:57	550-144002-8	
FC-CCR-MW16-0620	06/23/20 11:15	550-144002-9	
FC-CCR-FD03-0620	06/21/20 11:58	550-144002-10	Field duplicate of FC-CCR-MW01-0620
FC-CCR-MW17R0620	06/22/20 12:10	550-144002-11	
FC-CCR-MW18-0620	06/22/20 10:18	550-144002-12	
FC-CCR-MW19-0620	06/21/20 15:37	550-144002-13	
FC-CCR-MW21-0620	06/21/20 13:20	550-144002-14	
FC-CCR-MW23R-0620	06/21/20 16:15	550-144002-15	
FC-CCR-MW36R-0620	06/21/20 16:49	550-144002-16	
FC-CCR-MW38R-0620	06/22/20 15:26	550-144002-17	
FC-CCR-MW56-0620	06/22/20 10:54	550-144002-18	
FC-CCR-MW57-0620	06/22/20 14:46	550-144002-19	
FC-CCR-FD05-0620	06/22/20 15:26	550-144002-20	Field duplicate of FC-CCR-MW38R-0620
FC-CCR-MW60-0620	06/21/20 11:11	550-144002-21	
FC-CCR-MW78S-0620	06/21/20 14:00	550-144002-22	
FC-CCR-MW81-0620	06/21/20 14:32	550-144002-23	
FC-CCR-MW82S-0620	06/21/20 15:06	550-144002-24	

Analytical Methods:

Analyte	Analyte Group	Method
Boron, Calcium, Lithium, Magnesium, Potassium, Sodium	Metals	EPA Method 200.7
Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium	Metals	EPA Method 200.8
Chloride, Fluoride, Sulfate	Anions	EPA Method 300.0
Alkalinity	General Chemistry	SM 2320B
Total dissolved solids (TDS)	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H+ B

APS Four Corners CCR Data Review

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Sample Receipt Condition:

COC Signed and Complete?

No

If No, provide details.

Sample Login Matched COC?

No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

No

N/A

If no, provide details.

APS Four Corners CCR Data Review

1. Samples analyzed for pH within 15 minutes of sampling? Yes No
2. Samples analyzed for TDS within 7 days of sampling? Yes No
3. Samples analyzed for alkalinity within 14 days of sampling? Yes No
4. Samples analyzed for chloride, fluoride, and sulfate within 28 days of sampling? Yes No
5. Samples analyzed for metals within 180 days of sampling? Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on Data Usability
FC-CCR-DMX04-0620	pH	13 days, 23 hours, 45 minutes	J-HT
FC-CCR-DMX06-0620	pH	13 days, 7 minutes	J-HT
FC-CCR-MW06-0620	pH	12 days, 22 hours, 51 minutes	J-HT
FC-CCR-MW15-0620	pH	13 days, 48 minutes	J-HT
FC-CCR-MW16-0620	pH	13 days, 1 hour, 30 minutes	J-HT
FC-CCR-MW17R-0620	pH	14 days, 35 minutes	J-HT
FC-CCR-MW38R-0620	pH	13 days, 21 hours, 19 minutes	J-HT
FC-CCR-MW56-0620	pH	14 days, 1 hour, 51 minutes	J-HT
FC-CCR-MW57-0620	pH	13 days, 21 hours, 59 minutes	J-HT
FC-CCR-FD05-0620	pH	13 days, 21 hours, 19 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

6. Target analytes detected in the blank? Yes No N/A

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection

APS Four Corners CCR Data Review

7. LCS recoveries within laboratory-specified limits?

Yes
 No
 N/A

If No:

Analyte	Recovery	Affected Samples

8. MS performed on a project-specific sample?

Yes
 No
 N/A

If Yes:

Spiked Sample ID	Spiked Analyte(s)
FC-CCR-DMX04-0620	Boron, Potassium, Calcium, Lithium, Magnesium, Sodium
FC-CCR-MW01-0620	Cobalt, Molybdenum
FC-CCR-MW17R-0620	Antimony, Arsenic, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Thallium

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes
 No
 N/A

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability
FC-CCR-DMX04-0620	Calcium	-40%, -2%, -12%	70 to 130%	NA4
FC-CCR-DMX04-0620	Magnesium	-140%, -78%, -95%, 132%	70 to 130%	NA4
FC-CCR-DMX04-0620	Sodium	-511%, -404%	70 to 130%	NA4

Note:

NA4 = The concentration detected in the unspiked native sample is greater than four times the spike concentration and it is not possible to assess data usability for this analyte in this sample based on MS recovery.

APS Four Corners CCR Data Review

9. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate
FC-CCR-MW01-0620	FC-CCR-FD03-0620
FC-CCR-MW38R-0620	FC-CCR-FD05-0620

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
FC-CCR-MW01-0620 and FC-CCR-FD03-0620					
Cobalt	0.00050 mg/L	0.073	0.073	0.0%	
Molybdenum	0.00050 mg/L	0.045	0.041	9.3%	
FC-CCR-MW38R-0620 and FC-CCR-FD05-0620					
Chloride	4.0 mg/L	290	290	0.0%	
Sulfate	400 mg/L	3,700	3,800	2.7%	
Boron	0.050 mg/L	29	30	3.4%	
Calcium	2.0 mg/L	450	440	2.2%	
Lithium	0.20 mg/L	0.49	0.49	0.0%	
Magnesium	2.0 mg/L	290	300	3.4%	
Potassium	0.50 mg/L	20	19	5.1%	
Sodium	5.0 mg/L	920	910	1.1%	
Barium	0.0010 mg/L	0.014	0.016	13%	
Cobalt	0.0010 mg/L	0.24	0.28	15%	
Molybdenum	0.0010 mg/L	0.0057	0.0063	10%	
Alkalinity	5.0 mg/L	120	130	8.0%	
Bicarbonate Alkalinity	5.0 mg/L	120	130	8.0%	
TDS	100 mg/L	5,600	5,400	3.6%	
pH	1.7 S.U.	7.2	7.4	2.7%	

Notes:

mg/L = milligrams per liter

S.U. = standard units

APS Four Corners CCR Data Review

10. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis
FC-CCR-FD05-620	Alkalinity
FC-CCR-MW15-0620	pH

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

APS Four Corners CCR Data Review

11. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	0.8	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit
FC-CCR-MW56-0620	Lithium	2.0 mg/L

APS Four Corners CCR Data Review

Laboratory Name:	Eurofins Environment Testing America		
Sample Delivery Group:	J152664-1	Review Date:	10 December 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
FC-CCR-MW66-1120	11/05/20 11:33	550-152664-1	
FC-CCR-MW67-1120	11/04/20 12:02	550-152664-2	
FC-CCR-MW68-1120	11/04/20 11:18	550-152664-3	
FC-CCR-MW69-1120	11/04/20 08:50	550-152664-4	
FC-CCR-MW70-1120	11/05/20 10:32	550-152664-5	
FC-CCR-MW71-1120	11/05/20 08:52	550-152664-6	
FC-CCR-MW72-1120	11/05/20 09:35	550-152664-7	
FC-CCR-MW73-1120	11/05/20 16:05	550-152664-8	
FC-CCR-MW83-1120	11/04/20 15:15	550-152664-9	
FC-CCR-MW84-1120	11/04/20 14:30	550-152664-10	
FC-CCR-FD01-1120	11/04/20 12:02	550-152664-11	Field duplicate of FC-CCR-MW67-1120
FC-CC-MW85-1120	11/04/20 16:18	550-152664-12	
FC-CCR-MW86-1120	11/05/20 12:33	550-152664-13	
FC-CCR-FD02-1120	11/05/20 11:33	550-152664-14	Field duplicate of FC-CCR-MW66-1120

Analytical Methods:

Analyte	Analyte Group	Method
Beryllium, Boron, Calcium, Lithium	Metals	EPA Method 200.7
Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium	Metals	EPA Method 200.8
Mercury	Metals	EPA Method 245.1
Chloride, Fluoride, Sulfate	Anions	EPA Method 300.0
Total dissolved solids (TDS)	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H+ B

APS Four Corners CCR Data Review

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Sample Receipt Condition:

COC Signed and Complete?

No

If No, provide details.

Sample Login Matched COC?

No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

No

N/A

If no, provide details.

APS Four Corners CCR Data Review

1. Samples analyzed for pH within 15 minutes of sampling? Yes No
2. Samples analyzed for TDS within 7 days of sampling? Yes No
3. Samples analyzed for chloride, fluoride, mercury, and sulfate within 28 days of sampling? Yes No
4. Samples analyzed for other metals within 180 days of sampling? Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on Data Usability
FC-CCR-MW66-1120	pH	6 days, 21 hours, 55 minutes	J-HT
FC-CCR-MW67-1120	pH	7 days, 21 hours, 26 minutes	J-HT
FC-CCR-MW68-1120	pH	7 days, 22 hours, 10 minutes	J-HT
FC-CCR-MW69-1120	pH	8 days, 38 minutes	J-HT
FC-CCR-MW70-1120	pH	6 days, 22 hours, 56 minutes	J-HT
FC-CCR-MW71-1120	pH	7 days, 36 minutes	J-HT
FC-CCR-MW72-1120	pH	11 days, 6 hours, 48 minutes	J-HT
FC-CCR-MW73-1120	pH	11 days, 18 minutes	J-HT
FC-CCR-MW83-1120	pH	12 days, 1 hour, 8 minutes	J-HT
FC-CCR-MW84-1120	pH	12 days, 1 hour, 53 minutes	J-HT
FC-CCR-FD01-1120	pH	12 days, 4 hours, 21 minutes	J-HT
FC-CC-MW85-1120	pH	12 days, 5 minutes	J-HT
FC-CCR-MW86-1120	pH	11 days, 3 hours, 50 minutes	J-HT
FC-CCR-FD02-1120	pH	11 days, 4 hours, 50 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

APS Four Corners CCR Data Review

5. Target analytes detected in the blank?

Yes
 No
 N/A

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection
Beryllium	0.000180 mg/L 0.000110 mg/L	FC-CCR-MW83-1120 (U-MB)
Boron	0.00719 mg/L	
Antimony	0.0000430 mg/L	FC-CCR-FD02-1120 FC-CCR-MW66-1120 FC-CCR-MW68-1120 FC-CCR-MW69-1120 FC-CCR-MW72-1120 FC-CCR-MW73-1120 FC-CCR-MW83-1120 FC-CCR-MW84-1120 (U-MB)
Cadmium	0.0000510 mg/L	FC-CCR-FD01-1120 FC-CCR-FD02-1120 FC-CCR-MW66-1120 FC-CCR-MW67-1120 FC-CCR-MW68-1120 FC-CCR-MW69-1120 FC-CCR-MW70-1120 FC-CCR-MW71-1120 FC-CCR-MW72-1120 FC-CCR-MW73-1120 FC-CCR-MW85-1120 FC-CCR-MW86-1120 (U-MB)
Selenium	0.000516 mg/L	FC-CCR-MW83-1120 (U-MB)
Thallium	0.0000360 mg/L	FC-CCR-MW68-1120 FC-CCR-MW72-1120 (U-MB)

Notes:

MB = The same analyte was detected in the sample and its associated blank and the concentration detected in the sample is less than five times the concentration detected in the blank.

mg/L = milligrams per liter

APS Four Corners CCR Data Review

6. LCS recoveries within laboratory-specified limits?

Yes No N/A

If No:

Analyte	Recovery	Affected Samples

7. MS performed on a project-specific sample?

Yes No

If Yes:

Spiked Sample ID	Spiked Analyte(s)

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes No N/A

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability

APS Four Corners CCR Data Review

8. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate
FC-CCR-MW67-1120	FC-CCR-FD01-1120
FC-CCR-MW66-1120	FC-CCR-FD02-1120

a. Is the RPD between primary and duplicate results \leq 20% or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
FC-CCR-MW67-1120 and FC-CCR-FD01-1120					
Chloride	400 mg/L	2,000	1,900	5.1%	
Fluoride	0.80 mg/L	15	15	0.0%	
Sulfate	400 mg/L	14,000	14,000	0.0%	
Boron	0.25 mg/L	160	170	6.1%	
Calcium	2.0 mg/L	470	470	0.0%	
Lithium	0.020 mg/L	0.40	0.40	0.0%	
Antimony	0.0015 mg/L	0.00027 J	0.0020 U	NC	± RL
Arsenic	0.0010 mg/L	0.0027	0.0040	39%	J-FD
Barium	0.00075 mg/L	0.0079	0.014	56%	J-FD
Cadmium	0.00015 mg/L	0.00025	0.00011 J	78%	± RL
Chromium	0.0010 mg/L	0.0010 U	0.0018 J	NC	± RL
Cobalt	0.00075 mg/L	0.00090	0.0078	159%	J-FD
Molybdenum	0.00075 mg/L	0.011	0.038	110%	J-FD
Selenium	0.0020 mg/L	0.0054	0.0069	24%	± RL
Thallium	0.00015 mg/L	0.00031	0.0010	105%	J-FD
Total Dissolved Solids	200 mg/L	20,000	20,000	0.0%	
pH	1.7 S.U.	7.4	7.4	0.0%	

APS Four Corners CCR Data Review

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
FC-CCR-MW66-1120 and FC-CCR-FD02-1120					
Chloride	400 mg/L	1,700	1,800	5.7%	
Fluoride	0.80 mg/L	26	21	21%	J-FD
Sulfate	400 mg/L	13,000	13,000	0.0%	
Boron	0.10 mg/L	140	140	0.0%	
Calcium	2.0 mg/L	490	490	0.0%	
Lithium	0.020 mg/L	0.36	0.35	2.8%	
Antimony	0.0010 mg/L	0.000078 J	0.000084 J	7.4%	
Arsenic	0.0010 mg/L	0.0037	0.0031	18%	
Barium	0.00050 mg/L	0.016	0.021	27%	J-FD
Cadmium	0.00010 mg/L	0.00018	0.00014	25%	± RL
Chromium	0.0015 mg/L	0.0014 J	0.00082 J	52%	± RL
Cobalt	0.00075 mg/L	0.010	0.00058	178%	J-FD
Molybdenum	0.00050 mg/L	0.0014	0.0067	131%	J-FD
Selenium	0.0020 mg/L	0.0041	0.0053	26%	± RL
Thallium	0.00015 mg/L	0.00038	0.00090	81%	J-FD
Total Dissolved Solids	100 mg/L	18,000	20,000	11%	
pH	1.7 S.U.	7.3	7.3	0.0%	

Notes:

± RL = The difference between analyte concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

FD = Imprecision between primary and field duplicate results.

mg/L = milligrams per liter

NC = not calculable

S.U. = standard units

APS Four Corners CCR Data Review

9. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis
FC-CCR-MW67-1120	TDS
F-CCR-MW72-1120	pH

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

APS Four Corners CCR Data Review

10. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	0.8	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

APS Four Corners CCR Data Review

Laboratory Name:	Eurofins Environment Testing America		
Sample Delivery Group:	J152663-1	Review Date:	10 December 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
FC-CCR-MW62-1120	11/05/20 13:44	550-152663-1	
FC-CCR-MW63-1120	11/05/20 14:21	550-152663-2	
FC-CCR-MW64-1120	11/05/20 14:58	550-152663-3	
FC-CCR-MW65-1120	11/05/20 13:11	550-152663-4	

Analytical Methods:

Analyte	Analyte Group	Method
Boron, Calcium	Metals	EPA Method 200.7
Chloride, Fluoride, Sulfate	Anions	EPA Method 300.0
Total dissolved solids (TDS)	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H+ B

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

APS Four Corners CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?
If No, provide details.

Yes No

Sample Login Matched COC?

If no, provide details.

Yes No

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

If no, provide details.

Yes No N/A

APS Four Corners CCR Data Review

- 1. Samples analyzed for pH within 15 minutes of sampling? Yes No
- 2. Samples analyzed for TDS within 7 days of sampling? Yes No
- 3. Samples analyzed for chloride, fluoride, and sulfate within 28 days of sampling? Yes No
- 4. Samples analyzed for metals within 180 days of sampling? Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on Data Usability
FC-CCR-MW62-1120	pH	6 days, 19 hours, 44 minutes	J-HT
FC-CCR-MW63-1120	pH	6 days, 19 hours, 7 minutes	J-HT
FC-CCR-MW64-1120	pH	6 days, 18 hours, 30 minutes	J-HT
FC-CCR-MW65-1120	pH	6 days, 20 hours, 17 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

- 5. Target analytes detected in the blank? Yes No N/A

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection

- 6. LCS recoveries within laboratory-specified limits? Yes No N/A

If No:

Analyte	Recovery	Affected Samples

APS Four Corners CCR Data Review

7. MS performed on a project-specific sample?

Yes No N/A

If Yes:

Spiked Sample ID	Spiked Analyte(s)
FC-CCR-MW62-1120	Boron
FC-CCR-MW63-1120	Boron, Calcium

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes No N/A

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability
FC-CCR-MW62-1120	Boron	-22%, -14%	70 to 130%	J-LM
FC-CCR-MW63-1120	Calcium	-126, -102%	70 to 130%	None-NA4

Note:

LM = Low MS recovery. Result may be biased low.

NA4 = The concentration detected in the unspiked native sample is greater than four times the spike concentration and it is not possible to assess data usability for this analyte in this sample based on MS recovery.

8. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate

a. Is the RPD between primary and duplicate results \leq 20% or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

APS Four Corners CCR Data Review

9. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis
FC-CCR-MW62-1120	pH

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

APS Four Corners CCR Data Review

10. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	0.8	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

APS Four Corners CCR Data Review

Laboratory Name:	Radiation Safety Engineering, Inc.		
Sample Delivery Group:	Samples Received 10 November 2020	Review Date:	10 December 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
FC-CCR-MW66-1120	11/5/2020 11:33	65459	
FC-CCR-MW67-1120	11/4/2020 12:02	65460	
FC-CCR-MW68-1120	11/4/2020 11:18	65461	
FC-CCR-MW69-1120	11/4/2020 8:50	65462	
FC-CCR-MW70-1120	11/5/2020 10:32	65463	
FC-CCR-MW71-1120	11/5/2020 8:52	65464	
FC-CCR-MW72-1120	11/5/2020 9:35	65465	
FC-CCR-MW73-1120	11/5/2020 16:05	65466	
FC-CCR-MW83-1120	11/4/2020 15:15	65467	
FC-CCR-MW84-1120	11/4/2020 14:30	65468	
FC-CCR-FD01-1120	11/4/2020 12:02	65471	Field duplicate of FC-CCR-MW67-1120
FC-CC-MW85-1120	11/4/2020 16:18	65479	
FC-CCR-MW86-1120	11/5/2020 12:33	65470	
FC-CCR-FD02-1120	11/5/2020 11:33	65489	Field duplicate of FC-CCR-MW66-1120

Analytical Methods:

Analyte	Analyte Group	Method
Radium 226, Radium 228, Total Radium	Radionuclides	GammaRay HPGE

APS Four Corners CCR Data Review

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Sample Receipt Condition:

COC Signed and Complete?

Yes

No

If No, provide details.

Sample Login Matched COC?

Yes

No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

Yes

No

N/A

If no, provide details.

APS Four Corners CCR Data Review

1. Samples analyzed for radionuclides within 180 days of sampling?

Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on data usability

2. Target analytes detected in the blank?

Yes No N/A

3. LCS recoveries within laboratory-specified limits?

Yes No N/A

4. MS performed on a project-specific sample?

Yes No N/A

5. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate
FC-CCR-MW67-1120	FC-CCR-FD01-1120
FC-CCR-MW66-1120	FC-CCR-FD02-1120

a. Is the RPD between primary and duplicate detections $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples FC-CCR-MW67-1120 and FC-CCR-FD01-1120					
Radium 226	0.4 pCi/L	0.7 ± 0.2	0.4 U	NC	± RL
Radium 228	0.4 pCi/L	2.9 ± 0.4	3.5 ± 0.5	19%	
Total Radium	0.8 pCi/L	3.6 ± 0.4	3.5 ± 0.5	2.8%	

APS Four Corners CCR Data Review

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples FC-CCR-MW66-1120 and FC-CCR-FD02-1120					
Radium 226	0.4 pCi/L	1.2 ± 0.2	0.9 ± 0.2	29%	± RL
Radium 228	0.4 pCi/L	1.2 ± 0.4	1.1 ± 0.4	8.7%	
Total Radium	0.8 pCi/L	2.4 ± 0.4	2.0 ± 0.4	18%	

Notes:

± RL = The difference between analyte concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

NC = not calculable

pCi/L = picoCuries per liter

6. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

APS Four Corners CCR Data Review

7. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?



No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	0.8	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

APS Four Corners CCR Data Review

Laboratory Name:	Eurofins Environment Testing America		
Sample Delivery Group:	J152659-1	Review Date:	16 December 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
FC-CCR-DMX03-1120	11/07/20 13:31	550-152659-1	
FC-CCR-DMX04-1120	11/07/20 09:19	550-152659-2	
FC-CCR-DMX06-1120	11/06/20 13:36	550-152659-3	
FC-CCR-MW01-1120	11/08/20 10:36	550-152659-4	
FC-CCR-MW03-1120	11/08/20 11:31	550-152659-5	
FC-CCR-MW05-1120	11/07/20 13:05	550-152659-6	
FC-CCR-MW06-1120	11/07/20 08:33	550-152659-7	
FC-CCR-MW15-1120	11/06/20 12:45	550-152659-8	
FC-CCR-MW16-1120	11/06/20 11:42	550-152659-9	
FC-CCR-FD03-1120	11/08/20 10:36	550-152659-10	Field duplicate of FC-CCR-MW01-1120
FC-CCR-MW17R-1120	11/07/20 10:01	550-152659-11	
FC-CCR-MW18-1120	11/07/20 12:22	550-152659-12	
FC-CCR-MW19-1120	11/07/20 14:46	550-152659-13	
FC-CCR-MW21-1120	11/08/20 12:15	550-152659-14	
FC-CCR-MW23R-1120	11/07/20 14:14	550-152659-15	
FC-CCR-MW36R-1120	11/07/20 11:40	550-152659-16	
FC-CCR-MW38R-1120	11/06/20 16:03	550-152659-17	
FC-CCR-MW56-1120	11/07/20 10:38	550-152659-18	
FC-CCR-MW57-1120	11/06/20 15:13	550-152659-19	
FC-CCR-FD04-1120	11/07/20 11:40	550-152659-20	Field duplicate of FC-CCR-MW36R-1120
FC-CCR-MW60-1120	11/08/20 10:07	550-152659-21	
FC-CCR-MW81-1120	11/08/20 13:28	550-152659-22	
FC-CCR-MW82S-1120	11/08/20 13:56	550-152659-23	
FC-CCR-CM01-1120	11/04/20 13:07	550-152659-24	
FC-CCR-CM02-1120	11/04/20 13:54	550-152659-25	
FC-CCR-CM03-1120	11/04/20 10:33	550-152659-26	
FC-CCR-CM04-1120	11/04/20 09:42	550-152659-27	

APS Four Corners CCR Data Review

Analytical Methods:

Analyte	Analyte Group	Method
Beryllium, Boron, Calcium, Lithium, Magnesium, Potassium, Sodium	Metals	EPA Method 200.7
Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium	Metals	EPA Method 200.8
Chloride, Fluoride, Sulfate	Anions	EPA Method 300.0
Alkalinity	General Chemistry	SM 2320B
Total dissolved solids (TDS)	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H+ B

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UU** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

APS Four Corners CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?
If No, provide details.

Yes No

Sample Login Matched COC?

Yes No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

Yes No N/A

If no, provide details.

APS Four Corners CCR Data Review

1. Samples analyzed for pH within 15 minutes of sampling? Yes No
2. Samples analyzed for TDS within 7 days of sampling? Yes No
3. Samples analyzed for alkalinity within 14 days of sampling? Yes No
4. Samples analyzed for chloride, fluoride, and sulfate within 28 days of sampling? Yes No
5. Samples analyzed for other metals within 180 days of sampling? Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on Data Usability
FC-CCR-DMX03-1120	pH	9 days, 2 hours, 52 minutes	J-HT
FC-CCR-DMX04-1120	pH	9 days, 7 hours, 4 minutes	J-HT
FC-CCR-DMX06-1120	pH	10 days, 2 hours, 47 minutes	J-HT
FC-CCR-MW06-1120	pH	9 days, 7 hours, 50 minutes	J-HT
FC-CCR-MW15-1120	pH	10 days, 3 hours, 38 minutes	J-HT
FC-CCR-MW16-1120	pH	10 days, 4 hours, 41 minutes	J-HT
FC-CCR-MW17R-1120	pH	9 days, 6 hours, 22 minutes	J-HT
FC-CCR-MW38R-1120	pH	10 days, 20 minutes	J-HT
FC-CCR-MW56-1120	pH	9 days, 5 hours, 45 minutes	J-HT
FC-CCR-MW57-1120	pH	10 days, 1 hour, 10 minutes	J-HT
FC-CCR-CM01-1120	pH	12 days, 3 hours, 16 minutes	J-HT
FC-CCR-CM02-1120	pH	12 days, 2 hours, 29 minutes	J-HT
FC-CCR-CM03-1120	pH	12 days, 5 hours, 50 minutes	J-HT
FC-CCR-CM04-1120	pH	12 days, 6 hours, 41 minutes	J-HT
FC-CCR-CM01-1120	TDS	8 days	J-HT
FC-CCR-CM02-1120	TDS	8 days	J-HT
FC-CCR-CM03-1120	TDS	8 days	J-HT
FC-CCR-CM04-1120	TDS	8 days	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

APS Four Corners CCR Data Review

6. Target analytes detected in the blank?

Yes No N/A

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection
Beryllium	0.000140 mg/L	
Sodium	0.0548 mg/L	
Beryllium	0.000230 mg/L	
Boron	0.00695 mg/L	
Calcium	0.0259 mg/L	
Sodium	0.385 mg/L	
Calcium	0.169 mg/L	
Magnesium	0.155 mg/L	
Calcium	0.0244 mg/L	
Sodium	0.111 mg/L	
Selenium	0.000224 mg/L	

Note:

mg/L = milligrams per liter

7. LCS recoveries within laboratory-specified limits?

Yes No N/A

If No:

Analyte	Recovery	Affected Samples

APS Four Corners CCR Data Review

8. MS performed on a project-specific sample?

Yes No

If Yes:

Spiked Sample ID	Spiked Analyte(s)
FC-CCR-MW06-1120	Chloride, fluoride, sulfate
FC-CCR-DMX03-1120	Chloride, fluoride, sulfate
FC-CCR-MW01-1120	Boron, cobalt, molybdenum
FC-CCR-MW36R-1120	Boron, cobalt, molybdenum

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes No N/A

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability
FC-CCR-MW06-1120	Fluoride	57%, 5%	80 to 120%	R-LM
FC-CCR-MW06-1120	Fluoride	171% RPD	20 % RPD	None
FC-CCR-DMX03-1120	Fluoride	13%, 52%	80 to 120%	J-LM
FC-CCR-DMX03-1120	Fluoride	95% RPD	20% RPD	J-HD
FC-CCR-DMX03-1120	Sulfate	127%, 122%	80 to 120%	J-HM
FC-CCR-MW01-1120	Boron	-250%, -296%	70 to 130%	NA4
FC-CCR-MW36R-1120	Boron	-241%, -297%	70 to 130%	NA4

Notes:

HD = Imprecision between laboratory duplicate results.

HM = High matrix spike recovery. Result may be biased high.

LM = Low matrix spike recovery. Result may be biased low.

NA4 = the concentration detected in the unspiked native sample is more than four times the spike concentration and it is not possible to assess data usability for this analyte in this sample based on matrix spike recovery.

APS Four Corners CCR Data Review

9. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate
FC-CCR-MW01-1120	FC-CCR-FD03-1120
FC-CCR-MW36R-1120	FC-CCR-FD04-1120

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
FC-CCR-MW01-1120 and FC-CCR-FD03-1120					
Boron	0.050 mg/L	56	56	0.0%	
Cobalt	0.00050 mg/L	0.0015	0.00035 J	124%	J-FD
Molybdenum	0.00050 mg/L	0.00051	0.055	196%	J-FD
FC-CCR-MW36R-1120 and FC-CCR-FD04-1120					
Boron	0.050 mg/L	53	55	3.7%	
Cobalt	0.0013 mg/L	0.26	0.29	11%	
Molybdenum	0.0013 mg/L	0.0010	0.0018	57%	\pm RL

Notes:

\pm RL = The difference between analyte concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

FD = Imprecision between primary and field duplicate results.

mg/L = milligrams per liter

APS Four Corners CCR Data Review

10. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis
FC-CCR-DMX03-1120	Alkalinity, TDS
FC-CCR-CM01-1120	TDS
FC-CCR-MW57-1120	pH

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

APS Four Corners CCR Data Review

11. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	0.8	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

APS Four Corners CCR Data Review

Laboratory Name:	Eurofins Environment Testing America		
Sample Delivery Group:	J152660-1	Review Date:	16 December 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
FC-CCR-MW07-1120	11/06/20 09:41	550-152660-1	
FC-CCR-MW08-1120	11/06/20 10:37	550-152660-2	
FC-CCR-MW49-1120	11/06/20 08:41	550-152660-3	
FC-CCR-MW52-1120	11/08/20 08:10	550-152660-4	
FC-CCR-MW61-1120	11/08/20 08:45	550-152660-5	
FC-CCR-MW75-1120	11/08/20 09:23	550-152660-6	
FC-CCR-MW87-1120	11/06/20 14:26	550-152660-7	
FC-CCR-FD05-1120	11/06/20 09:41	550-152660-8	Field duplicate of FC-CCR-MW07-1120

Analytical Methods:

Analyte	Analyte Group	Method
Barium, Beryllium, Boron, Calcium, Lithium, Magnesium, Potassium, Sodium	Metals	EPA Method 200.7
Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium	Metals	EPA Method 200.8
Mercury	Metals	EPA Method 245.1
Chloride, Fluoride, Sulfate	Anions	EPA Method 300.0
Alkalinity	General Chemistry	SM 2320B
Total dissolved solids (TDS)	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H+ B

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

APS Four Corners CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?
If No, provide details.

Yes No

Sample Login Matched COC?

If no, provide details.

Yes No

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

If no, provide details.

Yes No N/A

APS Four Corners CCR Data Review

1. Samples analyzed for pH within 15 minutes of sampling? Yes No
2. Samples analyzed for TDS within 7 days of sampling? Yes No
3. Samples analyzed for alkalinity within 14 days of sampling? Yes No
4. Samples analyzed for chloride, fluoride, mercury, and sulfate within 28 days of sampling? Yes No
5. Samples analyzed for other metals within 180 days of sampling? Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on Data Usability
FC-CCR-MW07-1120	pH	5 days, 23 hours, 47 minutes	J-HT
FC-CCR-MW08-1120	pH	5 days, 22 hours, 51 minutes	J-HT
FC-CCR-MW49-1120	pH	6 days, 47 minutes	J-HT
FC-CCR-MW61-1120	pH	4 days, 43 minutes	J-HT
FC-CCR-MW75-1120	pH	4 days, 5 minutes	J-HT
FC-CCR-MW87-1120	pH	5 days, 19 hours, 2 minutes	J-HT
FC-CCR-FD05-1120	pH	5 days, 23 hours, 47 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

6. Target analytes detected in the blank? Yes No N/A

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection
Beryllium	0.000600 mg/L, 0.000140 mg/L	
Boron	0.00760 mg/L, 0.0182 mg/L	
Calcium	0.0526 mg/L, 0.00760 mg/L	
Sodium	0.455 mg/L, 0.0380 mg/L	
Barium (200.7)	0.00156 mg/L, 0.00137 mg/L	FC-CCR-MW07-1120, FC-CCR-MW49-1120 (U-MB)
Arsenic	0.000338 mg/L	FC-CCR-MW75-1120 (U-MB)
Antimony	0.0000460 mg/L	FC-CCR-MW61-1120, FC-CCR-MW75-1120, FC-CCR-FD05-1120 (U-MB)
Selenium	0.000193 mg/L	

Notes:

mg/L = milligrams per liter

MB = The concentration detected in the sample is less than five times the concentration detected in the blank.

APS Four Corners CCR Data Review

7. LCS recoveries within laboratory-specified limits?

Yes No N/A

If No:

Analyte	Recovery	Affected Samples

8. MS performed on a project-specific sample?

Yes No

If Yes:

Spiked Sample ID	Spiked Analyte(s)
FC-CCR-MW87-1120	Chloride, Fluoride, Sulfate

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes No N/A

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability
FC-CCR-MW87-1120	Chloride	16%, -13%	80 to 120%	NA4
	Fluoride	28%, 26%	80 to 120%	J-LM
	Sulfate	-33%, -157%	80 to 120%	NA4

Notes:

LM = Low matrix spike recovery. Result may be biased low.

NA4 = the concentrations detected in the unspiked native sample is more than four times the spike concentration and it is not possible to assess data usability for this analyte in this sample based on matrix spike recovery.

APS Four Corners CCR Data Review

9. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate
FC-CCR-MW07-1120	FC-CCR-FD05-1120

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
FC-CCR-MW07-1120 and FC-CCR-FD05-1120					
Chloride	400 mg/L	600	540	11%	
Fluoride	0.80 mg/L	0.33	0.37	11%	
Sulfate	400 mg/L	5,600	5,800	3.5%	
Lithium	0.020 mg/L	0.90	0.92	2.2%	
Boron	0.050 mg/L	8.6	8.5	1.2%	
Calcium	2.0 mg/L	400	400	0.0%	
Barium	0.020 mg/L	0.0057	0.0060	5.1%	
Antimony	0.0010 mg/L	0.00024	0.00020	18%	
Arsenic	0.00050 mg/L	0.0017	0.0025	38%	J-FD
Cadmium	0.00010 mg/L	0.000069	0.000062	11%	
Chromium	0.0010 mg/L	0.00055	0.00062	12%	
Cobalt	0.00050 mg/L	0.00050	0.00059	17%	
Molybdenum	0.00050 mg/L	0.0052	0.0052	0.0%	
Selenium	0.0010 mg/L	0.0076	0.011	37%	J-FD
Thallium	0.00010 mg/L	0.00010	0.00012	18%	
Total Dissolved Solids	100 mg/L	9,400	8,800	6.6%	
pH	1.7 S.U.	7.3	7.4	1.4%	

Note:

FD = Imprecision between primary and field duplicate results.

mg/L = milligrams per liter

S.U. = standard pH units

APS Four Corners CCR Data Review

10. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis
FC-CCR-MW08-1120	Alkalinity
FC-CCR-MW07-1120	pH

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

APS Four Corners CCR Data Review

11. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	0.8	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	S.U.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

APPENDIX E
GROUNDWATER QUALITY DATA TABLES



Groundwater Sampling Results for the CWTP Monitoring Wells

Well ID	Organization	Sample Type	Date	Appendix III Constituents								Appendix IV Constituents															
				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium		
				Filtered: N	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
					Units: mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
					2	563	710	1.6	6.33-7.04	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
					2	563	710	2.3	6.33-7.04	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
					0.69	498	710	1.5	7.25-7.68	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
					0.69	498	710	2	6.96-8.27	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	03/05/2016	0.44	450	660	< 0.050	--	--	8,500	13,000	0.00016	0.016	0.027	0.00064	0.00019	0.00078	0.0028	< 0.050	0.00061	0.28	< 0.00020	0.0028	0.19	0.00031	--	--
MW-71	URS/CWTP	Background	03/05/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	03/05/2016	0.46	480	670	< 0.050	--	--	8,500	13,000	< 0.0020	0.017	0.025	< 0.0010	0.00010	0.00054	0.0028	< 0.050	0.00021	0.28	< 0.00020	0.0029	0.20	0.00026	--	--
MW-71	URS/CWTP	Background	03/05/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	04/26/2016	0.69	470	670	< 2.0	--	--	13,000	21,000	< 0.0025	0.0064	0.019	< 0.0010	0.00015	< 0.00050	0.0049	< 2.0	< 0.00050	0.45	< 0.00020	0.0018	0.31	0.00047	2.2	--
MW-71	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.2
MW-71	URS/CWTP	Background	06/06/2016	0.70	460	750	< 0.40	6.87	13,000	20,000	0.00012	0.0069	0.020	< 0.0010	0.00015	< 0.00050	0.0041	< 0.40	0.00073	0.41	< 0.00020	0.0014	0.28	0.00043	--	--	--
MW-71	URS/CWTP	Background	08/21/2016	0.56	450	590	< 0.80	7.1	8,400	14,000	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	< 0.80	--	--	--	--	0.00022	0.0066	0.014	< 0.0010	< 0.00020	< 0.0010	< 0.0010	< 0.80	< 0.0010	0.36	< 0.00020	0.0025	0.26	0.00029	--	--
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.6
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	7.1	--	14,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	< 0.40	--	--	--	--	0.00024	0.0076	0.013	< 0.0010	< 0.00020	< 0.0010	< 0.0010	< 0.40	< 0.0010	0.37	< 0.00020	0.0024	0.25	0.00028	--	--
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1
MW-71	URS/CWTP	Background	09/12/2016	0.58	460	570	< 0.40	7.2	9,300	16,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	09/12/2016	--	--	--	< 0.40	--	--	--	--	< 0.0025	< 0.0010	0.013	< 0.0010	< 0.00050	< 0.0025	0.0012	< 0.40	< 0.00050	0.30	< 0.00020	0.0013	0.18	< 0.00050	--	--
MW-71	URS/CWTP	Background	09/12/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1
MW-71	URS/CWTP	Background	10/20/2016	0.55	410	580	< 0.40	7.3	9,100	15,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	10/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4
MW-71	URS/CWTP	Background	02/02/2017	0.62	440	610	< 0.40	7.6	14,000	17,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	02/02/2017	--	--	--	< 0.40	--	--	--	--	< 0.0010	0.0094	0.012	< 0.0010	0.00011	< 0.00050	0.0012	< 0.40	< 0.00050	0.39	< 0.00020	0.00078	0.34	0.00037	--	--
MW-71	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9
MW-71	URS/CWTP	Background	04/17/2017	0.52	400	550	< 2.0	7.6	9,400	15,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2
MW-71	URS/CWTP	Background	04/17/2017	--	--	--	< 2.0	--	--	--	--	< 0.0040	0.0063	0.010	< 0.0010	< 0.00040	< 0.0020	< 0.0020	< 2.0	< 0.0020	0.32	< 0.00020	< 0.0020	0.20	< 0.00040	--	
MW-71	URS/CWTP	Background	05/02/2017	--	--	--	< 13	--	--	--	--	< 0.0010	0.0072	0.0087	< 0.0010	< 0.00010	< 0.0010	< 0.0010	< 13	< 0.00050	0.34	< 0.00020	< 0.0010	0.27	0.00025	--	
MW-71	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.7
MW-71	URS/CWTP	Background	05/29/2017	--	--	--	< 2.0	--	--	--	--	< 0.010	0.0070	0.010	< 0.0010	< 0.0010	< 0.0050	< 0.0050	< 2.0	< 0.0050	0.33	< 0.00020	< 0.0050	0.21	< 0.0010	--	
MW-71	URS/CWTP	Background	05/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6
MW-71	URS/CWTP	Background	06/22/2017	0.60	460	620	--	7.2	4,600	17,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	06/22/2017	--	--	--	< 2.0	--	--	--	--	< 0.0040	0.0063	0.012	< 0.0010	< 0.00040	< 0.0020	< 0.0020	< 2.0	< 0.0020	0.38	< 0.00020	< 0.0020	0.25	< 0.00040	--	
MW-71	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.7
MW-71	URS/CWTP	Background	07/21/2017	0.55	450	590	< 2.0	7.1	10,000	15,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	--	< 0.0040	0.0053	0.0086	< 0.0010	< 0.00040	< 0.0020	< 0.0010	--	< 0.0020	< 0.40	< 0.00020	< 0.0020	0.24	< 0.00040	--	
MW-71	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5
MW-71	URS/CWTP	Background	08/10/2017	0.55	450	560	--	7.4	10,000	15,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	08/10/2017	--	--	--	< 2.0	--	--	--	--	< 0.010	0.0048	0.0092	< 0.0010	< 0.0010	< 0.0040	< 0.0020	< 2.0	< 0.0050	0.34	< 0.00020	< 0.0050	0.21	< 0.0010	--	
MW-71	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
MW-71	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0
MW-71	URS/CWTP	Background	08/17/2017	0.56	480	570	< 2.0	7.3	9,500	15,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	09/11/2017	0.55	470	570	--	7.1	9,900	15,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	09/11/2017	--	--	--	< 2.0	--	--	--	--	< 0.0040	0.0048	0.0089	< 0.0010	< 0.00040	< 0.0040	< 0.0020	< 2.0	< 0.0020	0.32	< 0.00020	< 0.0020	0.20	< 0.00040	--	
MW-71	URS/CWTP	Background	09/11/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
MW-71	URS/CWTP	Background	10/13/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.6
MW-71	URS/CWTP	Background	10/13/2017	0.54	420	570	< 2.0	7.2	10,000	15,000	< 0.010	< 0.0050	0.012	< 0.0010	< 0.0010	< 0.010	< 0.0050	< 2.0	< 0.0050	0.33	< 0.00020	< 0.0050	0.20				

Groundwater Sampling Results for the CWTP Monitoring Wells

Well ID	Organization	Sampling Type	Date	Appendix III Constituents											Appendix IV Constituents																							
				Boron		Calcium		Chloride		Fluoride		pH (Laboratory Measurement)		Sulfate		Total Dissolved Solids		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium						
				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L																mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				<i>CWTP BTW (applicable to MW-62)</i>	2	563	710	1.6	6.33-7.04	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>CWTP BTW (applicable to MW-63)</i>	2	563	710	2.3	6.33-7.04	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>CWTP BTW (applicable to MW-64)</i>	0.69	498	710	1.5	7.25-7.68	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>CWTP BTW (applicable to MW-65)</i>	0.69	498	710	2	6.96-8.27	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	06/20/2020	0.59	450	480	< 0.8	7.3 J	9,900	15,000	< 0.002	0.0048	0.0045	--	< 0.0002	< 0.002	< 0.001	< 0.8	< 0.001	0.75	--	< 0.001	0.15	0.00025	< 0.8													
MW-71	URS/CWTP	Background	11/05/2020	0.59	460	490	< 0.4	7.2 J	10,000	16,000	< 0.002	0.012	0.0092	< 0.001	< 0.0002 U	< 0.002	0.00026 J	< 0.4	< 0.001	0.35	< 0.0002	0.00061 J	0.28	0.00023	< 0.8													
MW-72	URS/CWTP	Background	03/07/2016	0.16	480	490	< 0.050	--	12,000	17,000	< 0.0020	0.011	0.035	< 0.0010	0.000078	0.00044	0.019	< 0.050	0.00013	0.33	< 0.00020	0.011	0.13	0.0012	--													
MW-72	URS/CWTP	Background	03/07/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	04/26/2016	0.22	470	430	< 2.0	--	11,000	19,000	< 0.0025	0.0038	0.034	< 0.0010	< 0.00010	0.0028	0.0087	< 2.0	0.0011	0.40	< 0.00020	0.0093	0.16	0.00081	< 0.8													
MW-72	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	06/06/2016	0.25	570	530	< 0.40	6.99	4,500	9,500	0.00027	0.0084	0.051	< 0.0010	< 0.00020	0.00060	0.0029	< 0.40	< 0.0010	< 0.20	< 0.00020	0.0052	0.39	0.00058	--													
MW-72	URS/CWTP	Background	08/21/2016	0.23	450	440	< 0.40	7.0	10,000	17,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	08/21/2016	--	--	--	< 0.40	--	--	--	0.00026	0.0047	0.016	< 0.0010	< 0.00020	< 0.0010	0.0034	< 0.40	< 0.0010	0.42	< 0.00020	0.0061	0.18	0.0011	--													
MW-72	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	09/13/2016	0.24	470	450	< 0.40	7.1	10,000	17,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	09/13/2016	--	--	--	< 0.40	--	--	--	< 0.0025	< 0.0010	0.019	< 0.0010	< 0.00050	< 0.0025	0.0073	< 0.40	< 0.00050	0.35	< 0.00020	0.011	< 0.0030	0.00056	--													
MW-72	URS/CWTP	Background	09/13/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	10/20/2016	0.23	400	480	< 0.40	7.1	11,000	17,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	10/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	02/02/2017	0.23	420	430	< 0.40	7.5	11,000	16,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	< 0.40	--	--	--	< 0.0010	0.0041	0.0093	< 0.0010	< 0.00010	< 0.0010	0.0025	< 0.40	< 0.00050	0.39	< 0.00020	0.00093	0.13	0.00094	--													
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	02/02/2017	0.21	430	450	< 0.40	7.5	11,000	16,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	< 0.40	--	--	--	< 0.0020	0.0027	0.0084	< 0.0010	< 0.00020	< 0.0010	0.0025	< 0.40	< 0.0010	0.39	< 0.00020	0.0010	0.12	0.00096	--													
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	04/17/2017	0.20	440	450	< 2.0	7.4	610	17,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	04/17/2017	--	--	--	< 2.0	--	--	--	< 0.0040	0.0028	0.0096	< 0.0010	< 0.00040	< 0.0020	0.0024	< 2.0	< 0.0020	0.35	< 0.00020	< 0.0020	0.10	0.00096	--													
MW-72	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	05/02/2017	--	--	--	< 13	--	--	--	< 0.0010	0.0030	0.0079	< 0.0010	< 0.00010	< 0.0010	0.0024	< 13	< 0.00050	0.38	< 0.00020	< 0.0010	0.12	0.00091	--													
MW-72	URS/CWTP	Background	05/29/2017	--	--	--	< 2.0	--	--	--	< 0.010	< 0.0050	0.0093	< 0.0010	< 0.0010	< 0.0050	< 2.0	< 0.0050	0.37	< 0.00020	< 0.0050	0.11	0.0011	--														
MW-72	URS/CWTP	Background	06/22/2017	0.23	450	450	--	7.1	11,000	17,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	< 2.0	--	--	--	< 0.0040	0.0023	0.0077	< 0.0010	< 0.00040	< 0.0020	0.0025	< 2.0	< 0.0020	0.39	< 0.00020	< 0.0020	0.10	0.0010	--													
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	06/22/2017	0.22	440	450	--	7.0	11,000	17,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	< 2.0	--	--	--	< 0.0040	< 0.0020	0.0086	< 0.0010	< 0.00040	< 0.0020	0.0025	< 2.0	< 0.0020	0.40	0.00020	< 0.0020	0.099	0.0011	--													
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	07/21/2017	0.23	450	460	< 2.0	7.1	11,000	17,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--	--												
MW-72	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	< 0.0040	0.0026	0.0073	< 0.0010	< 0.00040	< 0.0020	0.0024	--	< 0.0020	< 0.80	< 0.00020	< 0.0020	0.13	0.00089	--													
MW-72	URS/CWTP	Background	07/21/2017	--	--																																	

Groundwater Sampling Results for the CWTP Monitoring Wells

				Appendix III Constituents							Appendix IV Constituents														
Constituent:				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
Filtered:				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	
CWTP BTW (applicable to MW-62)				2	563	710	1.6	6.33-7.04	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CWTP BTW (applicable to MW-63)				2	563	710	2.3	6.33-7.04	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CWTP BTW (applicable to MW-64)				0.69	498	710	1.5	7.25-7.68	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CWTP BTW (applicable to MW-65)				0.69	498	710	2	6.96-8.27	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	03/17/2019	--	--	--	< 0.80	--	--	--	< 0.0010	0.0034	0.0077	< 0.0010	< 0.00010	< 0.0010	0.0022	< 0.80	< 0.00050	0.36	< 0.00020	0.00095	0.13	0.00095	--
MW-72	URS/CWTP	Background	03/17/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.4	
MW-72	URS/CWTP	Background	05/07/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.4	
MW-72	URS/CWTP	Background	12/02/2019	0.19	430	430	< 0.80	7.1 J	11,000	16000 J	< 0.0020	0.0031	0.0081	< 0.0010	< 0.00020	< 0.0040	0.0023	< 0.80	< 0.0010	0.36	< 0.00020	0.0014	0.11	0.0011	--
MW-72	URS/CWTP	Background	06/19/2020	0.23	440	400	< 0.8	7.2 J	11,000	16,000	< 0.004	0.0044	0.020	--	< 0.0004	< 0.004	0.0027	< 0.8	< 0.001	0.89	--	< 0.002	0.11	0.0011	3.5
MW-72	URS/CWTP	Background	11/05/2020	0.24	470	430	< 0.4	7.1 J	10,000	16,000	< 0.001 U	0.0053	0.018	< 0.001	< 0.0001 U	0.00071 J	0.0013	< 0.4	< 0.0005	0.38	< 0.0002	0.0020	0.11	< 0.00011 U	2.4
MW-73	URS/CWTP	Background	02/02/2017	1.6	480	380	< 0.40	7.5	5,400	8,800	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	02/02/2017	--	--	--	< 0.40	--	--	--	< 0.0010	0.0015	0.043	< 0.0010	0.00017	< 0.0010	0.0073	< 0.40	< 0.00050	0.21	< 0.00020	0.0086	0.029	0.00020	--
MW-73	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.2	
MW-73	URS/CWTP	Background	04/18/2017	1.6	450	340	< 0.80	7.3	5,700	9,200	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	04/18/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8	
MW-73	URS/CWTP	Background	04/18/2017	--	--	--	< 0.80	--	--	--	< 0.0040	< 0.0020	0.027	< 0.0010	< 0.00040	< 0.0020	0.0058	< 0.80	< 0.0020	0.22	< 0.00020	0.0041	0.019	< 0.00040	--
MW-73	URS/CWTP	Background	05/02/2017	--	--	--	< 5.0	--	--	--	< 0.0020	< 0.0010	0.026	< 0.0010	0.00021	< 0.0010	0.0067	< 5.0	< 0.00050	0.24	< 0.00020	0.0037	0.015	0.00024	--
MW-73	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.3	
MW-73	URS/CWTP	Background	05/29/2017	--	--	--	< 0.80	--	--	--	< 0.010	< 0.0050	0.028	< 0.0010	< 0.0010	< 0.0050	< 0.0050	< 0.80	< 0.0050	< 0.20	< 0.00020	< 0.0050	0.043	< 0.0010	--
MW-73	URS/CWTP	Background	05/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	
MW-73	URS/CWTP	Background	06/22/2017	1.6	490	450	--	7.0	6,700	11,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	06/22/2017	--	--	--	< 0.80	--	--	--	< 0.0040	< 0.0020	0.029	< 0.0010	< 0.00040	< 0.0020	0.0066	< 0.80	< 0.0020	0.25	< 0.00020	< 0.0020	0.019	< 0.00040	--
MW-73	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.1	
MW-73	URS/CWTP	Background	07/22/2017	1.6	490	520	< 0.80	7.1	8,000	12,000	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	07/22/2017	--	--	--	< 2.0	--	--	--	< 0.0040	< 0.0020	0.024	< 0.0010	< 0.00040	< 0.0020	0.0067	< 2.0	< 0.0020	< 0.40	< 0.00020	0.0023	0.016	< 0.00040	--
MW-73	URS/CWTP	Background	07/22/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	
MW-73	URS/CWTP	Background	07/22/2017	1.6	490	500	< 2.0	7.1	7,800	12,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	07/22/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8	
MW-73	URS/CWTP	Background	08/10/2017	1.7	500	540	--	7.4	7,700	12,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	08/10/2017	--	--	--	< 0.80	--	--	--	< 0.010	< 0.0020	0.024	< 0.0010	< 0.0010	0.0041	0.0065	< 0.80	< 0.0050	0.27	< 0.00020	< 0.0050	0.017	< 0.0010	--
MW-73	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	
MW-73	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5	
MW-73	URS/CWTP	Background	08/17/2017	1.7	540	550	< 0.80	7.0	7,600	11,000	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	09/10/2017	1.9	520	470	--	7.0	6,000	9,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	09/10/2017	--	--	--	< 0.80	--	--	--	< 0.0040	0.0020	0.023	< 0.0010	< 0.00040	< 0.0040	0.0048	< 0.80	< 0.0020	0.22	< 0.00020	0.0024	0.033	< 0.00040	--
MW-73	URS/CWTP	Background	09/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5	
MW-73	URS/CWTP	Background	10/12/2017	2.0	510	310	< 0.80	7.3	3,900	6,600	< 0.010	< 0.0050	0.024	< 0.0010	< 0.0010	< 0.010	< 0.0050	< 0.80	< 0.0050	< 0.20	< 0.00020	< 0.0050	0.048	< 0.0010	--
MW-73	URS/CWTP	Background	10/12/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9	
MW-73	URS/CWTP	Background	10/12/2017	2.0	510	300	< 0.80	7.1	3,700	6,600	< 0.010	< 0.0050	0.024	< 0.0010	< 0.0010	< 0.010	< 0.0050	< 0.80	< 0.0050	< 0.20	< 0.00020	< 0.0050	0.047	< 0.0010	--
MW-73	URS/CWTP	Background	11/29/2017	1.8	550	420	< 0.80	7.1	5,600	8,900	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	03/16/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	
MW-73	URS/CWTP	Background	06/02/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8	
MW-73	URS/CWTP	Background	06/02/2018	1.6	460	550	< 0.80	6.9	7,100	12,000	--	< 0.010	0.023	--	--	--	< 0.010	< 0.80	--	0.26	< 0.00020	< 0.010	0.011	< 0.0020	--
MW-73	URS/CWTP	Background	11/03/2018	1.7	480	660	< 0.80	7.0	7,500	12,000	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	< 0.00050	0.022	--	--	--	--	0.0078	--	--	0.31	--	0.0026	0.0062	0.00020	2.9
MW-73	URS/CWTP	Background	03/18/2019	--	--	--	< 0.80	--	--	--	< 0.0010	< 0.00050	0.023	< 0.0010	0.00013	< 0.0010	0.0038	< 0.80	< 0.00050	0.26	< 0.00020	0.0017	0.0069	0.00025	--
MW-73	URS/CWTP	Background	03/18/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.6	
MW-73	URS/CWTP	Background	05/06/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.7	
MW-73	URS/CWTP	Background	12/02/2019	1.6	460	520	< 0.80	7.1 J	7,100	11000 J	< 0.0020	< 0.0010	0.020	< 0.0010	< 0.00020	< 0.0040	0.0040	< 0.80	< 0.0010	0.23	< 0.00020	0.0020	0.0086	0.00022	--
MW-73	URS/CWTP	Background	12/02/2019	1.7	480	500	< 0.80	7.0 J	6,900	11000 J	< 0.0020	< 0.0010	0.020	< 0.0010	< 0.00020	< 0.0040	0.0039	< 0.80	< 0.0010	0.23	< 0.00020	0.0021	0.0094	0.00021	--
MW-73	URS/CWTP	Background	06/20/2020	1.7	450	520	< 0.8	7.2 J																	

Groundwater Sampling Results for the CWTP Monitoring Wells

Well ID	Well Type	Status	Date	Appendix III Constituents							Appendix IV Constituents															
				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium	
				Filtered: N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L		
CWTP BTW (applicable to MW-62)				2	563	710	1.6	6.33-7.04	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
CWTP BTW (applicable to MW-63)				2	563	710	2.3	6.33-7.04	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
CWTP BTW (applicable to MW-64)				0.69	498	710	1.5	7.25-7.68	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
CWTP BTW (applicable to MW-65)				0.69	498	710	2	6.96-8.27	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-64	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	< 0.0040	< 0.0020	0.024	< 0.0010	< 0.00040	< 0.0020	< 0.0020	--	< 0.0020	< 0.20	< 0.00020	0.0042	< 0.0020	< 0.00040	--
MW-64	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	
MW-64	CWTP	Downgradient	08/09/2017	0.61	89	52	--	7.8	380	890	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-64	CWTP	Downgradient	08/09/2017	--	--	--	1.5	--	--	--	--	< 0.0010	< 0.00050	0.027	< 0.0010	< 0.00010	< 0.0010	0.0012	1.5	< 0.00050	< 0.20	< 0.00020	0.0047	< 0.00050	< 0.00010	--
MW-64	CWTP	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.8	
MW-64	CWTP	Downgradient	08/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7	
MW-64	CWTP	Downgradient	08/16/2017	0.58	89	53	1.5	7.8	360	790	--	--	--	--	--	--	--	--	--	1.5	--	--	--	--	--	--
MW-64	CWTP	Downgradient	09/09/2017	0.67	90	53	--	7.8	350	810	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-64	CWTP	Downgradient	09/09/2017	--	--	--	1.5	--	--	--	--	< 0.0040	< 0.0020	0.024	< 0.0010	< 0.00040	< 0.0040	< 0.0020	1.5	< 0.0020	< 0.20	< 0.00020	0.0045	< 0.0020	< 0.00040	--
MW-64	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	
MW-64	CWTP	Downgradient	10/13/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	
MW-64	CWTP	Downgradient	10/13/2017	0.62	82	52	1.4	7.7	360	790	< 0.0040	< 0.0050	0.029	< 0.0010	< 0.0010	< 0.010	< 0.0050	1.4	< 0.0050	< 0.20	< 0.00020	0.0051	< 0.0020	< 0.00040	--	
MW-64	CWTP	Downgradient	11/30/2017	0.64	90	52	1.4	7.7	350	780	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--	
MW-64	CWTP	Downgradient	06/03/2018	0.48	85	50	1.4	7.7	390	800	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--	
MW-64	CWTP	Downgradient	11/02/2018	0.64	88	50	1.4	7.8	350	760	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--	
MW-64	CWTP	Downgradient	05/07/2019	0.49	89	--	1.4	8.0	--	790	--	--	--	--	--	--	--	1.4	--	< 0.20	--	--	--	--	--	
MW-64	CWTP	Downgradient	05/07/2019	0.48	88	--	1.4	8.0	--	780	--	--	--	--	--	--	--	1.4	--	< 0.20	--	--	--	--	--	
MW-64	CWTP	Downgradient	12/03/2019	0.56	82	--	1.5	7.8 J	--	720	--	--	--	--	--	--	--	1.5	--	< 0.20	--	--	--	--	--	
MW-64	CWTP	Downgradient	06/19/2020	0.47	77	49	1.3	7.9 J	300	790	--	--	--	--	--	--	--	1.3	--	--	--	--	--	--	--	
MW-64	CWTP	Downgradient	11/05/2020	0.51	73	53	1.6	7.8 J	270	720	--	--	--	--	--	--	--	1.6	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	11/05/2015	0.86	100	52	2.0	--	440	1,000	< 0.0020	0.00071	0.014	< 0.0010	< 0.0010	0.00049	0.0012	2.0	< 0.0010	0.054	< 0.00020	0.0093	0.00034	< 0.0010	--	
MW-65	CWTP	Downgradient	11/05/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	04/27/2016	--	--	--	1.8	--	--	--	< 0.0025	< 0.00050	0.017	< 0.0010	< 0.00010	0.0015	0.0012	1.8	< 0.00050	< 0.20	< 0.00020	0.0078	< 0.00050	< 0.00010	< 0.8	
MW-65	CWTP	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.8	
MW-65	CWTP	Downgradient	06/05/2016	0.75	100	54	2.0	7.41	460	1,100	< 0.00010	< 0.00050	0.014	< 0.0010	< 0.00010	< 0.00050	0.0011	2.0	< 0.00050	< 0.20	< 0.00020	0.0083	< 0.00050	< 0.00010	--	
MW-65	CWTP	Downgradient	08/20/2016	0.79	100	52	1.7	7.4	450	1,000	--	--	--	--	--	--	--	1.7	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	08/20/2016	--	--	--	2.1	--	--	--	< 0.00010	< 0.00050	0.019	< 0.0010	< 0.00010	< 0.00050	0.0012	2.1	< 0.00050	< 0.20	< 0.00020	0.013	< 0.00050	< 0.00010	--	
MW-65	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	
MW-65	CWTP	Downgradient	09/12/2016	0.83	110	54	2.0	7.5	480	1,100	--	--	--	--	--	--	--	2.0	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	09/12/2016	--	--	--	2.0	--	--	--	< 0.0025	< 0.0010	0.013	< 0.0010	< 0.00050	< 0.0025	0.0014	2.0	< 0.00050	< 0.20	< 0.00020	0.0084	< 0.0030	< 0.00050	--	
MW-65	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0	
MW-65	CWTP	Downgradient	10/19/2016	0.77	95	54	2.0	7.6	450	1,000	--	--	--	--	--	--	--	2.0	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	10/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	
MW-65	CWTP	Downgradient	02/01/2017	0.76	96	51	1.8	7.9	410	970	--	--	--	--	--	--	--	1.8	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	02/01/2017	--	--	--	2.0	--	--	--	< 0.0010	< 0.00050	0.014	< 0.0010	< 0.00010	< 0.00050	0.0011	2.0	< 0.00050	< 0.20	< 0.00020	0.0086	< 0.00050	< 0.00010	--	

Groundwater Sampling Results for the CWTP Monitoring Wells

Constituent:				Additional Analyses									
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity(as CaCO3)	Alkalinity, Phenolphthalein ,as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium
Filtered:	N	N	N	N	N	N	N	N	N	N	N	N	
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L		
CWTP BTV (applicable to MW-62)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-63)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-64)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-65)				--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	03/05/2016	490	< 5.0	--	490	--	1,600	23	--	880	
MW-71	URS/CWTP	Background	03/05/2016	--	--	--	--	--	--	0.656	1.2	--	
MW-71	URS/CWTP	Background	03/05/2016	410	< 5.0	--	410	--	1,700	24	--	940	
MW-71	URS/CWTP	Background	03/05/2016	--	--	--	--	--	--	0.717	1.26	--	
MW-71	URS/CWTP	Background	04/26/2016	--	--	--	--	--	--	0.7	1.5	--	
MW-71	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	1.1	2.1	--	
MW-71	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	0.6	1.0	--	
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	0.3	0.8	--	
MW-71	URS/CWTP	Background	09/12/2016	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	09/12/2016	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	09/12/2016	--	--	--	--	--	0.5	1.6	--	--	
MW-71	URS/CWTP	Background	10/20/2016	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	10/20/2016	--	--	--	--	--	0.4	< 0.7	--	--	
MW-71	URS/CWTP	Background	02/02/2017	550	< 6.0	< 6.0	550	< 6.0	2,300	32	--	1,200	
MW-71	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	< 0.4	1.9	--	
MW-71	URS/CWTP	Background	04/17/2017	420	< 6.0	< 6.0	420	< 6.0	1,800	25	--	980	
MW-71	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	< 0.4	1.2	--	
MW-71	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	0.7	< 0.6	--	
MW-71	URS/CWTP	Background	05/29/2017	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	05/29/2017	--	--	--	--	--	--	< 0.4	< 0.6	--	
MW-71	URS/CWTP	Background	06/22/2017	540	< 6.0	< 6.0	540	< 6.0	2,400	31	--	1,200	
MW-71	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	1.2	1.5	--	
MW-71	URS/CWTP	Background	07/21/2017	420	< 6.0	< 6.0	420	< 6.0	1,800	27	--	1,100	
MW-71	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	< 0.5	< 0.4	--	
MW-71	URS/CWTP	Background	08/10/2017	420	< 6.0	< 6.0	420	< 6.0	2,000	27	--	1,100	
MW-71	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	< 0.4	< 0.7	--	
MW-71	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	< 0.4	2.0	--	
MW-71	URS/CWTP	Background	08/17/2017	430	< 6.0	< 6.0	430	< 6.0	1,800	30	--	1,100	
MW-71	URS/CWTP	Background	09/11/2017	420	< 6.0	< 6.0	420	< 6.0	1,800	26	--	1,100	
MW-71	URS/CWTP	Background	09/11/2017	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	09/11/2017	--	--	--	--	--	--	< 0.4	< 0.7	--	
MW-71	URS/CWTP	Background	10/13/2017	--	--	--	--	--	--	0.8	0.8	--	
MW-71	URS/CWTP	Background	10/13/2017	430	< 6.0	< 6.0	430	< 6.0	1,700	26	--	1,000	
MW-71	URS/CWTP	Background	11/30/2017	430	< 6.0	< 6.0	430	< 6.0	1,700	29	--	1,100	
MW-71	URS/CWTP	Background	03/16/2018	--	--	--	--	--	--	< 1.0	0.8	--	
MW-71	URS/CWTP	Background	06/02/2018	--	--	--	--	--	--	0.4	1.5	--	
MW-71	URS/CWTP	Background	06/02/2018	430	< 6.0	< 6.0	430	< 6.0	2,000	27	--	1,000	
MW-71	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	1.2	< 0.7	--	
MW-71	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	1.8	< 0.7	--	
MW-71	URS/CWTP	Background	03/18/2019	--	--	--	--	--	--	--	--	--	
MW-71	URS/CWTP	Background	03/18/2019	--	--	--	--	--	--	< 0.4	< 0.7	--	
MW-71	URS/CWTP	Background	05/06/2019	--	--	--	--	--	--	< 0.4	1.0	--	
MW-71	URS/CWTP	Background	12/02/2019	--	--	--	--	--	--	--	--	--	

Groundwater Sampling Results for the CWTP Monitoring Wells

Constituent:				Additional Analyses									
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity(as CaCO3)	Alkalinity, Phosphophatein ,as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium
Filtered:				N	N	N	N	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L
CWTP BTV (applicable to MW-62)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-63)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-64)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-65)				--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	06/20/2020	--	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-71	URS/CWTP	Background	11/05/2020	--	--	--	--	--	--	--	< 0.5	< 0.8	--
MW-72	URS/CWTP	Background	03/07/2016	620	< 5.0	--	620	--	2,300	29	--	--	720
MW-72	URS/CWTP	Background	03/07/2016	--	--	--	--	--	--	--	1.06	1.85	--
MW-72	URS/CWTP	Background	04/26/2016	--	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-72	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	--	0.5	0.8	--
MW-72	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	0.5	2.7	--
MW-72	URS/CWTP	Background	09/13/2016	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	09/13/2016	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	09/13/2016	--	--	--	--	--	--	--	0.5	3.4	--
MW-72	URS/CWTP	Background	10/20/2016	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	10/20/2016	--	--	--	--	--	--	--	0.7	3.5	--
MW-72	URS/CWTP	Background	02/02/2017	560	< 6.0	< 6.0	560	< 6.0	2,200	27	--	--	700
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	0.7	3.3	--
MW-72	URS/CWTP	Background	02/02/2017	560	< 6.0	< 6.0	560	< 6.0	2,300	28	--	--	710
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	0.6	0.6	--
MW-72	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	--	0.6	2.9	--
MW-72	URS/CWTP	Background	04/17/2017	600	< 6.0	< 6.0	600	< 6.0	2,400	29	--	--	760
MW-72	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	0.7	3.1	--
MW-72	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	05/29/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	06/22/2017	600	< 6.0	< 6.0	600	< 6.0	2,400	29	--	--	760
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	0.6	2.2	--
MW-72	URS/CWTP	Background	06/22/2017	610	< 6.0	< 6.0	610	< 6.0	2,500	30	--	--	770
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	0.5	2.5	--
MW-72	URS/CWTP	Background	07/21/2017	600	< 6.0	< 6.0	600	< 6.0	2,300	29	--	--	760
MW-72	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	< 0.5	1.7	--
MW-72	URS/CWTP	Background	08/10/2017	600	< 6.0	< 6.0	600	< 6.0	2,500	30	--	--	780
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	< 0.4	2.8	--
MW-72	URS/CWTP	Background	08/10/2017	610	< 6.0	< 6.0	610	< 6.0	2,600	30	--	--	800
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	< 0.4	1.7	--
MW-72	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	--	< 0.4	2.1	--
MW-72	URS/CWTP	Background	08/17/2017	610	< 6.0	< 6.0	610	< 6.0	2,300	33	--	--	790
MW-72	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	--	0.9	2.1	--
MW-72	URS/CWTP	Background	08/17/2017	600	< 6.0	< 6.0	600	< 6.0	2,400	32	--	--	770
MW-72	URS/CWTP	Background	09/10/2017	610	< 6.0	< 6.0	610	< 6.0	2,300	28	--	--	730
MW-72	URS/CWTP	Background	09/10/2017	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	09/10/2017	--	--	--	--	--	--	--	< 0.4	2.3	--
MW-72	URS/CWTP	Background	10/13/2017	--	--	--	--	--	--	--	0.7	2.4	--
MW-72	URS/CWTP	Background	10/13/2017	610	< 6.0	< 6.0	610	< 6.0	2,300	28	--	--	740
MW-72	URS/CWTP	Background	11/29/2017	590	< 6.0	< 6.0	590	< 6.0	2,300	28	--	--	760
MW-72	URS/CWTP	Background	03/16/2018	--	--	--	--	--	--	--	< 1.0	1.9	--
MW-72	URS/CWTP	Background	06/02/2018	--	--	--	--	--	--	--	< 0.4	2.8	--
MW-72	URS/CWTP	Background	06/02/2018	610	< 6.0	< 6.0	610	< 6.0	2,300	26	--	--	670
MW-72	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	0.7	1.0	--
MW-72	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	0.5	1.5	--

Groundwater Sampling Results for the CWTP Monitoring Wells

Constituent:				Additional Analyses									
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity(as CaCO3)	Alkalinity, Phosphaterein ,as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium
Filtered:				N	N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L
CWTP BTV (applicable to MW-62)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-63)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-64)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-65)				--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	03/17/2019	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	03/17/2019	--	--	--	--	--	--	--	< 0.4	2.4	--
MW-72	URS/CWTP	Background	05/07/2019	--	--	--	--	--	--	--	< 0.4	3.4	--
MW-72	URS/CWTP	Background	12/02/2019	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	06/19/2020	--	--	--	--	--	--	--	0.9	2.6	--
MW-72	URS/CWTP	Background	11/05/2020	--	--	--	--	--	--	--	0.7	1.7	--
MW-73	URS/CWTP	Background	02/02/2017	560	< 6.0	< 6.0	560	< 6.0	580	28	--	--	1,100
MW-73	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	1.0	2.2	--
MW-73	URS/CWTP	Background	04/18/2017	650	< 6.0	< 6.0	650	< 6.0	630	29	--	--	1,200
MW-73	URS/CWTP	Background	04/18/2017	--	--	--	--	--	--	--	0.7	1.1	--
MW-73	URS/CWTP	Background	04/18/2017	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	0.5	1.8	--
MW-73	URS/CWTP	Background	05/29/2017	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	05/29/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-73	URS/CWTP	Background	06/22/2017	780	< 6.0	< 6.0	780	< 6.0	750	34	--	--	1,600
MW-73	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	1.5	1.6	--
MW-73	URS/CWTP	Background	07/22/2017	800	< 6.0	< 6.0	800	< 6.0	840	37	--	--	1,800
MW-73	URS/CWTP	Background	07/22/2017	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	07/22/2017	--	--	--	--	--	--	--	< 0.5	2.0	--
MW-73	URS/CWTP	Background	07/22/2017	800	< 6.0	< 6.0	800	< 6.0	850	37	--	--	1,800
MW-73	URS/CWTP	Background	07/22/2017	--	--	--	--	--	--	--	0.7	1.1	--
MW-73	URS/CWTP	Background	08/10/2017	800	< 6.0	< 6.0	800	< 6.0	820	36	--	--	1,800
MW-73	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	< 0.4	1.1	--
MW-73	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	--	< 0.4	1.5	--
MW-73	URS/CWTP	Background	08/17/2017	800	< 6.0	< 6.0	800	< 6.0	860	41	--	--	1,800
MW-73	URS/CWTP	Background	09/10/2017	730	< 6.0	< 6.0	730	< 6.0	680	30	--	--	1,300
MW-73	URS/CWTP	Background	09/10/2017	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	09/10/2017	--	--	--	--	--	--	--	1.2	1.3	--
MW-73	URS/CWTP	Background	10/12/2017	--	--	--	--	--	--	--	< 0.3	0.9	--
MW-73	URS/CWTP	Background	10/12/2017	480	< 6.0	< 6.0	480	< 6.0	440	20	--	--	600
MW-73	URS/CWTP	Background	10/12/2017	--	--	--	--	--	--	--	0.7	1.2	--
MW-73	URS/CWTP	Background	10/12/2017	480	< 6.0	< 6.0	480	< 6.0	430	20	--	--	590
MW-73	URS/CWTP	Background	11/29/2017	650	< 6.0	< 6.0	650	< 6.0	640	32	--	--	1,200
MW-73	URS/CWTP	Background	03/16/2018	--	--	--	--	--	--	--	< 1.0	2.6	--
MW-73	URS/CWTP	Background	06/02/2018	--	--	--	--	--	--	--	0.8	2.0	--
MW-73	URS/CWTP	Background	06/02/2018	800	< 6.0	< 6.0	800	< 6.0	710	34	--	--	1,600
MW-73	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	1.5	1.4	--
MW-73	URS/CWTP	Background	03/18/2019	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	03/18/2019	--	--	--	--	--	--	--	< 0.4	1.6	--
MW-73	URS/CWTP	Background	05/06/2019	--	--	--	--	--	--	--	< 0.4	1.7	--
MW-73	URS/CWTP	Background	12/02/2019	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	12/02/2019	--	--	--	--	--	--	--	--	--	--
MW-73	URS/CWTP	Background	06/20/2020	--	--	--	--	--	--	--	1.5	1.9	--
MW-73	URS/CWTP	Background	11/05/2020	--	--	--	--	--	--	--	0.6	2.2	--
MW-62	CWTP	Downgradient	11/09/2015	1,100	< 5.0	--	1,100	--	340	11	--	--	710
MW-62	CWTP	Downgradient	11/09/2015	--	--	--	--	--	--	--	< 0.0145	1.59	--
MW-62	CWTP	Downgradient	04/27/2016	--	--	--	--	--	--	--	0.6	< 0.8	--
MW-62	CWTP	Downgradient	06/05/2016	--	--	--	--	--	--	--	< 0.4	1.1	--
MW-62	CWTP	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	< 0.2	1.4	--
MW-62	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	< 0.4	1.3	--

Groundwater Sampling Results for the CWTP Monitoring Wells

				Additional Analyses									
Constituent:				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity(as CaCO3)	Alkalinity, Phosphophatein as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium
Filtered:				N	N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L
<i>CWTP BTV (applicable to MW-62)</i>				--	--	--	--	--	--	--	--	--	--
<i>CWTP BTV (applicable to MW-63)</i>				--	--	--	--	--	--	--	--	--	--
<i>CWTP BTV (applicable to MW-64)</i>				--	--	--	--	--	--	--	--	--	--
<i>CWTP BTV (applicable to MW-65)</i>				--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	10/19/2016	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	10/19/2016	--	--	--	--	--	--	--	< 0.4	0.9	--
MW-62	CWTP	Downgradient	02/01/2017	740	< 6.0	< 6.0	740	< 6.0	340	10	--	--	660
MW-62	CWTP	Downgradient	02/01/2017	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	02/01/2017	--	--	--	--	--	--	--	0.4	1.5	--
MW-62	CWTP	Downgradient	04/16/2017	800	< 6.0	< 6.0	800	< 6.0	350	9.4	--	--	710
MW-62	CWTP	Downgradient	04/16/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-62	CWTP	Downgradient	04/16/2017	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	05/01/2017	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	05/01/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-62	CWTP	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	05/29/2017	--	--	--	--	--	--	--	0.8	0.8	--
MW-62	CWTP	Downgradient	06/21/2017	850	< 6.0	< 6.0	850	< 6.0	360	9.3	--	--	710
MW-62	CWTP	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	06/21/2017	--	--	--	--	--	--	--	< 0.3	< 0.6	--
MW-62	CWTP	Downgradient	07/21/2017	760	< 6.0	< 6.0	760	< 6.0	340	10	--	--	650
MW-62	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	--	< 0.3	< 0.6	--
MW-62	CWTP	Downgradient	08/09/2017	770	< 6.0	< 6.0	770	< 6.0	330	10	--	--	640
MW-62	CWTP	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	08/09/2017	--	--	--	--	--	--	--	< 0.5	< 0.7	--
MW-62	CWTP	Downgradient	08/16/2017	--	--	--	--	--	--	--	< 0.5	1.0	--
MW-62	CWTP	Downgradient	08/16/2017	760	< 6.0	< 6.0	760	< 6.0	340	12	--	--	640
MW-62	CWTP	Downgradient	09/09/2017	800	< 6.0	< 6.0	800	< 6.0	340	10	--	--	640
MW-62	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-62	CWTP	Downgradient	10/13/2017	--	--	--	--	--	--	--	< 0.4	0.7	--
MW-62	CWTP	Downgradient	10/13/2017	850	< 6.0	< 6.0	850	< 6.0	340	10	--	--	680
MW-62	CWTP	Downgradient	11/30/2017	800	< 6.0	< 6.0	800	< 6.0	360	10	--	--	740
MW-62	CWTP	Downgradient	04/06/2018	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	06/03/2018	750	< 6.0	< 6.0	750	< 6.0	320	8.5	--	--	640
MW-62	CWTP	Downgradient	11/02/2018	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	05/07/2019	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	06/19/2020	--	--	--	--	--	--	--	--	--	--
MW-62	CWTP	Downgradient	11/05/2020	--	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	11/04/2015	540	< 5.0	--	540	--	260	7.4	--	--	410
MW-63	CWTP	Downgradient	11/04/2015	--	--	--	--	--	--	--	0.408	0.89	--
MW-63	CWTP	Downgradient	04/27/2016	--	--	--	--	--	--	--	0.6	< 0.8	--
MW-63	CWTP	Downgradient	06/05/2016	--	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-63	CWTP	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	0.3	1.8	--
MW-63	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	< 0.4	1.0	--
MW-63	CWTP	Downgradient	10/19/2016	--	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	10/19/2016	--	--	--	--	--	--	--	< 0.2	< 0.7	--
MW-63	CWTP	Downgradient	10/20/2016	--	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	10/20/2016	--	--	--	--	--	--	0.4	1.4	--	--
MW-63	CWTP	Downgradient	01/31/2017	470	< 6.0	< 6.0	470	< 6.0	260	5.6	--	--	360
MW-63	CWTP	Downgradient	01/31/2017	--	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	01/31/2017	--	--	--	--	--	--	--	< 0.4	0.7	--
MW-63	CWTP	Downgradient	01/31/2017	470	< 6.0	< 6.0	470	< 6.0	260	5.5	--	--	350
MW-63	CWTP	Downgradient	01/31/2017	--	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	01/31/2017	--	--	--	--	--	--	--	< 0.4	1.7	--
MW-63	CWTP	Downgradient	04/17/2017	500	< 6.0	< 6.0	500	< 6.0	270	5.7	--	--	360
MW-63	CWTP	Downgradient	04/17/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-63	CWTP	Downgradient	04/17/2017	--	--	--	--	--	--	--	--	--	--

Groundwater Sampling Results for the CWTP Monitoring Wells

				Additional Analyses								
	Constituent:	Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity(as CaCO3)	Alkalinity, Phosphophalein ,as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium	
		Filtered:	N	N	N	N	N	N	N	N	N	N
	Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	
MW-63	CWTP	Downgradient	05/02/2017	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	05/02/2017	--	--	--	--	--	--	< 0.4	0.8	--
MW-63	CWTP	Downgradient	05/28/2017	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	05/28/2017	--	--	--	--	--	--	0.5	< 0.6	--
MW-63	CWTP	Downgradient	05/28/2017	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	05/28/2017	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-63	CWTP	Downgradient	06/21/2017	500	< 6.0	< 6.0	500	< 6.0	280	6.3	--	380
MW-63	CWTP	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	06/21/2017	--	--	--	--	--	--	0.4	< 0.6	--
MW-63	CWTP	Downgradient	07/21/2017	480	< 6.0	< 6.0	480	< 6.0	280	6.9	--	380
MW-63	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	< 0.3	0.8	--
MW-63	CWTP	Downgradient	08/09/2017	490	< 6.0	< 6.0	490	< 6.0	280	6.9	--	390
MW-63	CWTP	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	08/09/2017	--	--	--	--	--	--	< 0.5	< 0.7	--
MW-63	CWTP	Downgradient	08/16/2017	--	--	--	--	--	--	< 0.5	< 0.7	--
MW-63	CWTP	Downgradient	08/16/2017	490	< 6.0	< 6.0	490	< 6.0	300	7.7	--	400
MW-63	CWTP	Downgradient	09/09/2017	490	< 6.0	< 6.0	490	< 6.0	270	6.9	--	360
MW-63	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	< 0.4	0.7	--
MW-63	CWTP	Downgradient	10/13/2017	--	--	--	--	--	--	0.6	1.2	--
MW-63	CWTP	Downgradient	10/13/2017	490	< 6.0	< 6.0	490	< 6.0	250	6.7	--	340
MW-63	CWTP	Downgradient	11/30/2017	500	< 6.0	< 6.0	500	< 6.0	270	6.6	--	360
MW-63	CWTP	Downgradient	04/06/2018	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	06/03/2018	500	< 6.0	< 6.0	500	< 6.0	260	5.4	--	320
MW-63	CWTP	Downgradient	11/02/2018	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	05/07/2019	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	06/19/2020	--	--	--	--	--	--	--	--	--
MW-63	CWTP	Downgradient	11/05/2020	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	11/05/2015	320	< 5.0	--	320	--	34	6.1	--	120
MW-64	CWTP	Downgradient	11/05/2015	--	--	--	--	--	--	0.339	< 0.392	--
MW-64	CWTP	Downgradient	04/27/2016	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-64	CWTP	Downgradient	06/05/2016	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-64	CWTP	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	< 0.3	< 0.7	--
MW-64	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	< 0.4	0.8	--
MW-64	CWTP	Downgradient	10/19/2016	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	10/19/2016	--	--	--	--	--	--	< 0.3	< 0.5	--
MW-64	CWTP	Downgradient	01/31/2017	230	< 6.0	< 6.0	230	< 6.0	34	5.7	--	120
MW-64	CWTP	Downgradient	01/31/2017	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	01/31/2017	--	--	--	--	--	--	< 0.4	1.7	--
MW-64	CWTP	Downgradient	04/17/2017	220	< 6.0	< 6.0	220	< 6.0	35	5.8	--	120
MW-64	CWTP	Downgradient	04/17/2017	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-64	CWTP	Downgradient	04/17/2017	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	05/02/2017	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	05/02/2017	--	--	--	--	--	--	0.7	< 0.6	--
MW-64	CWTP	Downgradient	05/02/2017	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	05/02/2017	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-64	CWTP	Downgradient	05/28/2017	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	05/28/2017	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-64	CWTP	Downgradient	06/21/2017	220	< 6.0	< 6.0	220	< 6.0	36	5.8	--	120
MW-64	CWTP	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	06/21/2017	--	--	--	--	--	--	< 0.3	< 0.6	--
MW-64	CWTP	Downgradient	07/21/2017	210	< 6.0	< 6.0	210	< 6.0	37	6.2	--	130

Groundwater Sampling Results for the CWTP Monitoring Wells

				Additional Analyses									
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity(as CaCO3)	Alkalinity, Phosphatase, as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium
Constituent:				N	N	N	N	N	N	N	N	N	N
Filtered:				N	N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L
CWTP BTV (applicable to MW-62)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-63)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-64)				--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-65)				--	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	--	< 0.3	< 0.6	--
MW-64	CWTP	Downgradient	08/09/2017	220	< 6.0	< 6.0	220	< 6.0	37	6.0	--	--	130
MW-64	CWTP	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	08/09/2017	--	--	--	--	--	--	--	< 0.5	0.8	--
MW-64	CWTP	Downgradient	08/16/2017	--	--	--	--	--	--	--	< 0.5	< 0.7	--
MW-64	CWTP	Downgradient	08/16/2017	230	< 6.0	< 6.0	230	< 6.0	36	6.1	--	--	120
MW-64	CWTP	Downgradient	09/09/2017	230	< 6.0	< 6.0	230	< 6.0	35	5.8	--	--	120
MW-64	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-64	CWTP	Downgradient	10/13/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-64	CWTP	Downgradient	10/13/2017	230	< 6.0	< 6.0	230	< 6.0	33	5.7	--	--	120
MW-64	CWTP	Downgradient	11/30/2017	230	< 6.0	< 6.0	230	< 6.0	34	5.9	--	--	120
MW-64	CWTP	Downgradient	06/03/2018	190	< 6.0	< 6.0	190	< 6.0	34	5.4	--	--	110
MW-64	CWTP	Downgradient	11/02/2018	--	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	05/07/2019	--	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	05/07/2019	--	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	06/19/2020	--	--	--	--	--	--	--	--	--	--
MW-64	CWTP	Downgradient	11/05/2020	--	--	--	--	--	--	--	--	--	--
MW-65	CWTP	Downgradient	11/05/2015	390	< 5.0	--	390	--	59	3.2	--	--	140
MW-65	CWTP	Downgradient	11/05/2015	--	--	--	--	--	--	--	< 0.0704	< 0.408	--
MW-65	CWTP	Downgradient	04/27/2016	--	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-65	CWTP	Downgradient	06/05/2016	--	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-65	CWTP	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--	--
MW-65	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--
MW-65	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--
MW-65	CWTP	Downgradient	08/20/2016	--	--	--	--	--	--	--	< 0.3	< 0.4	--
MW-65	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--	--
MW-65	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--	--
MW-65	CWTP	Downgradient	09/12/2016	--	--	--	--	--	--	--	< 0.4	1.0	--
MW-65	CWTP	Downgradient	10/19/2016	--	--	--	--	--	--	--	--	--	--
MW-65	CWTP	Downgradient	10/19/2016	--	--	--	--	--	--	--	< 0.3	< 0.5	--
MW-65	CWTP	Downgradient	02/01/2017	310	< 6.0	< 6.0	310	< 6.0	56	3.6	--	--	140
MW-65	CWTP	Downgradient	02/01/2017	--	--	--	--	--	--	--	--	--	--

Groundwater Sampling Results for the CWTP Monitoring Wells

Constituent:				Additional Analyses										
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity(as CaCO3)	Alkalinity, Phosphophalein ,as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium	
Filtered:				N	N	N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	
CWTP BTV (applicable to MW-62)				--	--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-63)				--	--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-64)				--	--	--	--	--	--	--	--	--	--	--
CWTP BTV (applicable to MW-65)				--	--	--	--	--	--	--	--	--	--	--
MW-65	CWTP	Downgradient	02/01/2017	--	--	--	--	--	--	--	0.4	1.5	--	
MW-65	CWTP	Downgradient	04/16/2017	320	< 6.0	< 6.0	320	< 6.0	62	4.0	--	--	170	
MW-65	CWTP	Downgradient	04/16/2017	--	--	--	--	--	--	--	< 0.4	0.7	--	
MW-65	CWTP	Downgradient	04/16/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	05/01/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	05/01/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--	
MW-65	CWTP	Downgradient	05/01/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	05/01/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--	
MW-65	CWTP	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	05/29/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--	
MW-65	CWTP	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	05/29/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--	
MW-65	CWTP	Downgradient	06/21/2017	320	< 6.0	< 6.0	320	< 6.0	73	3.9	--	--	190	
MW-65	CWTP	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	06/21/2017	--	--	--	--	--	--	--	< 0.3	< 0.6	--	
MW-65	CWTP	Downgradient	06/21/2017	330	< 6.0	< 6.0	330	< 6.0	76	4.0	--	--	200	
MW-65	CWTP	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	06/21/2017	--	--	--	--	--	--	--	0.5	1.8	--	
MW-65	CWTP	Downgradient	07/21/2017	310	< 6.0	< 6.0	310	< 6.0	63	3.7	--	--	150	
MW-65	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	--	< 0.3	< 0.6	--	
MW-65	CWTP	Downgradient	07/21/2017	310	< 6.0	< 6.0	310	< 6.0	63	3.7	--	--	150	
MW-65	CWTP	Downgradient	07/21/2017	--	--	--	--	--	--	--	< 0.3	< 0.6	--	
MW-65	CWTP	Downgradient	08/09/2017	310	< 6.0	< 6.0	310	< 6.0	63	3.6	--	--	150	
MW-65	CWTP	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	08/09/2017	--	--	--	--	--	--	--	< 0.4	< 0.5	--	
MW-65	CWTP	Downgradient	08/16/2017	--	--	--	--	--	--	--	< 0.4	< 0.7	--	
MW-65	CWTP	Downgradient	08/16/2017	320	< 6.0	< 6.0	320	< 6.0	63	4.0	--	--	150	
MW-65	CWTP	Downgradient	08/16/2017	--	--	--	--	--	--	--	< 0.4	< 0.7	--	
MW-65	CWTP	Downgradient	08/16/2017	310	< 6.0	< 6.0	310	< 6.0	62	3.9	--	--	150	
MW-65	CWTP	Downgradient	09/09/2017	320	< 6.0	< 6.0	320	< 6.0	59	3.4	--	--	140	
MW-65	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--	
MW-65	CWTP	Downgradient	09/09/2017	320	< 6.0	< 6.0	320	< 6.0	60	3.5	--	--	140	
MW-65	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	09/09/2017	--	--	--	--	--	--	--	< 0.3	< 0.6	--	
MW-65	CWTP	Downgradient	10/13/2017	--	--	--	--	--	--	--	< 0.3	< 0.6	--	
MW-65	CWTP	Downgradient	10/13/2017	330	< 6.0	< 6.0	330	< 6.0	54	3.6	--	--	130	
MW-65	CWTP	Downgradient	10/13/2017	--	--	--	--	--	--	--	< 0.3	< 0.6	--	
MW-65	CWTP	Downgradient	10/13/2017	330	< 6.0	< 6.0	330	< 6.0	55	3.5	--	--	140	
MW-65	CWTP	Downgradient	11/30/2017	330	< 6.0	< 6.0	330	< 6.0	57	3.5	--	--	140	
MW-65	CWTP	Downgradient	06/03/2018	290	< 6.0	< 6.0	290	< 6.0	56	3.3	--	--	130	
MW-65	CWTP	Downgradient	11/02/2018	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	05/07/2019	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	06/19/2020	--	--	--	--	--	--	--	--	--	--	
MW-65	CWTP	Downgradient	11/05/2020	--	--	--	--	--	--	--	--	--	--	

Notes:

BTV exceedances are shown in grey shaded cells.
Duplicate sample dates under the same locations are either field duplicates or are instances of samples with multiple filed/lab sample IDs on the same date.

Abbreviations and Data Qualifiers:

< = less than
BTV = Background Threshold Value
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
mg/L = milligrams per liter
pCi/L = Picocuries per liter
su = standard units

Groundwater Sampling Results for the URS Monitoring Wells

Constituent:	Appendix III Constituents							Appendix IV Constituents															
	Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium	
	Units:	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
<i>URS BTW (applicable to downgradient wells)</i>	1.9	540	710	<RL	LPL and UPL	13,000	20,000	0.01	0.13	0.051	0.001	0.001	0.01	0.016	4	0.005	0.8	0.0002	0.011	0.45	0.002	5	
<i>URS GWPS (applicable to downgradient wells)</i>	--	--	--	--	--	--	--	0.01	0.13	2	0.004	0.005	0.1	0.016	4	0.015	0.8	0.002	0.1	0.45	0.002	5.4	
MW-71 URS/CWTP Background	03/05/2016	0.44	450	660	< 0.050	--	8,500	13,000	0.00016	0.016	0.027	0.00064	0.00019	0.00078	0.0028	< 0.050	0.00061	0.28	< 0.00020	0.0028	0.19	0.00031	--
MW-71 URS/CWTP Background	03/05/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	03/05/2016	0.46	480	670	< 0.050	--	8,500	13,000	< 0.0020	0.017	0.025	< 0.0010	0.00010	0.00054	0.0028	< 0.050	0.00021	0.28	< 0.00020	0.0029	0.20	0.00026	--
MW-71 URS/CWTP Background	03/05/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	04/26/2016	0.69	470	670	< 2.0	--	13,000	21,000	< 0.0025	0.0064	0.019	< 0.0010	0.00015	< 0.00050	0.0049	< 2.0	< 0.00050	0.45	< 0.00020	0.0018	0.31	0.00047	2.2
MW-71 URS/CWTP Background	06/06/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.2
MW-71 URS/CWTP Background	06/06/2016	0.70	460	750	< 0.40	6.87	13,000	20,000	0.00012	0.0069	0.020	< 0.0010	0.00015	< 0.00050	0.0041	< 0.40	0.00073	0.41	< 0.00020	0.0014	0.28	0.00043	--
MW-71 URS/CWTP Background	08/21/2016	0.56	450	590	< 0.80	7.1	8,400	14,000	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	08/21/2016	--	--	--	< 0.80	--	--	--	0.00022	0.0066	0.014	< 0.0010	< 0.00020	< 0.0010	< 0.0010	< 0.80	< 0.0010	0.36	< 0.00020	0.0025	0.26	0.00029	--
MW-71 URS/CWTP Background	08/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.6
MW-71 URS/CWTP Background	08/21/2016	--	--	--	--	7.1	--	14,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	08/21/2016	--	--	--	< 0.40	--	--	--	0.00024	0.0076	0.013	< 0.0010	< 0.00020	< 0.0010	< 0.0010	< 0.40	< 0.0010	0.37	< 0.00020	0.0024	0.25	0.00028	--
MW-71 URS/CWTP Background	08/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1
MW-71 URS/CWTP Background	09/12/2016	0.58	460	570	< 0.40	7.2	9,300	16,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	09/12/2016	--	--	--	< 0.40	--	--	--	< 0.0025	< 0.0010	0.013	< 0.0010	< 0.00050	< 0.0025	0.0012	< 0.40	< 0.00050	0.30	< 0.00020	0.0013	0.18	< 0.00050	--
MW-71 URS/CWTP Background	09/12/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1
MW-71 URS/CWTP Background	10/20/2016	0.55	410	580	< 0.40	7.3	9,100	15,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	10/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4
MW-71 URS/CWTP Background	02/02/2017	0.62	440	610	< 0.40	7.6	14,000	17,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	02/02/2017	--	--	--	< 0.40	--	--	--	< 0.0010	0.0094	0.012	< 0.0010	0.00011	< 0.00050	0.0012	< 0.40	< 0.00050	0.39	< 0.00020	0.00078	0.34	0.00037	--
MW-71 URS/CWTP Background	02/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9
MW-71 URS/CWTP Background	04/17/2017	0.52	400	550	< 2.0	7.6	9,400	15,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	04/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2
MW-71 URS/CWTP Background	04/17/2017	--	--	--	< 2.0	--	--	--	< 0.0040	0.0063	0.010	< 0.0010	< 0.00040	< 0.0020	< 0.0020	< 2.0	< 0.0020	0.32	< 0.00020	< 0.0020	0.20	< 0.00040	--
MW-71 URS/CWTP Background	05/02/2017	--	--	--	< 13	--	--	--	< 0.0010	0.0072	0.0087	< 0.0010	< 0.00010	< 0.0010	< 0.0010	< 13	< 0.00050	0.34	< 0.00020	< 0.0010	0.27	0.00025	--
MW-71 URS/CWTP Background	05/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.7
MW-71 URS/CWTP Background	05/29/2017	--	--	--	< 2.0	--	--	--	< 0.010	0.0070	0.010	< 0.0010	< 0.0010	< 0.0050	< 0.0050	< 2.0	< 0.0050	0.33	< 0.00020	< 0.0050	0.21	< 0.0010	--
MW-71 URS/CWTP Background	05/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6
MW-71 URS/CWTP Background	06/22/2017	0.60	460	620	--	7.2	4,600	17,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	06/22/2017	--	--	--	< 2.0	--	--	--	< 0.0040	0.0063	0.012	< 0.0010	< 0.00040	< 0.0020	< 0.0020	< 2.0	< 0.0020	0.38	< 0.00020	< 0.0020	0.25	< 0.00040	--
MW-71 URS/CWTP Background	06/22/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.7
MW-71 URS/CWTP Background	07/21/2017	0.55	450	590	< 2.0	7.1	10,000	15,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	07/21/2017	--	--	--	--	--	--	--	< 0.0040	0.0053	0.0086	< 0.0010	< 0.00040	< 0.0020	< 0.0010	--	< 0.0020	< 0.40	< 0.00020	< 0.0020	0.24	< 0.00040	--
MW-71 URS/CWTP Background	07/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5
MW-71 URS/CWTP Background	08/10/2017	0.55	450	560	--	7.4	10,000	15,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	08/10/2017	--	--	--	< 2.0	--	--	--	< 0.010	0.0048	0.0092	< 0.0010	< 0.0010	< 0.0040	< 0.0020	< 2.0	< 0.0050	0.34	< 0.00020	< 0.0050	0.21	< 0.0010	--
MW-71 URS/CWTP Background	08/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
MW-71 URS/CWTP Background	08/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0
MW-71 URS/CWTP Background	08/17/2017	0.56	480	570	< 2.0	7.3	9,500	15,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	09/11/2017	0.55	470	570	--	7.1	9,900	15,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	09/11/2017	--	--	--	< 2.0	--	--	--	< 0.0040	0.0048	0.0089	< 0.0010	< 0.00040	< 0.0040	< 0.0020	< 2.0	< 0.0020	0.32	< 0.00020	< 0.0020	0.20	< 0.00040	--
MW-71 URS/CWTP Background	09/11/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
MW-71 URS/CWTP Background	10/13/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.6
MW-71 URS/CWTP Background	10/13/2017	0.54	420	570	< 2.0	7.2	10,000	15,000	< 0.010	< 0.0050	0.012	< 0.0010	< 0.0010	< 0.010	< 0.0050	< 2.0	< 0.0050	0.33	< 0.00020	< 0.0050	0.20	< 0.0010	--
MW-71 URS/CWTP Background	11/30/2017	0.56	490	540	< 2.0	7.1	10,000	15,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	03/16/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.8
MW-71 URS/CWTP Background	06/02/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9
MW-71 URS/CWTP Background	06/02/2018	0.55	420	520	< 0.80	7.1	10,000	15,000	--	0.012	< 0.010	--	--	--	< 0.010	< 0.80	--	0.32	< 0.00020	< 0.010	0.20	< 0.0020	--
MW-71 URS/CWTP Background	11/03/2018	0.56	470	520	< 2.0	7.0	11,000	16,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	11/03/2018	--	--	--	--	--	--	--	--	0.0046	0.0098	--	--	--	< 0.00050	--	--	0.35	--	0.00079	0.27	0.00031	1.2
MW-71 URS/CWTP Background	11/03/2018	--	--	--	< 0.80	--	--	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	--	--
MW-71 URS/CWTP Background	11/03/2018	0.54	450	520	< 0.80	7.2	11,000	16,000															

Groundwater Sampling Results for the URS Monitoring Wells

Constituent: Filtered: Units:				Appendix III Constituents								Appendix IV Constituents															
				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium		
				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
URS BTW (applicable to downgradient wells)				1.9	540	710	<RL	LPL and UPL	13,000	20,000	0.01	0.13	0.051	0.001	0.001	0.01	0.016	4	0.005	0.8	0.0002	0.011	0.45	0.002	5		
URS GWPS (applicable to downgradient wells)				--	--	--	--	--	--	--	0.01	0.13	2	0.004	0.005	0.1	0.016	4	0.015	0.8	0.002	0.1	0.45	0.002	5.4		
MW-71	URS/CWTP	Background	05/06/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0		
MW-71	URS/CWTP	Background	12/02/2019	0.50	440	500	< 0.80	7.2 J	10,000	16000 J	< 0.0040	0.0095	0.012	< 0.0010	< 0.00040	< 0.0040	< 0.0020	< 0.80	< 0.0020	0.32	< 0.00020	< 0.0020	0.27	0.00065	--		
MW-71	URS/CWTP	Background	06/20/2020	0.59	450	480	< 0.8	7.3 J	9,900	15,000	< 0.002	0.0048	0.0045	--	< 0.0002	< 0.002	< 0.001	< 0.8	< 0.001	0.75	--	< 0.001	0.15	0.00025	< 0.8		
MW-71	URS/CWTP	Background	11/05/2020	0.59	460	490	< 0.4	7.2 J	10,000	16,000	< 0.002	0.012	0.0092	< 0.001	< 0.0002 U	< 0.002	0.00026 J	< 0.4	< 0.001	0.35	< 0.0002	0.00061 J	0.28	0.00023	< 0.8		
MW-72	URS/CWTP	Background	03/07/2016	0.16	480	490	< 0.050	--	12,000	17,000	< 0.0020	0.011	0.035	< 0.0010	0.000078	0.00044	0.019	< 0.050	0.00013	0.33	< 0.00020	0.011	0.13	0.0012	--		
MW-72	URS/CWTP	Background	03/07/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	04/26/2016	0.22	470	430	< 2.0	--	11,000	19,000	< 0.0025	0.0038	0.034	< 0.0010	< 0.00010	0.0028	0.0087	< 2.0	0.0011	0.40	< 0.00020	0.0093	0.16	0.00081	< 0.8		
MW-72	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3		
MW-72	URS/CWTP	Background	06/06/2016	0.25	570	530	< 0.40	6.99	4,500	9,500	0.00027	0.0084	0.051	< 0.0010	< 0.00020	0.00060	0.0029	< 0.40	< 0.0010	< 0.20	< 0.00020	0.0052	0.39	0.00058	--		
MW-72	URS/CWTP	Background	08/21/2016	0.23	450	440	< 0.40	7.0	10,000	17,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	08/21/2016	--	--	--	< 0.40	--	--	--	0.00026	0.0047	0.016	< 0.0010	< 0.00020	< 0.0010	0.0034	< 0.40	< 0.0010	0.42	< 0.00020	0.0061	0.18	0.0011	--		
MW-72	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.2		
MW-72	URS/CWTP	Background	09/13/2016	0.24	470	450	< 0.40	7.1	10,000	17,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	09/13/2016	--	--	--	< 0.40	--	--	--	< 0.0025	< 0.0010	0.019	< 0.0010	< 0.00050	< 0.0025	0.0073	< 0.40	< 0.00050	0.35	< 0.00020	0.011	< 0.0030	0.00056	--		
MW-72	URS/CWTP	Background	09/13/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.9		
MW-72	URS/CWTP	Background	10/20/2016	0.23	400	480	< 0.40	7.1	11,000	17,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	10/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.2		
MW-72	URS/CWTP	Background	02/02/2017	0.23	420	430	< 0.40	7.5	11,000	16,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	< 0.40	--	--	--	< 0.0010	0.0041	0.0093	< 0.0010	< 0.00010	< 0.0010	0.0025	< 0.40	< 0.00050	0.39	< 0.00020	0.00093	0.13	0.00094	--		
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.0		
MW-72	URS/CWTP	Background	02/02/2017	0.21	430	450	< 0.40	7.5	11,000	16,000	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	< 0.40	--	--	--	< 0.0020	0.0027	0.0084	< 0.0010	< 0.00020	< 0.0010	0.0025	< 0.40	< 0.0010	0.39	< 0.00020	0.0010	0.12	0.00096	--		
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.6		
MW-72	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.5		
MW-72	URS/CWTP	Background	04/17/2017	0.20	440	450	< 2.0	7.4	610	17,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	04/17/2017	--	--	--	< 2.0	--	--	--	< 0.0040	0.0028	0.0096	< 0.0010	< 0.00040	< 0.0020	0.0024	< 2.0	< 0.0020	0.35	< 0.00020	< 0.0020	0.10	0.00096	--		
MW-72	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.8		
MW-72	URS/CWTP	Background	05/02/2017	--	--	--	< 13	--	--	--	< 0.0010	0.0030	0.0079	< 0.0010	< 0.00010	< 0.0010	0.0024	< 13	< 0.00050	0.38	< 0.00020	< 0.0010	0.12	0.00091	--		
MW-72	URS/CWTP	Background	05/29/2017	--	--	--	< 2.0	--	--	--	< 0.010	< 0.0050	0.0093	< 0.0010	< 0.0010	< 0.0050	< 0.0050	< 2.0	< 0.0050	0.37	< 0.00020	< 0.0050	0.11	0.0011	--		
MW-72	URS/CWTP	Background	06/22/2017	0.23	450	450	--	7.1	11,000	17,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	< 2.0	--	--	--	< 0.0040	0.0023	0.0077	< 0.0010	< 0.00040	< 0.0020	0.0025	< 2.0	< 0.0020	0.39	< 0.00020	< 0.0020	0.10	0.0010	--		
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8		
MW-72	URS/CWTP	Background	06/22/2017	0.22	440	450	--	7.0	11,000	17,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	< 2.0	--	--	--	< 0.0040	< 0.0020	0.0086	< 0.0010	< 0.00040	< 0.0020	0.0025	< 2.0	< 0.0020	0.40	0.00020	< 0.0020	0.099	0.0011	--		
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.0		
MW-72	URS/CWTP	Background	07/21/2017	0.23	450	460	< 2.0	7.1	11,000	17,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	< 0.0040	0.0026	0.0073	< 0.0010	< 0.00040	< 0.0020	0.0024	--	< 0.0020	< 0.80	< 0.00020	< 0.0020	0.13	0.00089	--		
MW-72	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.7		
MW-72	URS/CWTP	Background	08/10/2017	0.21	450	460	--	7.3	11,000	17,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	< 2.0	--	--	--	< 0.0010	0.0040	0.0075	< 0.0010	< 0.00010	< 0.0010	0.0023	< 2.0	< 0.00050	0.41	< 0.00020	0.00087	0.14	0.00091	--		
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8		
MW-72	URS/CWTP	Background	08/10/2017	0.25	460	460	--	7.2	12,000	17,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	< 2.0	--	--	--	< 0.010	0.0028	0.0089	< 0.0010	< 0.0010	< 0.0040	0.0025	< 2.0	< 0.0050	0.42	< 0.00020	< 0.0050	0.10	0.0010	--		
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.7		
MW-72	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1		
MW-72	URS/CWTP	Background	08/17/2017	0.26	490	450	< 2.0	7.1	11,000	17,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.0		
MW-72	URS/CWTP	Background	08/17/2017	0.27	480	460	< 2.0	7.2	12,000	17,000	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	--		
MW-72	URS/CWTP	Background	09/10/2017	0.21	470																						

Groundwater Sampling Results for the URS Monitoring Wells

Constituent: Filtered: Units:				Appendix III Constituents							Appendix IV Constituents															
				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium	
				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>URS BTW (applicable to downgradient wells)</i>				1.9	540	710	<RL	LPL and UPL	13,000	20,000	0.01	0.13	0.051	0.001	0.001	0.01	0.016	4	0.005	0.8	0.0002	0.011	0.45	0.002	5	
<i>URS GWPS (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	0.01	0.13	2	0.004	0.005	0.1	0.016	0.067	0.063 J	< 0.001	0.29	< 0.0002	0.0016	0.0099	0.0022	2.8
MW-73	URS/CWTP	Background	11/05/2020	1.6	480	530	0.063 J	7.0 J	7,100	12,000	< 0.002 U	0.0012	0.020	< 0.001	< 0.0002 U	0.00073 J	0.0067	0.063 J	< 0.001	0.29	< 0.0002	0.0016	0.0099	0.0022	2.8	
MW-66	URS	Downgradient	11/05/2015	87	470	870	18	--	7,300	11,000	< 0.0020	0.0034	0.016	< 0.0010	0.000062	0.0010	0.0051	18	0.00018	0.24	< 0.00020	0.016	0.0022	0.00063	--	
MW-66	URS	Downgradient	11/05/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	04/27/2016	--	--	--	18	--	--	--	< 0.0025	0.0013	0.024	< 0.0010	< 0.00010	0.0031	0.0076	18	0.00072	0.29	< 0.00020	0.012	0.0018	0.00070	0.6	
MW-66	URS	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.7	
MW-66	URS	Downgradient	06/05/2016	89	470	1,300	20	7.31	7,000	13,000	< 0.00010	0.00067	0.016	< 0.0010	< 0.00010	0.00074	0.0078	20	< 0.00050	0.28	< 0.00020	0.013	0.0016	0.00060	--	
MW-66	URS	Downgradient	08/20/2016	100	480	1,400	20	7.3	7,600	15,000	--	--	--	--	--	--	--	20	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	08/20/2016	--	--	--	19	--	--	--	0.00013	0.0013	0.021	< 0.0010	< 0.00010	0.0012	0.0080	19	< 0.00050	0.32	< 0.00020	0.039	0.0018	0.00062	--	
MW-66	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4	
MW-66	URS	Downgradient	09/12/2016	110	470	1,500	12	7.4	8,000	15,000	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	09/12/2016	--	--	--	17	--	--	--	< 0.0025	< 0.0010	0.011	< 0.0010	< 0.00050	< 0.0025	0.0029	17	< 0.00050	0.27	< 0.00020	0.010	0.11	0.00088	--	
MW-66	URS	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.9	
MW-66	URS	Downgradient	10/19/2016	130	440	1,600	17	7.4	9,100	16,000	--	--	--	--	--	--	--	17	--	--	--	--	--	--	3.0	
MW-66	URS	Downgradient	10/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	02/01/2017	130	470	1,800	18	7.5	10,000	16,000	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	02/01/2017	--	--	--	19	--	--	--	< 0.0010	0.0014	0.021	< 0.0010	< 0.00010	0.0031	0.0064	19	< 0.00050	0.29	< 0.00020	0.020	0.0019	0.00040	--	
MW-66	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.0	
MW-66	URS	Downgradient	04/16/2017	140	460	1,600	25	7.4	11,000	17,000	--	--	--	--	--	--	--	25	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	04/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.8	
MW-66	URS	Downgradient	04/16/2017	--	--	--	23	--	--	--	< 0.0040	< 0.0020	0.020	< 0.0010	< 0.00040	< 0.0020	0.0071	23	< 0.0020	0.31	< 0.00020	0.022	< 0.0020	< 0.00040	--	
MW-66	URS	Downgradient	05/01/2017	--	--	--	32	--	--	--	< 0.0010	0.0018	0.020	< 0.0010	< 0.00010	< 0.0010	0.0073	32	< 0.00050	0.32	< 0.00020	0.023	0.0022	0.00033	--	
MW-66	URS	Downgradient	05/01/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.9	
MW-66	URS	Downgradient	05/29/2017	--	--	--	25	--	--	--	< 0.010	< 0.0050	0.022	< 0.0010	< 0.0010	< 0.0050	0.0077	25	< 0.0050	0.30	< 0.00020	0.023	< 0.0050	< 0.0010	--	
MW-66	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8	
MW-66	URS	Downgradient	06/21/2017	130	450	1,700	--	7.3	11,000	18,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	06/21/2017	--	--	--	24	--	--	--	< 0.0010	0.0028	0.022	< 0.0010	< 0.00010	0.00088	0.0074	24	< 0.00050	0.32	< 0.00020	0.023	0.0022	0.00041	--	
MW-66	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.7	
MW-66	URS	Downgradient	07/21/2017	140	450	1,700	25	7.3	12,000	19,000	--	--	--	--	--	--	--	25	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	< 0.0040	< 0.0020	0.020	< 0.0010	< 0.00040	< 0.0020	0.0065	--	< 0.0020	< 0.80	< 0.00020	0.021	< 0.0020	< 0.00040	--	
MW-66	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2	
MW-66	URS	Downgradient	08/09/2017	140	460	1,700	--	7.4	12,000	19,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	08/09/2017	--	--	--	26	--	--	--	< 0.010	< 0.0020	0.019	< 0.0010	< 0.0010	< 0.0040	0.0072	26	< 0.0050	0.34	< 0.00020	0.022	< 0.0020	< 0.0010	--	
MW-66	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.2	
MW-66	URS	Downgradient	08/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5	
MW-66	URS	Downgradient	08/16/2017	150	510	1,700	25	7.5	11,000	19,000	--	--	--	--	--	--	--	25	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	09/09/2017	140	480	1,800	--	7.3	12,000	19,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	09/09/2017	--	--	--	26	--	--	--	< 0.0040	< 0.0020	0.019	< 0.0010	< 0.00040	< 0.0040	0.0069	26	< 0.0020	0.32	< 0.00020	0.021	< 0.0020	< 0.00040	--	
MW-66	URS	Downgradient	09/09/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5	
MW-66	URS	Downgradient	10/13/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.1	
MW-66	URS	Downgradient	10/13/2017	150	440	2,000	26	7.3	13,000	18,000	< 0.0010	0.0021	0.021	< 0.0010	< 0.00010	< 0.0010	0.0075	26	< 0.00050	0.34	< 0.00020	0.023	0.0021	0.00036	--	
MW-66	URS	Downgradient	11/30/2017	140	500	1,900	26	7.3	13,000	19,000	--	--	--	--	--	--	--	26	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	03/16/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 1.5	
MW-66	URS	Downgradient	03/16/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.0	
MW-66	URS	Downgradient	05/31/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1	
MW-66	URS	Downgradient	05/31/2018	150	440	1,800	25	7.2	12,000	19,000	--	< 0.010	0.020	--	--	--	0.010	25	--	0.36	< 0.00020	0.015	< 0.010	0.0025	--	
MW-66	URS	Downgradient	11/02/2018	140	470	1,800	--	7.3	12,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-66	URS	Downgradient	11/02/2018	--	--	--	--	--	--	--	--	0.0015	0.023	--	--	--	0.012	--	--	0.38	--	0.019	0.0020	0.0011	2.9	
MW-66	URS	Downgradient	03/18/2019	--	--	--	23	--	--	--	< 0.0010	0.0012	0.023	< 0.0010	0.00016	0.0010	0.017	23	< 0.00050	0.37	< 0.00020	0.016	0.0024 J	0.0011	--	
MW-66	URS	Downgradient	03/18/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	
MW-66	URS	Downgradient	05/07/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5	
MW-66	URS	Downgradient	12/03/2019	130	430	1,800	22	7.2 J	12,000	19,000	< 0.0020	< 0.0020	0.024	< 0.0010	< 0.00020	< 0.0040	0.012	22	< 0.0010	0.32	< 0.00020	0.023	< 0.0020	0.0010	--	
MW-66	URS	Downgradient	12/03/2019	150	460	1,800	22	7.3 J	14,000	19,000	< 0.0020	0.0013	0.021	< 0.0010	< 0.00020	< 0.0040	0.011	22	< 0.0010	0.33	< 0.00020	0.020	0.0020	0.00083	--	
MW-66	URS	Downgradient	06/18/2020	140	450	1,700	17	7.3 J	12,000	20,000	< 0.002	0.0016	0.019 J	--	< 0.0002	< 0.002	0.011	17	< 0.001	0.81	--	0.019	0.0019	0.00094	1.5	
MW-66	URS	Downgradient	11/05/2020	140	490	1,700	26 J	7.3 J	13,000	18,000	< 0.001 U	0.0037	0.016 J	< 0.001	< 0.00018 U	0.0014 J	0.01 J	26 J	< 0.0005	0.36	< 0.0002	0.0014 J	0.0041	0.00038 J	2.4	
MW-66	URS	Downgradient	11/05/2020	140	490	1,800	21 J	7.3 J	13,000	20,000	< 0.001 U	0.0031	0.021 J	< 0.001	< 0.00014 U	0.00082 J	0.00058 J	21 J	< 0.001							

Groundwater Sampling Results for the URS Monitoring Wells

Constituent:	Appendix III Constituents							Appendix IV Constituents															
	Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium	
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Filtered:																							
Units:	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
URS BTV (applicable to downgradient wells)	1.9	540	710	<RL	LPL and UPL	13,000	20,000	0.01	0.13	0.051	0.001	0.001	0.01	0.016	4	0.005	0.8	0.0002	0.011	0.45	0.002	5	
URS GWPS (applicable to downgradient wells)	--	--	--	--	--	--	--	0.01	0.13	2	0.004	0.005	0.1	0.016	4	0.015	0.8	0.002	0.1	0.45	0.002	5.4	
MW-67 URS Downgradient 11/04/2015	75	330	990	18	--	6,900	11,000	0.00019	0.00099	0.017	0.00017	0.00018	0.00078	0.0078	18	0.00017	0.25	<0.00020	0.050	0.0053	0.00047	--	
MW-67 URS Downgradient 11/04/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-67 URS Downgradient 04/27/2016	--	--	--	19	--	--	--	<0.0025	0.0025	0.018	<0.0010	<0.00010	0.00057	0.0028	19	<0.00050	0.31	<0.00020	0.044	0.043	0.00038	2.1	
MW-67 URS Downgradient 04/27/2016	--	--	--	21	--	--	--	<0.0025	0.0029	0.017	<0.0010	<0.00010	0.00069	0.0027	21	<0.00050	0.32	<0.00020	0.043	0.043	0.00037	--	
MW-67 URS Downgradient 06/06/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	
MW-67 URS Downgradient 06/06/2016	90	490	1,600	24	7.27	7,000	13,000	0.00014	0.0030	0.018	<0.0010	<0.00010	<0.00050	0.0025	24	<0.00050	0.30	<0.00020	0.041	0.044	0.00031	--	
MW-67 URS Downgradient 08/20/2016	100	510	1,400	23	7.1	7,500	15,000	--	--	--	--	--	--	--	23	--	--	--	--	--	--	--	
MW-67 URS Downgradient 08/20/2016	--	--	--	19	--	--	--	0.00021	0.0039	0.020	<0.0010	0.00011	0.0010	0.0055	19	<0.00050	0.36	<0.00020	0.064	0.067	0.00031	--	
MW-67 URS Downgradient 08/20/2016	--	--	--	--	7.1	--	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.3	
MW-67 URS Downgradient 08/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-67 URS Downgradient 08/20/2016	--	--	--	20	--	--	--	0.00029	0.0040	0.022	<0.0010	<0.00020	0.0016	0.0064	20	<0.0010	0.35	<0.00020	0.063	0.068	0.00034	--	
MW-67 URS Downgradient 08/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.0	
MW-67 URS Downgradient 09/13/2016	110	510	1,500	23	7.3	7,900	16,000	--	--	--	--	--	--	--	23	--	--	--	--	--	--	--	
MW-67 URS Downgradient 09/13/2016	--	--	--	17	--	--	--	<0.0025	0.0023	0.021	<0.0010	<0.00050	<0.0025	0.0057	17	<0.00050	0.31	<0.00020	0.045	0.059	<0.00050	--	
MW-67 URS Downgradient 09/13/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1	
MW-67 URS Downgradient 10/20/2016	120	480	1,500	16	7.3	8,300	16,000	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--	
MW-67 URS Downgradient 10/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.1	
MW-67 URS Downgradient 02/01/2017	120	510	1,800	16	7.5	9,400	16,000	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--	
MW-67 URS Downgradient 02/01/2017	--	--	--	16	--	--	--	<0.0010	0.0033	0.019	<0.0010	0.00015	0.00058	0.0058	16	<0.00050	0.36	<0.00020	0.046	0.064	0.00039	--	
MW-67 URS Downgradient 02/01/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.0	
MW-67 URS Downgradient 04/17/2017	130	500	1,700	22	7.3	10,000	17,000	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	
MW-67 URS Downgradient 04/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.2	
MW-67 URS Downgradient 04/17/2017	--	--	--	21	--	--	--	<0.0040	0.0020	0.020	<0.0010	<0.00040	<0.0020	0.0062	21	<0.0020	0.42	<0.00020	0.039	0.032	<0.00040	--	
MW-67 URS Downgradient 05/01/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.3	
MW-67 URS Downgradient 05/02/2017	--	--	--	28	--	--	--	<0.0010	0.0027	0.019	<0.0010	0.00015	<0.0010	0.0065	28	<0.00050	0.43	<0.00020	0.041	0.048	0.00042	--	
MW-67 URS Downgradient 05/29/2017	--	--	--	21	--	--	--	<0.010	<0.0050	0.022	<0.0010	<0.0010	<0.0050	0.0060	21	<0.00050	0.38	<0.00020	0.040	0.030	<0.0010	--	
MW-67 URS Downgradient 05/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.2	
MW-67 URS Downgradient 06/21/2017	130	480	1,900	--	7.3	11,000	18,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-67 URS Downgradient 06/21/2017	--	--	--	21	--	--	--	<0.0040	0.0020	0.020	<0.0010	<0.00040	<0.0020	0.0049	21	<0.0020	0.40	<0.00020	0.039	0.024	0.00057	--	
MW-67 URS Downgradient 06/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.2	
MW-67 URS Downgradient 07/21/2017	150	520	2,000	22	7.1	12,000	20,000	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	
MW-67 URS Downgradient 07/21/2017	--	--	--	--	--	--	--	<0.0040	0.0027	0.020	<0.0010	<0.00040	<0.0020	0.0053	--	<0.0020	<0.80	<0.00020	0.039	0.053	0.00050	--	
MW-67 URS Downgradient 07/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<2.0	
MW-67 URS Downgradient 08/09/2017	160	490	2,200	--	7.4	13,000	21,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-67 URS Downgradient 08/09/2017	--	--	--	22	--	--	--	<0.010	0.0023	0.020	<0.0010	<0.0010	<0.0040	0.0045	22	<0.00050	0.44	<0.00020	0.038	0.021	<0.0010	--	
MW-67 URS Downgradient 08/09/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4	
MW-67 URS Downgradient 08/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	
MW-67 URS Downgradient 08/16/2017	160	550	2,000	22	7.4	12,000	22,000	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	
MW-67 URS Downgradient 09/10/2017	150	500	2,100	--	7.3	13,000	21,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-67 URS Downgradient 09/10/2017	--	--	--	24	--	--	--	<0.0040	<0.0020	0.020	<0.0010	<0.00040	<0.0040	0.0047	24	<0.0020	0.43	<0.00020	0.038	0.023	0.00056	--	
MW-67 URS Downgradient 09/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.1	
MW-67 URS Downgradient 10/13/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.7	
MW-67 URS Downgradient 10/13/2017	160	460	2,300	25	7.1	14,000	21,000	<0.0010	0.0027	0.022	<0.0010	0.00016	<0.0010	0.0064	25	<0.00050	0.49	<0.00020	0.045	0.038	0.00054	--	
MW-67 URS Downgradient 11/29/2017	160	520	2,300	24	7.3	15,000	23,000	--	--	--	--	--	--	--	24	--	--	--	--	--	--	--	
MW-67 URS Downgradient 03/16/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.9	
MW-67 URS Downgradient 06/02/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5	
MW-67 URS Downgradient 06/02/2018	200	430	2,000	25	7.1	15,000	23,000	--	<0.010	0.020	--	--	--	<0.010	25	--	0.50	<0.00020	0.041	<0.010	<0.0020	--	
MW-67 URS Downgradient 11/03/2018	170	470	2,000	16	7.4	13,000	19,000	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--	
MW-67 URS Downgradient 11/03/2018	--	--	--	--	--	--	--	--	0.0016	0.017	--	--	--	0.0061	--	--	0.39	--	0.037	0.0043	0.00078	1.6	
MW-67 URS Downgradient 03/17/2019	--	--	--	15	--	--	--	<0.0010	0.0016	0.014	<0.0010	<0.00010	<0.0010	0.0058	15	<0.00050	0.37	<0.00020	0.036	0.0050	0.00086	--	
MW-67 URS Downgradient 03/17/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6	
MW-67 URS Downgradient 05/07/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	
MW-67 URS Downgradient 12/02/2019	150	450	1,900	14	7.4 J	13,000	20000 J	<0.0020	0.0035	0.020	<0.0010	<0.00020	<0.0040	0.0096	14	<0.0010	0.37	<0.00020	0.038	0.0045	0.0011	--	
MW-67 URS Downgradient 06/19/2020	160	440	1,900	12	7.5 J	13,000	20,000	<0.002	0.0017	0.012	--	<0.0002	<0.002	0.0052	12	<0.001	0.90	--	0.039	0.0040	0.00098	3.2	
MW-67 URS Downgradient 11/04/2020	160	470	2,000	15	7.4 J	14,000	20,000	0.00027 J	0.0027 J	0.0079 J	<0.001	<0.00025 U	<0.001	0.0009 J	15	<0.0005	0.40	<0.0002	0.011 J	0.0054	0.00031 J	3.6	

Groundwater Sampling Results for the URS Monitoring Wells

Constituent:	Appendix III Constituents							Appendix IV Constituents																	
	Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium			
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
Filtered:	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
Units:	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L		
<i>URS BTW (applicable to downgradient wells)</i>																									
<i>URS GWPS (applicable to downgradient wells)</i>																									
MW-67	URS	Downgradient	11/04/2020	170	470	1,900	15	7.4 J	14,000	20,000	< 0.002	0.004 J	0.014 J	< 0.001	< 0.0002 U	0.0018 J	0.0078 J	15	< 0.001	0.40	< 0.0002	0.038 J	0.0069	0.0010 J	3.5
MW-68	URS	Downgradient	11/06/2015	93	470	1,200	7.0	7.11	7,900	12,000	0.00045	0.0027	0.0093	0.00033	0.00046	0.0012	0.0053	7.0	0.00019	0.22	< 0.00020	0.010	0.045	0.00089	--
MW-68	URS	Downgradient	11/06/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-68	URS	Downgradient	04/26/2016	110	460	1,300	8.0	--	7,700	14,000	< 0.0025	0.0032	0.013	< 0.0010	< 0.00010	0.0012	0.0030	8.0	0.00052	0.31	< 0.00020	0.0075	0.10	0.00056	1.5
MW-68	URS	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-68	URS	Downgradient	06/05/2016	100	450	1,500	10	7.05	8,000	15,000	0.00011	0.0032	0.0099	< 0.0010	< 0.00010	0.00073	0.0042	10	< 0.00050	0.27	< 0.00020	0.010	0.11	0.00066	--
MW-68	URS	Downgradient	08/20/2016	120	460	1,300	8.6	7.0	8,100	16,000	--	--	--	--	--	--	--	8.6	--	--	--	--	--	--	--
MW-68	URS	Downgradient	08/20/2016	--	--	--	7.5	--	--	--	0.00012	0.0065	0.0078	< 0.0010	0.00016	0.00072	0.0020	7.5	< 0.00050	0.35	< 0.00020	0.0095	0.22	0.00063	--
MW-68	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9
MW-68	URS	Downgradient	09/13/2016	120	480	1,400	9.7	7.1	8,500	16,000	--	--	--	--	--	--	--	9.7	--	--	--	--	--	--	--
MW-68	URS	Downgradient	09/13/2016	--	--	--	5.7	--	--	--	< 0.0025	0.0016	0.0074	< 0.0010	< 0.00050	< 0.0025	0.0025	5.7	< 0.00050	0.29	< 0.00020	0.012	0.15	0.0012	--
MW-68	URS	Downgradient	09/13/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.8
MW-68	URS	Downgradient	10/20/2016	120	430	1,400	6.8	7.1	11,000	16,000	--	--	--	--	--	--	--	6.8	--	--	--	--	--	--	--
MW-68	URS	Downgradient	10/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4
MW-68	URS	Downgradient	02/01/2017	120	450	1,600	6.4	7.5	10,000	16,000	--	--	--	--	--	--	--	6.4	--	--	--	--	--	--	--
MW-68	URS	Downgradient	02/01/2017	--	--	--	6.8	--	--	--	< 0.0010	0.0048	0.0082	< 0.0010	0.00012	0.00081	0.0034	6.8	< 0.00050	0.32	< 0.00020	0.010	0.17	0.00080	--
MW-68	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1
MW-68	URS	Downgradient	04/17/2017	130	450	1,400	10	7.1	9,900	16,000	--	--	--	--	--	--	--	10	--	--	--	--	--	--	--
MW-68	URS	Downgradient	04/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.2
MW-68	URS	Downgradient	04/17/2017	--	--	--	9.7	--	--	--	< 0.0040	0.0051	0.0078	< 0.0010	< 0.00040	< 0.0020	0.0028	9.7	< 0.0020	0.38	< 0.00020	0.0080	0.16	0.00067	--
MW-68	URS	Downgradient	05/01/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2
MW-68	URS	Downgradient	05/02/2017	--	--	--	18	--	--	--	< 0.0010	0.0084	0.0068	< 0.0010	< 0.00010	< 0.0010	0.0024	18	< 0.00050	0.37	< 0.00020	0.0073	0.28	0.00068	--
MW-68	URS	Downgradient	05/29/2017	--	--	--	8.3	--	--	--	< 0.010	0.0085	0.0086	< 0.0010	< 0.0010	< 0.0050	< 0.0050	8.3	< 0.0050	0.32	< 0.00020	0.0054	0.29	< 0.0010	--
MW-68	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6
MW-68	URS	Downgradient	06/21/2017	120	470	1,400	--	7.1	9,700	17,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	06/21/2017	--	--	--	8.7	--	--	--	< 0.0040	0.0079	0.0075	< 0.0010	< 0.00040	< 0.0020	< 0.0020	8.7	< 0.0020	0.33	< 0.00020	0.0051	0.28	0.00065	--
MW-68	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.2
MW-68	URS	Downgradient	07/21/2017	130	470	1,500	9.6	7.0	10,000	17,000	--	--	--	--	--	--	--	9.6	--	--	--	--	--	--	--
MW-68	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	< 0.0040	0.0081	0.0066	< 0.0010	< 0.00040	< 0.0020	0.0017	--	< 0.0020	< 0.80	< 0.00020	0.0058	0.30	0.00062	--
MW-68	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.9
MW-68	URS	Downgradient	08/09/2017	120	460	1,600	--	7.2	11,000	18,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	08/09/2017	--	--	--	11	--	--	--	< 0.010	0.0055	0.0074	< 0.0010	< 0.0010	< 0.0040	0.0025	11	< 0.0050	0.37	< 0.00020	0.0067	0.27	< 0.0010	--
MW-68	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.3
MW-68	URS	Downgradient	08/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.2
MW-68	URS	Downgradient	08/16/2017	130	510	1,500	11	7.2	9,900	17,000	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--
MW-68	URS	Downgradient	09/10/2017	130	480	1,500	--	7.0	10,000	18,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	09/10/2017	--	--	--	11	--	--	--	< 0.0040	0.0086	0.0075	< 0.0010	< 0.00040	< 0.0040	0.0023	11	< 0.0020	0.34	< 0.00020	0.0063	0.29	0.00083	--
MW-68	URS	Downgradient	09/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.9
MW-68	URS	Downgradient	10/13/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.9
MW-68	URS	Downgradient	10/13/2017	140	450	1,800	10	7.1	11,000	17,000	< 0.0010	0.0097	0.0078	< 0.0010	0.00011	< 0.0010	0.0019	10	< 0.00050	0.37	< 0.00020	0.0063	0.37	0.00069	--
MW-68	URS	Downgradient	11/30/2017	130	520	1,400	10	7.1	9,700	16,000	--	--	--	--	--	--	--	10	--	--	--	--	--	--	--
MW-68	URS	Downgradient	11/30/2017	130	520	1,400	10	7.1	9,400	16,000	--	--	--	--	--	--	--	10	--	--	--	--	--	--	--
MW-68	URS	Downgradient	03/16/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0
MW-68	URS	Downgradient	06/02/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.6
MW-68	URS	Downgradient	06/02/2018	130	430	1,500	12	6.9	10,000	17,000	--	< 0.010	< 0.010	--	--	--	< 0.010	12	--	0.38	< 0.00020	< 0.010	0.24	< 0.0020	--
MW-68	URS	Downgradient	11/03/2018	150	460	1,500	12	7.2	11,000	18,000	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--
MW-68	URS	Downgradient	11/03/2018	--	--	--	--	--	--	--	--	0.0030	0.0081	--	--	--	0.0038	--	--	0.42	--	0.0078	0.11	0.0016	1.9
MW-68	URS	Downgradient	03/17/2019	--	--	--	9.2	--	--	--	< 0.0010	0.0035	0.0084	< 0.0010	0.00014	< 0.0010	0.0026	9.2	< 0.00050	0.37	< 0.00020	0.0067	0.14	0.0010	--
MW-68	URS	Downgradient	03/17/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6
MW-68	URS	Downgradient	05/07/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1
MW-68	URS	Downgradient	12/02/2019	94	450	1,200	10	7.0 J	9,600	15000 J	< 0.0020	0.0058	0.068	< 0.0010	< 0.00020	< 0.0040	0.0037	10	0.0013	0.37	< 0.00020	0.0068	0.12	0.0017	--
MW-68	URS	Downgradient	06/19/2020	110	460	5,000	7.7	7.3 J	9,000	16,000	< 0.002	0.0048	0.0093	--	< 0.0002	< 0.002	0.0053	7.7	< 0.001	0.85	--	0.0063	0.13	0.0015	0.9
MW-68	URS	Downgradient	11/04/2020	110	470	1,300	10	7.2 J	11,000	17,000	< 0.001 U	0.0038	0.012	< 0.001	< 0.00012 U	0.0012	0.00066	10	< 0.0005	0.41	< 0.0002	0.0045	0.069	< 0.0001 U	1.8
MW-69	URS	Downgradient	11/04/2015	80	490	1,000	9.8	--	6,600	10,000	0.00046	0.0026	0.013	0.00029	0.00031	0.00081	0.0035	9.8	0.00021	0.27	< 0.00020	0.015	0.010	0.00047	--
MW-69	URS	Downgradient	11/04/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Groundwater Sampling Results for the URS Monitoring Wells

Well ID	Company	Flow Direction	Date	Appendix III Constituents							Appendix IV Constituents														
				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Constituent:	Units:	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	
URS BTV (applicable to downgradient wells)				1.9	540	710	<RL	LPL and UPL	13,000	20,000	0.01	0.13	0.051	0.001	0.001	0.01	0.016	4	0.005	0.8	0.0002	0.011	0.45	0.002	5
URS GWPS (applicable to downgradient wells)				--	--	--	--	--	--	--	0.01	0.13	2	0.004	0.005	0.1	0.016	4	0.015	0.8	0.002	0.1	0.45	0.002	5.4
MW-69	URS	Downgradient	04/26/2016	95	480	1,200	13	--	7,100	13,000	<0.0025	0.0031	0.013	<0.0010	<0.00010	<0.00050	0.0029	13	<0.00050	0.31	<0.00020	0.013	0.011	0.0028	3.1
MW-69	URS	Downgradient	04/26/2016	97	490	1,200	13	--	7,200	13,000	<0.0025	0.0031	0.013	<0.0010	<0.00010	0.00050	0.0029	13	<0.00050	0.32	<0.00020	0.014	0.011	0.0028	3.2
MW-69	URS	Downgradient	06/06/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.2
MW-69	URS	Downgradient	06/06/2016	94	470	1,400	13	7.47	7,600	13,000	0.0021	0.0037	0.015	<0.0010	<0.00010	<0.00050	0.0027	13	<0.00050	0.27	<0.00020	0.015	0.018	0.0022	--
MW-69	URS	Downgradient	08/21/2016	110	480	1,300	16	7.4	8,500	16,000	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--
MW-69	URS	Downgradient	08/21/2016	--	--	--	13	--	--	--	0.00054	0.011	0.016	<0.0010	<0.00010	0.00076	0.0037	13	<0.00050	0.37	<0.00020	0.015	0.015	0.0024	--
MW-69	URS	Downgradient	08/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.9
MW-69	URS	Downgradient	09/13/2016	110	500	1,400	16	7.1	8,700	17,000	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--
MW-69	URS	Downgradient	09/13/2016	--	--	--	11	--	--	--	<0.0025	0.0093	0.016	<0.0010	<0.00050	<0.0025	0.0042	11	<0.00050	0.31	<0.00020	0.015	0.012	<0.00050	--
MW-69	URS	Downgradient	09/13/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.4
MW-69	URS	Downgradient	10/20/2016	120	450	1,400	9.0	7.4	9,800	18,000	--	--	--	--	--	--	--	9.0	--	--	--	--	--	--	--
MW-69	URS	Downgradient	10/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.5
MW-69	URS	Downgradient	02/01/2017	130	460	1,500	11	7.6	12,000	18,000	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--
MW-69	URS	Downgradient	02/01/2017	--	--	--	12	--	--	--	<0.0010	0.0042	0.017	<0.0010	<0.00010	0.00083	0.0046	12	<0.00050	0.40	<0.00020	0.016	0.015	0.00017	--
MW-69	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.4
MW-69	URS	Downgradient	04/17/2017	130	470	1,400	17	7.5	11,000	18,000	--	--	--	--	--	--	--	17	--	--	--	--	--	--	--
MW-69	URS	Downgradient	04/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.0
MW-69	URS	Downgradient	04/17/2017	--	--	--	17	--	--	--	<0.0040	0.0066	0.016	<0.0010	<0.00040	<0.0020	0.0045	17	<0.0020	0.45	<0.00020	0.014	0.011	<0.00040	--
MW-69	URS	Downgradient	04/17/2017	140	470	1,400	17	7.5	12,000	18,000	--	--	--	--	--	--	--	17	--	--	--	--	--	--	--
MW-69	URS	Downgradient	04/17/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.9
MW-69	URS	Downgradient	04/17/2017	--	--	--	17	--	--	--	<0.0040	0.0063	0.016	<0.0010	<0.00040	<0.0020	0.0044	17	<0.0020	0.44	<0.00020	0.014	0.010	<0.00040	--
MW-69	URS	Downgradient	05/02/2017	--	--	--	24	--	--	--	<0.0010	0.0087	0.015	<0.0010	<0.00010	<0.0010	0.0043	24	<0.00050	0.45	<0.00020	0.014	0.019	0.00017	--
MW-69	URS	Downgradient	05/02/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.0
MW-69	URS	Downgradient	05/29/2017	--	--	--	16	--	--	--	<0.010	0.0076	0.018	<0.0010	<0.0010	<0.0050	<0.0050	16	<0.0050	0.37	<0.00020	0.016	0.013	<0.0010	--
MW-69	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.6
MW-69	URS	Downgradient	06/21/2017	120	460	1,400	--	7.5	10,000	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-69	URS	Downgradient	06/21/2017	--	--	--	14	--	--	--	<0.0040	0.0063	0.016	<0.0010	<0.00040	<0.0020	0.0041	14	<0.0020	0.36	<0.00020	0.017	0.017	<0.00040	--
MW-69	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.3
MW-69	URS	Downgradient	07/21/2017	150	470	1,600	18	7.4	13,000	19,000	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--
MW-69	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	<0.0040	0.0083	0.016	<0.0010	<0.00040	<0.0020	0.0048	--	<0.0020	<0.80	<0.00020	0.014	0.013	<0.00040	--
MW-69	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.4
MW-69	URS	Downgradient	08/09/2017	140	470	1,600	--	7.5	12,000	19,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-69	URS	Downgradient	08/09/2017	--	--	--	17	--	--	--	<0.010	0.0066	0.016	<0.0010	<0.0010	<0.0040	0.0044	17	<0.0050	0.44	<0.00020	0.016	0.014	<0.0010	--
MW-69	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.1
MW-69	URS	Downgradient	08/09/2017	150	470	1,500	--	7.5	12,000	19,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-69	URS	Downgradient	08/09/2017	--	--	--	17	--	--	--	<0.010	0.0072	0.013	<0.0010	<0.0010	0.0059	0.0044	17	<0.0050	0.43	<0.00020	0.014	0.016	<0.0010	--
MW-69	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.7
MW-69	URS	Downgradient	08/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.6
MW-69	URS	Downgradient	08/16/2017	130	520	1,500	17	7.6	11,000	20,000	--	--	--	--	--	--	--	17	--	--	--	--	--	--	--
MW-69	URS	Downgradient	09/10/2017	150	490	1,600	--	7.5	13,000	18,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-69	URS	Downgradient	09/10/2017	--	--	--	20	--	--	--	<0.0040	0.0073	0.018	<0.0010	<0.00040	<0.0040	0.0043	20	0.0060	0.46	<0.00020	0.016	0.014	<0.00040	--
MW-69	URS	Downgradient	09/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.9
MW-69	URS	Downgradient	09/10/2017	150	480	1,600	--	7.5	13,000	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-69	URS	Downgradient	09/10/2017	--	--	--	20	--	--	--	<0.0040	0.0075	0.018	<0.0010	<0.00040	<0.0040	0.0044	20	<0.0020	0.46	<0.00020	0.017	0.013	<0.00040	--
MW-69	URS	Downgradient	09/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.9
MW-69	URS	Downgradient	10/13/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.7
MW-69	URS	Downgradient	10/13/2017	150	430	1,600	20	7.5	13,000	19,000	<0.0010	0.0078	0.019	<0.0010	<0.00010	<0.0010	0.0051	20	<0.00050	0.50	<0.00020	0.015	0.023	0.00022	--
MW-69	URS	Downgradient	11/29/2017	150	500	1,600	21	7.4	13,000	20,000	--	--	--	--	--	--	--	21	--	--	--	--	--	--	--
MW-69	URS	Downgradient	03/16/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.4
MW-69	URS	Downgradient	06/02/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6
MW-69	URS	Downgradient																							

Groundwater Sampling Results for the URS Monitoring Wells

Constituent:	Appendix III Constituents							Appendix IV Constituents															
	Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium	
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Filtered:																							
Units:	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
URS BTV (applicable to downgradient wells)	1.9	540	710	<RL	LPL and UPL	13,000	20,000	0.01	0.13	0.051	0.001	0.001	0.01	0.016	4	0.005	0.8	0.0002	0.011	0.45	0.002	5	
URS GWPS (applicable to downgradient wells)	--	--	--	--	--	--	--	0.01	0.13	2	0.004	0.005	0.1	0.016	4	0.015	0.8	0.002	0.1	0.45	0.002	5.4	
MW-69 URS Downgradient 03/17/2019	--	--	--	3.1	--	--	--	<0.0010	0.0032	0.010	<0.0010	0.00021	<0.0010	0.0031	3.1	<0.00050	0.27	<0.00020	0.011	0.038	0.0020	--	
MW-69 URS Downgradient 03/17/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	
MW-69 URS Downgradient 05/07/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8	
MW-69 URS Downgradient 12/03/2019	88	490	1,000	9.0	7.2 J	8,100	13000 J	<0.0020	0.0070	0.011	<0.0010	<0.00020	<0.0040	0.0047	9.0	<0.0010	0.35	<0.00020	0.0096	0.12	0.00053	--	
MW-69 URS Downgradient 06/19/2020	58	500	830	5.5	7.4 J	5,500	9,700	<0.002	0.0040	0.014	--	<0.0002	<0.002	0.0027	5.5	<0.001	0.55	--	0.0072	0.089	0.00030	1.9	
MW-69 URS Downgradient 11/04/2020	63	550	890	5.8	7.3 J	6,000	9,600	<0.002 U	0.0058	0.0081	<0.001	<0.0002 U	0.00092 J	0.0028	5.8	<0.0005	0.26	<0.0002	0.0075	0.11	0.00034	1.3	
MW-70 URS Downgradient 11/09/2015	95	500	1,200	2.6	6.87	7,000	11,000	0.00017	0.0094	0.015	0.00011	0.00014	0.00060	0.0057	2.6	0.00015	0.28	<0.00020	0.0096	0.20	0.00049	--	
MW-70 URS Downgradient 11/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-70 URS Downgradient 04/27/2016	--	--	--	2.3	--	--	--	<0.0025	0.0053	0.012	<0.0010	<0.00010	0.00062	0.0057	2.3	<0.00050	0.33	<0.00020	0.0062	0.20	0.00038	1.0	
MW-70 URS Downgradient 06/05/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.9	
MW-70 URS Downgradient 06/05/2016	89	480	1,200	2.1	6.97	6,300	12,000	0.00011	0.0048	0.012	<0.0010	<0.00010	0.00063	0.0051	2.1	<0.00050	0.31	<0.00020	0.0060	0.17	0.00028	--	
MW-70 URS Downgradient 06/05/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9	
MW-70 URS Downgradient 06/05/2016	89	480	1,100	2.2	6.94	6,300	12,000	0.00011	0.0044	0.013	<0.0010	<0.00010	0.00084	0.0051	2.2	<0.00050	0.32	<0.00020	0.0060	0.16	0.00027	--	
MW-70 URS Downgradient 08/20/2016	91	490	1,100	0.66	7.0	5,800	12,000	--	--	--	--	--	--	--	0.66	--	--	--	--	--	--	--	
MW-70 URS Downgradient 08/20/2016	--	--	--	<0.80	--	--	--	0.00026	0.0051	0.016	<0.0010	<0.00020	0.0037	0.0032	<0.80	<0.0010	0.35	<0.00020	0.027	0.23	0.00057	--	
MW-70 URS Downgradient 08/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5	
MW-70 URS Downgradient 09/12/2016	93	500	1,100	0.69	7.0	5,900	12,000	--	--	--	--	--	--	--	0.69	--	--	--	--	--	--	--	
MW-70 URS Downgradient 09/12/2016	--	--	--	<0.40	--	--	--	<0.0025	<0.0010	0.0073	<0.0010	<0.00050	<0.0025	0.0023	<0.40	<0.00050	0.29	<0.00020	0.0036	0.13	<0.00050	--	
MW-70 URS Downgradient 09/12/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	
MW-70 URS Downgradient 10/19/2016	91	450	1,100	<0.40	7.1	6,400	12,000	--	--	--	--	--	--	--	<0.40	--	--	--	--	--	--	--	
MW-70 URS Downgradient 10/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.6	
MW-70 URS Downgradient 02/01/2017	90	480	1,100	<0.40	7.5	6,400	11,000	--	--	--	--	--	--	--	<0.40	--	--	--	--	--	--	--	
MW-70 URS Downgradient 02/01/2017	--	--	--	<0.40	--	--	--	<0.0010	0.0071	0.0089	<0.0010	0.00011	0.0016	0.0031	<0.40	<0.00050	0.28	<0.00020	0.0026	0.26	0.00040	--	
MW-70 URS Downgradient 02/01/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.3	
MW-70 URS Downgradient 04/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	
MW-70 URS Downgradient 04/16/2017	94	490	1,100	0.94	7.1	6,000	11,000	--	--	--	--	--	--	--	0.94	--	--	--	--	--	--	--	
MW-70 URS Downgradient 04/16/2017	--	--	--	0.85	--	--	--	<0.0040	0.0054	0.0084	<0.0010	<0.00040	<0.0020	0.0035	0.85	<0.0020	0.31	<0.00020	0.0035	0.18	0.00041	--	
MW-70 URS Downgradient 04/16/2017	92	460	1,100	0.95	7.1	6,100	11,000	--	--	--	--	--	--	--	0.95	--	--	--	--	--	--	--	
MW-70 URS Downgradient 04/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1	
MW-70 URS Downgradient 04/16/2017	--	--	--	0.85	--	--	--	<0.0040	0.0045	0.0090	<0.0010	<0.00040	<0.0020	0.0038	0.85	<0.0020	0.32	<0.00020	0.0037	0.20	0.00042	--	
MW-70 URS Downgradient 05/01/2017	--	--	--	<5.0	--	--	--	<0.0010	0.0070	0.0097	<0.0010	<0.00010	<0.0010	0.0053	<5.0	<0.00050	0.32	<0.00020	0.0057	0.25	0.00039	--	
MW-70 URS Downgradient 05/01/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.4	
MW-70 URS Downgradient 05/29/2017	--	--	--	2.6	--	--	--	<0.010	<0.0050	0.014	<0.0010	<0.0010	<0.0050	0.0071	2.6	<0.0050	0.31	<0.00020	0.0090	0.18	<0.0010	--	
MW-70 URS Downgradient 05/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3	
MW-70 URS Downgradient 06/21/2017	92	500	1,000	--	7.1	6,200	11,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-70 URS Downgradient 06/21/2017	--	--	--	2.9	--	--	--	<0.0040	0.0049	0.014	<0.0010	<0.00040	<0.0020	0.0075	2.9	<0.0020	0.32	<0.00020	0.0088	0.18	<0.00040	--	
MW-70 URS Downgradient 06/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5	
MW-70 URS Downgradient 07/21/2017	100	510	1,100	2.1	7.0	6,800	12,000	--	--	--	--	--	--	--	2.1	--	--	--	--	--	--	--	
MW-70 URS Downgradient 07/21/2017	--	--	--	--	--	--	--	<0.0040	0.0042	0.0095	<0.0010	<0.00040	<0.0020	0.0055	--	<0.0020	<0.80	<0.00020	0.0055	0.21	<0.00040	--	
MW-70 URS Downgradient 07/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.7	
MW-70 URS Downgradient 08/09/2017	98	510	1,100	--	7.2	6,800	11,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-70 URS Downgradient 08/09/2017	--	--	--	3.0	--	--	--	<0.010	0.0047	0.013	<0.0010	<0.0010	<0.0040	0.0077	3.0	<0.0050	0.34	<0.00020	0.0093	0.18	<0.0010	--	
MW-70 URS Downgradient 08/09/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.6	
MW-70 URS Downgradient 08/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8	
MW-70 URS Downgradient 08/16/2017	94	540	1,100	3.2	7.1	6,200	12,000	--	--	--	--	--	--	--	3.2	--	--	--	--	--	--	--	
MW-70 URS Downgradient 09/09/2017	99	520	1,100	--	7.0	6,500	12,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-70 URS Downgradient 09/09/2017	--	--	--	2.5	--	--	--	<0.0040	0.0056	0.010	<0.0010	<0.00040	<0.0040	0.0057	2.5	<0.0020	0.31	<0.00020	0.0063	0.17	<0.00040	--	
MW-70 URS Downgradient 09/09/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	
MW-70 URS Downgradient 10/13/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.6	
MW-70 URS Downgradient 10/13/2017	97	490	1,200	1.0	7.1	6,600	12,000	<0.010	0.0062	0.011	<0.0010	<0.0010	<0.010	<0.0050	1.0	<0.0050	0.31	<0.00020	<0.0050	0.21	<0.0010	--	
MW-70 URS Downgradient 11/30/2017	92	560	1,100	2.7	6.9	6,300	11,000	--	--	--	--	--	--	--	2.7	--	--	--	--	--	--	--	
MW-70 URS Downgradient 03/16/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	
MW-70 URS Downgradient 05/31/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8	
MW-70 URS Downgradient 05/31/2018	100	490	1,100	1.8	6.9	6,500	11,000	--	<0.010	0.012	--	--	--	<0.010	1.8	--	0.30	<0.00020	<0.010	0.18	<0.0020	--	
MW-70 URS Downgradient 11/02/2018	88	510	1,100	2.7	7.0	6,400	11,000	--	--	--	--	--	--	--	2.7	--	--	--	--	--	--	--	

Groundwater Sampling Results for the URS Monitoring Wells

Constituent:	Appendix III Constituents							Appendix IV Constituents															
	Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium	
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
<i>URS BTV (applicable to downgradient wells)</i>	1.9	540	710	<RL	LPL and UPL	13,000	20,000	0.01	0.13	0.051	0.001	0.001	0.01	0.016	4	0.005	0.8	0.0002	0.011	0.45	0.002	5	
<i>URS GWPS (applicable to downgradient wells)</i>	--	--	--	--	--	--	--	0.01	0.13	2	0.004	0.005	0.1	0.016	4	0.015	0.8	0.002	0.1	0.45	0.002	5.4	
MW-70 URS Downgradient 11/02/2018	--	--	--	--	--	--	--	--	0.0043	0.010	--	--	--	0.0041	--	--	0.32	--	0.0064	0.19	0.0029	0.7	
MW-70 URS Downgradient 03/18/2019	--	--	--	2.3	--	--	--	<0.0010	0.0054	0.0099	<0.0010	<0.00010	<0.0010	0.0040	2.3	<0.00050	0.32	<0.00020	0.0057	0.24	0.0029	--	
MW-70 URS Downgradient 03/18/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2	
MW-70 URS Downgradient 05/07/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.4	
MW-70 URS Downgradient 12/03/2019	95	510	1,200	2.1	7.0 J	6,400	11,000	<0.0020	0.0076	0.012	<0.0010	<0.00020	<0.0040	0.0036	2.1	<0.0010	0.33	<0.00020	0.0075	0.19	0.0028	--	
MW-70 URS Downgradient 06/19/2020	98	490	1,100	1.9	7.1 J	6,300	11,000	<0.002	0.0070	0.010	--	<0.0002	<0.002	0.0043	1.9	<0.001	0.71	--	0.0060	0.21	0.0023	1.9	
MW-70 URS Downgradient 11/05/2020	93	510	1,100	2.0	7.1 J	6,300	10,000	<0.002	0.0078	0.011	<0.001	<0.0002 U	0.001 J	0.0035	2	<0.001	0.36	<0.0002	0.0054	0.21	0.00034	1.8	
MW-83 URS Downgradient 03/18/2019	--	--	--	1.2	--	--	--	<0.0010	0.0023	0.034	<0.0010	<0.00010	<0.0010	<0.00050	1.2	<0.00050	<0.20	<0.00020	0.053	0.0012	<0.00010	--	
MW-83 URS Downgradient 03/18/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.7	
MW-83 URS Downgradient 05/06/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.7	
MW-83 URS Downgradient 05/06/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.7	
MW-83 URS Downgradient 12/02/2019	2.5	480	130	1.8	7.4 J	3,600	5,400	<0.0020	<0.0010	0.018	<0.0010	<0.00020	<0.0040	0.0023	1.8	<0.0010	<0.20	<0.00020	0.0096	0.0021	<0.00020	--	
MW-83 URS Downgradient 06/19/2020	2.1	290	83	1.0	7.4 J	1,500	2,800	<0.004	0.0021	0.012 J	--	<0.0004	<0.004	<0.002	1.0	<0.001	0.27	--	0.044	<0.002	<0.0002	<0.8	
MW-83 URS Downgradient 06/19/2020	2.2	340	83	1.0	7.3 J	1,500	2,800	<0.004	0.0020	0.038 J	--	<0.0004	<0.004	<0.002	1.0	<0.002	0.30	--	0.046	<0.002	<0.0004	<0.6	
MW-83 URS Downgradient 11/04/2020	2.2	300	84	0.98	7.3 J	1,500	2,700	<0.001 U	0.0029	0.017	<0.001 U	0.0011	0.0020	0.068	0.98	0.0016	0.20	<0.0002	0.035	<0.0025 U	0.0026	<0.8	
MW-84 URS Downgradient 03/17/2019	--	--	--	<0.80	--	--	--	<0.0010	0.00065	0.020	<0.0010	0.00021	0.0010	0.0071	<0.80	<0.00050	0.20	<0.00020	0.0091	0.0036 J	0.00046	--	
MW-84 URS Downgradient 03/17/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5	
MW-84 URS Downgradient 05/07/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9	
MW-84 URS Downgradient 12/03/2019	110	470	1,400	<0.80	7.0 J	8,900	14,000	<0.0020	0.0011	0.019	<0.0010	0.00030	<0.0040	0.0086	<0.80	<0.0010	<0.20	<0.00020	0.0051	0.0028	0.0036	--	
MW-84 URS Downgradient 06/20/2020	45	480	590	0.83	7.3 J	6,000	9,600	<0.004	<0.002	0.037 J	--	<0.0004	<0.004	0.0022	0.83	<0.002	0.61	--	0.0027	0.024	0.00067	1.0	
MW-84 URS Downgradient 11/04/2020	32	490	630	0.71	7.2 J	7,200	11,000	<0.001 U	0.0033	0.019	<0.001	0.0015	0.00058 J	0.075	0.71	0.0024	0.35	<0.0002	0.0014	0.066	0.00028	<0.8	
MW-85 URS Downgradient 03/20/2019	--	--	--	<0.80	--	--	--	<0.0010	0.0043	0.016	<0.0010	<0.00010	0.0028 "J,UJ"	<0.00050	<0.80	<0.00050	0.25	<0.00020	0.0052	0.16	0.00023	--	
MW-85 URS Downgradient 03/20/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.8	
MW-85 URS Downgradient 03/20/2019	--	--	--	<0.80	--	--	--	<0.0010	0.0041	0.017	<0.0010	<0.00010	<0.0010 "J,UJ"	<0.00050	<0.80	<0.00050	0.25	<0.00020	0.0045	0.16	0.00023	--	
MW-85 URS Downgradient 03/20/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.7	
MW-85 URS Downgradient 05/07/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.7	
MW-85 URS Downgradient 12/03/2019	20	500	580	<0.80	7.0 J	4,600	8,200	<0.0020	0.0061	0.017	<0.0010	<0.00020	<0.0040	<0.0010	<0.80	<0.0010	0.23	<0.00020	0.0021	0.13	0.00030	--	
MW-85 URS Downgradient 06/19/2020	38	510	620	<0.8	7.1 J	4,900	8,700	<0.004	0.0079	0.015	--	<0.0004	0.0044	<0.002	<0.8	<0.002	0.44	--	0.049	0.22	<0.0004	0.5	
MW-85 URS Downgradient 11/04/2020	35	540	670	0.35 J	7.0 J	5,000	8,400	<0.002	0.0097	0.016	<0.001	<0.0002 U	0.003	0.00065 J	0.35 J	<0.001	0.29	<0.0002	0.049	0.22	0.0002	0.7	
MW-86 URS Downgradient 03/18/2019	--	--	--	<0.80	--	--	--	<0.0010	0.0011	0.016	<0.0010	0.00012	0.0025	0.0043	<0.80	<0.00050	0.30	<0.00020	0.0028	0.0050	0.00057	--	
MW-86 URS Downgradient 03/18/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.7	
MW-86 URS Downgradient 05/07/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	
MW-86 URS Downgradient 05/07/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	
MW-86 URS Downgradient 12/03/2019	120	480	1,400	<0.80	7.1 J	8,700	14,000	<0.0020	0.0014	0.018	<0.0010	<0.00020	0.035	0.0055	<0.80	<0.0010	0.31	<0.00020	0.0015	0.0015	0.00075	--	
MW-86 URS Downgradient 06/19/2020	110	500	1,300	<0.8	7.1 J	8,300	14,000	<0.004	<0.002	0.012	--	<0.0004	<0.004	0.0056	<0.8	<0.002	<2	--	<0.002	0.0024	0.00072	1.8	
MW-86 URS Downgradient 06/20/2020	46	460	620	0.83	7.1 J	6,100	9,700	<0.004	0.0022	0.020 J	--	<0.0004	<0.004	0.0022	0.83	<0.002	0.46	--	0.0025	0.023	0.00069	0.9	
MW-86 URS Downgradient 11/05/2020	120	470	1,500	0.63 J	7.2 J	9,400	15,000	<0.002	0.0035	0.013	<0.001	<0.0002 U	0.0018 J	0.0057	0.63 J	<0.001	0.33	<0.0002	0.0013	0.0053	0.00076	0.6	

Groundwater Sampling Results for the URS Monitoring Wells

Constituent:	Appendix III Constituents							Appendix IV Constituents															
	Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium	
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Filtered:	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
<i>URS BTV (applicable to downgradient wells)</i>	1.9	540	710	<RL	LPL and UPL	13,000	20,000	0.01	0.13	0.051	0.001	0.001	0.01	0.016	4	0.005	0.8	0.0002	0.011	0.45	0.002	5	
<i>URS GWPS (applicable to downgradient wells)</i>	--	--	--	--	--	--	--	0.01	0.13	2	0.004	0.005	0.1	0.016	4	0.015	0.8	0.002	0.1	0.45	0.002	5.4	
CM-01	URS	CM Pre-Design	11/04/2020	--	--	1,700	3.7	7.3 J	12,000	19,000 J	--	--	--	--	--	--	--	--	--	--	--	--	--
CM-02	URS	CM Pre-Design	11/04/2020	--	--	1,800	6.8	7.4 J	12,000	19,000 J	--	--	--	--	--	--	--	--	--	--	--	--	--
CM-03	URS	CM Pre-Design	11/04/2020	--	--	1,600	16	7.4 J	14,000	21,000 J	--	--	--	--	--	--	--	--	--	--	--	--	--
CM-04	URS	CM Pre-Design	11/04/2020	--	--	1,700	10	7.4 J	11,000	17,000 J	--	--	--	--	--	--	--	--	--	--	--	--	--

Groundwater Sampling Results for the URS Monitoring Wells

				Additional Analyses									
Constituent:				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO ₃)	Alkalinity, Phenolphthalein, as CaCO ₃	Magnesium	Potassium	Radium 226	Radium 228	Sodium
Filtered:				N	N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L
<i>URS BTV (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--	--
<i>URS GWPS (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	03/05/2016	490	< 5.0	--	490	--	1,600	23	--	--	880
MW-71	URS/CWTP	Background	03/05/2016	--	--	--	--	--	--	--	0.656	1.2	--
MW-71	URS/CWTP	Background	03/05/2016	410	< 5.0	--	410	--	1,700	24	--	--	940
MW-71	URS/CWTP	Background	03/05/2016	--	--	--	--	--	--	--	0.717	1.26	--
MW-71	URS/CWTP	Background	04/26/2016	--	--	--	--	--	--	--	0.7	1.5	--
MW-71	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	--	1.1	2.1	--
MW-71	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	0.6	1.0	--
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	0.3	0.8	--
MW-71	URS/CWTP	Background	09/12/2016	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	09/12/2016	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	09/12/2016	--	--	--	--	--	--	--	0.5	1.6	--
MW-71	URS/CWTP	Background	10/20/2016	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	10/20/2016	--	--	--	--	--	--	--	0.4	< 0.7	--
MW-71	URS/CWTP	Background	02/02/2017	550	< 6.0	< 6.0	550	< 6.0	2,300	32	--	--	1,200
MW-71	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	< 0.4	1.9	--
MW-71	URS/CWTP	Background	04/17/2017	420	< 6.0	< 6.0	420	< 6.0	1,800	25	--	--	980
MW-71	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	--	< 0.4	1.2	--
MW-71	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	0.7	< 0.6	--
MW-71	URS/CWTP	Background	05/29/2017	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	05/29/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-71	URS/CWTP	Background	06/22/2017	540	< 6.0	< 6.0	540	< 6.0	2,400	31	--	--	1,200
MW-71	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	1.2	1.5	--
MW-71	URS/CWTP	Background	07/21/2017	420	< 6.0	< 6.0	420	< 6.0	1,800	27	--	--	1,100
MW-71	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	< 0.5	< 0.4	--
MW-71	URS/CWTP	Background	08/10/2017	420	< 6.0	< 6.0	420	< 6.0	2,000	27	--	--	1,100
MW-71	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	< 0.4	< 0.7	--
MW-71	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	--	< 0.4	2.0	--
MW-71	URS/CWTP	Background	08/17/2017	430	< 6.0	< 6.0	430	< 6.0	1,800	30	--	--	1,100
MW-71	URS/CWTP	Background	09/11/2017	420	< 6.0	< 6.0	420	< 6.0	1,800	26	--	--	1,100
MW-71	URS/CWTP	Background	09/11/2017	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	09/11/2017	--	--	--	--	--	--	--	< 0.4	< 0.7	--
MW-71	URS/CWTP	Background	10/13/2017	--	--	--	--	--	--	--	0.8	0.8	--
MW-71	URS/CWTP	Background	10/13/2017	430	< 6.0	< 6.0	430	< 6.0	1,700	26	--	--	1,000
MW-71	URS/CWTP	Background	11/30/2017	430	< 6.0	< 6.0	430	< 6.0	1,700	29	--	--	1,100
MW-71	URS/CWTP	Background	03/16/2018	--	--	--	--	--	--	--	< 1.0	0.8	--
MW-71	URS/CWTP	Background	06/02/2018	--	--	--	--	--	--	--	0.4	1.5	--
MW-71	URS/CWTP	Background	06/02/2018	430	< 6.0	< 6.0	430	< 6.0	2,000	27	--	--	1,000
MW-71	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	1.2	< 0.7	--
MW-71	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	11/03/2018	--	--	--	--	--	--	--	1.8	< 0.7	--
MW-71	URS/CWTP	Background	03/18/2019	--	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	03/18/2019	--	--	--	--	--	--	--	< 0.4	< 0.7	--

Groundwater Sampling Results for the URS Monitoring Wells

				Additional Analyses								
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Potassium	Radium 226	Radium 228
Constituent:				N	N	N	N	N	N	N	N	N
Filtered:				N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L
<i>URS BTV (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--
<i>URS GWPS (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	05/06/2019	--	--	--	--	--	--	< 0.4	1.0	--
MW-71	URS/CWTP	Background	12/02/2019	--	--	--	--	--	--	--	--	--
MW-71	URS/CWTP	Background	06/20/2020	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-71	URS/CWTP	Background	11/05/2020	--	--	--	--	--	--	< 0.5	< 0.8	--
MW-72	URS/CWTP	Background	03/07/2016	620	< 5.0	--	620	--	2,300	29	--	720
MW-72	URS/CWTP	Background	03/07/2016	--	--	--	--	--	--	1.06	1.85	--
MW-72	URS/CWTP	Background	04/26/2016	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-72	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	0.5	0.8	--
MW-72	URS/CWTP	Background	06/06/2016	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	08/21/2016	--	--	--	--	--	--	0.5	2.7	--
MW-72	URS/CWTP	Background	09/13/2016	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	09/13/2016	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	09/13/2016	--	--	--	--	--	--	0.5	3.4	--
MW-72	URS/CWTP	Background	10/20/2016	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	10/20/2016	--	--	--	--	--	--	0.7	3.5	--
MW-72	URS/CWTP	Background	02/02/2017	560	< 6.0	< 6.0	560	< 6.0	2,200	27	--	700
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	0.7	3.3	--
MW-72	URS/CWTP	Background	02/02/2017	560	< 6.0	< 6.0	560	< 6.0	2,300	28	--	710
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	02/02/2017	--	--	--	--	--	--	0.6	0.6	--
MW-72	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	0.6	2.9	--
MW-72	URS/CWTP	Background	04/17/2017	600	< 6.0	< 6.0	600	< 6.0	2,400	29	--	760
MW-72	URS/CWTP	Background	04/17/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	0.7	3.1	--
MW-72	URS/CWTP	Background	05/02/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	05/29/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	06/22/2017	600	< 6.0	< 6.0	600	< 6.0	2,400	29	--	760
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	0.6	2.2	--
MW-72	URS/CWTP	Background	06/22/2017	610	< 6.0	< 6.0	610	< 6.0	2,500	30	--	770
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	06/22/2017	--	--	--	--	--	--	0.5	2.5	--
MW-72	URS/CWTP	Background	07/21/2017	600	< 6.0	< 6.0	600	< 6.0	2,300	29	--	760
MW-72	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	07/21/2017	--	--	--	--	--	--	< 0.5	1.7	--
MW-72	URS/CWTP	Background	08/10/2017	600	< 6.0	< 6.0	600	< 6.0	2,500	30	--	780
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	< 0.4	2.8	--
MW-72	URS/CWTP	Background	08/10/2017	610	< 6.0	< 6.0	610	< 6.0	2,600	30	--	800
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	08/10/2017	--	--	--	--	--	--	< 0.4	1.7	--
MW-72	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	< 0.4	2.1	--
MW-72	URS/CWTP	Background	08/17/2017	610	< 6.0	< 6.0	610	< 6.0	2,300	33	--	790
MW-72	URS/CWTP	Background	08/17/2017	--	--	--	--	--	--	0.9	2.1	--
MW-72	URS/CWTP	Background	08/17/2017	600	< 6.0	< 6.0	600	< 6.0	2,400	32	--	770
MW-72	URS/CWTP	Background	09/10/2017	610	< 6.0	< 6.0	610	< 6.0	2,300	28	--	730
MW-72	URS/CWTP	Background	09/10/2017	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	09/10/2017	--	--	--	--	--	--	< 0.4	2.3	--
MW-72	URS/CWTP	Background	10/13/2017	--	--	--	--	--	--	0.7	2.4	--
MW-72	URS/CWTP	Background	10/13/2017	610	< 6.0	< 6.0	610	< 6.0	2,300	28	--	740
MW-72	URS/CWTP	Background	11/29/2017	590	< 6.0	< 6.0	590	< 6.0	2,300	28	--	760
MW-72	URS/CWTP	Background	03/16/2018	--	--	--	--	--	--	< 1.0	1.9	--

Groundwater Sampling Results for the URS Monitoring Wells

Well ID	Location	Type	Date	Constituent:	Additional Analyses															
					Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium						
					N	N	N	N	N	N	N	N	N	N						
					Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L						
URS BTV (applicable to downgradient wells)					--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
URS GWPS (applicable to downgradient wells)					--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-72	URS/CWTP	Background	06/02/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	06/02/2018		610	< 6.0	< 6.0	610	< 6.0	2,300	26	< 0.4	2.8	--	--	--	--	--	670	
MW-72	URS/CWTP	Background	11/03/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	11/03/2018		--	--	--	--	--	--	--	0.7	1.0	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	11/03/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	11/03/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	11/03/2018		--	--	--	--	--	--	--	0.5	1.5	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	03/17/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	03/17/2019		--	--	--	--	--	--	--	< 0.4	2.4	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	05/07/2019		--	--	--	--	--	--	--	< 0.4	3.4	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	12/02/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	06/19/2020		--	--	--	--	--	--	--	0.9	2.6	--	--	--	--	--	--	
MW-72	URS/CWTP	Background	11/05/2020		--	--	--	--	--	--	--	0.7	1.7	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	02/02/2017		560	< 6.0	< 6.0	560	< 6.0	580	28	--	--	--	--	--	--	--	1,100	
MW-73	URS/CWTP	Background	02/02/2017		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	02/02/2017		--	--	--	--	--	--	--	1.0	2.2	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	04/18/2017		650	< 6.0	< 6.0	650	< 6.0	630	29	--	--	--	--	--	--	--	1,200	
MW-73	URS/CWTP	Background	04/18/2017		--	--	--	--	--	--	--	0.7	1.1	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	04/18/2017		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	05/02/2017		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	05/02/2017		--	--	--	--	--	--	--	0.5	1.8	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	05/29/2017		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	05/29/2017		--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	06/22/2017		780	< 6.0	< 6.0	780	< 6.0	750	34	--	--	--	--	--	--	--	1,600	
MW-73	URS/CWTP	Background	06/22/2017		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	06/22/2017		--	--	--	--	--	--	--	1.5	1.6	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	07/22/2017		800	< 6.0	< 6.0	800	< 6.0	840	37	--	--	--	--	--	--	--	1,800	
MW-73	URS/CWTP	Background	07/22/2017		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	07/22/2017		--	--	--	--	--	--	--	< 0.5	2.0	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	07/22/2017		800	< 6.0	< 6.0	800	< 6.0	850	37	--	--	--	--	--	--	--	1,800	
MW-73	URS/CWTP	Background	07/22/2017		--	--	--	--	--	--	--	0.7	1.1	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	08/10/2017		800	< 6.0	< 6.0	800	< 6.0	820	36	--	--	--	--	--	--	--	1,800	
MW-73	URS/CWTP	Background	08/10/2017		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	08/10/2017		--	--	--	--	--	--	--	< 0.4	1.1	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	08/17/2017		--	--	--	--	--	--	--	< 0.4	1.5	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	08/17/2017		800	< 6.0	< 6.0	800	< 6.0	860	41	--	--	--	--	--	--	--	1,800	
MW-73	URS/CWTP	Background	09/10/2017		730	< 6.0	< 6.0	730	< 6.0	680	30	--	--	--	--	--	--	--	1,300	
MW-73	URS/CWTP	Background	09/10/2017		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	09/10/2017		--	--	--	--	--	--	--	1.2	1.3	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	10/12/2017		--	--	--	--	--	--	--	< 0.3	0.9	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	10/12/2017		480	< 6.0	< 6.0	480	< 6.0	440	20	--	--	--	--	--	--	--	600	
MW-73	URS/CWTP	Background	10/12/2017		--	--	--	--	--	--	--	0.7	1.2	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	10/12/2017		480	< 6.0	< 6.0	480	< 6.0	430	20	--	--	--	--	--	--	--	590	
MW-73	URS/CWTP	Background	11/29/2017		650	< 6.0	< 6.0	650	< 6.0	640	32	--	--	--	--	--	--	--	1,200	
MW-73	URS/CWTP	Background	03/16/2018		--	--	--	--	--	--	--	< 1.0	2.6	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	06/02/2018		--	--	--	--	--	--	--	0.8	2.0	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	06/02/2018		800	< 6.0	< 6.0	800	< 6.0	710	34	--	--	--	--	--	--	--	1,600	
MW-73	URS/CWTP	Background	11/03/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	11/03/2018		--	--	--	--	--	--	--	1.5	1.4	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	03/18/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	03/18/2019		--	--	--	--	--	--	--	< 0.4	1.6	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	05/06/2019		--	--	--	--	--	--	--	< 0.4	1.7	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	12/02/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	12/02/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-73	URS/CWTP	Background	06/20/2020		--	--	--	--	--	--	--	1.5	1.9	--	--	--	--	--	--	

Groundwater Sampling Results for the URS Monitoring Wells

	Constituent:	Additional Analyses											
		Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium		
		N	N	N	N	N	N	N	N	N	N		
Filtered:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L			
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L			
	URS BTV (applicable to downgradient wells)	--	--	--	--	--	--	--	--	--			
	URS GWPS (applicable to downgradient wells)	--	--	--	--	--	--	--	--	--			
MW-73	URS/CWTP	Background	11/05/2020										
MW-66	URS	Downgradient	11/05/2015	250	< 5.0	--	250	--	1,700	29	0.6	2.2	310
MW-66	URS	Downgradient	11/05/2015	--	--	--	--	--	--	--	0.722	1.06	--
MW-66	URS	Downgradient	04/27/2016	--	--	--	--	--	--	--	0.6	< 0.8	--
MW-66	URS	Downgradient	06/05/2016	--	--	--	--	--	--	--	0.6	1.1	--
MW-66	URS	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	0.4	< 0.7	--
MW-66	URS	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	09/12/2016	--	--	--	--	--	--	--	0.9	2.0	--
MW-66	URS	Downgradient	10/19/2016	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	10/19/2016	--	--	--	--	--	--	--	0.9	2.1	--
MW-66	URS	Downgradient	02/01/2017	240	< 6.0	< 6.0	240	< 6.0	2,300	40	--	--	500
MW-66	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	1.2	2.8	--
MW-66	URS	Downgradient	04/16/2017	260	< 6.0	< 6.0	260	< 6.0	2,700	42	--	--	590
MW-66	URS	Downgradient	04/16/2017	--	--	--	--	--	--	--	1.4	2.4	--
MW-66	URS	Downgradient	04/16/2017	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	05/01/2017	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	05/01/2017	--	--	--	--	--	--	--	1.3	1.6	--
MW-66	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	0.8	2.0	--
MW-66	URS	Downgradient	06/21/2017	270	< 6.0	< 6.0	270	< 6.0	2,700	43	--	--	600
MW-66	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	1.2	2.5	--
MW-66	URS	Downgradient	07/21/2017	260	< 6.0	< 6.0	260	< 6.0	2,600	44	--	--	620
MW-66	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	< 0.5	1.2	--
MW-66	URS	Downgradient	08/09/2017	260	< 6.0	< 6.0	260	< 6.0	2,700	44	--	--	640
MW-66	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	0.6	2.6	--
MW-66	URS	Downgradient	08/16/2017	--	--	--	--	--	--	--	0.6	1.9	--
MW-66	URS	Downgradient	08/16/2017	260	< 6.0	< 6.0	260	< 6.0	2,500	50	--	--	690
MW-66	URS	Downgradient	09/09/2017	260	< 6.0	< 6.0	260	< 6.0	2,600	43	--	--	640
MW-66	URS	Downgradient	09/09/2017	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	09/09/2017	--	--	--	--	--	--	--	0.9	1.6	--
MW-66	URS	Downgradient	10/13/2017	--	--	--	--	--	--	--	1.9	3.2	--
MW-66	URS	Downgradient	10/13/2017	270	< 6.0	< 6.0	270	< 6.0	2,600	45	--	--	700
MW-66	URS	Downgradient	11/30/2017	270	< 6.0	< 6.0	270	< 6.0	2,900	48	--	--	770
MW-66	URS	Downgradient	03/16/2018	--	--	--	--	--	--	--	< 1.5	< 1.5	--
MW-66	URS	Downgradient	03/16/2018	--	--	--	--	--	--	--	1.4	2.6	--
MW-66	URS	Downgradient	05/31/2018	--	--	--	--	--	--	--	1.1	1.0	--
MW-66	URS	Downgradient	05/31/2018	300	< 6.0	< 6.0	300	< 6.0	2,800	39	--	--	630
MW-66	URS	Downgradient	11/02/2018	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	11/02/2018	--	--	--	--	--	--	--	2.0	0.9	--
MW-66	URS	Downgradient	03/18/2019	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	03/18/2019	--	--	--	--	--	--	--	< 0.5	1.1	--
MW-66	URS	Downgradient	05/07/2019	--	--	--	--	--	--	--	< 0.4	2.5	--
MW-66	URS	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--	--
MW-66	URS	Downgradient	06/18/2020	--	--	--	--	--	--	--	1.5	< 0.8	--
MW-66	URS	Downgradient	11/05/2020	--	--	--	--	--	--	--	1.2	1.2	--
MW-66	URS	Downgradient	11/05/2020	--	--	--	--	--	--	--	0.9	1.1	--

Groundwater Sampling Results for the URS Monitoring Wells

				Additional Analyses										
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium	
				N	N	N	N	N	N	N	N	N	N	
				Filtered:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	
<i>URS BTV (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--	--	--
<i>URS GWPS (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	11/04/2015	260	< 5.0	--	260	--	1,400	23	--	--	--	270
MW-67	URS	Downgradient	11/04/2015	--	--	--	--	--	--	--	0.846	1.83	--	--
MW-67	URS	Downgradient	04/27/2016	--	--	--	--	--	--	--	0.4	1.7	--	--
MW-67	URS	Downgradient	04/27/2016	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	06/06/2016	--	--	--	--	--	--	--	0.8	1.2	--	--
MW-67	URS	Downgradient	06/06/2016	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	0.7	1.6	--	--
MW-67	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	0.9	2.1	--	--
MW-67	URS	Downgradient	09/13/2016	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	09/13/2016	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	09/13/2016	--	--	--	--	--	--	--	< 0.4	2.1	--	--
MW-67	URS	Downgradient	10/20/2016	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	10/20/2016	--	--	--	--	--	--	--	1.2	2.9	--	--
MW-67	URS	Downgradient	02/01/2017	350	< 6.0	< 6.0	350	< 6.0	2,300	30	--	--	--	470
MW-67	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	< 0.5	3.0	--	--
MW-67	URS	Downgradient	04/17/2017	390	< 6.0	< 6.0	390	< 6.0	2,600	33	--	--	--	570
MW-67	URS	Downgradient	04/17/2017	--	--	--	--	--	--	--	1.0	2.2	--	--
MW-67	URS	Downgradient	04/17/2017	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	05/01/2017	--	--	--	--	--	--	--	0.6	2.7	--	--
MW-67	URS	Downgradient	05/02/2017	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	0.8	1.4	--	--
MW-67	URS	Downgradient	06/21/2017	330	< 6.0	< 6.0	330	< 6.0	2,700	39	--	--	--	620
MW-67	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	1.3	2.9	--	--
MW-67	URS	Downgradient	07/21/2017	370	< 6.0	< 6.0	370	< 6.0	2,800	39	--	--	--	690
MW-67	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	< 0.5	< 2.0	--	--
MW-67	URS	Downgradient	08/09/2017	320	< 6.0	< 6.0	320	< 6.0	3,000	42	--	--	--	720
MW-67	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	< 0.4	1.4	--	--
MW-67	URS	Downgradient	08/16/2017	--	--	--	--	--	--	--	0.5	2.1	--	--
MW-67	URS	Downgradient	08/16/2017	310	< 6.0	< 6.0	310	< 6.0	2,900	52	--	--	--	800
MW-67	URS	Downgradient	09/10/2017	340	< 6.0	< 6.0	340	< 6.0	3,000	41	--	--	--	720
MW-67	URS	Downgradient	09/10/2017	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	09/10/2017	--	--	--	--	--	--	--	0.9	2.2	--	--
MW-67	URS	Downgradient	10/13/2017	--	--	--	--	--	--	--	0.7	2.0	--	--
MW-67	URS	Downgradient	10/13/2017	380	< 6.0	< 6.0	380	< 6.0	2,900	39	--	--	--	770
MW-67	URS	Downgradient	11/29/2017	320	< 6.0	< 6.0	320	< 6.0	3,200	51	--	--	--	910
MW-67	URS	Downgradient	03/16/2018	--	--	--	--	--	--	--	< 1.2	0.9	--	--
MW-67	URS	Downgradient	06/02/2018	--	--	--	--	--	--	--	< 0.4	1.5	--	--
MW-67	URS	Downgradient	06/02/2018	350	< 6.0	< 6.0	350	< 6.0	3,500	43	--	--	--	940
MW-67	URS	Downgradient	11/03/2018	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	11/03/2018	--	--	--	--	--	--	--	0.8	0.8	--	--
MW-67	URS	Downgradient	03/17/2019	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	03/17/2019	--	--	--	--	--	--	--	1.3	3.3	--	--
MW-67	URS	Downgradient	05/07/2019	--	--	--	--	--	--	--	< 0.4	2.6	--	--
MW-67	URS	Downgradient	12/02/2019	--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	06/19/2020	--	--	--	--	--	--	--	0.8	2.4	--	--
MW-67	URS	Downgradient	11/04/2020	--	--	--	--	--	--	--	0.7	2.9	--	--

Groundwater Sampling Results for the URS Monitoring Wells

				Additional Analyses										
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium	
				N	N	N	N	N	N	N	N	N	N	
Filtered:	N	N	N	N	N	N	N	N	N	N				
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L				
<i>URS BTV (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--	--	--
<i>URS GWPS (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--	--	--
MW-67	URS	Downgradient	11/04/2020									< 0.4	3.5	
MW-68	URS	Downgradient	11/06/2015	320	< 5.0	--	320	--	1,700	17	--	--	--	360
MW-68	URS	Downgradient	11/06/2015	--	--	--	--	--	--	--	0.552	0.8	--	--
MW-68	URS	Downgradient	04/26/2016	--	--	--	--	--	--	--	0.6	0.9	--	--
MW-68	URS	Downgradient	06/05/2016	--	--	--	--	--	--	--	0.8	2.1	--	--
MW-68	URS	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	0.5	1.4	--	--
MW-68	URS	Downgradient	09/13/2016	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	09/13/2016	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	09/13/2016	--	--	--	--	--	--	--	1.1	2.7	--	--
MW-68	URS	Downgradient	10/20/2016	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	10/20/2016	--	--	--	--	--	--	--	0.5	0.9	--	--
MW-68	URS	Downgradient	02/01/2017	400	< 6.0	< 6.0	400	< 6.0	2,300	21	--	--	--	570
MW-68	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	< 0.4	2.1	--	--
MW-68	URS	Downgradient	04/17/2017	450	< 6.0	< 6.0	450	< 6.0	2,400	20	--	--	--	620
MW-68	URS	Downgradient	04/17/2017	--	--	--	--	--	--	--	0.4	1.8	--	--
MW-68	URS	Downgradient	04/17/2017	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	05/01/2017	--	--	--	--	--	--	--	< 0.3	1.2	--	--
MW-68	URS	Downgradient	05/02/2017	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--
MW-68	URS	Downgradient	06/21/2017	560	< 6.0	< 6.0	560	< 6.0	2,400	17	--	--	--	640
MW-68	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	0.4	1.8	--	--
MW-68	URS	Downgradient	07/21/2017	550	< 6.0	< 6.0	550	< 6.0	2,300	17	--	--	--	670
MW-68	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	< 0.5	0.9	--	--
MW-68	URS	Downgradient	08/09/2017	500	< 6.0	< 6.0	500	< 6.0	2,500	20	--	--	--	640
MW-68	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	< 0.5	2.8	--	--
MW-68	URS	Downgradient	08/16/2017	--	--	--	--	--	--	--	< 0.4	2.2	--	--
MW-68	URS	Downgradient	08/16/2017	510	< 6.0	< 6.0	510	< 6.0	2,300	23	--	--	--	630
MW-68	URS	Downgradient	09/10/2017	530	< 6.0	< 6.0	530	< 6.0	2,300	18	--	--	--	610
MW-68	URS	Downgradient	09/10/2017	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	09/10/2017	--	--	--	--	--	--	--	0.5	2.4	--	--
MW-68	URS	Downgradient	10/13/2017	--	--	--	--	--	--	--	1.3	1.6	--	--
MW-68	URS	Downgradient	10/13/2017	550	< 6.0	< 6.0	550	< 6.0	2,200	18	--	--	--	650
MW-68	URS	Downgradient	11/30/2017	580	< 6.0	< 6.0	580	< 6.0	2,200	16	--	--	--	680
MW-68	URS	Downgradient	11/30/2017	580	< 6.0	< 6.0	580	< 6.0	2,200	16	--	--	--	680
MW-68	URS	Downgradient	03/16/2018	--	--	--	--	--	--	--	< 1.2	1.0	--	--
MW-68	URS	Downgradient	06/02/2018	--	--	--	--	--	--	--	0.6	< 0.6	--	--
MW-68	URS	Downgradient	06/02/2018	570	< 6.0	< 6.0	570	< 6.0	2,300	17	--	--	--	650
MW-68	URS	Downgradient	11/03/2018	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	11/03/2018	--	--	--	--	--	--	--	0.6	1.3	--	--
MW-68	URS	Downgradient	03/17/2019	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	03/17/2019	--	--	--	--	--	--	--	< 0.5	2.6	--	--
MW-68	URS	Downgradient	05/07/2019	--	--	--	--	--	--	--	< 0.5	2.1	--	--
MW-68	URS	Downgradient	12/02/2019	--	--	--	--	--	--	--	--	--	--	--
MW-68	URS	Downgradient	06/19/2020	--	--	--	--	--	--	--	< 0.4	0.9	--	--
MW-68	URS	Downgradient	11/04/2020	--	--	--	--	--	--	--	0.7	1.1	--	--
MW-69	URS	Downgradient	11/04/2015	210	< 5.0	--	210	--	1,500	32	--	--	--	290
MW-69	URS	Downgradient	11/04/2015	--	--	--	--	--	--	--	1.29	1.88	--	--

Groundwater Sampling Results for the URS Monitoring Wells

				Additional Analyses									
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium
				N	N	N	N	N	N	N	N	N	N
Filtered:	N	N	N	N	N	N	N	N	N	N			
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L			
<i>URS BTV (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--	
<i>URS GWPS (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	04/26/2016	--	--	--	--	--	--	0.8	2.3	--	
MW-69	URS	Downgradient	04/26/2016	--	--	--	--	--	--	1.2	2.0	--	
MW-69	URS	Downgradient	06/06/2016	--	--	--	--	--	--	0.8	2.4	--	
MW-69	URS	Downgradient	06/06/2016	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	08/21/2016	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	08/21/2016	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	08/21/2016	--	--	--	--	--	--	1.2	2.7	--	
MW-69	URS	Downgradient	09/13/2016	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	09/13/2016	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	09/13/2016	--	--	--	--	--	--	1.1	4.3	--	
MW-69	URS	Downgradient	10/20/2016	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	10/20/2016	--	--	--	--	--	--	1.8	3.7	--	
MW-69	URS	Downgradient	02/01/2017	320	< 6.0	< 6.0	320	< 6.0	2,600	40	--	550	
MW-69	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	02/01/2017	--	--	--	--	--	--	1.4	4.0	--	
MW-69	URS	Downgradient	04/17/2017	360	< 6.0	< 6.0	360	< 6.0	2,800	40	--	630	
MW-69	URS	Downgradient	04/17/2017	--	--	--	--	--	--	1.6	4.4	--	
MW-69	URS	Downgradient	04/17/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	04/17/2017	340	< 6.0	< 6.0	340	< 6.0	2,700	41	--	640	
MW-69	URS	Downgradient	04/17/2017	--	--	--	--	--	--	1.4	3.5	--	
MW-69	URS	Downgradient	04/17/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	05/02/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	05/02/2017	--	--	--	--	--	--	1.5	3.5	--	
MW-69	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	05/29/2017	--	--	--	--	--	--	1.6	2.0	--	
MW-69	URS	Downgradient	06/21/2017	290	< 6.0	< 6.0	290	< 6.0	2,400	39	--	590	
MW-69	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	06/21/2017	--	--	--	--	--	--	1.7	2.6	--	
MW-69	URS	Downgradient	07/21/2017	330	< 6.0	< 6.0	330	< 6.0	2,700	46	--	700	
MW-69	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	07/21/2017	--	--	--	--	--	--	< 0.5	3.4	--	
MW-69	URS	Downgradient	08/09/2017	310	< 6.0	< 6.0	310	< 6.0	2,800	44	--	690	
MW-69	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	08/09/2017	--	--	--	--	--	--	1.6	3.5	--	
MW-69	URS	Downgradient	08/09/2017	300	< 6.0	< 6.0	300	< 6.0	2,800	43	--	680	
MW-69	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	08/09/2017	--	--	--	--	--	--	1.1	2.6	--	
MW-69	URS	Downgradient	08/16/2017	--	--	--	--	--	--	1.0	2.6	--	
MW-69	URS	Downgradient	08/16/2017	300	< 6.0	< 6.0	300	< 6.0	2,500	49	--	710	
MW-69	URS	Downgradient	09/10/2017	340	< 6.0	< 6.0	340	< 6.0	2,700	46	--	720	
MW-69	URS	Downgradient	09/10/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	09/10/2017	--	--	--	--	--	--	2.2	3.7	--	
MW-69	URS	Downgradient	09/10/2017	340	< 6.0	< 6.0	340	< 6.0	2,800	45	--	720	
MW-69	URS	Downgradient	09/10/2017	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	09/10/2017	--	--	--	--	--	--	1.1	3.8	--	
MW-69	URS	Downgradient	10/13/2017	--	--	--	--	--	--	1.7	5.0	--	
MW-69	URS	Downgradient	10/13/2017	360	< 6.0	< 6.0	360	< 6.0	2,600	43	--	720	
MW-69	URS	Downgradient	11/29/2017	330	< 6.0	< 6.0	330	< 6.0	2,800	51	--	830	
MW-69	URS	Downgradient	03/16/2018	--	--	--	--	--	--	1.6	3.8	--	
MW-69	URS	Downgradient	06/02/2018	--	--	--	--	--	--	1.3	3.3	--	
MW-69	URS	Downgradient	06/02/2018	360	< 6.0	< 6.0	360	< 6.0	2,600	38	--	680	
MW-69	URS	Downgradient	06/02/2018	--	--	--	--	--	--	0.9	2.2	--	
MW-69	URS	Downgradient	06/02/2018	350	< 6.0	< 6.0	350	< 6.0	2,500	38	--	680	
MW-69	URS	Downgradient	11/03/2018	--	--	--	--	--	--	--	--	--	
MW-69	URS	Downgradient	11/03/2018	--	--	--	--	--	--	1.7	1.3	--	

Groundwater Sampling Results for the URS Monitoring Wells

				Additional Analyses								
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Potassium	Radium 226	Radium 228
Constituent:				N	N	N	N	N	N	N	N	N
Filtered:				N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L
<i>URS BTV (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--
<i>URS GWPS (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--
MW-69	URS	Downgradient	03/17/2019	--	--	--	--	--	--	--	--	--
MW-69	URS	Downgradient	03/17/2019	--	--	--	--	--	--	0.6	2.0	--
MW-69	URS	Downgradient	05/07/2019	--	--	--	--	--	--	< 0.4	1.8	--
MW-69	URS	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--
MW-69	URS	Downgradient	06/19/2020	--	--	--	--	--	--	0.6	1.3	--
MW-69	URS	Downgradient	11/04/2020	--	--	--	--	--	--	< 0.4	1.3	--
MW-70	URS	Downgradient	11/09/2015	540	< 5.0	--	540	--	1,300	19	--	830
MW-70	URS	Downgradient	11/09/2015	--	--	--	--	--	--	0.616	1.02	--
MW-70	URS	Downgradient	04/27/2016	--	--	--	--	--	--	< 0.4	1.0	--
MW-70	URS	Downgradient	06/05/2016	--	--	--	--	--	--	0.5	2.4	--
MW-70	URS	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	06/05/2016	--	--	--	--	--	--	0.6	1.3	--
MW-70	URS	Downgradient	06/05/2016	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	08/20/2016	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	08/20/2016	--	--	--	--	--	--	< 0.3	1.5	--
MW-70	URS	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	09/12/2016	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	09/12/2016	--	--	--	--	--	--	0.6	2.0	--
MW-70	URS	Downgradient	10/19/2016	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	10/19/2016	--	--	--	--	--	--	0.6	1.0	--
MW-70	URS	Downgradient	02/01/2017	470	< 6.0	< 6.0	470	< 6.0	1,300	17	--	770
MW-70	URS	Downgradient	02/01/2017	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	02/01/2017	--	--	--	--	--	--	< 0.4	3.3	--
MW-70	URS	Downgradient	04/16/2017	--	--	--	--	--	--	< 0.4	2.6	--
MW-70	URS	Downgradient	04/16/2017	510	< 6.0	< 6.0	510	< 6.0	1,300	18	--	820
MW-70	URS	Downgradient	04/16/2017	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	04/16/2017	510	< 6.0	< 6.0	510	< 6.0	1,300	18	--	790
MW-70	URS	Downgradient	04/16/2017	--	--	--	--	--	--	< 0.4	2.1	--
MW-70	URS	Downgradient	04/16/2017	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	05/01/2017	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	05/01/2017	--	--	--	--	--	--	0.5	1.9	--
MW-70	URS	Downgradient	05/29/2017	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	05/29/2017	--	--	--	--	--	--	< 0.4	1.3	--
MW-70	URS	Downgradient	06/21/2017	510	< 6.0	< 6.0	510	< 6.0	1,300	18	--	850
MW-70	URS	Downgradient	06/21/2017	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	06/21/2017	--	--	--	--	--	--	0.7	1.8	--
MW-70	URS	Downgradient	07/21/2017	500	< 6.0	< 6.0	500	< 6.0	1,300	19	--	870
MW-70	URS	Downgradient	07/21/2017	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	07/21/2017	--	--	--	--	--	--	< 0.5	< 0.7	--
MW-70	URS	Downgradient	08/09/2017	500	< 6.0	< 6.0	500	< 6.0	1,300	18	--	880
MW-70	URS	Downgradient	08/09/2017	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	08/09/2017	--	--	--	--	--	--	< 0.4	1.6	--
MW-70	URS	Downgradient	08/16/2017	--	--	--	--	--	--	< 0.4	1.8	--
MW-70	URS	Downgradient	08/16/2017	510	< 6.0	< 6.0	510	< 6.0	1,300	21	--	890
MW-70	URS	Downgradient	09/09/2017	510	< 6.0	< 6.0	510	< 6.0	1,200	17	--	820
MW-70	URS	Downgradient	09/09/2017	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	09/09/2017	--	--	--	--	--	--	0.7	1.3	--
MW-70	URS	Downgradient	10/13/2017	--	--	--	--	--	--	< 0.3	< 0.6	--
MW-70	URS	Downgradient	10/13/2017	510	< 6.0	< 6.0	510	< 6.0	1,200	18	--	810
MW-70	URS	Downgradient	11/30/2017	510	< 6.0	< 6.0	510	< 6.0	1,200	19	--	880
MW-70	URS	Downgradient	03/16/2018	--	--	--	--	--	--	< 1.1	2.6	--
MW-70	URS	Downgradient	05/31/2018	--	--	--	--	--	--	0.5	2.3	--
MW-70	URS	Downgradient	05/31/2018	520	< 6.0	< 6.0	520	< 6.0	1,300	17	--	780
MW-70	URS	Downgradient	11/02/2018	--	--	--	--	--	--	--	--	--

Groundwater Sampling Results for the URS Monitoring Wells

				Additional Analyses								
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Potassium	Radium 226	Radium 228
Constituent:				N	N	N	N	N	N	N	N	N
Filtered:				N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L
<i>URS BTV (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--
<i>URS GWPS (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	11/02/2018	--	--	--	--	--	--	0.7	< 0.7	--
MW-70	URS	Downgradient	03/18/2019	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	03/18/2019	--	--	--	--	--	--	< 0.4	1.2	--
MW-70	URS	Downgradient	05/07/2019	--	--	--	--	--	--	< 0.5	2.4	--
MW-70	URS	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--
MW-70	URS	Downgradient	06/19/2020	--	--	--	--	--	--	0.6	1.3	--
MW-70	URS	Downgradient	11/05/2020	--	--	--	--	--	--	< 0.5	1.8	--
MW-83	URS	Downgradient	03/18/2019	--	--	--	--	--	--	--	--	--
MW-83	URS	Downgradient	03/18/2019	--	--	--	--	--	--	< 0.4	< 0.7	--
MW-83	URS	Downgradient	05/06/2019	--	--	--	--	--	--	< 0.4	< 0.7	--
MW-83	URS	Downgradient	05/06/2019	--	--	--	--	--	--	< 0.4	< 0.7	--
MW-83	URS	Downgradient	12/02/2019	--	--	--	--	--	--	--	--	--
MW-83	URS	Downgradient	06/19/2020	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-83	URS	Downgradient	06/19/2020	--	--	--	--	--	--	< 0.4	< 0.6	--
MW-83	URS	Downgradient	11/04/2020	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-84	URS	Downgradient	03/17/2019	--	--	--	--	--	--	--	--	--
MW-84	URS	Downgradient	03/17/2019	--	--	--	--	--	--	< 0.5	1.5	--
MW-84	URS	Downgradient	05/07/2019	--	--	--	--	--	--	0.7	1.2	--
MW-84	URS	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--
MW-84	URS	Downgradient	06/20/2020	--	--	--	--	--	--	< 0.4	1.0	--
MW-84	URS	Downgradient	11/04/2020	--	--	--	--	--	--	< 0.4	< 0.8	--
MW-85	URS	Downgradient	03/20/2019	--	--	--	--	--	--	--	--	--
MW-85	URS	Downgradient	03/20/2019	--	--	--	--	--	--	< 0.5	0.8	--
MW-85	URS	Downgradient	03/20/2019	--	--	--	--	--	--	--	--	--
MW-85	URS	Downgradient	03/20/2019	--	--	--	--	--	--	< 0.4	< 0.7	--
MW-85	URS	Downgradient	05/07/2019	--	--	--	--	--	--	< 0.4	< 0.7	--
MW-85	URS	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--
MW-85	URS	Downgradient	06/19/2020	--	--	--	--	--	--	0.5	< 0.6	--
MW-85	URS	Downgradient	11/04/2020	--	--	--	--	--	--	0.7	< 0.8	--
MW-86	URS	Downgradient	03/18/2019	--	--	--	--	--	--	--	--	--
MW-86	URS	Downgradient	03/18/2019	--	--	--	--	--	--	< 0.4	< 0.7	--
MW-86	URS	Downgradient	05/07/2019	--	--	--	--	--	--	< 0.4	1.1	--
MW-86	URS	Downgradient	05/07/2019	--	--	--	--	--	--	< 0.4	1.1	--
MW-86	URS	Downgradient	12/03/2019	--	--	--	--	--	--	--	--	--
MW-86	URS	Downgradient	06/19/2020	--	--	--	--	--	--	0.6	1.2	--
MW-86	URS	Downgradient	06/20/2020	--	--	--	--	--	--	< 0.4	0.9	--
MW-86	URS	Downgradient	11/05/2020	--	--	--	--	--	--	0.6	< 0.8	--

Groundwater Sampling Results for the URS Monitoring Wells

				Additional Analyses									
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Potassium	Radium 226	Radium 228	Sodium
Constituent:				N	N	N	N	N	N	N	N	N	N
Filtered:				N	N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L
<i>URS BTV (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--	--
<i>URS GWPS (applicable to downgradient wells)</i>				--	--	--	--	--	--	--	--	--	--
CM-01	URS	CM Pre-Design	11/04/2020	400	< 6	< 6	400	< 6	2,700	39	--	--	700
CM-02	URS	CM Pre-Design	11/04/2020	280	< 6	< 6	280	< 6	2,700	42	--	--	700
CM-03	URS	CM Pre-Design	11/04/2020	490	< 6	< 6	490	< 6	3,000	55	--	--	780
CM-04	URS	CM Pre-Design	11/04/2020	300	< 6	< 6	300	< 6	2,300	43	--	--	850

Notes:

BTV exceedances are shown in grey shaded cells. GWPS exceedance are shown in red text.

Duplicate sample dates under the same locations are either field duplicates or are instances of samples with multiple filed/lab sample IDs on the same date.

Abbreviations and Data Qualifiers:

< = less than

BTV = Background Threshold Value

degrees C = degrees Celsius

GWPS = Groundwater Protection Standard

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

mg/L = milligrams per liter

pCi/L = Picocuries per liter

su = standard units

UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

				Appendix III Constituents										Appendix IV Constituents																							
Well	Unit	Background	Date	Boron	Boron	Calcium	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lead	Lithium	Mercury	Mercury	Molybdenum	Selenium	Thallium	Total Radium		
				N	Y	N	Y	N	N	su	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	N	Y	N	Y	N	N	N	N
Filtered:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Units:				N	Y	N	Y	N	N	su	N	N	N	N	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	mg/L
Multiunit 1 BTV				3.95	3.95	454.1	454.1	604.7	2.1	6.52-7.88	22,000	34,397	0.01	0.0086	0.0086	0.042	0.042	0.001	0.001	0.002	0.002	0.02	0.02	0.01	0.01	5	0.01	0.01	1.8	0.0002	0.0002	0.12	0.092	0.017	4.43		
Multiunit 1 GWPS				--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	2	2	0.004	0.004	0.005	0.005	0.1	0.1	0.01	0.01	5	0.015	0.015	1.8	0.002	0.002	0.1	0.092	0.017	5		
MW-74	Multiunit 1	Background	05/02/2017	--	--	--	--	--	--	--	--	--	< 0.010	< 0.0050	--	0.022	--	< 0.0010	--	< 0.0010	--	< 0.0050	--	< 0.0050	--	1.9	< 0.0050	--	0.37	< 0.00020	--	0.028	0.062	< 0.0010	--		
MW-74	Multiunit 1	Background	05/29/2017	--	--	--	--	--	1.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	
MW-74	Multiunit 1	Background	06/22/2017	1.6	--	420	--	410	--	7.8	7,800	12,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-74	Multiunit 1	Background	06/22/2017	--	--	--	--	--	1.9	--	--	--	< 0.0040	0.0032	--	0.020	--	< 0.0010	--	< 0.00040	--	< 0.0020	--	< 0.0020	--	1.9	< 0.0020	--	0.38	< 0.00020	--	0.020	0.060	< 0.00040	--		
MW-74	Multiunit 1	Background	06/22/2017	1.6	--	420	--	410	1.9	7.8	8,400	12,000	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9	--	--	--	--	--	--	--	--	--	< 0.6	
MW-74	Multiunit 1	Background	07/22/2017	--	--	--	--	--	--	--	--	--	< 0.0040	0.0028	--	0.018	--	< 0.0010	--	< 0.00040	--	< 0.0020	--	< 0.0010	--	< 0.0020	--	0.41	< 0.00020	--	0.016	0.071	< 0.00040	--	--		
MW-74	Multiunit 1	Background	07/22/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7	
MW-74	Multiunit 1	Background	08/10/2017	1.5	--	420	--	420	--	7.9	10,000	13,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-74	Multiunit 1	Background	08/10/2017	--	--	--	--	--	2.0	--	--	--	< 0.010	0.0022	--	0.019	--	< 0.0010	--	< 0.0010	--	< 0.0040	--	< 0.0020	--	2.0	< 0.0050	--	0.43	< 0.00020	--	0.018	0.060	< 0.0010	--		
MW-74	Multiunit 1	Background	08/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.9	
MW-74	Multiunit 1	Background	09/10/2017	1.9	--	420	--	470	--	7.7	11,000	15,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-74	Multiunit 1	Background	09/10/2017	--	--	--	--	--	2.0	--	--	--	< 0.0040	0.0043	--	0.023	--	< 0.0010	--	< 0.00040	--	< 0.0040	--	< 0.0020	--	2.0	< 0.0020	--	0.48	< 0.00020	--	0.024	0.092	< 0.00040	--		
MW-74	Multiunit 1	Background	09/10/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.7	
MW-74	Multiunit 1	Background	10/11/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	
MW-74	Multiunit 1	Background	10/11/2017	1.3	--	380	--	490	2.1	7.8	13,000	18,000	< 0.010	< 0.0050	--	0.023	--	< 0.0010	--	< 0.0010	--	< 0.010	--	< 0.0050	--	2.1	< 0.0050	--	0.48	< 0.00020	--	0.023	0.081	< 0.0010	--	--	
MW-74	Multiunit 1	Background	11/30/2017	1.4	--	460	--	470	1.9	7.6	12,000	17,000	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9	--	--	--	--	--	--	--	--	--	< 0.9	
MW-74	Multiunit 1	Background	06/01/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7	
MW-74	Multiunit 1	Background	06/01/2018	1.5	--	400	--	460	2.1	7.7	11,000	17,000	--	< 0.010	--	0.019	--	--	--	--	--	--	--	< 0.010	--	2.1	< 0.010	--	0.49	--	0.015	0.089	< 0.0020	--	--	--	
MW-74	Multiunit 1	Background	03/19/2019	--	--	--	--	--	2.4	--	--	--	< 0.0010	0.0049	--	0.014	--	< 0.0010	--	< 0.00010	--	0.0063	--	< 0.00050	--	2.4	< 0.00050	--	0.65	< 0.00020	--	0.012	0.14	< 0.0010	--		
MW-74	Multiunit 1	Background	03/19/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7	
MW-74	Multiunit 1	Background	05/13/2019	1.6	--	400	--	610	1.9	7.7 J	16,000	23,000	--	0.0044	--	0.016	--	--	--	--	--	--	--	< 0.00010	--	1.9	< 0.00050	--	0.73	--	0.017	0.14	0.0017	--	--		
MW-74	Multiunit 1	Background	05/13/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7	
MW-74	Multiunit 1	Background	06/20/2020	2.2	--	430	--	700	1.1	7.7 J	18,000	28,000	< 0.001	0.0049	--	0.014	--	< 0.0010	--	0.00029	--	0.0019	--	< 0.0005	--	1.1	< 0.0005	--	1.7	--	0.012	0.049	0.00022	< 0.6	--		
DMX-3	Multiunit 1	Downgradient	04/21/1992	--	0.70	--	459	440	0.23	7.6	8,900	15,000	--	--	< 0.005	--	0.013	--	< 0.005	--	< 0.005	--	< 0.010	--	< 0.010	--	0.23	--	< 0.010	--	--	--	< 0.0002	--	--	--	
DMX-3	Multiunit 1	Downgradient	03/12/2014	1.8	--	440	--	520	< 0.80	--	7,500	12,000	--	0.0020	--	--	--	--	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	--	--	--	--	
DMX-3	Multiunit 1	Downgradient	09/11/2014	1.7	--	450	--	650	< 0.40	--	9,600	14,000	--	< 0.0020	--	--	--	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--	--	< 0.0060	
DMX-3	Multiunit 1	Downgradient	12/08/2014	1.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
DMX-3	Multiunit 1	Downgradient	12/08/2014	1.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
DMX-3	Multiunit 1	Downgradient	03/18/2015	2.0	--	430	--	780	< 0.40	--	11,000	16,000	--	< 0.0050	--	--	--	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--	--	< 0.015	
DMX-3	Multiunit 1	Downgradient	06/24/2015	1.5	--	410	--	810	< 8.0	7.2	5,600	17,000	--	< 0.15	--	--	--	--	--	--	--	--	--	--	--	< 8.0	--	--	--	--	--	--	--	--	--	< 0.15	
DMX-3	Multiunit 1	Downgradient	11/05/2015	1.4	--	440	--	850	< 2.0	7.16	11,000	17,000	--	0.0048	--	--	--	--	--	< 0.00020	--	< 0.0010	--	--	--	< 2.0	--	--	--	--	--	--	--	0.0055	--	--	
DMX-3	Multiunit 1	Downgradient	06/21/2016	1.0	--	420	--	1,000	< 0.40	7.19	11,000	19,000	--	< 0.005	--	--	--	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--	--		
DMX-3	Multiunit 1	Downgradient	09/15/2016	0.97	--	400	--	970	< 0.40	7.2	12,000	19,000	--	< 0.0020	--	--	--	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--	--		
DMX-3	Multiunit 1	Downgradient	06/22/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--	--		
DMX-3	Multiunit 1	Downgradient	11/07/2020	0.86	--	440	--	1,100	0.31 J	7.5 J	13,000 J	19,000	0.000097 J	0.0033	--	0.018	--	< 0.001	--	0.000078 J	--	0.0019	--	0.011	--	0.31 J	< 0.001	--	1.3	--	0.019	0.014	0.00035	< 0.8	--		
DMX-4	Multiunit 1	Downgradient	04/21/1992	--																																	

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

Constituent:				Appendix III Constituents										Appendix IV Constituents																					
				Boron	Boron	Calcium	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lead	Lithium	Mercury	Mercury	Molybdenum	Selenium	Thallium	Total Radium
Filtered:				N	Y	N	Y	N	N	N	N	N	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
Multiunit 1 BTV				3.95	3.95	454.1	454.1	604.7	2.1	6.52-7.88	22,000	34,397	0.01	0.0086	0.0086	0.042	0.042	0.001	0.001	0.002	0.002	0.02	0.02	0.01	0.01	5	0.01	0.01	1.8	0.0002	0.0002	0.12	0.092	0.017	4.43
Multiunit 1 GWPS				--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	2	2	0.004	0.004	0.005	0.005	0.1	0.1	0.01	0.01	5	0.015	0.015	1.8	0.002	0.002	0.1	0.092	0.017	5
MW-05	Multiunit 1	Downgradient	09/11/1989	1.0	--	465	--	1,491	1.0	--	13,185	23,710	--	--	--	--	--	--	--	--	--	--	--	1.0	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	03/22/1990	1.0	--	500	--	1,261	0.80	--	12,903	23,200	--	--	--	--	--	--	--	--	--	--	--	0.80	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	10/30/1990	1.0	--	420	--	1,047	0.30	--	13,120	19,533	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	04/04/1991	1.0	--	400	--	1,048	0.30	--	13,185	19,930	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	09/30/1991	1.0	--	390	--	955	0.30	--	12,500	19,320	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	04/15/1992	1.0	--	420	--	1,151	0.40	--	12,680	21,150	--	--	--	--	--	--	--	--	--	--	--	0.40	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	11/03/1992	1.0	--	400	--	1,803	0.30	--	14,184	24,840	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	06/22/1993	0.60	--	380	--	927	0.40	--	11,436	19,210	--	--	--	--	--	--	--	--	--	--	--	0.40	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	11/30/1993	1.0	--	400	--	810	0.30	--	11,810	18,610	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	05/10/1994	1.0	--	420	--	931	0.40	--	11,670	19,240	--	--	--	--	--	--	--	--	--	--	--	0.40	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	11/08/1994	1.0	--	400	--	943	0.30	--	10,944	18,670	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	04/06/1995	1.0	--	420	--	929	0.30	--	10,568	19,370	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	12/13/1995	0.89	--	400	--	900	0.30	--	11,068	18,090	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	08/15/1996	0.67	--	360	--	762	0.20	--	9,929	17,210	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	04/15/1997	0.99	--	360	--	759.8	0.20	--	9,614	17,380	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	10/13/1997	< 0.05	--	400	--	786.2	0.20	--	9,887	16,050	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	04/14/1998	--	--	420	--	774.2	0.20	--	9,217	16,410	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	10/20/1998	1.02	--	380	--	850.6	0.20	--	10,063	16,600	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	06/08/1999	1.8	--	420	--	889.6	0.30	--	9,983	17,740	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	12/01/1999	1.6	--	440	--	747.4	0.30	--	8,913	18,140	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	05/30/2000	1.83	--	430	--	1,220	0.30	--	12,493	16,900	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	11/14/2000	2.02	--	40	--	754.2	0.2972	--	8,457	16,410	--	--	--	--	--	--	--	--	--	--	0.2972	--	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	08/21/2001	1.61	--	400	--	823.8	0.30	--	8,732	15,320	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	12/04/2001	1.4	--	440	--	781	0.30	--	9,030	15,300	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	06/11/2002	1.6	--	400	--	857	0.40	--	8,785	16,320	--	--	--	--	--	--	--	--	--	--	--	0.40	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	12/18/2002	1.57	--	380	--	809.4	0.30	--	8,517	16,310	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	05/28/2003	1.84	--	400	--	899.2	0.20	--	8,022	10,180	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	12/15/2003	0.90	--	320	--	791.4	0.29	--	8,312	15,850	--	--	--	--	--	--	--	--	--	--	--	0.29	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	06/18/2004	--	--	400	--	862.2	0.30	--	8,886	47,050	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	11/30/2004	1.3	--	440	--	875.6	0.30	--	6,119	16,360	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	05/11/2005	0.952	--	440	--	860.4	0.20	--	8,955	15,920	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	12/12/2005	0.841	--	445	--	958.4	0.30	--	9,241	16,780	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	05/15/2006	0.837	--	444	--	977	0.226	--	11,400	17,200	--	--	--	--	--	--	--	--	--	--	--	0.226	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	10/13/2006	0.997	--	476	--	852	0.219	--	10,000	17,300	--	--	--	--	--	--	--	--	--	--	--	0.219	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	04/19/2007	0.97	--	429	--	836	0.133	--	9,120	16,500	--	--	--	--	--	--	--	--	--	--	--	0.133	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	11/20/2007	0.743	--	348	--	1,040	0.30	--	9,800	18,100	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	05/08/2008	0.50	--	356	--	1,010	0.30	--	10,900	17,770	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
MW-05	Multiunit 1	Downgradient	09/27/2012	1.2	--	420	--	3,300	< 4.0	--	14,000	24,000	--	< 0.0010	--	--	--	--	< 0.0010	--	--	--	--	< 4.0	--	--	--	--	--	--	--	--	0.0015	--	
MW-05	Multiunit 1	Downgradient	09/10/2014	1.1	--	420	--	3,800	< 0.80	--	17,000	25,000	--	< 0.00040	--	--	--	< 0.0010	--	--	--	--	< 0.80	--	--	--	--	--	--	--	--	< 0.0012	--	--	
MW-05	Multiunit 1	Downgradient	03/18/2015	1.2	--	450	--	3,400	< 0.80	--	14,000	24,000	--	< 0.0010	--	--	--	< 0.0025	--	--	--	--	< 0.80	--	--	--	--	--	--	--	--	< 0.0030	--	--	
MW-05	Multiunit 1	Downgradient	06/30/2015	1.2	--	420	--	3,100	< 4.0	7.0	13,000	21,000	--	< 0.012	--	--	--	< 0.012	--	--	--	--	< 4.0	--	--	--	--	--	--	--	--	< 0.012	--	--	
MW-05	Multiunit 1	Downgradient	08/25/2015	1.2	--	450	--	3,400	< 4.0	6.98	13,000	26,000	--	< 0.030	--	--	--	< 0.030	--	--	--	--	< 4.0	--	--	--	--	--	--	--	--	< 0.030	--	--	
MW-05	Multiunit 1	Downgradient	11/06/2015	1.1	--	450	--	2,300	< 4.0	6.93	13,000	22,000	--	< 0.0050	--	--	< 0.0025	--	< 0.013	--	--	--	< 4.0	--	--	--	--	--	--	--	--	< 0.015	--	--	
MW-05	Multiunit 1	Downgradient	06/17/2016	1.0	--	460	--	3,000	< 0.80	7.27	14,000	23,000	--	< 0.005	--	--	--	< 0.005	--	--	--	--	< 0.80	--	--	--	--	--	--	--	--	< 0.0020	--	--	
MW-05	Multiunit 1	Downgradient	06/17/2016	0.98	--	450	--	3,000	< 0.80	7.27	14,000	25,000	--	< 0.005	--	--	--	< 0.005	--	--	--	--	< 0.80	--	--	--	--	--	--	--	--	< 0.0020	--	--	
MW-05	Multiunit 1	Downgradient	09/15/2016	1.0	--	440	--	2,900	< 2																										

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

Constituent:	Appendix III Constituents										Appendix IV Constituents																						
	N	Y	N	Y	N	N	pH (Laboratory Measurement)	N	N	N	N	N	N	Y	N	Y	N	Y	N	Y	N	N	Y	N	N	N	Y	N	N	N	N	N	
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
Multiunit 1 BTV	3.95	3.95	454.1	454.1	604.7	2.1	6.52-7.88	22.000	34.397	0.01	0.0086	0.0086	0.042	0.042	0.001	0.001	0.002	0.002	0.02	0.02	0.01	0.01	5	0.01	0.01	1.8	0.0002	0.0002	0.12	0.092	0.017	4.43	
Multiunit 1 GWPS	--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	2	2	0.004	0.004	0.005	0.005	0.1	0.1	0.01	0.01	5	0.015	0.015	1.8	0.002	0.002	0.1	0.092	0.017	5	
MW-06 Multiunit 1/EW System Downgradient 12/01/1999	4.2	--	480	--	345.3	0.20	--	5,662	9,570	--	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 06/08/2000	3.83	--	423	--	522	0.20	--	6,873	9,680	--	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 11/28/2000	4.19	--	490	--	329.9	0.1855	--	5,790	9,840	--	--	--	--	--	--	--	--	--	--	--	--	0.1855	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 08/21/2001	--	--	450	--	376	0.20	--	6,090	10,110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 12/03/2001	4.4	--	490	--	334.5	0.20	--	5,839	9,440	--	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 06/24/2002	4.43	--	400	--	323.9	0.10	--	5,592	9,790	--	--	--	--	--	--	--	--	--	--	--	--	0.10	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 12/18/2002	6.0	--	380	--	320.3	0.20	--	5,507	9,520	--	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 06/03/2003	--	--	400	--	352.6	0.28	--	5,253	9,590	--	--	--	--	--	--	--	--	--	--	--	--	0.28	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 09/24/2003	5.94	--	330	--	311	0.22	--	5,505	9,500	--	--	--	--	--	--	--	--	--	--	--	--	0.22	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 06/16/2004	--	--	40	--	353.6	0.20	--	5,658	9,310	--	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 11/09/2004	9.1	--	425	--	304	< 0.2	--	4,870	8,810	--	< 0.0005	--	0.0108	--	< 0.0005	--	0.0070	--	--	--	--	< 0.2	0.00020	--	--	--	--	0.00276	0.0060	--	--		
MW-06 Multiunit 1/EW System Downgradient 05/12/2005	9.47	--	450	--	321.9	0.10	--	5,588	8,580	--	0.0030	--	321.9	--	< 0.005	--	< 0.001	--	0.0012	--	0.10	< 0.001	--	--	< 0.0002	--	0.00276	0.0060	0.010	0.0012	--	--	
MW-06 Multiunit 1/EW System Downgradient 11/01/2005	11.1	--	404	--	316.4	0.10	--	4,881	8,990	--	--	--	0.011	--	--	--	--	--	0.0030	--	0.10	--	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 05/16/2006	12.4	--	419	--	314	0.15	--	5,100	8,500	--	0.043	--	0.011	--	0.0010	--	< 0.006	--	< 0.004	--	0.0040	--	0.15	< 0.012	--	--	< 0.006	< 0.038	0.012	--	--		
MW-06 Multiunit 1/EW System Downgradient 10/13/2006	14.1	--	454	--	318	0.149	--	5,590	7,920	--	< 0.024	--	0.013	--	< 0.003	--	< 0.002	--	< 0.002	--	< 0.008	--	0.149	< 0.009	--	--	< 0.012	< 0.029	< 0.025	--	--		
MW-06 Multiunit 1/EW System Downgradient 04/18/2007	30.9	--	422	--	352	0.112	--	5,370	8,050	--	0.040	--	0.015	--	< 0.003	--	< 0.002	--	< 0.002	--	< 0.008	--	0.112	< 0.009	--	--	< 0.0022	0.0040	0.020	< 0.025	--		
MW-06 Multiunit 1/EW System Downgradient 11/20/2007	13.5	--	478	--	352	0.20	--	5,100	8,070	--	0.0037	--	0.0085	--	< 0.0005	--	< 0.05	--	0.0060	--	0.00418	--	0.20	< 0.0001	--	--	0.00090	0.011	< 0.0005	--	--		
MW-06 Multiunit 1/EW System Downgradient 08/01/2008	13.9	--	389	--	400	< 0.2	--	5,450	8,120	--	0.0050	--	0.0135	--	< 0.0005	--	< 0.00005	--	0.0060	--	0.00489	--	< 0.2	0.00020	--	--	< 0.0005	0.023	< 0.00005	--	--		
MW-06 Multiunit 1/EW System Downgradient 12/03/2009	10.1	--	377	--	680	0.30	--	7,100	11,700	--	0.0024	--	0.0114	--	< 0.0005	--	< 0.00005	--	0.0080	--	0.00288	--	0.30	0.00040	--	--	< 0.0002	0.0010	0.011	< 0.00005	--	--	
MW-06 Multiunit 1/EW System Downgradient 09/28/2012	21	--	440	--	650	< 2.0	--	4,200	7,700	--	< 0.0010	--	--	--	--	--	--	--	0.0042	--	--	--	< 2.0	--	--	--	--	--	--	< 0.0010	--	--	
MW-06 Multiunit 1/EW System Downgradient 11/20/2013	9.3	--	480	--	1,100	< 2.0	--	9,400	15,000	--	0.00028	--	--	--	--	--	--	--	0.0044	--	--	--	< 2.0	--	--	--	--	--	--	< 0.001	--	--	
MW-06 Multiunit 1/EW System Downgradient 03/12/2014	8.2	--	430	--	1,100	< 0.80	--	9,300	14,000	--	0.00052	--	--	--	--	--	--	--	0.021	--	--	--	< 0.80	--	--	--	--	--	0.00093	--	--		
MW-06 Multiunit 1/EW System Downgradient 09/11/2014	9.1	--	400	--	1,200	< 0.40	--	9,400	15,000	--	< 0.0020	--	--	--	--	--	--	--	< 0.0050	--	--	--	< 0.40	--	--	--	--	--	< 0.0060	--	--		
MW-06 Multiunit 1/EW System Downgradient 12/08/2014	8.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-06 Multiunit 1/EW System Downgradient 03/19/2015	10	--	430	--	1,300	< 0.40	--	9,700	15,000	--	< 0.0010	--	--	--	--	--	--	--	< 0.0025	--	--	--	< 0.40	--	--	--	--	--	< 0.0030	--	--		
MW-06 Multiunit 1/EW System Downgradient 06/24/2015	9.6	--	410	--	1,400	< 0.40	7.17	9,400	16,000	--	< 0.030	--	--	--	--	--	--	--	< 0.030	--	--	--	< 0.40	--	--	--	--	--	< 0.030	--	--		
MW-06 Multiunit 1/EW System Downgradient 08/29/2015	12	--	440	--	1,100	< 2.0	7.16	8,300	14,000	--	< 0.0030	--	--	--	--	--	--	--	< 0.0030	--	--	--	< 2.0	--	--	--	--	--	0.0094	--	--		
MW-06 Multiunit 1/EW System Downgradient 11/07/2015	10	--	470	--	1,300	< 0.40	7.21	9,400	15,000	--	< 0.0010	--	--	--	--	--	--	--	< 0.00050	--	0.0043	--	< 0.40	--	--	--	--	--	< 0.0030	--	--		
MW-06 Multiunit 1/EW System Downgradient 06/20/2016	8.3	--	450	--	1,400	< 0.40	7.24	9,600	16,000	--	< 0.005	--	--	--	--	--	--	--	< 0.005	--	--	--	< 0.40	--	--	--	< 0.00020	--	--	--	--		
MW-06 Multiunit 1/EW System Downgradient 09/15/2016	8.1	--	420	--	1,300	< 0.40	7.2	9,700	15,000	--	< 0.0020	--	--	--	--	--	--	--	< 0.0050	--	--	--	< 0.40	--	--	--	< 0.00020	--	--	--	--		
MW-06 Multiunit 1/EW System Downgradient 03/19/2019	--	--	--	--	--	< 0.80	--	--	--	< 0.0010	0.00069	--	0.019	--	< 0.0010	--	< 0.00010	--	< 0.0010	--	0.0050	--	< 0.80	0.0010	--	1.2	< 0.00020	--	0.017	0.00054	< 0.00010	--	
MW-06 Multiunit 1/EW System Downgradient 03/19/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9	
MW-06 Multiunit 1/EW System Downgradient 05/14/2019	5.9	--	430	--	1,500	< 0.80	7.3 J	11,000	18,000	--	< 0.00050	--	0.016	--	--	--	--	--	< 0.00010	--	0.0047	--	< 0.80	< 0.00050	--	1.3	--	--	0.0074	0.00066	< 0.00010	--	
MW-06 Multiunit 1/EW System Downgradient 05/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4	
MW-06 Multiunit 1/EW System Downgradient 11/19/2019	6.0	--	500	--	1,900	< 0.80	7.3 J	16,000	22,000	< 0.0010	0.0014	--	0.015	--	< 0.0010	--	0.00016	--	< 0.0010	--	0.0010	--	< 0.80	< 0.00050	--	1.6	< 0.00020	--	0.0040	0.0010	< 0.00010	--	
MW-06 Multiunit 1/EW System Downgradient 06/23/2020	5.9	--	520	--	2,200	< 0.8	7.5 J	18,000	29,000	< 0.002	0.0025	--	0.019	--	--	--	--	--	< 0.0002	--	0.0025	--	< 0.8	< 0.001	--	2.7	--	--	0.0042	< 0.001	< 0.0002	2.8	
MW-06 Multiunit 1/EW System Downgradient 11/07/2020	5.9	--	460	--	2,700	--	7.5 J	23,000	31,000	0.00031	0.003	--	0.017	--	< 0.001	--	0.00011	--	0.0025	--	0.00036 J	--	< 0.002	--	--	2.2	--	--	0.0048	0.0049	< 0.0004	2.1	
MW-07 Multiunit 1 Downgradient 04/01/1987	--	4.4	--	500	460	< 0.5	7.6	3,100	5.6*	--	--	< 0.05	--	< 0.005	--	--	--	--	< 0.005	--	< 0.005	--	< 0.5	--	--	< 0.05	--	< 0.0001	--	--	--		
MW-07 Multiunit 1 Downgradient 04/01/1987	--	4.6	--	510	460	< 0.5	7.6	3,800	5,200	--	--	< 0.1	--	< 0.005	--	--	--	--	< 0.005	--	< 0.005	--	< 0.5	--	--	< 0.05	--	< 0.0001	--	--	--		
MW-07 Multiunit 1 Downgradient 09/30/1987	--	5.8	--	460	770	< 0.5	7.2	4,000	7,700	--	--	< 0.05	--	0.12	--	--	--	--	< 0.005	--	< 0.005	--	< 0.5	--	--	< 0.05	--	< 0.0001	--	--	--		
MW-07 Multiunit 1 Downgradient 06/16/1988	--	--	436	--	408	0.50	--	3,678	6,167	--	--	--	--	--	--	--	--	--	--	--	--	0.50	--	--	--	< 0.001	--	--	--	--	--		
MW-07 Multiunit 1 Downgradient 09/21/1988	7.0	--	424	--	309	0.50	--	3,260	5,813	--	--	--	--	--	--	--	--	--	--	--	--	0.50	--	--	--	--	--	--	--	--	--		
MW-07 Multiunit 1 Downgradient 11/14/1988	7.0	--	417	--	348	0.50	--	3,477	6,300	--	--	--	--	--	--	--	--	--	--	--	--	0.50	--	--	--	--	--	--	--	--	--		
MW-07 Multiunit 1 Downgradient 03/06/1989	8.0	--	421	--	3																												

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

					Appendix III Constituents										Appendix IV Constituents																							
Well ID	Unit	Direction	Date	Constituent:	Boron	Boron	Calcium	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lead	Lithium	Mercury	Mercury	Molybdenum	Selenium	Thallium	Total Radium		
				Filtered:	N	Y	N	Y	N	N	N	N	su	N	N	N	N	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	N	Y	N	N	N	N	N	N
					Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
Multiunit 1 BTV					3.95	3.95	454.1	454.1	604.7	2.1	6.52-7.88	22,000	34,397	0.01	0.0086	0.0086	0.042	0.042	0.001	0.001	0.002	0.002	0.02	0.02	0.01	0.01	5	0.01	0.01	1.8	0.0002	0.0002	0.12	0.092	0.017	4.43		
Multiunit 1 GWPS					--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	2	2	0.004	0.004	0.005	0.005	0.1	0.1	0.01	0.01	5	0.015	0.015	1.8	0.002	0.002	0.1	0.092	0.017	5		
MW-08	Multiunit 1	Downgradient	06/16/1988	--	--	448	--	910	0.70	--	--	5,527	9,962	--	--	--	--	--	--	--	--	--	--	--	--	--	0.70	--	--	--	< 0.001	--	--	--	--	--		

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

Well	Unit	Status	Date	Constituent:	Appendix III Constituents													Appendix IV Constituents																			
					Boron		Calcium		Chloride		Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lead	Lithium	Mercury	Mercury	Molybdenum	Selenium	Thallium	Total Radium
					N	Y	N	Y	N	Y	N	su	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
				Filtered:	N	Y	N	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
				Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	
Multiunit 1 BTV				3.95	3.95	454.1	454.1	604.7	2.1	6.52-7.88	22,000	34,397	0.01	0.0086	0.0086	0.042	0.042	0.001	0.001	0.002	0.002	0.02	0.02	0.01	0.01	5	0.01	0.01	1.8	0.0002	0.0002	0.12	0.092	0.017	4.43		
Multiunit 1 GWPS				--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	2	2	0.004	0.004	0.005	0.005	0.1	0.1	0.01	0.01	5	0.015	0.015	1.8	0.002	0.002	0.1	0.092	0.017	5		
MW-16	Multiunit 1	Downgradient	05/07/1992	2.0	--	250	--	557.2	0.30	--	9,994	16,220	--	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	11/05/1992	2.0	--	320	--	556	0.30	--	8,898	15,100	--	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	04/26/1993	2.0	--	330	--	527.8	0.20	--	9,830	14,170	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	11/23/1993	2.0	--	330	--	523	0.30	--	8,832	14,780	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	04/20/1994	2.0	--	390	--	581	0.30	--	9,260	15,320	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	09/21/1994	2.0	--	350	--	517	0.30	--	8,530	14,040	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	04/04/1995	1.0	--	390	--	531	0.30	--	8,186	13,220	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	11/21/1995	3.06	--	400	--	428.6	0.30	--	7,076	11,890	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	08/15/1996	2.79	--	320	--	424.4	0.20	--	7,115	11,820	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	04/15/1997	3.49	--	340	--	408.5	0.30	--	6,336	11,240	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	10/08/1997	< 0.05	--	320	--	414.3	0.20	--	6,952	10,850	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	04/15/1998	3.32	--	420	--	385.5	0.20	--	6,311	11,220	--	< 0.005	--	0.020	--	< 0.001	--	< 0.01	--	--	0.20	< 0.005	--	--	--	--	0.030	0.23	--	--	--				
MW-16	Multiunit 1	Downgradient	05/11/1999	3.9	--	440	--	412.6	0.30	--	6,520	11,790	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	11/30/1999	4.0	--	520	--	417.9	0.20	--	6,331	10,980	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	06/08/2000	4.73	--	462	--	618.3	0.30	--	7,616	11,390	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	12/12/2000	4.97	--	540	--	426.7	0.2809	--	6,014	--	--	--	--	--	--	--	--	--	--	--	2.809	--	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	08/22/2001	5.44	--	480	--	434	0.27	--	5,883	9,990	--	--	--	--	--	--	--	--	--	--	--	0.27	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	12/03/2001	5.7	--	620	--	386.4	0.30	--	5,470	10,240	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	06/12/2002	5.47	--	420	--	493.5	0.40	--	6,693	11,830	--	--	--	--	--	--	--	--	--	--	--	0.40	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	12/18/2002	64.2	--	440	--	429.8	0.20	--	5,924	10,780	--	0.0070	--	< 0.01	--	--	--	--	--	--	0.20	< 0.005	--	--	--	--	< 0.01	0.036	--	--	--				
MW-16	Multiunit 1	Downgradient	05/29/2003	6.55	--	480	--	536.6	0.70	--	6,005	11,460	--	--	--	--	--	--	--	--	--	--	--	0.70	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	12/24/2003	6.59	--	330	--	415	0.34	--	5,816	10,330	--	--	--	--	--	--	--	--	--	--	--	0.34	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	06/16/2004	--	--	440	--	429.3	0.30	--	6,128	10,350	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	11/29/2004	8.8	--	420	--	411.9	0.40	--	3,752	10,080	--	--	--	--	--	--	--	--	--	--	--	0.40	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	06/13/2005	7.41	--	470	--	371.6	0.30	--	5,373	9,900	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	10/31/2005	--	--	--	--	351.2	0.20	--	5,078	9,410	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	05/16/2006	10.3	--	460	--	322	0.267	--	5,440	9,200	--	--	--	--	--	--	--	--	--	--	--	0.267	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	10/11/2006	9.63	--	463	--	327	0.287	--	6,010	9,160	--	< 0.024	--	0.017	--	< 0.002	--	< 0.002	--	--	0.287	< 0.009	--	--	--	--	< 0.012	< 0.029	--	--	--				
MW-16	Multiunit 1	Downgradient	04/18/2007	9.69	--	460	--	380	0.59	--	5,860	9,040	--	--	--	--	--	--	--	--	--	--	--	0.59	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	11/14/2007	8.78	--	391	--	374	0.20	--	5,700	9,040	--	--	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	05/07/2008	9.7	--	400	--	330	0.30	--	6,020	8,780	--	--	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	12/04/2009	10.7	--	408	--	360	0.30	--	4,900	8,250	--	--	0.0037	0.0164	--	< 0.00025	--	0.020	--	--	0.30	< 0.0005	--	--	< 0.0002	--	< 0.0025	0.016	--	--	--				
MW-16	Multiunit 1	Downgradient	09/27/2012	9.5	--	400	--	450	< 2.0	--	5,400	8,900	--	< 0.0010	--	--	--	--	--	--	--	--	--	< 2.0	--	--	--	--	--	--	0.0016	--	--	--			
MW-16	Multiunit 1	Downgradient	11/19/2013	7.3	--	490	--	680	< 4.0	--	6,200	11,000	--	0.00031	--	--	--	--	--	--	--	--	--	< 4.0	--	--	--	--	--	--	0.0050	--	--	--			
MW-16	Multiunit 1	Downgradient	03/12/2014	7.6	--	460	--	690	< 0.80	--	6,500	11,000	--	0.00077	--	--	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	0.0030	--	--	--			
MW-16	Multiunit 1	Downgradient	09/09/2014	7.7	--	440	--	670	< 0.40	--	6,300	10,000	--	0.00065	--	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	0.0021	--	--	--			
MW-16	Multiunit 1	Downgradient	03/17/2015	8.8	--	460	--	820	< 0.40	--	6,300	10,000	--	0.00027	--	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	0.014	--	--	--			
MW-16	Multiunit 1	Downgradient	06/29/2015	8.7	--	430	--	940	< 0.80	7.21	6,200	12,000	--	< 0.0030	--	--	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	0.034	--	--	--			
MW-16	Multiunit 1	Downgradient	08/26/2015	8.3	--	440	--	890	2.7	7.17	7,700	12,000	--	< 0.0060	--	--	--	--	--	--	--	--	--	2.7	--	--	--	--	--	--	0.038	--	--	--			
MW-16	Multiunit 1	Downgradient	11/10/2015	8.1	--	530	--	1,000	< 4.0	7.24	9,000	17,000	--	< 0.0039	--	--	--	< 0.00050	--	0.014	--	--	--	< 4.0	--	--	--	--	--	--	0.049	--	--	--			
MW-16	Multiunit 1	Downgradient	06/18/2016	8.0	--	470	--	1,200	< 0.40	7.35	8,500	15,000	--	< 0.005	--	--	--	--	--	--	--	--	--	< 0.40	--	--	--	< 0.00020	--	--	--	--	--	--			
MW-16	Multiunit 1	Downgradient	09/15/2016	7.5	--	420	--	1,300	< 0.40	7.1	12,000	16,000	--	< 0.0010	--	0.021	--	< 0.0010	--	< 0.0025	--	--	--	< 0.40	--	--	--	< 0.00020	--	--	0.034	--	--	--			
MW-16	Multiunit 1	Downgradient	03/20/2019	--	--	--	--	--	< 0.80	--	--	--	--	< 0.0010	--	0.021	--	< 0.0010	--	0.00015	0.0018	--	0.0062	--	< 0.80	< 0.00050	--	1.2	< 0.00020	--	0.0033	0.045	0.00041	--			

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

Table with columns for Well ID, Unit, Date, and various chemical constituents grouped into Appendix III and Appendix IV. Rows include data for Multiunit 1 BTW, Multiunit 1 GWPS, and Multiunit 1/EW System wells across various dates from 1989 to 2020.

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

Well ID	Multiunit	Status	Date	Appendix III Constituents											Appendix IV Constituents																						
				Boron	Boron	Calcium	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lead	Lithium	Mercury	Mercury	Molybdenum	Selenium	Thallium	Total Radium		
				N	Y	N	Y	N	N	su	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Filtered:				N	Y	N	Y	N	N	su	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Multiunit 1 BTV				3.95	3.95	454.1	454.1	604.7	2.1	6.52-7.88	22,000	34,397	0.01	0.0086	0.0086	0.042	0.042	0.001	0.001	0.002	0.002	0.02	0.02	0.01	0.01	5	0.01	0.01	1.8	0.0002	0.0002	0.12	0.092	0.017	4.43		
Multiunit 1 GWPS				--	--	--	--	--	--	--	--	0.01	0.01	0.01	2	2	0.004	0.004	0.005	0.005	0.1	0.1	0.01	0.01	5	0.015	0.015	1.8	0.002	0.002	0.1	0.092	0.017	5			
MW-36R	Multiunit 1	Downgradient	08/25/2015	21	--	440	--	650	< 0.80	7.16	5,500	8,900	--	< 0.0030	--	--	--	--	< 0.0030	--	--	--	< 0.80	--	--	--	--	--	--	--	--	--	0.0682	--	--		
MW-36R	Multiunit 1	Downgradient	11/03/2015	28	--	480	--	--	--	7.14	--	8,400	--	< 0.0010	--	--	0.0031	--	< 0.0025	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0030	--	--	
MW-36R	Multiunit 1	Downgradient	11/13/2015	23	--	390	--	610	< 2.0	7.21	4,700	8,300	--	< 0.0040	--	--	--	--	< 0.0010	--	--	--	< 2.0	--	--	--	--	--	--	--	--	--	< 0.0012	--	--		
MW-36R	Multiunit 1	Downgradient	06/17/2016	28	--	460	--	640	< 0.40	7.32	4,800	7,900	--	< 0.005	--	--	--	--	< 0.005	--	--	< 0.40	--	--	--	--	< 0.0020	--	--	--	--	--	--	--	--		
MW-36R	Multiunit 1	Downgradient	09/15/2016	50	--	430	--	540	< 0.40	7.3	4,100	6,600	--	< 0.0010	--	--	--	--	< 0.0025	--	--	< 0.40	--	--	--	--	< 0.0020	--	--	--	--	--	--	--	--		
MW-36R	Multiunit 1	Downgradient	06/21/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0013	--	--	
MW-36R	Multiunit 1	Downgradient	11/07/2020	53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.26	--	--	--	--	--	--	--	--	--	--	0.0010	--	--	--	
MW-36R	Multiunit 1	Downgradient	11/07/2020	55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.29	--	--	--	--	--	--	--	--	--	--	0.0018	--	--	--	
MW-36R	Multiunit 1	Downgradient	03/12/2014	39	--	440	--	1,300	< 0.80	--	12,000	18,000	--	--	--	--	--	--	--	0.0015	--	--	< 0.80	--	--	--	--	--	--	--	--	--	0.0023	--	--		
MW-38R	Multiunit 1	Downgradient	09/11/2014	43	--	420	--	1,400	< 0.80	--	20,000	32,000	--	< 0.0040	--	--	--	--	--	< 0.010	--	--	< 0.80	--	--	--	--	--	--	--	--	--	< 0.012	--	--		
MW-38R	Multiunit 1	Downgradient	03/19/2015	34	--	410	--	1,200	< 0.80	--	18,000	29,000	--	0.0010	--	--	--	--	--	< 0.0025	--	--	< 0.80	--	--	--	--	--	--	--	--	0.0044	--	--	--		
MW-38R	Multiunit 1	Downgradient	06/30/2015	35	--	390	--	710	< 2.0	7.51	9,500	16,000	--	< 0.012	--	--	--	--	< 0.012	--	--	< 2.0	--	--	--	--	--	--	--	--	--	< 0.012	--	--	--		
MW-38R	Multiunit 1	Downgradient	08/29/2015	33	--	420	--	560	< 2.0	7.47	8,800	14,000	--	< 0.0030	--	--	--	< 0.0030	--	--	< 2.0	--	--	--	--	--	--	--	--	--	--	0.015	--	--	--		
MW-38R	Multiunit 1	Downgradient	11/10/2015	34	--	490	--	810	< 2.0	7.25	16,000	20,000	--	0.0020	--	--	--	< 0.0050	--	0.0071	--	< 2.0	--	--	--	--	--	--	--	--	0.011	--	--	--	--		
MW-38R	Multiunit 1	Downgradient	06/21/2016	27	--	400	--	520	< 0.40	7.37	8,200	12,000	--	< 0.005	--	--	--	--	--	< 0.005	--	--	< 0.40	--	--	--	< 0.0020	--	--	--	--	--	--	--	--		
MW-38R	Multiunit 1	Downgradient	06/21/2016	25	--	400	--	590	< 0.40	7.32	9,400	15,000	--	< 0.005	--	--	--	--	--	< 0.005	--	--	< 0.40	--	--	--	< 0.0020	--	--	--	--	--	--	--	--		
MW-38R	Multiunit 1	Downgradient	09/15/2016	26	--	380	--	420	< 0.40	7.4	7,700	12,000	--	< 0.0010	--	--	--	--	--	< 0.0025	--	--	< 0.40	--	--	--	< 0.0020	--	--	--	--	--	--	--	--		
MW-38R	Multiunit 1	Downgradient	09/15/2016	27	--	390	--	470	< 0.40	7.4	8,600	13,000	--	< 0.0010	--	--	--	--	--	< 0.0025	--	--	< 0.40	--	--	--	< 0.0020	--	--	--	--	--	--	--	--		
MW-38R	Multiunit 1	Downgradient	03/19/2019	--	--	--	--	--	< 0.40	--	--	--	< 0.0010	0.00051	--	0.018	--	< 0.0010	0.00011	--	< 0.0010	0.17	--	< 0.40	0.00053	0.45	< 0.0020	--	0.016	0.0037	< 0.00010	--	--	0.8			
MW-38R	Multiunit 1	Downgradient	03/19/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.8			
MW-38R	Multiunit 1	Downgradient	05/14/2019	24	--	400	--	300	< 0.80	7.7 J	4,900	8,200	--	0.00060	--	0.017	--	--	0.00013	--	--	0.16	--	< 0.80	0.00085	0.50	--	--	0.083	0.0033	< 0.00010	--	--	< 0.7			
MW-38R	Multiunit 1	Downgradient	05/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
MW-38R	Multiunit 1	Downgradient	11/19/2019	26	--	450	--	270	< 0.80	7.5 J	4,000	6,100	< 0.0010	< 0.00050	--	0.020	--	< 0.0010	0.00013	--	0.0011	0.23	--	< 0.80	< 0.00050	0.37	< 0.00020	--	0.0050	0.0010	< 0.00010	--	--	--	--		
MW-38R	Multiunit 1	Downgradient	11/19/2019	27	--	450	--	270	< 0.80	7.5 J	4,000	5,900	< 0.0010	0.00064	--	0.019	--	< 0.0010	0.00015	--	0.0011	0.23	--	< 0.80	< 0.00050	0.37	< 0.00020	--	0.0049	0.00080	< 0.00010	--	--	--	--		
MW-38R	Multiunit 1	Downgradient	06/22/2020	29	--	450	--	290	< 0.8	7.2 J	3,700	5,600	< 0.002	< 0.001	--	0.014	--	--	< 0.0002	--	< 0.002	0.24	--	< 0.8	< 0.001	0.49	--	--	0.0057	< 0.001	< 0.0002	0.4	--	--	--		
MW-38R	Multiunit 1	Downgradient	06/22/2020	30	--	440	--	290	< 0.8	7.4 J	3,800	5,400	< 0.004	< 0.002	--	0.016	--	--	< 0.0004	--	< 0.004	0.28	--	< 0.8	< 0.002	0.49	--	--	0.0063	< 0.002	< 0.0004	1.1	--	--	--		
MW-38R	Multiunit 1	Downgradient	11/06/2020	27	--	490 / 430	--	280	0.36 J	7.4 J	4,000	5,800	< 0.004	0.0013	--	0.014	--	< 0.001	0.00032	--	0.0022	0.28	--	< 0.36 J	< 0.002	0.41	--	--	0.0073	0.0026	< 0.0004	< 0.8	--	--	--		
MW-40R	Multiunit 1	Downgradient	02/02/2017	18	--	410	--	1,900	< 0.40	7.8	12,000	18,000	--	--	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	--	--	--	--	--		
MW-40R	Multiunit 1	Downgradient	02/02/2017	--	--	--	--	--	< 0.40	--	--	--	< 0.0020	< 0.0010	--	0.023	--	< 0.0010	0.00058	--	0.028	0.34	--	< 0.40	< 0.00050	1.1	< 0.00020	--	0.026	0.0018	0.00021	--	--	0.6			
MW-46	Multiunit 1	Downgradient	06/30/2015	0.37	--	400	--	2,400	< 4.0	7.44	18,000	28,000	--	< 0.012	--	--	--	--	< 0.012	--	--	< 4.0	--	--	--	--	--	--	--	--	0.012	--	--	--	--		
MW-46	Multiunit 1	Downgradient	11/07/2015	0.50	--	460	--	2,200	< 4.0	7.51	17,000	29,000	--	0.0062	--	--	--	< 0.00050	--	0.048	--	< 4.0	--	--	--	--	--	--	--	--	< 0.0030	--	--	--	--		
MW-52	Multiunit 1	Downgradient	03/17/2015	5.4	--	450	--	470	< 0.40	--	5,300	8,100	--	< 0.0010	--	--	--	--	--	< 0.0020	--	--	< 0.40	--	--	--	--	--	--	0.0029	--	--	--	--	--		
MW-52	Multiunit 1	Downgradient	03/17/2015	5.3	--	450	--	470	< 0.40	--	5,400	8,500	--	0.00030	--	--	--	--	--	< 0.00050	--	--	< 0.40	--	--	--	--	--	--	0.00074	--	--	--	--	--		
MW-52	Multiunit 1	Downgradient	08/26/2015	6.1	--	430	--	500	< 0.80	7.48	5,600	8,300	--	< 0.0060	--	--	--	--	--	< 0.0060	--	--	< 0.80	--	--	--	--	--	--	--	--	--	--	--	--		
MW-52	Multiunit 1	Downgradient	11/03/2015	6.0	--	460	--	470	< 0.80	7.47	5,400	8,400	< 0.0050	< 0.0010																							

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

				Appendix III Constituents									Appendix IV Constituents																						
				Boron	Boron	Calcium	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lead	Lithium	Mercury	Mercury	Molybdenum	Selenium	Thallium	Total Radium
Constituent:	Filtered:	N	Y	N	Y	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	N	Y	N	N	Y	N	N	N	N		
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L		
Multiunit 1 BTV	3.95	3.95	454.1	454.1	604.7	2.1	6.52-7.88	22,000	34,397	0.01	0.0086	0.0086	0.042	0.042	0.001	0.001	0.002	0.002	0.02	0.02	0.01	0.01	5	0.01	0.01	1.8	0.0002	0.0002	0.12	0.092	0.017	4.43			
Multiunit 1 GWPS	--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	2	2	0.004	0.004	0.005	0.005	0.1	0.1	0.01	0.01	5	0.015	0.015	1.8	0.002	0.002	0.1	0.092	0.017	5			
MW-75	Multiunit 1	Downgradient	11/19/2019	24	--	450	--	290	1.2	8.3 J	4,400	6,600	< 0.0010	0.00056	--	0.019	--	< 0.0010	--	0.0020	--	< 0.0010	--	0.045	--	1.2	0.0030	--	0.41	< 0.00020	--	0.19	0.0029	0.00022	--
MW-75	Multiunit 1	Downgradient	06/21/2020	24	--	470	--	270	1.1	8.4 J	4,300	6,700	< 0.001	0.00071	--	0.018	--	--	0.0017	--	< 0.001	--	0.047	--	1.1	0.0028	--	0.77	--	--	0.18	0.0030	0.00021	0.8	
MW-75	Multiunit 1	Downgradient	11/08/2020	25	--	470	--	290	1.3	8.4 J	4,800	6,600	< 0.001 U	< 0.0013 U	--	0.013 J	--	< 0.001	--	0.0019	--	0.00072 J	--	0.047	--	1.3	0.0029	--	0.43	< 0.0002	--	0.19	0.0060	0.00020	< 0.8
MW-87	Multiunit 1	Downgradient	03/19/2019	--	--	--	--	< 0.80	--	--	--	--	0.0037	0.0023	--	0.023	--	< 0.0010	--	0.00013	--	< 0.0010	--	0.032	--	< 0.80	0.00062	--	1.1	< 0.00020	--	0.12	0.090	< 0.00010	--
MW-87	Multiunit 1	Downgradient	03/19/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5	
MW-87	Multiunit 1	Downgradient	05/14/2019	1.2	--	410	--	2,100	< 0.80	7.4 J	17,000	29,000	--	0.0026	--	0.015	--	--	--	< 0.00010	--	--	--	0.018	--	< 0.80	< 0.00050	--	1.3	--	--	0.10	0.033	< 0.00010	--
MW-87	Multiunit 1	Downgradient	05/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4	
MW-87	Multiunit 1	Downgradient	06/22/2019	1.2	--	410	--	2,000	< 0.80	--	18,000	28,000	0.0033	0.0042	--	0.016	--	< 0.0010	--	< 0.00010	--	< 0.0020	--	0.018	--	< 0.80	< 0.0020	--	1.3	< 0.00020	--	0.13	0.0059	< 0.00040	--
MW-87	Multiunit 1	Downgradient	11/19/2019	2.4	--	420	--	1,600	< 0.80	7.3 J	18,000	27,000	< 0.0010	0.0028 J	--	0.015	--	< 0.0010	--	0.00024	--	< 0.0010	--	0.0037	--	< 0.80	< 0.00050	--	1.2	< 0.00020	--	0.030	0.015	0.00018	--
MW-87	Multiunit 1	Downgradient	11/19/2019	2.4	--	440	--	1,700	< 0.80	7.4 J	18,000	26,000	< 0.0010	0.0014 J	--	0.015	--	< 0.0010	--	0.00024	--	< 0.0010	--	0.0036	--	< 0.80	< 0.00050	--	1.3	< 0.00020	--	0.028	0.018	0.00017	--
MW-87	Multiunit 1	Downgradient	06/23/2020	1.4	--	440	--	2,200	< 0.8	7.7 J	19,000	30,000	0.0021	0.0030	--	0.012	--	--	--	0.00032	--	< 0.002	--	0.010	--	< 0.8	< 0.001	--	--	--	--	0.069	0.0067	< 0.0002	2.8
MW-87	Multiunit 1	Downgradient	11/06/2020	1.2	--	480	--	2,400	0.56 J	7.4 J	23,000	38,000	0.0016 J	0.0048	--	< 0.02 / 0.016	--	< 0.001	--	0.00023	--	0.012	--	0.014	--	0.56 J	< 0.001	--	1.7	< 0.0002	--	0.051	0.019	0.00014 J	3.7
MW-50B	Multiunit 1	--	03/17/2015	< 5.0	--	310	--	4,400	< 2.0	--	3,900	4,900	--	0.0790	--	--	--	--	--	--	--	0.35	--	--	--	< 2.0	--	--	--	--	--	0.020	--	--	

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

			Additional Analyses													
Constituent:	Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Magnesium	Potassium	Potassium	Radium 226	Radium 228	Selenium	Sodium	Sodium		
Filtered:	N	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y		
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L		
Multiunit 1 BTW			--	--	--	--	--	--	--	--	--	--	--	--		
Multiunit 1 GWPS			--	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	06/21/2004	2,776	--	2,275	< 0	320	--	30.4	--	--	--	1,180		
MW-07	Multiunit 1	Downgradient	11/29/2004	2,867	--	2,350	< 0	280	--	28.6	--	--	--	1,210		
MW-07	Multiunit 1	Downgradient	06/13/2005	335.5	--	275	< 0	300	--	29.6	--	--	--	1,180		
MW-07	Multiunit 1	Downgradient	12/14/2005	488	--	400	< 0	366	--	26.6	--	--	--	1,710		
MW-07	Multiunit 1	Downgradient	05/16/2006	340.4	--	279	< 0	274	--	26.3	--	--	--	1,260		
MW-07	Multiunit 1	Downgradient	10/11/2006	370.9	--	304	< 0	330	--	33.8	--	--	--	1,550		
MW-07	Multiunit 1	Downgradient	04/19/2007	337.9	--	277	< 0	269	--	27.1	--	--	--	1,280		
MW-07	Multiunit 1	Downgradient	11/19/2007	434.3	--	356	< 0	258	--	25.1	--	--	--	1,490		
MW-07	Multiunit 1	Downgradient	08/07/2008	414.8	--	340	< 0	321	--	30.1	--	--	--	1,590		
MW-07	Multiunit 1	Downgradient	07/10/2012	470	< 6.0	< 6.0	470	< 6.0	440	--	36	--	--	2,000		
MW-07	Multiunit 1	Downgradient	09/27/2012	390	< 6.0	< 6.0	390	< 6.0	800	--	39	--	--	2,600		
MW-07	Multiunit 1	Downgradient	11/19/2013	420	< 6.0	< 6.0	420	< 6.0	580	--	38	--	--	1,500		
MW-07	Multiunit 1	Downgradient	09/10/2014	440	< 6.0	< 6.0	440	< 6.0	530	--	37	--	--	2,100		
MW-07	Multiunit 1	Downgradient	03/16/2015	470	< 6.0	< 6.0	470	< 6.0	480	--	37	--	--	2,400		
MW-07	Multiunit 1	Downgradient	08/26/2015	470	< 6.0	< 6.0	470	< 6.0	400	--	40	--	--	2,300		
MW-07	Multiunit 1	Downgradient	11/07/2015	560	< 5.0	--	560	--	390	--	30	--	--	1,900		
MW-07	Multiunit 1	Downgradient	11/07/2015	--	--	--	--	--	--	--	0.611	1.19	--	--		
MW-07	Multiunit 1	Downgradient	04/26/2016	--	--	--	--	--	--	--	< 0.4	1.9	--	--		
MW-07	Multiunit 1	Downgradient	06/06/2016	--	--	--	--	--	--	--	0.9	2.4	--	--		
MW-07	Multiunit 1	Downgradient	06/06/2016	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	08/21/2016	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	08/21/2016	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	08/21/2016	--	--	--	--	--	--	--	< 0.4	0.7	--	--		
MW-07	Multiunit 1	Downgradient	09/13/2016	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	09/13/2016	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	09/13/2016	--	--	--	--	--	--	0.7	1.9	--	--	--		
MW-07	Multiunit 1	Downgradient	10/20/2016	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	10/20/2016	--	--	--	--	--	--	0.4	--	--	--	--		
MW-07	Multiunit 1	Downgradient	02/02/2017	450	< 6.0	< 6.0	450	< 6.0	500	--	36	--	--	1,800		
MW-07	Multiunit 1	Downgradient	02/02/2017	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	02/02/2017	--	--	--	--	--	--	--	< 0.4	1.9	--	--		
MW-07	Multiunit 1	Downgradient	04/18/2017	490	< 6.0	< 6.0	490	< 6.0	600	--	38	--	--	2,000		
MW-07	Multiunit 1	Downgradient	04/18/2017	--	--	--	--	--	--	--	< 0.5	1.5	--	--		
MW-07	Multiunit 1	Downgradient	04/18/2017	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	05/03/2017	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	05/03/2017	--	--	--	--	--	--	--	< 0.3	< 0.6	--	--		
MW-07	Multiunit 1	Downgradient	05/29/2017	--	--	--	--	--	--	--	< 0.4	2.2	--	--		
MW-07	Multiunit 1	Downgradient	05/30/2017	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	05/30/2017	--	--	--	--	--	--	< 0.5	< 0.6	--	--	--		
MW-07	Multiunit 1	Downgradient	06/22/2017	500	< 6.0	< 6.0	500	< 6.0	620	--	36	--	--	1,700		
MW-07	Multiunit 1	Downgradient	06/22/2017	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	06/22/2017	--	--	--	--	--	--	< 0.3	1.2	--	--	--		
MW-07	Multiunit 1	Downgradient	07/22/2017	500	< 6.0	< 6.0	500	< 6.0	620	--	36	--	--	1,700		
MW-07	Multiunit 1	Downgradient	07/22/2017	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	07/22/2017	--	--	--	--	--	--	< 0.5	1.9	--	--	--		
MW-07	Multiunit 1	Downgradient	08/10/2017	510	< 6.0	< 6.0	510	< 6.0	630	--	36	--	--	1,700		
MW-07	Multiunit 1	Downgradient	08/10/2017	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	08/10/2017	--	--	--	--	--	--	< 0.5	1.2	--	--	--		
MW-07	Multiunit 1	Downgradient	08/17/2017	--	--	--	--	--	--	< 0.4	1.2	--	--	--		
MW-07	Multiunit 1	Downgradient	08/17/2017	520	< 6.0	< 6.0	520	< 6.0	670	--	43	--	--	1,700		
MW-07	Multiunit 1	Downgradient	09/10/2017	510	< 6.0	< 6.0	510	< 6.0	610	--	35	--	--	1,600		
MW-07	Multiunit 1	Downgradient	09/10/2017	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	09/10/2017	--	--	--	--	--	--	< 0.4	1.3	--	--	--		
MW-07	Multiunit 1	Downgradient	10/12/2017	--	--	--	--	--	--	1.4	1.2	--	--	--		
MW-07	Multiunit 1	Downgradient	10/12/2017	510	< 6.0	< 6.0	510	< 6.0	550	--	34	--	--	1,600		
MW-07	Multiunit 1	Downgradient	11/30/2017	500	< 6.0	< 6.0	500	< 6.0	560	--	38	--	--	1,900		
MW-07	Multiunit 1	Downgradient	03/17/2018	--	--	--	--	--	--	--	< 0.9	< 0.8	--	--		
MW-07	Multiunit 1	Downgradient	03/17/2018	--	--	--	--	--	--	< 0.9	< 0.8	--	--	--		
MW-07	Multiunit 1	Downgradient	06/01/2018	--	--	--	--	--	--	0.5	0.8	--	--	--		
MW-07	Multiunit 1	Downgradient	06/01/2018	510	< 6.0	< 6.0	510	< 6.0	470	--	34	--	--	1,700		
MW-07	Multiunit 1	Downgradient	11/04/2018	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	11/04/2018	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
MW-07	Multiunit 1	Downgradient	03/19/2019	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	03/19/2019	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
MW-07	Multiunit 1	Downgradient	05/14/2019	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	05/14/2019	--	--	--	--	--	--	< 0.6	< 0.7	--	--	--		
MW-07	Multiunit 1	Downgradient	11/19/2019	--	--	--	--	--	--	--	--	--	--	--		
MW-07	Multiunit 1	Downgradient	06/23/2020	--	--	--	--	--	--	< 0.5	1.8	--	--	--		
MW-07	Multiunit 1	Downgradient	11/06/2020	--	--	--	--	--	--	< 0.4	1.4	--	--	--		
MW-07	Multiunit 1	Downgradient	11/06/2020	--	--	--	--	--	--	0.4	1.0	--	--	--		
MW-08	Multiunit 1	Downgradient	10/02/1987	--	--	200	--	--	680	--	40	--	< 0.05	1,600		

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

				Additional Analyses														
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO ₃)	Alkalinity, Phenolphthalein, as CaCO ₃	Magnesium	Magnesium	Potassium	Potassium	Radium 226	Radium 228	Selenium	Sodium	Sodium	
Constituent:				N	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y	
Filtered:																		
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	mg/L	
Multiunit 1 BTW				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Multiunit 1 GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-08	Multiunit 1	Downgradient	03/19/2019	--	--	--	--	--	--	--	--	--	< 0.5	1.3	--	--	--	
MW-08	Multiunit 1	Downgradient	05/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-08	Multiunit 1	Downgradient	05/14/2019	--	--	--	--	--	--	--	--	--	< 0.4	1.1	--	--	--	
MW-08	Multiunit 1	Downgradient	11/19/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-08	Multiunit 1	Downgradient	06/23/2020	490	< 6	< 6	490	< 6	830	--	35	--	< 0.4	0.7	--	3,100	--	
MW-08	Multiunit 1	Downgradient	06/23/2020	490	< 6	< 6	490	< 6	830	--	37	--	--	--	--	3,100	--	
MW-08	Multiunit 1	Downgradient	11/06/2020	540	< 6	< 6	540	< 6	940	--	47	--	< 0.4	< 0.8	--	2,700	--	
MW-15	Multiunit 1	Downgradient	09/30/1987	--	--	--	320	--	680	--	37	--	--	< 0.05	--	1,400	--	
MW-15	Multiunit 1	Downgradient	06/20/1988	388	--	--	318	< 0	614	--	41	--	--	--	--	1,250	--	
MW-15	Multiunit 1	Downgradient	09/22/1988	414.8	--	--	340	< 0	582	--	34	--	--	--	--	1,180	--	
MW-15	Multiunit 1	Downgradient	11/14/1988	402.6	--	--	330	< 0	677	--	39	--	--	--	--	1,160	--	
MW-15	Multiunit 1	Downgradient	03/08/1989	488	--	--	400	< 0	514	--	33	--	--	--	--	1,260	--	
MW-15	Multiunit 1	Downgradient	09/13/1989	488	--	--	400	< 0	580	--	40	--	--	--	--	1,100	--	
MW-15	Multiunit 1	Downgradient	03/22/1990	366	--	--	300	< 0	520	--	41	--	--	--	--	1,050	--	
MW-15	Multiunit 1	Downgradient	09/24/1990	396.5	--	--	325	< 0	600	--	40	--	--	--	--	1,200	--	
MW-15	Multiunit 1	Downgradient	03/27/1991	427	--	--	350	< 0	480	--	40	--	--	--	--	925	--	
MW-15	Multiunit 1	Downgradient	09/27/1991	396.5	--	--	325	< 0	600	--	45	--	--	--	--	935	--	
MW-15	Multiunit 1	Downgradient	05/01/1992	366	--	--	300	< 0	500	--	39	--	--	--	--	900	--	
MW-15	Multiunit 1	Downgradient	10/28/1992	396.5	--	--	325	< 0	600	--	40	--	--	--	--	900	--	
MW-15	Multiunit 1	Downgradient	04/23/1993	518.5	--	--	425	< 0	400	--	41	--	--	--	--	1,220	--	
MW-15	Multiunit 1	Downgradient	11/22/1993	396.5	--	--	325	< 0	500	--	51	--	--	--	--	1,000	--	
MW-15	Multiunit 1	Downgradient	04/20/1994	488	--	--	400	< 0	500	--	54	--	--	--	--	920	--	
MW-15	Multiunit 1	Downgradient	11/08/1994	610	--	--	500	< 0	500	--	50	--	--	--	--	1,120	--	
MW-15	Multiunit 1	Downgradient	04/05/1995	457.5	--	--	375	< 0	500	--	43	--	--	--	--	840	--	
MW-15	Multiunit 1	Downgradient	11/18/1995	396.5	--	--	325	< 0	500	--	47	--	--	--	--	1,000	--	
MW-15	Multiunit 1	Downgradient	08/14/1996	427	--	--	350	< 0	500	--	37	--	--	--	--	960	--	
MW-15	Multiunit 1	Downgradient	04/23/1997	518.5	--	--	425	< 0	400	--	35	--	--	--	--	900	--	
MW-15	Multiunit 1	Downgradient	10/08/1997	457.5	--	--	375	< 0	400	--	36	--	--	--	--	1,120	--	
MW-15	Multiunit 1	Downgradient	04/14/1998	335.5	--	--	275	< 0	400	--	32	--	--	--	--	1,150	--	
MW-15	Multiunit 1	Downgradient	05/11/1999	457.5	--	--	375	< 0	400	--	32	--	--	--	--	820	--	
MW-15	Multiunit 1	Downgradient	12/01/1999	366	--	--	300	< 0	400	--	31	--	--	--	--	1,180	--	
MW-15	Multiunit 1	Downgradient	06/08/2000	549	--	--	450	< 0	573	--	31.3	--	--	--	--	1,260	--	
MW-15	Multiunit 1	Downgradient	12/12/2000	549	--	--	450	< 0	400	--	40	--	--	--	--	1,600	--	
MW-15	Multiunit 1	Downgradient	08/22/2001	488	--	--	400	< 0	460	--	32	--	--	--	--	1,310	--	
MW-15	Multiunit 1	Downgradient	12/03/2001	457.5	--	--	375	< 0	350	--	38	--	--	--	--	1,040	--	
MW-15	Multiunit 1	Downgradient	06/24/2002	579.5	--	--	475	< 0	400	--	33	--	--	--	--	1,060	--	
MW-15	Multiunit 1	Downgradient	12/18/2002	488	--	--	400	< 0	400	--	41	--	--	--	--	1,060	--	
MW-15	Multiunit 1	Downgradient	05/28/2003	457.5	--	--	375	< 0	400	--	36	--	--	--	--	800	--	
MW-15	Multiunit 1	Downgradient	12/24/2003	1,922	--	--	1,575	< 0	500	--	42	--	--	--	--	9,000	--	
MW-15	Multiunit 1	Downgradient	06/16/2004	1,678	--	--	1,375	< 0	500	--	40	--	--	--	--	220	--	
MW-15	Multiunit 1	Downgradient	11/29/2004	3,874	--	--	3,175	< 0	480	--	34	--	--	--	--	980	--	
MW-15	Multiunit 1	Downgradient	05/13/2005	488	--	--	400	< 0	400	--	51	--	--	--	--	960	--	
MW-15	Multiunit 1	Downgradient	12/14/2005	549	--	--	450	< 0	526	--	26.6	--	--	--	--	1,250	--	
MW-15	Multiunit 1	Downgradient	06/17/2006	439.2	--	--	360	< 0	450	--	25.4	--	--	--	--	1,080	--	
MW-15	Multiunit 1	Downgradient	10/11/2006	442.9	--	--	363	< 0	456	--	33.5	--	--	--	--	1,150	--	
MW-15	Multiunit 1	Downgradient	04/18/2007	450.2	--	--	369	< 0	432	--	29.5	--	--	--	--	1,080	--	
MW-15	Multiunit 1	Downgradient	11/14/2007	512.4	--	--	420	< 0	367	--	27	--	--	--	--	1,240	--	
MW-15	Multiunit 1	Downgradient	05/07/2008	549	--	--	450	< 0	414	--	29.5	--	--	--	--	1,180	--	
MW-15	Multiunit 1	Downgradient	11/19/2013	--	--	--	--	--	520	--	30	--	--	--	--	1,900	--	
MW-15	Multiunit 1	Downgradient	11/19/2013	530	< 6.0	< 6.0	530	< 6.0	510	--	33	--	--	--	--	1,900	--	
MW-15	Multiunit 1	Downgradient	09/09/2014	560	< 6.0	< 6.0	560	< 6.0	520	--	38	--	--	--	--	2,100	--	
MW-15	Multiunit 1	Downgradient	03/17/2015	560	< 6.0	< 6.0	560	< 6.0	510	--	34	--	--	--	--	2,000	--	
MW-15	Multiunit 1	Downgradient	06/29/2015	560	< 6.0	< 6.0	560	< 6.0	500	--	34	--	--	--	--	2,000	--	
MW-15	Multiunit 1	Downgradient	08/26/2015	570	< 6.0	< 6.0	570	< 6.0	450	--	38	--	--	--	--	2,300	--	
MW-15	Multiunit 1	Downgradient	06/18/2016	600	< 6.0	< 6.0	600	< 6.0	580	--	38	--	--	--	--	2,100	--	
MW-15	Multiunit 1	Downgradient	09/15/2016	150	< 6.0	< 6.0	150	< 6.0	510	--	38	--	--	--	--	2,200	--	
MW-15	Multiunit 1	Downgradient	03/20/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	Multiunit 1	Downgradient	03/20/2019	--	--	--	--	--	--	--	--	< 0.6	< 0.7	--	--	--	--	
MW-15	Multiunit 1	Downgradient	05/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	Multiunit 1	Downgradient	05/14/2019	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--	--	
MW-15	Multiunit 1	Downgradient	11/19/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	Multiunit 1	Downgradient	06/23/2020	--	--	--	--	--	--	--	--	< 0.4	< 0.8	--	--	--	--	
MW-15	Multiunit 1	Downgradient	11/06/2020	660	< 6	< 6	660	< 6	640	--	41	--	< 0.4	< 0.8	--	2,200	--	
MW-16	Multiunit 1	Downgradient	09/30/1987	--	--	--	330	--	1,200	--	58	--	--	< 0.05	--	4,400	--	
MW-16	Multiunit 1	Downgradient	06/20/1988	407.5	--	--	334	< 0	1,150	--	59	--	--	--	--	4,250	--	
MW-16	Multiunit 1	Downgradient	09/21/1988	488	--	--	400	< 0	1,200	--	53	--	--	--	--	3,870	--	
MW-16	Multiunit 1	Downgradient	11/14/1988	463.6	--	--	380	< 0	1,510	--	73	--	--	--	--	3,420	--	
MW-16	Multiunit 1	Downgradient	03/08/1989	488	--	--	400	< 0	1,130	--	59	--	--	--	--	3,740	--	
MW-16	Multiunit 1	Downgradient	09/13/1989	366	--	--	300	< 0	1,173	--	56	--	--	--	--	3,500	--	
MW-16	Multiunit 1	Downgradient	03/26/1990	366	--	--	300	< 0	950	--	52	--	--	--	--	3,800	--	
MW-16	Multiunit 1	Downgradient	09/24/1990	427	--	--	350	< 0	1,000	--	60	--	--	--	--	3,700	--	
MW-16	Multiunit 1	Downgradient	04/02/1991	457.5	--	--	375	< 0	1,000	--	47	--	--	--	--	3,400	--	
MW-16	Multiunit 1	Downgradient	10/01/1991	366	--	--	300	< 0	1,000	--	55	--	--	--	--	3,090	--	

Groundwater Sampling Results for the Multiunit 1 Monitoring Wells

Well ID	Multiunit	Status	Date	Constituent:	Additional Analyses													
					Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Magnesium	Potassium	Potassium	Radium 226	Radium 228	Selenium	Sodium	Sodium
					Filtered: N	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L				
				<i>Multiunit 1 BTV</i>	--	--	--	--	--	--	--	--	--	--	--			
				<i>Multiunit 1 GWPS</i>	--	--	--	--	--	--	--	--	--	--	--			
MW-75	Multiunit 1	Downgradient	11/19/2019		--	--	--	--	--	--	--	--	--	--	--			
MW-75	Multiunit 1	Downgradient	06/21/2020		--	--	--	--	--	--	--	0.8	< 0.6	--	--			
MW-75	Multiunit 1	Downgradient	11/08/2020		99	< 6	< 6	99	< 6	250	--	27	--	< 0.4	< 0.8	--	1,300	--
MW-87	Multiunit 1	Downgradient	03/19/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-87	Multiunit 1	Downgradient	03/19/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-87	Multiunit 1	Downgradient	03/19/2019		--	--	--	--	--	--	--	--	--	< 0.6	1.5	--	--	--
MW-87	Multiunit 1	Downgradient	05/14/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-87	Multiunit 1	Downgradient	05/14/2019		--	--	--	--	--	--	--	--	--	< 0.5	1.4	--	--	--
MW-87	Multiunit 1	Downgradient	06/22/2019		830	< 6.0	< 6.0	830	< 6.0	1,200	--	83	--	--	--	--	6,300	--
MW-87	Multiunit 1	Downgradient	11/19/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-87	Multiunit 1	Downgradient	11/19/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-87	Multiunit 1	Downgradient	06/23/2020		900	< 6	< 6	900	< 6	1,500	--	78	--	0.8	2.0	--	7,200	--
MW-87	Multiunit 1	Downgradient	11/06/2020		800	< 6	< 6	800	< 6	2,000	--	130	--	1.0	2.7	--	8,300	--
MW-50B	Multiunit 1	--	03/17/2015		630	< 6.0	< 6.0	630	< 6.0	< 200	--	79	--	--	--	--	4,500	--

Notes:

BTV exceedances are shown in grey shaded cells. GWPS exceedance are shown in red text.
 Duplicate sample dates under the same locations are either field duplicates or are instances of samples with multiple filed/lab sample IDs on the

Abbreviations and Data Qualifiers:

* data appears anomalous
 < = less than
 BTV = Background Threshold Value
 degrees C = degrees Celsius
 GWPS = Groundwater Protection Standard
 J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 mg/L = milligrams per liter
 pCi/L = Picocuries per liter
 su = standard units
 UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Groundwater Sampling Results for Additional Monitoring Wells

Constituent:	Appendix III Constituents										Appendix IV Constituents																				
	Boron	Boron	Calcium	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Fluoride	Lead	Lead	Lithium	Mercury	Mercury	Molybdenum	Selenium	Thallium	Total Radium
	N	Y	N	Y	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	N	N	N	N
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
MW-03	Closed Ash Pond 6	Downgradient	04/28/1993	1.0	--	350	--	1,249	0.26	--	31,345	47,800	--	--	--	--	--	--	--	--	--	0.26	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	11/30/1993	2.0	--	280	--	1,216	0.30	--	31,475	48,630	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	04/21/1994	1.0	--	340	--	1,151	0.30	--	30,190	46,580	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	09/20/1994	2.0	--	380	--	1,171	0.30	--	28,895	45,520	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	12/14/1994	--	--	430	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	04/06/1995	1.0	--	360	--	1,183	0.20	--	28,085	43,870	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	12/12/1995	1.41	--	400	--	1,066	0.30	--	26,745	41,150	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	08/14/1996	1.16	--	300	--	1,110	0.20	--	25,150	40,430	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	04/23/1997	1.6	--	260	--	1,083	0.20	--	24,100	39,420	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	10/13/1997	< 0.05	--	300	--	1,164	0.20	--	25,154	38,450	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	04/15/1998	1.73	--	320	--	1,052	0.20	--	22,542	39,920	--	--	--	--	--	--	--	--	--	0.20	< 0.005	--	--	--	0.010	< 0.005	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	09/29/1998	1.73	--	70	--	1,228	0.20	--	25,071	38,140	--	--	--	--	--	--	--	--	--	0.20	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	05/10/1999	4.1	--	50	--	1,075	0.30	--	22,883	38,650	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	12/08/1999	3.8	--	170	--	990	0.30	--	20,512	34,270	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	05/10/2000	4.72	--	457	--	1,309	0.30	--	29,283	35,180	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	11/27/2000	6.01	--	180	--	971.2	0.5938	--	16,024	36,290	--	--	--	--	--	--	--	--	--	0.5938	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	08/20/2001	5.96	--	210	--	942.2	0.30	--	27,067	31,650	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	12/04/2001	3.9	--	180	--	1,142	0.50	--	20,827	33,270	--	--	--	--	--	--	--	--	--	0.50	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	06/12/2002	4.93	--	180	--	970.2	0.40	--	20,675	33,320	--	--	--	--	--	--	--	--	--	0.40	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	12/17/2002	4.34	--	200	--	1,059	0.30	--	18,595	32,590	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	06/03/2003	--	--	190	--	918.4	0.30	--	18,531	33,050	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	0.27	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	09/24/2003	3.86	--	215	--	975.6	0.54	--	17,891	32,470	--	--	--	--	--	--	--	--	--	0.54	--	--	--	--	--	--	--	--	--
MW-03	Closed Ash Pond 6	Downgradient	06/16/2004	--	--	250	--	1,062	0.30	--	18,085	32,180	--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--

Groundwater Sampling Results for Additional Monitoring Wells

				Appendix III Constituents									Appendix IV Constituents																			
				Boron	Boron	Calcium	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Fluoride	Lead	Lead	Lithium	Mercury	Mercury	Molybdenum	Selenium
Constituent:				N	Y	N	Y	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	N	N	N	N
Filtered:				N	Y	N	Y	N	N	N	N	N	N	Y	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
IP-03	SIT	Downgradient	06/29/2015	3.8	--	380	--	1,000	< 4.0	7.5	13,000	21,000	--	< 0.0030	--	--	--	--	--	< 0.0030	--	--	< 4.0	--	--	--	--	--	--	0.11	--	--
IP-05	SIT	Downgradient	06/29/2015	0.59	--	360	--	1,700	< 4.0	7.23	19,000	24,000	--	< 0.0030	--	--	--	--	--	0.0041	--	--	< 4.0	--	--	--	--	--	--	0.59	--	--

Groundwater Sampling Results for Additional Monitoring Wells

Constituent:					Additional Analyses													
					Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Magnesium	Potassium	Potassium	Radium 226	Radium 228	Selenium	Sodium	Sodium
					N	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L
					Units:	Units:	Units:	Units:	Units:	Units:	Units:	Units:	Units:	Units:	Units:	Units:	Units:	Units:
MW-01	Closed Ash Pond 6	Downgradient	09/28/1987	--	--	--	270	--	1,100	--	46	--	--	< 0.05	--	2,600		
MW-01	Closed Ash Pond 6	Downgradient	06/27/1988	319.64	--	--	262	< 0	1,120	--	48	--	--	--	--	2,360		
MW-01	Closed Ash Pond 6	Downgradient	09/21/1988	378.2	--	--	310	< 0	1,060	--	47	--	--	--	--	2,150		
MW-01	Closed Ash Pond 6	Downgradient	11/20/1988	366	--	--	300	< 0	1,070	--	54	--	--	--	--	2,190		
MW-01	Closed Ash Pond 6	Downgradient	03/06/1989	488	--	--	400	< 0	1,080	--	53	--	--	--	--	2,190		
MW-01	Closed Ash Pond 6	Downgradient	09/11/1989	610	--	--	500	< 0	1,173	--	54	--	--	--	--	2,200		
MW-01	Closed Ash Pond 6	Downgradient	03/26/1990	427	--	--	350	< 0	950	--	46	--	--	--	--	2,200		
MW-01	Closed Ash Pond 6	Downgradient	09/18/1990	305	--	--	250	< 0	1,000	--	40	--	--	--	--	2,200		
MW-01	Closed Ash Pond 6	Downgradient	03/27/1991	396.5	--	--	325	< 0	1,000	--	47	--	--	--	--	2,130		
MW-01	Closed Ash Pond 6	Downgradient	09/11/1991	305	--	--	250	< 0	1,100	--	49	--	--	--	--	2,100		
MW-01	Closed Ash Pond 6	Downgradient	04/30/1992	335.5	--	--	275	< 0	1,300	--	42	--	--	--	--	2,100		
MW-01	Closed Ash Pond 6	Downgradient	10/27/1992	396.5	--	--	325	< 0	1,000	--	49	--	--	--	--	1,900		
MW-01	Closed Ash Pond 6	Downgradient	04/21/1993	427	--	--	350	< 0	900	--	55	--	--	--	--	2,000		
MW-01	Closed Ash Pond 6	Downgradient	11/23/1993	335.5	--	--	275	< 0	900	--	53	--	--	--	--	2,100		
MW-01	Closed Ash Pond 6	Downgradient	04/20/1994	305	--	--	250	< 0	1,000	--	64	--	--	--	--	2,400		
MW-01	Closed Ash Pond 6	Downgradient	08/11/1994	244	--	--	200	< 0	900	--	60	--	--	--	--	2,100		
MW-01	Closed Ash Pond 6	Downgradient	04/06/1995	457.5	--	--	375	< 0	1,100	--	59	--	--	--	--	2,400		
MW-01	Closed Ash Pond 6	Downgradient	11/19/1995	335.5	--	--	275	< 0	1,000	--	55	--	--	--	--	3,000		
MW-01	Closed Ash Pond 6	Downgradient	08/13/1996	610	--	--	500	< 0	900	--	43	--	--	--	--	2,200		
MW-01	Closed Ash Pond 6	Downgradient	04/23/1997	457.5	--	--	375	< 0	800	--	39	--	--	--	--	1,800		
MW-01	Closed Ash Pond 6	Downgradient	10/20/1997	457.5	--	--	375	< 0	800	--	42	--	--	--	--	1,700		
MW-01	Closed Ash Pond 6	Downgradient	04/06/1998	457.5	--	--	375	< 0	--	--	--	--	--	--	--	--		
MW-01	Closed Ash Pond 6	Downgradient	10/19/1998	457.5	--	--	375	< 0	1,700	--	65	--	--	--	--	3,300		
MW-01	Closed Ash Pond 6	Downgradient	06/09/1999	457.5	--	--	375	< 0	800	--	31.5	--	--	--	--	1,600		
MW-01	Closed Ash Pond 6	Downgradient	12/06/1999	325.13	--	--	266.5	< 0	800	--	33	--	--	--	--	2,200		
MW-01	Closed Ash Pond 6	Downgradient	05/24/2000	305	--	--	250	< 0	831	--	33.8	--	--	--	--	1,660		
MW-01	Closed Ash Pond 6	Downgradient	11/14/2000	335.5	--	--	275	< 0	700	--	37	--	--	--	--	1,500		
MW-01	Closed Ash Pond 6	Downgradient	08/22/2001	732	--	--	600	< 0	790	--	35	--	--	--	--	1,440		
MW-01	Closed Ash Pond 6	Downgradient	12/05/2001	427	--	--	350	< 0	790	--	34.5	--	--	--	--	2,300		
MW-01	Closed Ash Pond 6	Downgradient	06/11/2002	396.5	--	--	325	< 0	800	--	31.5	--	--	--	--	1,500		
MW-01	Closed Ash Pond 6	Downgradient	12/17/2002	305	--	--	250	< 0	700	--	33	--	--	--	--	1,500		
MW-01	Closed Ash Pond 6	Downgradient	05/28/2003	366	--	--	300	< 0	700	--	37.5	--	--	--	--	1,600		
MW-01	Closed Ash Pond 6	Downgradient	12/24/2003	1,769	--	--	1,450	< 0	700	--	45	--	--	--	--	1,200		
MW-01	Closed Ash Pond 6	Downgradient	04/21/2004	2,898	--	--	2,375	< 0	800	--	31.5	--	--	--	--	1,450		
MW-01	Closed Ash Pond 6	Downgradient	11/29/2004	2,898	--	--	2,375	< 0	860	--	34	--	--	--	--	1,680		
MW-01	Closed Ash Pond 6	Downgradient	06/05/2005	366	--	--	300	< 0	800	--	47	--	--	--	--	1,350		
MW-01	Closed Ash Pond 6	Downgradient	12/12/2005	396.5	--	--	325	< 0	827	--	32	--	--	--	--	1,500		
MW-01	Closed Ash Pond 6	Downgradient	05/17/2006	330.62	--	--	271	< 0	757	--	29.2	--	--	--	--	1,310		
MW-01	Closed Ash Pond 6	Downgradient	10/12/2006	334.28	--	--	274	< 0	766	--	31.5	--	--	--	--	1,500		
MW-01	Closed Ash Pond 6	Downgradient	04/19/2007	335.5	--	--	275	< 0	746	--	31.6	--	--	--	--	1,330		
MW-01	Closed Ash Pond 6	Downgradient	11/19/2007	348.92	--	--	286	< 0	620	--	28.6	--	--	--	--	1,220		
MW-01	Closed Ash Pond 6	Downgradient	05/08/2008	353.8	--	--	290	< 0	690	--	31.7	--	--	--	--	1,260		
MW-01	Closed Ash Pond 6	Downgradient	09/27/2012	280	< 6.0	< 6.0	280	< 6.0	730	--	34	--	--	--	--	1,400		
MW-01	Closed Ash Pond 6	Downgradient	09/27/2012	280	< 6.0	< 6.0	280	< 6.0	740	--	35	--	--	--	--	1,500		
MW-01	Closed Ash Pond 6	Downgradient	11/18/2013	270	< 6.0	< 6.0	270	< 6.0	770	--	35	--	--	--	--	1,600		
MW-01	Closed Ash Pond 6	Downgradient	11/18/2013	220	< 6.0	< 6.0	220	< 6.0	740	--	34	--	--	--	--	1,600		
MW-01	Closed Ash Pond 6	Downgradient	09/09/2014	--	--	--	--	--	700	--	36	--	--	--	--	1,600		
MW-01	Closed Ash Pond 6	Downgradient	09/09/2014	260	< 6.0	< 6.0	260	< 6.0	680	--	34	--	--	--	--	1,500		
MW-01	Closed Ash Pond 6	Downgradient	03/17/2015	250	< 6.0	< 6.0	250	< 6.0	650	--	32	--	--	--	--	1,500		
MW-01	Closed Ash Pond 6	Downgradient	06/30/2015	260	< 6.0	< 6.0	260	< 6.0	650	--	33	--	--	--	--	1,400		
MW-01	Closed Ash Pond 6	Downgradient	08/27/2015	250	< 6.0	< 6.0	250	< 6.0	640	--	36	--	--	--	--	1,400		
MW-01	Closed Ash Pond 6	Downgradient	06/17/2016	270	< 6.0	< 6.0	270	< 6.0	660	--	35	--	--	--	--	1,600		
MW-01	Closed Ash Pond 6	Downgradient	09/15/2016	200	< 6.0	< 6.0	200	< 6.0	620	--	33	--	--	--	--	1,300		
MW-01	Closed Ash Pond 6	Downgradient	06/21/2020	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-01	Closed Ash Pond 6	Downgradient	06/21/2020	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-01	Closed Ash Pond 6	Downgradient	11/08/2020	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-01	Closed Ash Pond 6	Downgradient	11/08/2020	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-03	Closed Ash Pond 6	Downgradient	04/01/1987	--	--	--	490	--	--	5,100	--	64	--	--	0.64	5,700		
MW-03	Closed Ash Pond 6	Downgradient	09/29/1987	--	--	--	520	--	--	6,100	--	120	--	--	< 0.05	7,300		
MW-03	Closed Ash Pond 6	Downgradient	06/28/1988	578.28	--	--	474	< 0	6,250	--	129	--	--	--	--	7,500		
MW-03	Closed Ash Pond 6	Downgradient	09/21/1988	573.4	--	--	470	< 0	5,490	--	107	--	--	--	--	5,490		
MW-03	Closed Ash Pond 6	Downgradient	11/20/1988	646.6	--	--	530	< 0	6,620	--	122	--	--	--	--	5,540		
MW-03	Closed Ash Pond 6	Downgradient	02/27/1989	732	--	--	600	< 0	5,880	--	122	--	--	--	--	5,950		
MW-03	Closed Ash Pond 6	Downgradient	09/13/1989	732	--	--	600	< 0	5,530	--	112	--	--	--	--	6,800		
MW-03	Closed Ash Pond 6	Downgradient	03/22/1990	732	--	--	600	< 0	5,200	--	108	--	--	--	--	7,400		
MW-03	Closed Ash Pond 6	Downgradient	10/30/1990	701.5	--	--	575	< 0	5,200	--	100	--	--	--	--	7,200		
MW-03	Closed Ash Pond 6	Downgradient	04/04/1991	732	--	--	600	< 0	5,200	--	104	--	--	--	--	7,400		
MW-03	Closed Ash Pond 6	Downgradient	09/30/1991	488	--	--	400	< 0	5,560	--	106	--	--	--	--	7,460		
MW-03	Closed Ash Pond 6	Downgradient	05/07/1992	671	--	--	550	< 0	4,800	--	91	--	--	--	--	6,600		
MW-03	Closed Ash Pond 6	Downgradient	11/05/1992	701.5	--	--	575	< 0	4,400	--	106	--	--	--	--	6,600		

Groundwater Sampling Results for Additional Monitoring Wells

				Additional Analyses														
				Constituent:	Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Magnesium	Potassium	Potassium	Radium 226	Radium 228	Selenium	Sodium	Sodium
				Filtered:	N	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	
MW-03	Closed Ash Pond 6	Downgradient	04/28/1993	793	--	--	650	< 0	4,000	--	106	--	--	--	--	7,200	--	
MW-03	Closed Ash Pond 6	Downgradient	11/30/1993	671	--	--	550	< 0	4,400	--	82	--	--	--	--	7,200	--	
MW-03	Closed Ash Pond 6	Downgradient	04/21/1994	762.5	--	--	625	< 0	4,400	--	99	--	--	--	--	6,800	--	
MW-03	Closed Ash Pond 6	Downgradient	09/20/1994	610	--	--	500	< 0	4,000	--	100	--	--	--	--	7,200	--	
MW-03	Closed Ash Pond 6	Downgradient	12/14/1994	--	--	--	--	--	3,700	--	86	--	--	--	--	5,000	--	
MW-03	Closed Ash Pond 6	Downgradient	04/06/1995	823.5	--	--	675	< 0	4,000	--	98	--	--	--	--	6,000	--	
MW-03	Closed Ash Pond 6	Downgradient	12/12/1995	671	--	--	550	< 0	4,400	--	94	--	--	--	--	6,400	--	
MW-03	Closed Ash Pond 6	Downgradient	08/14/1996	732	--	--	600	< 0	4,000	--	84	--	--	--	--	7,200	--	
MW-03	Closed Ash Pond 6	Downgradient	04/23/1997	915	--	--	750	< 0	3,200	--	87	--	--	--	--	5,600	--	
MW-03	Closed Ash Pond 6	Downgradient	10/13/1997	915	--	--	750	< 0	3,200	--	73	--	--	--	--	6,000	--	
MW-03	Closed Ash Pond 6	Downgradient	04/15/1998	793	--	--	650	< 0	3,400	--	72	--	--	--	--	5,600	--	
MW-03	Closed Ash Pond 6	Downgradient	09/29/1998	976	--	--	800	< 0	3,200	--	70	--	--	--	--	5,200	--	
MW-03	Closed Ash Pond 6	Downgradient	05/10/1999	671	--	--	550	< 0	3,000	--	76	--	--	--	--	5,400	--	
MW-03	Closed Ash Pond 6	Downgradient	12/08/1999	671	--	--	550	< 0	2,600	--	69	--	--	--	--	6,200	--	
MW-03	Closed Ash Pond 6	Downgradient	05/10/2000	884.5	--	--	725	< 0	3,280	--	75.2	--	--	--	--	5,310	--	
MW-03	Closed Ash Pond 6	Downgradient	11/27/2000	976	--	--	800	< 0	2,800	--	72	--	--	--	--	6,200	--	
MW-03	Closed Ash Pond 6	Downgradient	08/20/2001	457.5	--	--	375	< 0	3,000	--	76	--	--	--	--	6,450	--	
MW-03	Closed Ash Pond 6	Downgradient	12/04/2001	701.5	--	--	575	< 0	2,200	--	71	--	--	--	--	6,200	--	
MW-03	Closed Ash Pond 6	Downgradient	06/12/2002	1,068	--	--	875	< 0	2,600	--	68	--	--	--	--	5,200	--	
MW-03	Closed Ash Pond 6	Downgradient	12/17/2002	793	--	--	650	< 0	2,400	--	60	--	--	--	--	5,000	--	
MW-03	Closed Ash Pond 6	Downgradient	06/03/2003	701.5	--	--	575	< 0	2,400	--	66	--	--	--	0.29	4,000	--	
MW-03	Closed Ash Pond 6	Downgradient	09/24/2003	793	--	--	650	< 0	2,200	--	75	--	--	--	--	4,200	--	
MW-03	Closed Ash Pond 6	Downgradient	06/16/2004	2,837	--	--	2,325	< 0	2,600	--	75	--	--	--	--	5,400	--	

Groundwater Sampling Results for Additional Monitoring Wells

Constituent:					Additional Analyses													
					Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Magnesium	Potassium	Potassium	Radium 226	Radium 228	Selenium	Sodium	Sodium
					N	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y
					Filtered:	Filtered:	Filtered:	Filtered:	Filtered:	Filtered:	Filtered:	Filtered:	Filtered:	Filtered:	Filtered:	Filtered:	Filtered:	Filtered:
Units:					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	
MW-03	Closed Ash Pond 6	Downgradient	11/09/2004	5,704	--	--	4,675	< 0	2,580	--	65.1	--	--	--	--	4,750	--	
MW-03	Closed Ash Pond 6	Downgradient	05/12/2005	854	--	--	700	< 0	2,400	--	69	--	--	--	--	3,800	--	
MW-03	Closed Ash Pond 6	Downgradient	11/01/2005	701.5	--	--	575	< 0	2,410	--	65.6	--	--	--	--	4,700	--	
MW-03	Closed Ash Pond 6	Downgradient	05/16/2006	622.2	--	--	510	< 0	2,150	--	58.8	--	--	--	--	4,370	--	
MW-03	Closed Ash Pond 6	Downgradient	10/12/2006	620.98	--	--	509	< 0	2,270	--	72	--	--	--	--	4,890	--	
MW-03	Closed Ash Pond 6	Downgradient	04/18/2007	628.3	--	--	515	< 0	2,130	--	58	--	--	--	--	4,370	--	
MW-03	Closed Ash Pond 6	Downgradient	11/19/2007	707.6	--	--	580	< 0	1,420	--	49.2	--	--	--	--	3,240	--	
MW-03	Closed Ash Pond 6	Downgradient	05/07/2008	683.2	--	--	560	< 0	1,710	--	63.1	--	--	--	--	5,020	--	
MW-03	Closed Ash Pond 6	Downgradient	12/03/2009	756.4	--	--	620	< 0	1,690	--	53.7	--	--	--	--	4,530	--	
MW-03	Closed Ash Pond 6	Downgradient	09/28/2012	450	< 6.0	< 6.0	450	< 6.0	2,100	--	60	--	--	--	--	4,100	--	
MW-03	Closed Ash Pond 6	Downgradient	9/29/2012*	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 2.0	--	< 2.0	--	--	--	--	< 2.0	--	
MW-03	Closed Ash Pond 6	Downgradient	03/11/2014	480	< 6.0	< 6.0	480	< 6.0	1,700	--	55	--	--	--	--	3,700	--	
MW-03	Closed Ash Pond 6	Downgradient	09/09/2014	460	< 6.0	< 6.0	460	< 6.0	1,800	--	61	--	--	--	--	3,900	--	
MW-03	Closed Ash Pond 6	Downgradient	03/18/2015	470	< 6.0	< 6.0	470	< 6.0	1,600	--	47	--	--	--	--	3,500	--	
MW-03	Closed Ash Pond 6	Downgradient	04/02/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-03	Closed Ash Pond 6	Downgradient	06/24/2015	440	< 6.0	< 6.0	440	< 6.0	1,800	--	56	--	--	--	--	3,400	--	
MW-03	Closed Ash Pond 6	Downgradient	08/28/2015	450	< 6.0	< 6.0	450	< 6.0	1,700	--	65	--	--	--	--	3,400	--	
MW-03	Closed Ash Pond 6	Downgradient	11/04/2015	--	--	--	--	--	1,800	--	57	--	--	--	--	4,000	--	
MW-03	Closed Ash Pond 6	Downgradient	11/12/2015	410	< 6.0	< 6.0	410	< 6.0	1,600	--	50	--	--	--	--	3,300	--	
MW-03	Closed Ash Pond 6	Downgradient	06/20/2016	480	< 6.0	< 6.0	480	< 6.0	1,800	--	58	--	--	--	--	3,700	--	
MW-03	Closed Ash Pond 6	Downgradient	09/15/2016	600	< 6.0	< 6.0	600	< 6.0	1,800	--	61	--	--	--	--	3,600	--	
MW-03	Closed Ash Pond 6	Downgradient	09/15/2016	400	< 6.0	< 6.0	400	< 6.0	1,700	--	58	--	--	--	--	3,500	--	
MW-03	Closed Ash Pond 6	Downgradient	06/21/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-03	Closed Ash Pond 6	Downgradient	11/08/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-19	Closed Ash Pond 6	Downgradient	09/29/1987	--	--	--	640	--	--	6,000	--	11	--	--	< 0.05	--	7,600	
MW-19	Closed Ash Pond 6	Downgradient	06/14/1988	732	--	--	600	< 0	8,225	--	168	--	--	--	--	8,425	--	
MW-19	Closed Ash Pond 6	Downgradient	09/18/1988	773.48	--	--	634	< 0	8,240	--	136	--	--	--	--	8,540	--	
MW-19	Closed Ash Pond 6	Downgradient	11/20/1988	793	--	--	650	< 0	9,610	--	146	--	--	--	--	7,860	--	
MW-19	Closed Ash Pond 6	Downgradient	02/28/1989	976	--	--	800	< 0	8,250	--	153	--	--	--	--	8,110	--	
MW-19	Closed Ash Pond 6	Downgradient	09/12/1989	854	--	--	700	< 0	8,000	--	125	--	--	--	--	8,200	--	
MW-19	Closed Ash Pond 6	Downgradient	03/22/1990	732	--	--	600	< 0	6,400	--	116	--	--	--	--	8,800	--	
MW-19	Closed Ash Pond 6	Downgradient	10/30/1990	732	--	--	600	< 0	6,000	--	110	--	--	--	--	7,600	--	
MW-19	Closed Ash Pond 6	Downgradient	04/03/1991	793	--	--	650	< 0	6,000	--	111	--	--	--	--	7,600	--	
MW-19	Closed Ash Pond 6	Downgradient	09/25/1991	823.5	--	--	675	< 0	5,800	--	108	--	--	--	--	7,780	--	
MW-19	Closed Ash Pond 6	Downgradient	05/07/1992	793	--	--	650	< 0	5,200	--	92	--	--	--	--	7,400	--	
MW-19	Closed Ash Pond 6	Downgradient	11/05/1992	854	--	--	700	< 0	4,800	--	110	--	--	--	--	6,800	--	
MW-19	Closed Ash Pond 6	Downgradient	04/27/1993	793	--	--	650	< 0	4,400	--	111	--	--	--	--	6,800	--	
MW-19	Closed Ash Pond 6	Downgradient	12/01/1993	732	--	--	600	< 0	4,800	--	101	--	--	--	--	8,000	--	
MW-19	Closed Ash Pond 6	Downgradient	05/10/1994	793	--	--	650	< 0	8,000	--	216	--	--	--	--	24,000	--	
MW-19	Closed Ash Pond 6	Downgradient	11/16/1994	793	--	--	650	< 0	4,000	--	160	--	--	--	--	7,000	--	
MW-19	Closed Ash Pond 6	Downgradient	04/06/1995	762.5	--	--	625	< 0	4,000	--	122	--	--	--	--	9,000	--	
MW-19	Closed Ash Pond 6	Downgradient	12/12/1995	701.5	--	--	575	< 0	5,200	--	150	--	--	--	--	10,000	--	
MW-19	Closed Ash Pond 6	Downgradient	08/15/1996	945.5	--	--	775	< 0	3,600	--	96	--	--	--	--	8,000	--	
MW-19	Closed Ash Pond 6	Downgradient	04/14/1997	854	--	--	700	< 0	3,600	--	90	--	--	--	--	6,000	--	
MW-19	Closed Ash Pond 6	Downgradient	10/13/1997	945.5	--	--	775	< 0	3,600	--	77	--	--	--	--	5,400	--	
MW-19	Closed Ash Pond 6	Downgradient	05/10/1999	854	--	--	700	< 0	2,800	--	70	--	--	--	--	5,200	--	
MW-19	Closed Ash Pond 6	Downgradient	12/01/1999	640.5	--	--	525	< 0	2,400	--	60	--	--	--	--	6,000	--	
MW-19	Closed Ash Pond 6	Downgradient	05/30/2000	671	--	--	550	< 0	2,980	--	71.8	--	--	--	--	5,090	--	
MW-19	Closed Ash Pond 6	Downgradient	11/27/2000	823.5	--	--	675	< 0	2,400	--	72	--	--	--	--	5,000	--	
MW-19	Closed Ash Pond 6	Downgradient	08/21/2001	701.5	--	--	575	< 0	2,140	--	68	--	--	--	--	4,800	--	
MW-19	Closed Ash Pond 6	Downgradient	12/04/2001	610	--	--	500	< 0	2,000	--	61	--	--	--	--	5,600	--	
MW-19	Closed Ash Pond 6	Downgradient	06/11/2002	1,159	--	--	950	< 0	2,000	--	65	--	--	--	--	4,600	--	
MW-19	Closed Ash Pond 6	Downgradient	12/17/2002	671	--	--	550	< 0	1,600	--	60	--	--	--	--	4,000	--	
MW-19	Closed Ash Pond 6	Downgradient	05/29/2003	701.5	--	--	575	< 0	2,000	--	67	--	--	--	--	4,600	--	
MW-19	Closed Ash Pond 6	Downgradient	12/15/2003	2,898	--	--	2,375	< 0	3,200	--	65	--	--	--	--	1,800	--	
MW-19	Closed Ash Pond 6	Downgradient	06/18/2004	5,887	--	--	4,825	< 0	2,400	--	63	--	--	--	--	5,200	--	
MW-19	Closed Ash Pond 6	Downgradient	11/30/2004	1,037	--	--	850	< 0	2,800	--	60	--	--	--	--	4,800	--	
MW-19	Closed Ash Pond 6	Downgradient	06/14/2005	762.5	--	--	625	< 0	2,400	--	66	--	--	--	--	3,200	--	
MW-19	Closed Ash Pond 6	Downgradient	12/12/2005	945.5	--	--	775	< 0	2,850	--	62.9	--	--	--	--	5,630	--	
MW-19	Closed Ash Pond 6	Downgradient	05/15/2006	928.42	--	--	761	< 0	2,930	--	68.4	--	--	--	--	5,770	--	
MW-19	Closed Ash Pond 6	Downgradient	04/17/2007	979.66	--	--	803	< 0	3,030	--	75.5	--	--	--	--	5,890	--	
MW-19	Closed Ash Pond 6	Downgradient	05/08/2008	1,013	--	--	830	< 0	2,540	--	87.6	--	--	--	--	7,720	--	
MW-19	Closed Ash Pond 6	Downgradient	11/18/2013	850	< 6.0	< 6.0	850	< 6.0	2,700	--	77	--	--	--	--	7,900	--	
MW-19	Closed Ash Pond 6	Downgradient	03/11/2014	840	< 6.0	< 6.0	840	< 6.0	2,600	--	74	--	--	--	--	7,000	--	
MW-19	Closed Ash Pond 6	Downgradient	09/09/2014	800	< 6.0	< 6.0	800	< 6.0	2,700	--	78	--	--	--	--	7,400	--	
MW-19	Closed Ash Pond 6	Downgradient	12/08/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-19	Closed Ash Pond 6	Downgradient	03/18/2015	660	< 6.0	< 6.0	660	< 6.0	2,600	--	67	--	--	--	--	6,200	--	
MW-19	Closed Ash Pond 6	Downgradient	06/30/2015	790	< 6.0	< 6.0	790	< 6.0	2,700	--	73	--	--	--	--	6,200	--	
MW-19	Closed Ash Pond 6	Downgradient	08/25/2015	780	< 6.0	< 6.0	780	< 6.0	2,700	--	84	--	--	--	--	6,700	--	
MW-19	Closed Ash Pond 6	Downgradient	11/03/2015	770	< 6.0	< 6.0	770	< 6.0	2,700	--	68	--	--	--	--	6,300	--	

Groundwater Sampling Results for Additional Monitoring Wells

				Additional Analyses														
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity (as CaCO ₃)	Alkalinity, Phenolphthalein, as CaCO ₃	Magnesium	Magnesium	Potassium	Potassium	Radium 226	Radium 228	Selenium	Sodium	Sodium	
Constituent:				N	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y	
Filtered:				N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L
MW-19	Closed Ash Pond 6	Downgradient	06/17/2016	820	< 6.0	< 6.0	820	< 6.0	2,700	--	79	--	--	--	--	7,300	--	
MW-19	Closed Ash Pond 6	Downgradient	06/21/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-19	Closed Ash Pond 6	Downgradient	11/07/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-21	Closed Ash Pond 6	Downgradient	09/27/1987	--	--	--	690	--	--	8,000	--	220	--	< 0.05	--	--	27,000	
MW-21	Closed Ash Pond 6	Downgradient	09/18/1988	480.68	--	--	394	< 0	3,590	--	123	--	--	--	--	11,200	--	
MW-21	Closed Ash Pond 6	Downgradient	11/20/1988	610	--	--	500	< 0	5,180	--	195	--	--	--	--	13,600	--	
MW-21	Closed Ash Pond 6	Downgradient	03/06/1989	1,464	--	--	1,200	< 0	4,220	--	162	--	--	--	--	15,500	--	
MW-21	Closed Ash Pond 6	Downgradient	09/12/1989	671	--	--	550	< 0	3,170	--	104	--	--	--	--	11,500	--	
MW-21	Closed Ash Pond 6	Downgradient	03/22/1990	732	--	--	600	< 0	4,800	--	150	--	--	--	--	19,000	--	
MW-21	Closed Ash Pond 6	Downgradient	09/18/1990	732	--	--	600	< 0	4,000	--	140	--	--	--	--	17,500	--	
MW-21	Closed Ash Pond 6	Downgradient	03/20/1991	1,037	--	--	850	< 0	5,600	--	156	--	--	--	--	20,900	--	
MW-21	Closed Ash Pond 6	Downgradient	09/24/1991	884.5	--	--	725	< 0	5,200	--	146	--	--	--	--	19,950	--	
MW-21	Closed Ash Pond 6	Downgradient	05/01/1992	1,068	--	--	875	< 0	6,000	--	142	--	--	--	--	22,000	--	
MW-21	Closed Ash Pond 6	Downgradient	11/02/1992	1,129	--	--	925	< 0	5,500	--	172	--	--	--	--	21,500	--	
MW-21	Closed Ash Pond 6	Downgradient	04/21/1993	1,159	--	--	950	< 0	5,500	--	176	--	--	--	--	22,500	--	
MW-21	Closed Ash Pond 6	Downgradient	12/01/1993	915	--	--	750	< 0	5,000	--	192	--	--	--	--	21,000	--	
MW-21	Closed Ash Pond 6	Downgradient	04/27/1994	1,007	--	--	825	< 0	6,000	--	188	--	--	--	--	21,500	--	
MW-21	Closed Ash Pond 6	Downgradient	09/19/1994	1,098	--	--	900	< 0	5,500	--	168	--	--	--	--	21,000	--	
MW-21	Closed Ash Pond 6	Downgradient	12/14/1994	--	--	--	--	--	4,100	--	110	--	--	--	--	14,000	--	
MW-21	Closed Ash Pond 6	Downgradient	04/05/1995	915	--	--	750	< 0	4,000	--	140	--	--	--	--	16,000	--	
MW-21	Closed Ash Pond 6	Downgradient	12/12/1995	823.5	--	--	675	< 0	5,000	--	154	--	--	--	--	20,000	--	
MW-21	Closed Ash Pond 6	Downgradient	08/15/1996	854	--	--	700	< 0	4,000	--	118	--	--	--	--	16,000	--	
MW-21	Closed Ash Pond 6	Downgradient	06/23/1997	884.5	--	--	725	< 0	3,000	--	110	--	--	--	--	11,500	--	
MW-21	Closed Ash Pond 6	Downgradient	10/14/1997	762.5	--	--	625	< 0	3,000	--	104	--	--	--	--	11,500	--	
MW-21	Closed Ash Pond 6	Downgradient	04/13/1998	671	--	--	550	< 0	3,000	--	120	--	--	--	--	13,000	--	
MW-21	Closed Ash Pond 6	Downgradient	05/10/1999	945.5	--	--	775	< 0	4,000	--	118	--	--	--	--	15,500	--	
MW-21	Closed Ash Pond 6	Downgradient	12/06/1999	823.5	--	--	675	< 0	4,000	--	110	--	--	--	--	20,500	--	
MW-21	Closed Ash Pond 6	Downgradient	05/24/2000	823.5	--	--	675	< 0	4,760	--	125	--	--	--	--	16,300	--	
MW-21	Closed Ash Pond 6	Downgradient	11/13/2000	1,190	--	--	975	< 0	4,000	--	166	--	--	--	--	26,000	--	
MW-21	Closed Ash Pond 6	Downgradient	08/20/2001	762.5	--	--	625	< 0	3,850	--	130	--	--	--	--	18,000	--	
MW-21	Closed Ash Pond 6	Downgradient	12/04/2001	976	--	--	800	< 0	4,000	--	106	--	--	--	--	20,000	--	
MW-21	Closed Ash Pond 6	Downgradient	06/12/2002	976	--	--	800	< 0	3,000	--	106	--	--	--	--	13,500	--	
MW-21	Closed Ash Pond 6	Downgradient	12/17/2002	854	--	--	700	< 0	3,000	--	98	--	--	--	--	13,000	--	
MW-21	Closed Ash Pond 6	Downgradient	06/02/2003	823.5	--	--	675	< 0	3,500	--	138	--	--	--	--	12,000	--	
MW-21	Closed Ash Pond 6	Downgradient	06/03/2003	--	--	--	--	--	--	--	--	--	--	0.68	--	--	--	
MW-21	Closed Ash Pond 6	Downgradient	09/23/2003	793	--	--	650	< 0	4,000	--	120	--	--	--	--	15,500	--	
MW-21	Closed Ash Pond 6	Downgradient	06/14/2004	8,357	--	--	6,850	< 0	4,000	--	120	--	--	--	--	19,500	--	
MW-21	Closed Ash Pond 6	Downgradient	11/08/2004	7,930	--	--	6,500	< 0	4,270	--	121	--	--	--	--	16,200	--	
MW-21	Closed Ash Pond 6	Downgradient	05/11/2005	1,068	--	--	875	< 0	3,500	--	118	--	--	--	--	11,500	--	
MW-21	Closed Ash Pond 6	Downgradient	10/31/2005	1,037	--	--	850	< 0	3,880	--	114	--	--	--	--	15,700	--	
MW-21	Closed Ash Pond 6	Downgradient	05/15/2006	974.78	--	--	799	< 0	3,720	--	108	--	--	--	--	15,400	--	
MW-21	Closed Ash Pond 6	Downgradient	10/11/2006	999.18	--	--	819	< 0	3,640	--	120	--	--	--	--	15,700	--	
MW-21	Closed Ash Pond 6	Downgradient	04/17/2007	997.96	--	--	818	< 0	3,440	--	108	--	--	--	--	14,800	--	
MW-21	Closed Ash Pond 6	Downgradient	11/20/2007	1,159	--	--	950	< 0	1,950	--	96	--	--	--	--	13,500	--	
MW-21	Closed Ash Pond 6	Downgradient	04/30/2008	1,159	--	--	950	< 0	2,410	--	136	--	--	--	--	12,200	--	
MW-21	Closed Ash Pond 6	Downgradient	12/04/2009	951.6	--	--	780	< 0	1,940	--	80.9	--	--	--	--	11,400	--	
MW-21	Closed Ash Pond 6	Downgradient	12/29/2009	1,159	--	--	950	20	3,180	--	97.6	--	--	--	--	12,700	--	
MW-21	Closed Ash Pond 6	Downgradient	09/29/2012	490	< 6.0	< 6.0	490	< 6.0	1,800	--	72	--	--	--	--	7,100	--	
MW-21	Closed Ash Pond 6	Downgradient	11/20/2013	1,000	< 6.0	< 6.0	1,000	< 6.0	3,900	--	110	--	--	--	--	18,000	--	
MW-21	Closed Ash Pond 6	Downgradient	03/11/2014	920	< 6.0	< 6.0	920	< 6.0	3,400	--	110	--	--	--	--	15,000	--	
MW-21	Closed Ash Pond 6	Downgradient	09/09/2014	560	< 6.0	< 6.0	560	< 6.0	1,700	--	84	--	--	--	--	7,200	--	
MW-21	Closed Ash Pond 6	Downgradient	12/09/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-21	Closed Ash Pond 6	Downgradient	03/18/2015	850	< 6.0	< 6.0	850	< 6.0	3,200	--	99	--	--	--	--	15,000	--	
MW-21	Closed Ash Pond 6	Downgradient	06/24/2015	850	< 6.0	< 6.0	850	< 6.0	3,300	--	98	--	--	--	--	14,000	--	
MW-21	Closed Ash Pond 6	Downgradient	08/28/2015	540	< 6.0	< 6.0	540	< 6.0	2,000	--	91	--	--	--	--	7,600	--	
MW-21	Closed Ash Pond 6	Downgradient	11/04/2015	--	--	--	--	--	3,300	--	100	--	--	--	--	16,000	--	
MW-21	Closed Ash Pond 6	Downgradient	11/13/2015	700	< 6.0	< 6.0	700	< 6.0	1,600	--	47	--	--	--	--	6,800	--	
MW-21	Closed Ash Pond 6	Downgradient	11/13/2015	710	< 6.0	< 6.0	710	< 6.0	1,600	--	48	--	--	--	--	6,500	--	
MW-21	Closed Ash Pond 6	Downgradient	09/15/2016	1,000	< 6.0	< 6.0	1,000	< 6.0	3,000	--	97	--	--	--	--	15,000	--	
MW-21	Closed Ash Pond 6	Downgradient	06/21/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-21	Closed Ash Pond 6	Downgradient	11/08/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-78S	Closed Ash Pond 6	Downgradient	06/21/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-81	Closed Ash Pond 6	Downgradient	06/22/2019	520	< 6.0	< 6.0	520	< 6.0	800	--	42	--	--	--	--	2,200	--	
MW-81	Closed Ash Pond 6	Downgradient	06/21/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-81	Closed Ash Pond 6	Downgradient	11/08/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-82S	Closed Ash Pond 6	Downgradient	06/22/2019	260	< 6.0	< 6.0	260	< 6.0	610	--	25	--	--	--	--	1,300	--	
MW-82S	Closed Ash Pond 6	Downgradient	06/21/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-82S	Closed Ash Pond 6	Downgradient	11/08/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
EW-14	EW System	Downgradient	06/23/2020	140	< 6	< 6	140	< 6	420	--	26	--	< 0.4	< 0.6	--	1,400	--	
EW-15	EW System	Downgradient	06/23/2020	140	< 6	< 6	140	< 6	350	--	26	--	< 0.4	0.8	--	1,200	--	

Groundwater Sampling Results for Additional Monitoring Wells

				Additional Analyses													
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Alkalinity(as CaCO3)	Alkalinity, Phenolphthalein, as CaCO3	Magnesium	Magnesium	Potassium	Potassium	Radium 226	Radium 228	Selenium	Sodium	Sodium
Constituent:				N	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y
Filtered:				N	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L
IP-03	SIT	Downgradient	06/29/2015	580	< 6.0	< 6.0	580	< 6.0	1,400	--	60	--	--	--	--	3,500	--
IP-05	SIT	Downgradient	06/29/2015	780	< 6.0	< 6.0	780	< 6.0	2,000	--	81	--	--	--	--	6,100	--

Notes:

Duplicate sample dates under the same locations are either field duplicates or are instances of samples with multiple filed/lab sample IDs on the same date.

Abbreviations and Data Qualifiers:

- *data appear anomalous
- < = less than
- degrees C = degrees Celsius
- J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- mg/L = milligrams per liter
- pCi/L = Picocuries per liter
- su = standard units

APPENDIX F

**WOOD TECHNICAL MEMORANDUM DOCUMENTING THE STATISTICAL ANALYSIS
OF APPENDIX III CONSTITUENT DATA COLLECTED FROM THE CWTP THROUGH
DECEMBER 2019**



Technical Memorandum

To: Natalie Chrisman Lazarr, PE
Arizona Public Service

File No: 14-2018-2068

From: Carla Landrum, PhD
Formation Environmental

Reviewed by: Emily LoDolce, PE
Wood Environment and
Infrastructure Solutions, Inc.

Date: April 13, 2020

Subject: **CCR GROUNDWATER DETECTION MONITORING
STATISTICAL ANALYSIS AND RESULTS FOR THE CWTP
APPENDIX III CONSTITUENT DATA COLLECTED THROUGH DECEMBER 2019
Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico**

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) was prepared by Wood Environment and Infrastructure Solutions, Inc. (Wood) and its subcontractor, Formation Environmental, LLC (Formation) on behalf of Arizona Public Service (APS), to document the ongoing statistical evaluation of detection monitoring (i.e., Appendix III constituent) groundwater data associated with the Combined Waste Treatment Pond (CWTP) unit located at the APS Four Corners Power Plant (Four Corners) in Fruitland, New Mexico.

In 2019, the CWTP underwent an Alternative Source Demonstration (ASD) (Wood, 2019a) in response to multiple declarations of statistically significant increases (SSIs) over respective Background Threshold Values (BTVs) for fluoride, pH, boron, and calcium (Wood, 2019b). The ASD concluded that the exceedances were not due to a release from the CWTP but were instead attributable to:

- The varying presence of fill materials at the compliance and background monitoring locations;
- Surface water/groundwater interactions; and
- Spatial and temporal heterogeneity in the compliance and background well sample concentrations.

This statistical evaluation incorporates the results of detection monitoring at the CWTP in December 2019 and the recommended BTV updates for select monitoring wells and constituents put forth in the ASD (Wood, 2019a). The following sections present data inputs, statistical methods, results, and recommendations for the subject analysis.

2.0 DATA INPUTS

The CWTP groundwater monitoring well network consists of three background monitoring wells (MW-71, MW-72, and MW-73) and four compliance (i.e., downgradient), monitoring wells (M-62, M-63, MW-64, and M-65). The period of evaluation for this CWTP Appendix III constituent statistical analysis ranges from November 2015 through December 2019 and includes the minimum of eight initial, or baseline, sampling rounds required by the Coal Combustion Residuals (CCR) Rule (Federal Register, 2018) and five subsequent sampling rounds of detection monitoring that occur on a semi-annual frequency. Due principally to the CCR Rule requirement that a minimum of eight initial rounds of data be collected from the site prior to October

17, 2017, the frequency of sample collection prior to this date is short and variable (e.g., biweekly to quarterly sampling).

This statistical evaluation includes 18 to 23 sample results for boron, calcium, chloride, fluoride, sulfate, total dissolved solids (TDS), and pH at each compliance monitoring well. The first, second, third, fourth, and fifth rounds of detection monitoring at the CWTP were conducted in November 2017, June 2018, November 2018, May 2019, and December 2019, respectively; all Appendix III constituents were evaluated in collected samples during these monitoring events with the exception of chloride and sulfate in May and December 2019 due to the inadvertent exclusion of these analytes on the Chain of Custody in the field.

Appendix A contains the contents of the ProUCL data upload tables for the subject analysis. The Appendix III detection monitoring analytes are listed by name or chemical symbol as column headers in the ProUCL data upload table. By ProUCL convention (United States Environmental Protection Agency [USEPA], 2015), each analyte has a corresponding data column (indicated with a "D_" prefix) that indicates if the analyte was detected or not at a concentration that exceeds the analytical reporting limit, where detectable concentrations are symbolized by a "1" and non-detectable concentrations are symbolized by a "0." The detection frequency is 100% for all compliance well sample data listed in Appendix A.

3.0 METHODS

The statistical methods and analysis approach to complete the subject analysis are documented in the *Statistical Data Analysis Work Plan (SDAWP)* (Wood, 2018a) prepared for the site and the USEPA's Unified Guidance (2009).

Exploratory Data Analysis (EDA) is a relevant assessment of overall data adequacy for completing the subject analysis, including preparation of box plots, goodness of fit testing, Mann-Kendall trend testing, and outlier testing.

Table 1 summarizes previously calculated BTVs (Wood, 2018b; Wood, 2018c; and Wood, 2019c) and the new BTVs and intrawell UPLs for each Appendix III constituent resulting from the ASD findings and recommendations (Wood, 2019a). Table 1 also identifies the type of resampling strategy in effect by constituent.

The statistical analysis consists of comparing the December 2019 sample concentrations to corresponding not-to-exceed threshold values in Table 1. If an exceedance exists, the statistical significance of this exceedance is assessed through the prescribed resampling strategy.

4.0 RESULTS

Table 2 summarizes: 1) which Appendix III constituents exhibit exceedances above their respective BTVs/intrawell UPL for each compliance well and 2) which constituents exhibit statistically significant ($p < 0.05$) temporal trends.

Appendix B contains the raw ProUCL EDA outputs.

This statistical analysis results in the following:

Monitoring Well MW-62. There are sample exceedances for boron and calcium for the December 2019 sampling event.

Notably, the December 2019 exceedances for boron and calcium are *not* statistical outliers ($p < 0.05$), meaning the December 2019 sample concentrations are typical according to historical sampling events for these constituents in this monitoring well.

The December 2019 boron sample concentration exceeds its regulatory threshold by a tenth of a concentration value, which is less than one standard deviation for boron sample concentrations collected in this well under the detection monitoring program. Furthermore, this exceedance follows an update to the BTV calculation for this constituent in this monitoring well (Wood, 2019b).

The calcium exceedance for December 2019 follows a previous exceedance declaration in this monitoring well for the May 2019 sampling event (Wood, 2019c); both sampling events are subsequent to an update to the BTV calculation for this constituent in this well (Wood, 2019b).

For sampling events occurring through December 2019 under the detection monitoring program, there is sufficient evidence to declare statistically significant decreasing temporal trend ($p < 0.05$) for chloride and TDS in this monitoring well at this time.

Monitoring Well MW-63. There is a sample exceedance for calcium for the December 2019 sampling event.

The calcium exceedance for December 2019 follows a sample exceedance in this monitoring well for the May 2019 sampling event (Wood, 2019c); both sampling events are subsequent to an update to the BTV calculation for this constituent in this well (Wood, 2019b). The December 2019 exceedance for calcium is *not* a statistical outlier ($p < 0.05$), meaning the December 2019 calcium sample concentration is typical according to historical sampling events for this constituent in this monitoring well.

Concurrent with historical observations, calcium indicates a statistically significant ($p < 0.05$) increasing trend while chloride indicates statistically significant ($p < 0.05$) decreasing trend for this monitoring well. The increasing calcium trend in this monitoring well is unique among CWTP compliance monitoring wells.

Monitoring Well MW-64. There are no sample exceedances for the December 2019 sampling event for this well. Consistent with previous statistical analyses, sulfate shows a significant ($p < 0.05$) increasing trend at this well.

Monitoring Well MW-65. There are no sample exceedances for the December 2019 sampling event for this well. Based on an evaluation of MW-65 data collected through May 2019, boron and TDS exhibit a statistically significant ($p < 0.05$) decreasing trends and pH exhibits a statistically significant ($p < 0.05$) increasing trend in this well.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This statistical analysis results in the following conclusions and recommendations for the CWTP detection monitoring statistical analysis:

- There is sufficient evidence at this time to declare SSIs in calcium concentrations over the BTV at **MW-62** and **MW-63** using the 1 of 2 resampling strategy in place (Table 1). This declaration triggers either assessment monitoring or a successful demonstration that a source other than the unit caused the exceedance, pursuant to Coal Combustion Residuals (CCR) Rule requirements for groundwater

monitoring and corrective action detailed in 40 Code of Federal Regulations (CFR) Sections (§) 257.90 through 257.98 (Federal Register, 2018).

There is uncertainty regarding the validity of this SSI declaration. First, the calcium exceedances for the May 2019 and December 2019 sampling events are not identified as significant ($p < 0.05$) statistical outliers according to historical sampling events for calcium in MW-62 and MW-63, respectively, under the detection monitoring program; suggesting the 2019 sample calcium concentrations are typical for these wells. Furthermore, the May 2019 and December 2019 sample exceedances follow a recalculation of the calcium BTV (525 mg/L) that is lower than its preceding BTV (540 mg/L). Based on these findings, Wood and Formation Environmental recommend investigating the BTV calculation and representativeness of the updated BTV for monitoring groundwater conditions beneath the CWTP.

- The temporal trend for calcium in MW-63 is unique among compliance wells at the CWTP. Wood and Formation Environmental recommend investigating the cause to this unique behavior by leveraging the conceptual site model and the previous ASD investigation.
- The boron exceedance in MW-62 is infinitesimal. To be judicious, Wood and Formation Environmental recommend implementing the 1 of 3 resampling strategy in place for boron during the next scheduled detection monitoring event.
- Trend testing after each sampling round should continue to assess changes in temporal trend significance.
- Statistical method selection and BTVs should be reassessed after 1 to 2 years of future sampling events and updated as appropriate.

6.0 REFERENCES

- Federal Register, 2018. 40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.
- United States Environmental Protection Agency (USEPA), 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance*. EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.
- USEPA, 2015. *ProUCL (Version 5.1.1) User Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations*. EPA/600/R-07/041. Washington D.C. October 2015.
- Wood, 2018a. *Statistical Data Analysis Work Plan*. Coal Combustion Residual Rule Groundwater Monitoring System Compliance, Four Corners Power Plant, Fruitland, New Mexico. Report prepared for Arizona Public Service. Report dated October 13, 2017 and updated October 15, 2018.
- Wood, 2018b. *Statistical Analysis of Initial Detection Monitoring Appendix III Constituent Data*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated January 12, 2018 and revised August 20, 2018.
- Wood, 2018c. *CCR Groundwater Detection Monitoring Evaluation of June 2018 Data Collected from the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated October 15, 2018.
- Wood, 2019a. *Alternative Source Demonstration for Boron, Calcium, Fluoride and pH at the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated July 15, 2019.
- Wood, 2019b. *CCR Groundwater Detection Monitoring Evaluation of November 2018 Data Collected from the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated April 15, 2019.
- Wood, 2019c. *CCR Groundwater Detection Monitoring Evaluation of May 2019 Data Collected from the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated, October 15, 2019.

ATTACHMENTS

Table 1 – BTVs and Intrawell UPLs for the Four Corners CWTP

Table 2 – CWTP Downgradient Sample Data Summary

Appendix A – ProUCL Data Upload Table

Appendix B – ProUCL EDA Output Files

wood.

TABLES



Table 1
BTVs and Intrawell UPLs for the Four Corners CWTP
Appendix III Statistical Analysis

Background Wells	Dates Corresponding to Data Used to Derive UPL	Constituent	BTV (Calculation Method)	Units	Resampling Strategy ¹	Reference
MW-71 and MW-72	3/5/2016-5/6/2019	Boron	0.69 (NP-UPL) ²	mg/L	1 of 3	Wood, 2019c
MW-73	2/2/2017-5/6/2019	Boron	2.0 (NP-UPL) ³	mg/L	1 of 3	Wood, 2019c
MW-71, MW-72, and MW-73	3/5/2016-5/6/2019	Calcium	525 (P-UPL)	mg/L	1 of 2	Wood, 2019c
MW-71, MW-72, and MW-73	3/5/2016-10/13/2017	Chloride	710 (P-UPL)	mg/L	1 of 2	Wood, 2018b
MW-71, MW-72, and MW-73	3/5/2016-6/3/2018	pH (upper limit)	7.04 (P-UPL) ³	SU	1 of 2	Wood, 2018c
MW-71, MW-72, and MW-73	3/5/2016-6/3/2018	pH (lower limit)	6.33 (P-LPL)	SU	1 of 2	Wood, 2018c
MW-71, MW-72, and MW-73	3/5/2016-10/13/2017	Sulfate	13,000 (NP-UPL)	mg/L	1 of 3	Wood, 2018b
MW-71, MW-72, and MW-73	3/5/2016-10/13/2017	TDS	20,000 (NP-UPL)	mg/L	1 of 3	Wood, 2018b

Compliance Well	Dates Corresponding to Data Used to Derive UPL	Constituent	Intrawell UPL (Calculation Method ¹)	Units	Resampling Strategy ²	Reference
MW-62	11/9/2015-10/13/2017	Fluoride	1.6 (NP-UPL)	mg/L	1 of 3	Wood, 2019c
MW-63	11/4/2015-10/13/2017	Fluoride	2.3 (P-UPL)	mg/L	1 of 3	Wood, 2019c
MW-64	11/5/2015-10/13/2017	Fluoride	1.5 (NP-UPL)	mg/L	1 of 3	Wood, 2019c
MW-64	11/5/2015-10/13/2017	pH	7.68 (P-UPL)	SU	1 of 2	Wood, 2019c
MW-64	11/5/2015-10/13/2017	pH	7.25 (P-LPL)	SU	1 of 2	Wood, 2019c
MW-65	11/5/2015-10/13/2017	Fluoride	2.0 (NP-UPL)	mg/L	1 of 3	Wood, 2019c
MW-65	11/5/2015-10/13/2017	pH	8.27 (NP-UPL)	SU	1 of 3	Wood, 2019c
MW-65	11/5/2015-10/13/2017	pH	6.96 (NP-LPL)	SU	1 of 3	Wood, 2019c

Notes:

BTV = background threshold value
 CWTP = Combined Waste Treatment Pond
 LPL = Lower Prediction Limit

mg/L = milligrams per liter
 NP = Non Parametric
 P = Parametric

SU = standard units
 UPL = Upper Prediction Limit

¹ A 1 of 2 resampling strategy is in place for parametric prediction limits. A 1 of 3 resampling strategy is in place for non-parametric prediction limits and the limit represents the maximum concentration value of the data set (i.e., maximum order statistic).

² Only applicable to MW-64 and MW-65

³ Only applicable to MW-62 and MW-63

Table 2
Four Corners CWTP Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
MW-62	FC-CCR-MW62-110915	11/9/2015	2.1	520	150	1.6	6.63	3600	6700
MW-62	FC-CCR-MW-62-042716	4/27/2016	2.0	530	150	1.6	6.77	3200	6100
MW-62	FC-CCR-MW62-616	6/5/2016	2.0	510	140	1.5	6.50	3300	5900
MW-62	FC-CCR-MW62-816	8/20/2016	2.3	530	120	1.5	7.40	3300	5800
MW-62	FC-CCR-MW62-916	9/12/2016	2.5	570	130	1.5	6.73	3300	2400
MW-62	FC-CCR-MW62-1016	10/19/2016	2.2	480	120	1.2	6.57	3300	6000
MW-62	FC-CCR-MW62-117	2/1/2017	2.1	510	110	1.4	6.68	3400	5600
MW-62	FC-CCR-MW62-41617	4/16/2017	1.9	500	120	1.2	6.64	3300	5900
MW-62	FC-CCR-MW62-5117	5/1/2017	1.9	520	110	3.3	6.64	3800	5800
MW-62	FC-CCR-MW62-52917	5/29/2017	1.9	570	120	1.2	6.50	3500	5500
MW-62	FC-CCR-MW62-62117	6/21/2017	1.9	520	120	1.4	6.54	3600	5700
MW-62	FC-CCR-MW62-72117	7/21/2017	2.1	540	99	1.5	6.69	3300	5400
MW-62	FC-CCR-MW62-8917	8/9/2017	2.2	540	110	1.4	6.41	3400	5400
MW-62	FC-CCR-MW62-81617	8/16/2017	2.1	590	110	1.6	6.36	3200	5400
MW-62	FC-CCR-MW62-9917	9/9/2017	2.3	570	120	1.5	6.41	3300	5500
MW-62	FC-CCR-MW62-101317	10/13/2017	2.2	520	130	1.5	6.46	3300	5600
MW-62	FC-CCR-MW62-113017	11/30/2017	2.3	570	130	1.4	6.43	3400	5900
MW-62	FC-CCR-MW62-4618	4/6/2018	2.1	520	--	--	6.70	--	--
MW-62	FC-CCR-MW-62-6318	6/3/2018	1.8	490	120	1.6	6.59	3500	5900
MW-62	FC-CCR-MW62-11218	11/2/2018	2.4	550	110	1.5	6.46	3300	5600
MW-62	FC-CCR-MW62-5719-01	5/7/2019	1.8	540	--	1.4	6.65	--	5800
MW-62	FC-CCR-MW62-120319	12/3/2019	2.1	530	--	1.5	6.37	--	5000
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or Intrawell UPL ^{1,2} :			2.0	525	710	1.6	7.04/6.33	13,000	20,000
Temporal Trend ³ :			None	None	Decreasing	None	None	None	Decreasing

Table 2
Four Corners CWTP Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
MW-63	FC-CCR-MW63-110415	11/4/2015	1.6	420	77	2.4	6.86	2800	4100
MW-63	FC-CCR-MW-63-042716	4/27/2016	1.3	500	100	2.0	6.88	2300	4300
MW-63	FC-CCR-MW63-616	6/5/2016	1.4	500	110	1.9	6.70	2500	4400
MW-63	FC-CCR-MW63-816	8/20/2016	1.9	530	98	1.9	6.92	2800	4700
MW-63	FC-CCR-MW63-916	9/12/2016	2.0	550	110	2.1	7.03	2800	4700
MW-63	FC-CCR-MW63-1016	10/19/2016	1.7	470	100	1.8	6.82	2700	4500
MW-63	FC-CCR-MW63-117	1/31/2017	1.4	510	95	2.0	6.67	2600	4200
MW-63	FC-CCR-MW63-41717	4/17/2017	1.4	520	98	1.6	6.78	2600	4400
MW-63	FC-CCR-MW63-5217	5/2/2017	1.4	510	92	2.5	6.79	4300	4300
MW-63	FC-CCR-MW63-52817	5/28/2017	1.5	550	98	1.6	6.80	2700	4300
MW-63	FC-CCR-MW63-62117	6/21/2017	1.6	520	100	1.9	6.78	2900	4400
MW-63	FC-CCR-MW63-72117	7/21/2017	1.8	530	98	2.0	6.87	2900	4600
MW-63	FC-CCR-MW63-8917	8/9/2017	1.9	530	97	1.9	6.56	2900	4500
MW-63	FC-CCR-MW63-81617	8/16/2017	1.8	580	100	2.1	6.53	2700	4500
MW-63	FC-CCR-MW63-9917	9/9/2017	2.0	540	97	2.0	6.83	2700	4300
MW-63	FC-CCR-MW63-101317	10/13/2017	1.8	500	90	2.0	6.69	2700	4300
MW-63	FC-CCR-MW63-113017	11/30/2017	1.7	560	91	1.8	6.72	2700	4500
MW-63	FC-CCR-MW63-4618	4/6/2018	1.3	530	--	--	6.75	--	--
MW-63	FC-CCR-MW-63-6318	6/3/2018	1.4	510	90	1.7	6.76	2600	4500
MW-63	FC-CCR-MW63-112818	11/2/2018	1.9	550	88	1.9	6.66	2800	4300
MW-63	FC-CCR-MW63-5719-02	5/7/2019	1.3	540	--	1.6	6.63	--	4400
MW-63	FC-CCR-MW63-120319	12/3/2019	1.6	550	--	1.8	6.58	--	4300
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or Intrawell UPL ^{1,2} :			2.0	525	710	2.3	7.04/6.33	13,000	20,000
Temporal Trend ³ :			None	Increasing	Decreasing	None	None	None	None

Table 2
Four Corners CWTP Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
MW-64	FC-CCR-MW64-110515	11/5/2015	0.6	87	49	1.5	7.64	320	780
MW-64	FC-CCR-MW-64-042716	4/27/2016	0.62	90	53	1.4	7.50	340	810
MW-64	FC-CCR-MW64-616	6/5/2016	0.58	86	52	1.4	7.29	350	800
MW-64	FC-CCR-MW64-816	8/20/2016	0.65	89	46	1.3	7.68	330	790
MW-64	FC-CCR-MW64-916	9/12/2016	0.67	90	52	1.5	7.54	320	790
MW-64	FC-CCR-MW64-1016	10/19/2016	0.64	83	53	1.5	7.52	330	790
MW-64	FC-CCR-MW64-117	1/31/2017	0.61	85	48	1.4	7.38	340	800
MW-64	FC-CCR-MW64-41717	4/17/2017	0.58	85	51	1.4	7.53	870	800
MW-64	FC-CCR-MW64-5217	5/2/2017	0.55	86	44	1.3	7.47	340	780
MW-64	FC-CCR-MW64-52817	5/28/2017	0.55	93	51	1.5	7.45	380	780
MW-64	FC-CCR-MW64-62117	6/21/2017	0.55	86	51	1.4	7.50	390	770
MW-64	FC-CCR-MW64-72117	7/21/2017	0.59	88	52	1.5	7.61	370	790
MW-64	FC-CCR-MW64-8917	8/9/2017	0.61	89	52	1.5	7.31	380	890
MW-64	FC-CCR-MW64-81617	8/16/2017	0.58	89	53	1.5	7.29	360	790
MW-64	FC-CCR-MW64-9917	9/9/2017	0.67	90	53	1.5	7.36	350	810
MW-64	FC-CCR-MW64-101317	10/13/2017	0.62	82	52	1.4	7.42	360	790
MW-64	FC-CCR-MW64-113017	11/30/2017	0.64	90	52	1.4	7.37	350	780
MW-64	FC-CCR-MW-64-6318	6/3/2018	0.48	85	50	1.4	7.54	390	800
MW-64	FC-CCR-MW64-11218	11/2/2018	0.64	88	50	1.4	7.43	350	760
MW-64	FC-CCR-MW64-5719-03	5/7/2019	0.49	89	--	1.4	7.41	--	790
MW-64	FC-CCR-MW64-120319	12/3/2019	0.56	82	--	1.5	7.29	--	720
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or Intrawell UPL ^{1,2} :			0.69	525	710	1.5	7.68/7.25	13,000	20,000
Temporal Trend ³ :			None	None	None	None	None	Increasing	None

Table 2
Four Corners CWTP Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
MW-65	FC-CCR-MW65-110515	11/5/2015	0.86	100	52	2.0	7.50	440	1000
MW-65	FC-CCR-MW-65-042716	4/27/2016	0.76	110	55	1.8	7.29	460	1100
MW-65	FC-CCR-MW65-616	6/5/2016	0.75	100	54	2.0	7.08	460	1100
MW-65	FC-CCR-MW65-816	8/20/2016	0.79	100	52	1.7	8.27	450	1000
MW-65	FC-CCR-MW65-916	9/12/2016	0.83	110	54	2.0	7.52	480	1100
MW-65	FC-CCR-MW65-1016	10/19/2016	0.77	95	54	2.0	7.36	450	1000
MW-65	FC-CCR-MW65-117	2/1/2017	0.76	96	51	1.8	7.35	410	970
MW-65	FC-CCR-MW65-41617	4/16/2017	0.83	120	60	1.8	7.21	490	1300
MW-65	FC-CCR-MW65-5117	5/1/2017	0.79	110	58	1.6	7.24	500	1100
MW-65	FC-CCR-MW65-52917	5/29/2017	0.98	160	77	1.8	7.10	790	1500
MW-65	FC-CCR-MW65-62117	6/21/2017	0.92	140	68	1.9	7.06	710	1400
MW-65	FC-CCR-MW65-72117	7/21/2017	0.76	110	53	2.0	7.31	470	1000
MW-65	FC-CCR-MW65-8917	8/9/2017	0.76	110	53	2.0	7.15	500	1000
MW-65	FC-CCR-MW65-81617	8/16/2017	0.75	110	53	2.0	6.96	500	1000
MW-65	FC-CCR-MW65-9917	9/9/2017	0.80	110	53	2.0	7.04	450	1000
MW-65	FC-CCR-MW65-101317	10/13/2017	0.75	92	52	1.9	7.13	400	960
MW-65	FC-CCR-MW65-113017	11/30/2017	0.79	100	53	2.0	7.21	410	990
MW-65	FC-CCR-MW-65-6318	6/3/2018	0.62	98	52	1.9	7.22	480	1000
MW-65	FC-CCR-MW65-11218	11/2/2018	0.77	100	51	1.9	7.18	420	940
MW-65	FC-CCR-MW65-5719-05	5/7/2019	0.60	100	--	1.7	7.13	--	970
MW-65	FC-CCR-MW65-120319	12/3/2019	0.65	89	--	1.9	7.10	--	850
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or Intrawell UPL ^{1,2} :			0.69	525	710	2.0	8.27/6.96	13,000	20,000
Temporal Trend ³ :			Decreasing	None	None	None	Increasing	None	Decreasing

Table 2
Four Corners CWTP Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration					
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate

Notes:

BTV = background threshold value

mg/L = milligrams per liter

TDS = total dissolved solids

UPL = upper prediction limit

SU = standard units

0.75

Value from baseline monitoring period (November 2015 thru October 2017)



Reported value in current sampling round (December 2019) exceeds the BTV or UPL



Statistically significant increasing trend present



Statistically significant decreasing trend present

None

Insufficient evidence to identify a trend

¹ Values updated during a recent update (Wood, 2019c) presented in bolded red text; see Table 1 for relevant BTV and Intrawell UPL information.

² For pH, values presented refer to the Upper Prediction Limit/Lower Prediction Limit, respectively.

³ Temporal trends evaluated with Mann-Kendall trend tests ($p < 0.05$); tied values (sequential sample concentrations that are equal overtime) can cause misleading trend results.

APPENDIX A

PROUCL DATA UPLOAD TABLE



StationName	QC_SampleID	SampDate	NumDate	Boron	D_Boron	Calcium	D_Calcium	Chloride	D_Chloride	Fluoride	D_Fluoride	Hydrogen ion/	Hydrogen ion/	Sulfate	D_Sulfate	Dissolved Solids	Dissolved Solids
MW-62	FC-CCR-MW62-110915	11/09/2015	42317.00	2.1	1	520	1	150	1	1.6	1	6.94	1	3600	1	6700	1
MW-62	FC-CCR-MW-62-042716	4/27/2016	42487.00	2.0	1	530	1	150	1	1.6	1	6.77	1	3200	1	6100	1
MW-62	FC-CCR-MW62-616	06/05/2016	42526.00	2	1	510	1	140	1	1.45	1	6.86	1	3300	1	5900	1
MW-62	FC-CCR-MW62-816	08/20/2016	42602.00	2.3	1	530	1	120	1	1.4	1	6.7	1	3300	1	5800	1
MW-62	FC-CCR-MW62-916	09/12/2016	42625.00	2.5	1	570	1	130	1	1.4	1	6.9	1	3300	1	2400	1
MW-62	FC-CCR-MW62-1016	10/19/2016	42662.00	2.2	1	480	1	120	1	1.2	1	7	1	3300	1	6000	1
MW-62	FC-CCR-MW62-117	02/01/2017	42767.00	2.1	1	510	1	110	1	1.4	1	7.6	1	3400	1	5600	1
MW-62	FC-CCR-MW62-41617	04/16/2017	42841.00	1.9	1	500	1	120	1	1.2	1	7.2	1	3300	1	5900	1
MW-62	FC-CCR-MW62-5117	5/1/2017	42856.00	1.9	1	520	1	110	1	3.3	1	6.64	1	3800	1	5800	1
MW-62	FC-CCR-MW62-52917	5/29/2017	42884.00	1.9	1	570	1	120	1	1.2	1	6.50	1	3500	1	5500	1
MW-62	FC-CCR-MW62-62117	06/21/2017	42907.00	1.9	1	520	1	120	1	1.4	1	7	1	3600	1	5700	1
MW-62	FC-CCR-MW62-72117	07/21/2017	42937.00	2.1	1	540	1	99	1	1.5	1	7	1	3300	1	5400	1
MW-62	FC-CCR-MW62-8917	08/09/2017	42956.00	2.1	1	590	1	110	1	1.6	1	7	1	3200	1	5400	1
MW-62	FC-CCR-MW62-81617	08/16/2017	42963.00	2.2	1	540	1	110	1	1.4	1	7	1	3400	1	5400	1
MW-62	FC-CCR-MW62-9917	09/09/2017	42987.00	2.3	1	570	1	120	1	1.5	1	6.8	1	3300	1	5500	1
MW-62	FC-CCR-MW62-101317	10/13/2017	43021.00	2.2	1	520	1	130	1	1.5	1	6.8	1	3300	1	5600	1
MW-62	FC-CCR-MW62-113017	11/30/2017	43069.00	2.3	1	570	1	130	1	1.4	1	7	1	3400	1	5900	1
MW-62	FC-CCR-MW62-4618	04/06/2018	43196.00	2.1	1	520	1	NA	1	NA	0	NA	0	NA	0	NA	0
MW-62	FC-CCR-MW-62-6318	06/03/2018	43254.00	1.8	1	490	1	120	1	1.6	1	6.8	1	3500	1	5900	1
MW-62	FC-CCR-MW62-11218	11/02/2018	43406.00	2.4	1	550	1	110	1	1.5	1	6.8	1	3300	1	5600	1
MW-62	FC-CCR-MW62-5719-01	05/07/2019	43592.00	1.8	1	540	1	NA	0	1.4	1	7.2	1	NA	0	5800	1
MW-62	FC-CCR-MW62-120319	12/03/2019	43802.00	2.1	1	530	1	NA	0	1.5	1	7.2	1	NA	0	5000	1
MW-63	FC-CCR-MW63-110415	11/04/2015	42312.00	1.6	1	420	1	77	1	2.4	1	NA	0	2800	1	4100	1
MW-63	FC-CCR-MW-63-042716	04/27/2016	42487.00	NA	0	NA	0	NA	0	2	1	NA	0	NA	0	NA	0
MW-63	FC-CCR-MW63-616	06/05/2016	42526.00	1.4	1	500	1	110	1	1.9	1	7.05	1	2500	1	4400	1
MW-63	FC-CCR-MW63-816	08/20/2016	42602.00	1.9	1	530	1	98	1	1.9	1	6.9	1	2800	1	4700	1
MW-63	FC-CCR-MW63-916	09/12/2016	42625.00	2	1	550	1	110	1	2.05	1	7.1	1	2800	1	4700	1
MW-63	FC-CCR-MW63-1016	10/19/2016	42662.00	1.7	1	480	1	98	1	2	1	7.2	1	2600	1	4400	1
MW-63	FC-CCR-MW100-1016	10/20/2016	42663.00	1.7	1	470	1	100	1	1.8	1	7.2	1	2700	1	4500	1
MW-63	FC-CCR-MW63-117	01/31/2017	42766.00	1.4	1	500	1	93	1	1.75	1	7.6	1	2500	1	4200	1
MW-63	FC-CCR-MW100-117	01/31/2017	42766.00	1.4	1	510	1	95	1	2	1	7.7	1	2600	1	4200	1
MW-63	FC-CCR-MW63-41717	04/17/2017	42842.00	1.4	1	520	1	98	1	1.55	1	7.3	1	2600	1	4400	1
MW-63	FC-CCR-MW63-5217	05/02/2017	42857.00	NA	0	NA	0	NA	0	1.6	1	NA	0	NA	0	NA	0
MW-63	FC-CCR-MW63-52817	05/28/2017	42883.00	NA	0	NA	0	NA	0	1.6	1	NA	0	NA	0	NA	0
MW-63	FC-CCR-MW63-62117	06/21/2017	42907.00	1.6	1	520	1	100	1	1.9	1	7.2	1	2900	1	4400	1
MW-63	FC-CCR-MW63-72117	07/21/2017	42937.00	1.8	1	530	1	98	1	2	1	7.2	1	2900	1	4600	1
MW-63	FC-CCR-MW63-8917	08/09/2017	42956.00	1.8	1	580	1	100	1	2.1	1	7.2	1	2700	1	4500	1
MW-63	FC-CCR-MW63-81617	08/16/2017	42963.00	1.9	1	530	1	97	1	1.9	1	7.2	1	2900	1	4500	1
MW-63	FC-CCR-MW63-9917	09/09/2017	42987.00	2	1	540	1	97	1	2	1	7	1	2700	1	4300	1
MW-63	FC-CCR-MW63-101317	10/13/2017	43021.00	1.8	1	500	1	90	1	2	1	7.1	1	2700	1	4300	1
MW-63	FC-CCR-MW63-113017	11/30/2017	43069.00	1.7	1	560	1	91	1	1.8	1	7.2	1	2700	1	4500	1
MW-63	FC-CCR-MW63-4618	04/06/2018	43196.00	1.3	1	530	1	NA	0	NA	0	NA	0	NA	0	NA	0
MW-63	FC-CCR-MW-63-6318	06/03/2018	43254.00	1.4	1	510	1	90	1	1.7	1	7.1	1	2600	1	4500	1
MW-63	FC-CCR-MW63-112818	11/02/2018	43406.00	1.9	1	550	1	88	1	1.9	1	7.1	1	2800	1	4300	1
MW-63	FC-CCR-MW63-5719-02	05/07/2019	43592.00	1.3	1	540	1	NA	0	1.6	1	7.2	1	NA	0	4400	1
MW-63	FC-CCR-MW63-120319	12/03/2019	43802.00	1.5	1	550	1	NA	0	1.8	1	7.1	1	NA	0	4300	1
MW-64	FC-CCR-MW64-110515	11/05/2015	42313.00	0.64	1	87	1	49	1	1.5	1	NA	0	320	1	780	1
MW-64	FC-CCR-MW-64-042716	4/27/2016	42487.00	0.62	1	90	1	53	1	1.4	1	7.50	1	340	1	810	1
MW-64	FC-CCR-MW64-616	06/05/2016	42526.00	0.58	1	86	1	52	1	1.45	1	7.66	1	350	1	800	1
MW-64	FC-CCR-MW64-816	08/20/2016	42602.00	0.65	1	89	1	46	1	1.45	1	7.5	1	330	1	790	1
MW-64	FC-CCR-MW64-916	09/12/2016	42625.00	0.67	1	90	1	52	1	1.5	1	7.7	1	320	1	790	1

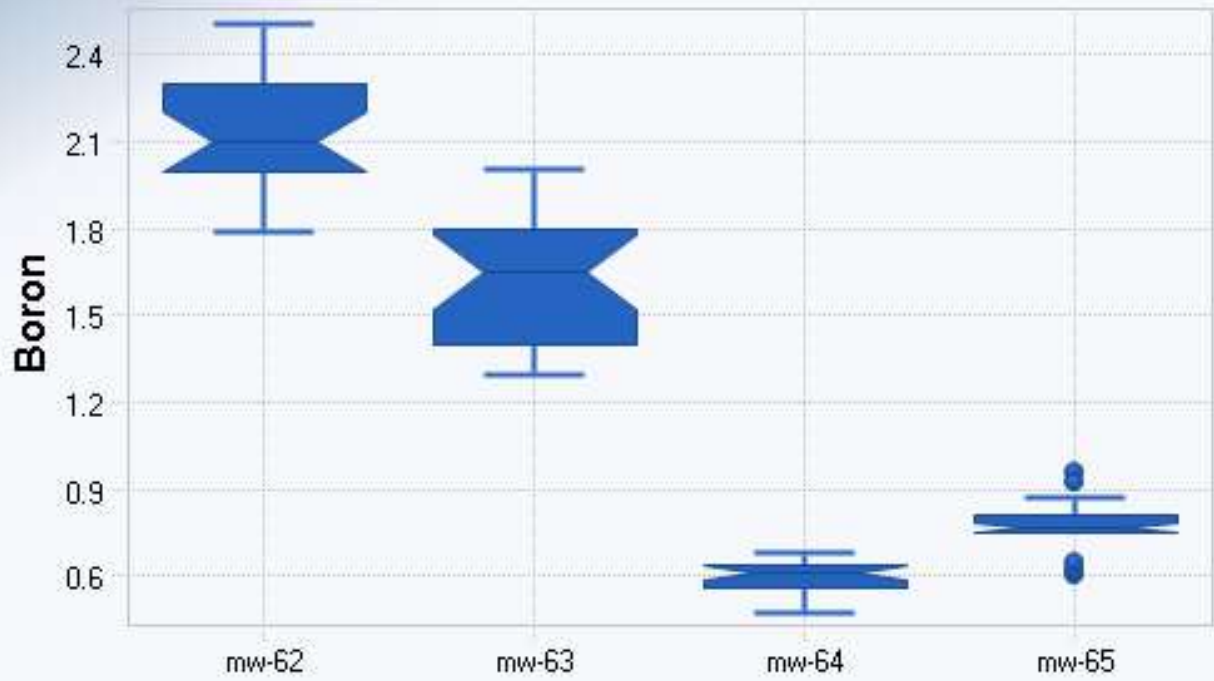
MW-64	FC-CCR-MW64-1016	10/19/2016	42662.00	0.64	1	83	1	53	1	1.5	1	7.8	1	330	1	790	1	
MW-64	FC-CCR-MW64-117	01/31/2017	42766.00	0.61	1	85	1	48	1	1.45	1	8.1	1	340	1	800	1	
MW-64	FC-CCR-MW64-41717	04/17/2017	42842.00	0.58	1	85	1	51	1	1.4	1	7.9	1	870	1	800	1	
MW-64	FC-CCR-MW64-5217	5/2/2017	42857.00	0.55	1	86	1	44	1	1.3	1	7.47	1	340	1	780	1	
MW-64	FC-CCR-MW64-52817	5/28/2017	42883.00	0.55	1	93	1	51	1	1.5	1	7.45	1	380	1	780	1	
MW-64	FC-CCR-MW64-62117	06/21/2017	42907.00	0.55	1	86	1	51	1	1.4	1	7.8	1	390	1	770	1	
MW-64	FC-CCR-MW64-72117	07/21/2017	42937.00	0.59	1	88	1	52	1	1.5	1	7.7	1	370	1	790	1	
MW-64	FC-CCR-MW64-8917	08/09/2017	42956.00	0.58	1	89	1	53	1	1.5	1	7.8	1	360	1	790	1	
MW-64	FC-CCR-MW64-81617	08/16/2017	42963.00	0.61	1	89	1	52	1	1.5	1	7.8	1	380	1	890	1	
MW-64	FC-CCR-MW64-9917	09/09/2017	42987.00	0.67	1	90	1	53	1	1.5	1	7.8	1	350	1	810	1	
MW-64	FC-CCR-MW64-101317	10/13/2017	43021.00	0.62	1	82	1	52	1	1.4	1	7.7	1	360	1	790	1	
MW-64	FC-CCR-MW64-113017	11/30/2017	43069.00	0.64	1	90	1	52	1	1.4	1	7.7	1	350	1	780	1	
MW-64	FC-CCR-MW-64-6318	06/03/2018	43254.00	0.48	1	85	1	50	1	1.4	1	7.7	1	390	1	800	1	
MW-64	FC-CCR-MW64-11218	11/02/2018	43406.00	0.64	1	88	1	50	1	1.4	1	7.8	1	350	1	760	1	
MW-64	FC-CCR-MW64-5719-03	05/07/2019	43592.00	0.48	1	88	1	NA	0	1.4	1	8	1	NA	0	780	1	
MW-64	FC-CCR-MW64-120319	12/03/2019	43802.00	0.56	1	82	1	NA	0	1.5	1	7.8	1	NA	0	720	1	
MW-65	FC-CCR-MW65-110515	11/05/2015	42313.00	0.86	1	100	1	52	1	2	1	NA	0	440	1	1000	1	
MW-65	FC-CCR-MW-65-042716	4/27/2016	42487.00	0.76	1	110	1	55	1	1.8	1	7.29	1	460	1	1100	1	
MW-65	FC-CCR-MW65-616	06/05/2016	42526.00	0.75	1	100	1	54	1	1.95	1	7.41	1	460	1	1100	1	
MW-65	FC-CCR-MW65-816	08/20/2016	42602.00	0.79	1	100	1	52	1	1.9	1	7.4	1	450	1	1000	1	
MW-65	FC-CCR-MW65-916	09/12/2016	42625.00	0.83	1	110	1	54	1	2	1	7.5	1	480	1	1100	1	
MW-65	FC-CCR-MW65-1016	10/19/2016	42662.00	0.77	1	95	1	54	1	2	1	7.6	1	450	1	1000	1	
MW-65	FC-CCR-MW65-117	02/01/2017	42767.00	0.76	1	96	1	51	1	1.9	1	7.9	1	410	1	970	1	
MW-65	FC-CCR-MW65-41617	04/16/2017	42841.00	0.83	1	120	1	60	1	1.75	1	7.6	1	490	1	1300	1	
MW-65	FC-CCR-MW65-5117	5/1/2017	42856.00	0.79	1	110	1	58	1	1.6	1	7.24	1	500	1	1100	1	
MW-65	FC-CCR-MW65-52917	5/29/2017	42884.00	0.98	1	160	1	77	1	1.8	1	7.10	1	790	1	1500	1	
MW-65	FC-CCR-MW65-62117	06/21/2017	42907.00	0.92	1	140	1	68	1	1.9	1	7.6	1	710	1	1400	1	
MW-65	FC-CCR-MW65-72117	07/21/2017	42937.00	0.76	1	110	1	53	1	2	1	7.5	1	470	1	1000	1	
MW-65	FC-CCR-MW65-8917	08/09/2017	42956.00	0.75	1	110	1	53	1	2	1	7.6	1	470	1	1000	1	
MW-65	FC-CCR-MW65-81617	08/16/2017	42963.00	0.76	1	110	1	53	1	2	1	7.7	1	500	1	1000	1	
MW-65	FC-CCR-MW65-9917	09/09/2017	42987.00	0.8	1	110	1	53	1	2	1	7.5	1	450	1	1000	1	
MW-65	FC-CCR-MW65-101317	10/13/2017	43021.00	0.76	1	93	1	52	1	1.9	1	7.6	1	400	1	980	1	
MW-65	FC-CCR-MW65-113017	11/30/2017	43069.00	0.79	1	100	1	53	1	2	1	7.6	1	410	1	990	1	
MW-65	FC-CCR-MW-65-6318	06/03/2018	43254.00	0.62	1	98	1	52	1	1.9	1	7.5	1	480	1	1000	1	
MW-65	FC-CCR-MW65-11218	11/02/2018	43406.00	0.77	1	100	1	51	1	1.9	1	7.5	1	420	1	940	1	
MW-65	FC-CCR-MW65-5719-05	05/07/2019	43592.00	0.6	1	100	1	NA	0	1.7	1	7.9	1	NA	0	970	1	
MW-65	FC-CCR-MW65-120319	12/03/2019	43802.00	0.65	1	89	1	NA	0	1.9	1	7.6	1	NA	0	850	1	

APPENDIX B

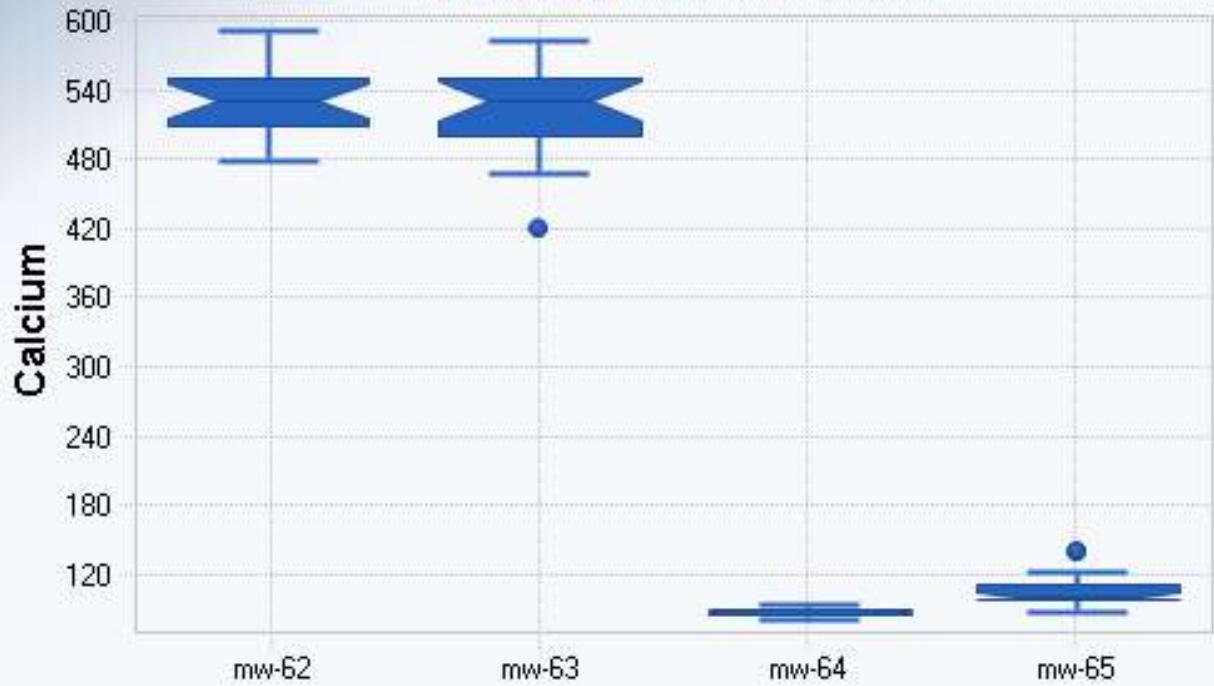
PROUCL EDA OUTPUT FILES



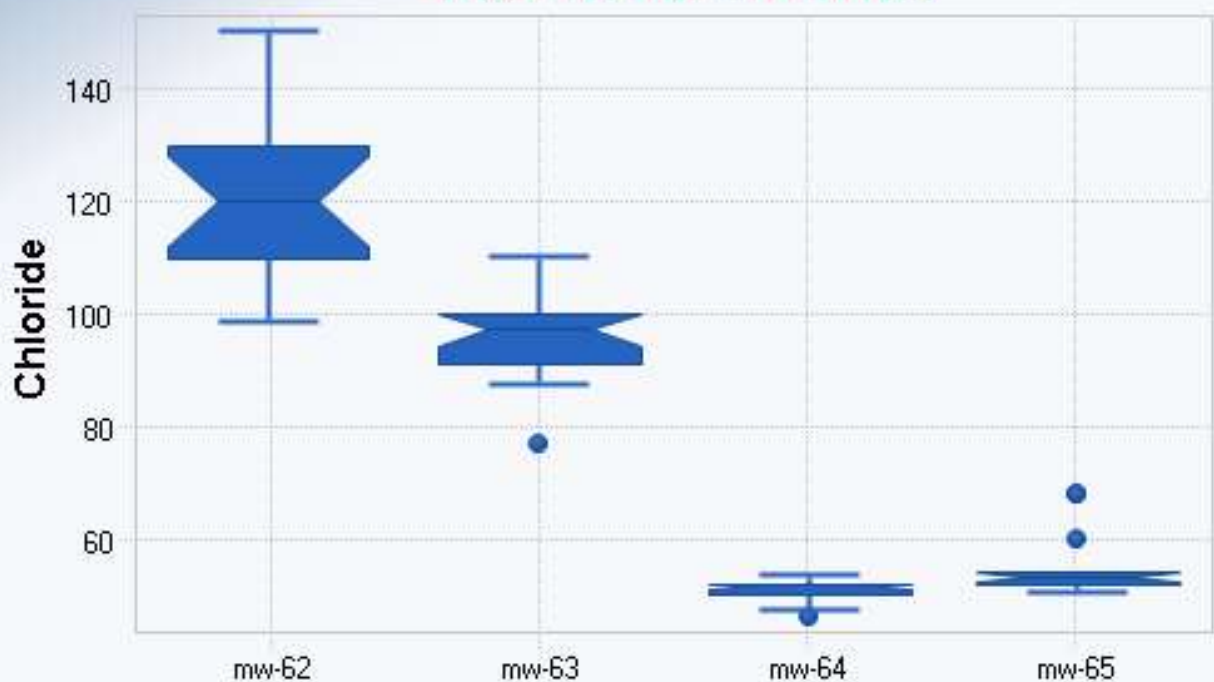
Box Plot for Boron



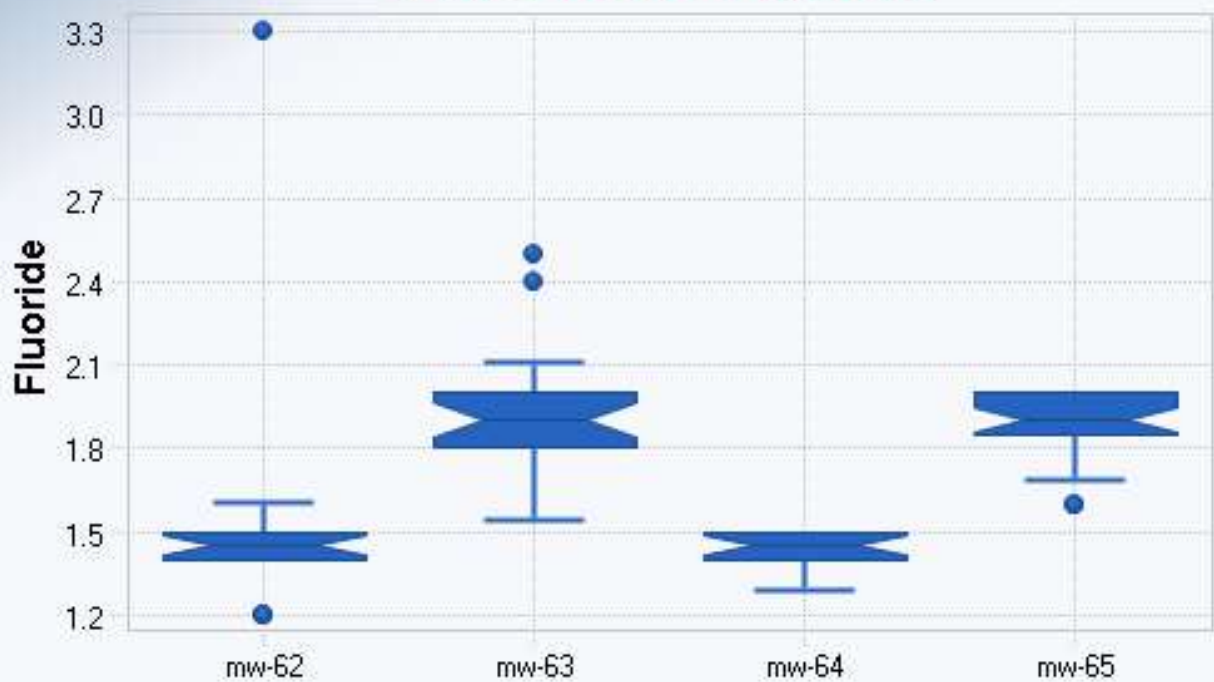
Box Plot for Calcium



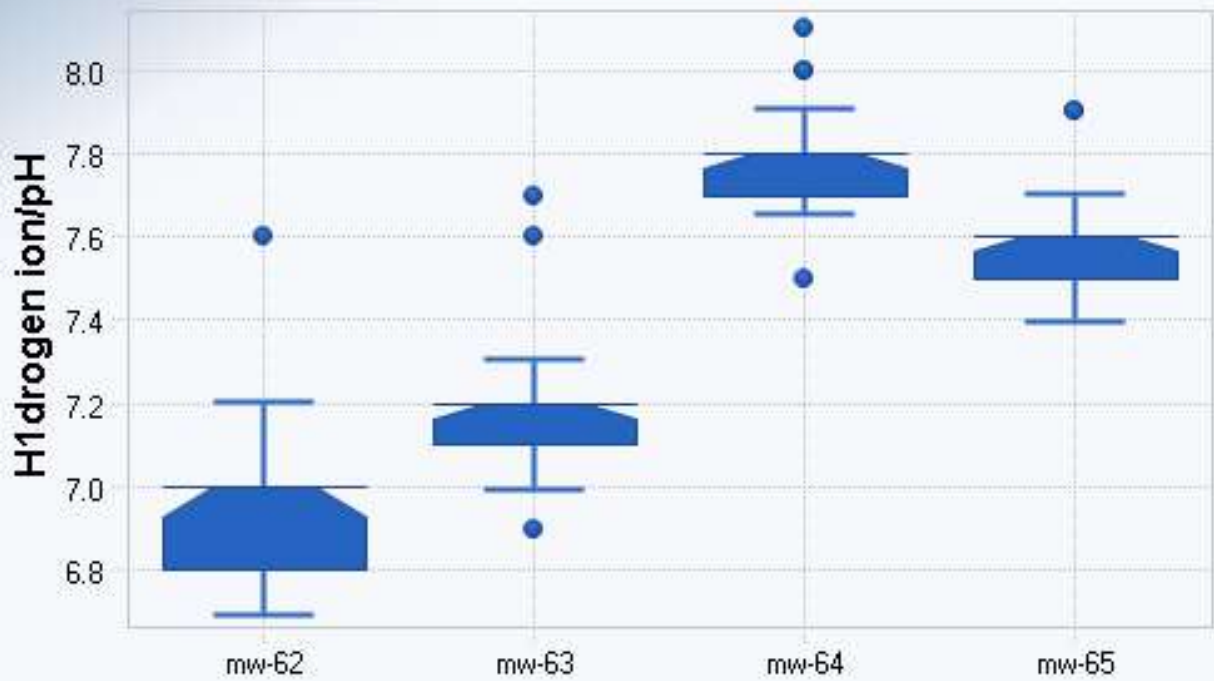
Box Plot for Chloride



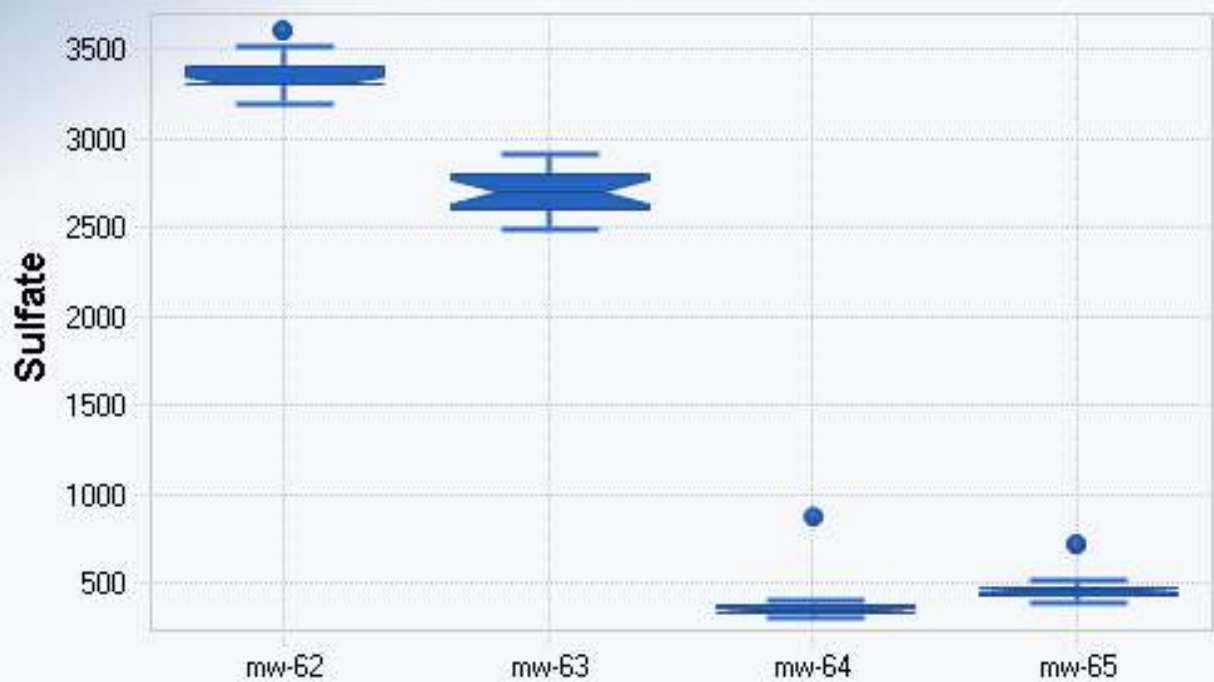
Box Plot for Fluoride



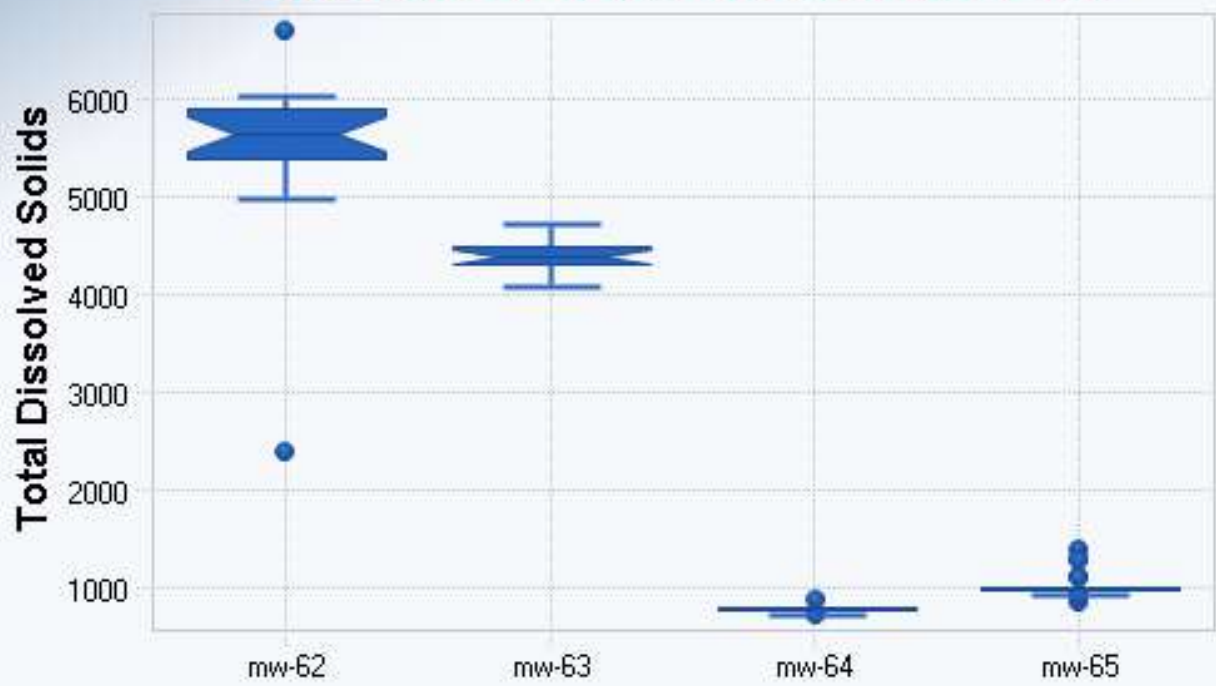
Box Plot for H1drogen ion/pH



Box Plot for Sulfate



Box Plot for Total Dissolved Solids



	A	B	C	D	E	F	G	H	I	J	K	L
1	Goodness-of-Fit Test Statistics for Data Sets with Non-Detects											
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 1:45:24 PM								
4	From File			20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7												
8												
9	Boron (mw-62)											
10												
11	Raw Statistics											
12	Number of Valid Observations					22						
13	Number of Distinct Observations					8						
14	Minimum					1.8						
15	Maximum					2.5						
16	Mean of Raw Data					2.1						
17	Standard Deviation of Raw Data					0.19						
18	Khat					128.3						
19	Theta hat					0.0164						
20	Kstar					110.8						
21	Theta star					0.0189						
22	Mean of Log Transformed Data					0.738						
23	Standard Deviation of Log Transformed Data					0.0904						
24												
25	Normal GOF Test Results											
26												
27	Correlation Coefficient R					0.982						
28	Shapiro Wilk Test Statistic					0.958						
29	Shapiro Wilk Critical (0.05) Value					0.911						
30	Approximate Shapiro Wilk P Value					0.44						
31	Lilliefors Test Statistic					0.136						
32	Lilliefors Critical (0.05) Value					0.184						
33	Data appear Normal at (0.05) Significance Level											
34												
35	Gamma GOF Test Results											
36												
37	Correlation Coefficient R					0.983						
38	A-D Test Statistic					0.412						
39	A-D Critical (0.05) Value					0.741						
40	K-S Test Statistic					0.148						
41	K-S Critical(0.05) Value					0.185						
42	Data appear Gamma Distributed at (0.05) Significance Level											
43												
44	Lognormal GOF Test Results											
45												
46	Correlation Coefficient R					0.983						
47	Shapiro Wilk Test Statistic					0.959						
48	Shapiro Wilk Critical (0.05) Value					0.911						
49	Approximate Shapiro Wilk P Value					0.461						
50	Lilliefors Test Statistic					0.154						

	A	B	C	D	E	F	G	H	I	J	K	L
51	Lilliefors Critical (0.05) Value					0.184						
52	Data appear Lognormal at (0.05) Significance Level											
53												
54	Boron (mw-63)											
55												
56	Raw Statistics											
57	Number of Valid Observations					21						
58	Number of Missing Observations					3						
59	Number of Distinct Observations					8						
60	Minimum					1.3						
61	Maximum					2						
62	Mean of Raw Data					1.643						
63	Standard Deviation of Raw Data					0.234						
64	Khat					51.26						
65	Theta hat					0.0321						
66	Kstar					43.97						
67	Theta star					0.0374						
68	Mean of Log Transformed Data					0.487						
69	Standard Deviation of Log Transformed Data					0.144						
70												
71	Normal GOF Test Results											
72												
73	Correlation Coefficient R					0.967						
74	Shapiro Wilk Test Statistic					0.919						
75	Shapiro Wilk Critical (0.05) Value					0.908						
76	Approximate Shapiro Wilk P Value					0.0786						
77	Lilliefors Test Statistic					0.184						
78	Lilliefors Critical (0.05) Value					0.188						
79	Data appear Normal at (0.05) Significance Level											
80												
81	Gamma GOF Test Results											
82												
83	Correlation Coefficient R					0.964						
84	A-D Test Statistic					0.709						
85	A-D Critical (0.05) Value					0.741						
86	K-S Test Statistic					0.191						
87	K-S Critical(0.05) Value					0.189						
88	Data appear Gamma Distributed at (0.05) Significance Level											
89												
90	Lognormal GOF Test Results											
91												
92	Correlation Coefficient R					0.965						
93	Shapiro Wilk Test Statistic					0.915						
94	Shapiro Wilk Critical (0.05) Value					0.908						
95	Approximate Shapiro Wilk P Value					0.0648						
96	Lilliefors Test Statistic					0.185						
97	Lilliefors Critical (0.05) Value					0.188						
98	Data appear Lognormal at (0.05) Significance Level											
99												
100	Boron (mw-64)											

	A	B	C	D	E	F	G	H	I	J	K	L
101												
102			Raw Statistics									
103			Number of Valid Observations			21						
104			Number of Distinct Observations			10						
105				Minimum		0.48						
106				Maximum		0.67						
107				Mean of Raw Data		0.596						
108				Standard Deviation of Raw Data		0.0541						
109				Khat		121.2						
110				Theta hat		0.00492						
111				Kstar		103.9						
112				Theta star		0.00573						
113				Mean of Log Transformed Data		-0.522						
114				Standard Deviation of Log Transformed Data		0.0944						
115												
116			Normal GOF Test Results									
117												
118				Correlation Coefficient R		0.966						
119				Shapiro Wilk Test Statistic		0.926						
120				Shapiro Wilk Critical (0.05) Value		0.908						
121				Approximate Shapiro Wilk P Value		0.113						
122				Lilliefors Test Statistic		0.128						
123				Lilliefors Critical (0.05) Value		0.188						
124			Data appear Normal at (0.05) Significance Level									
125												
126			Gamma GOF Test Results									
127												
128				Correlation Coefficient R		0.958						
129				A-D Test Statistic		0.583						
130				A-D Critical (0.05) Value		0.74						
131				K-S Test Statistic		0.139						
132				K-S Critical(0.05) Value		0.189						
133			Data appear Gamma Distributed at (0.05) Significance Level									
134												
135			Lognormal GOF Test Results									
136												
137				Correlation Coefficient R		0.955						
138				Shapiro Wilk Test Statistic		0.906						
139				Shapiro Wilk Critical (0.05) Value		0.908						
140				Approximate Shapiro Wilk P Value		0.042						
141				Lilliefors Test Statistic		0.14						
142				Lilliefors Critical (0.05) Value		0.188						
143			Data appear Approximate_Lognormal at (0.05) Significance Level									
144												
145			Boron (mw-65)									
146												
147			Raw Statistics									
148				Number of Valid Observations		21						
149				Number of Distinct Observations		12						
150				Minimum		0.6						

	A	B	C	D	E	F	G	H	I	J	K	L
151					Maximum	0.98						
152					Mean of Raw Data	0.776						
153					Standard Deviation of Raw Data	0.0867						
154					Khat	82.98						
155					Theta hat	0.00935						
156					Kstar	71.15						
157					Theta star	0.0109						
158					Mean of Log Transformed Data	-0.259						
159					Standard Deviation of Log Transformed Data	0.113						
160												
161					Normal GOF Test Results							
162												
163					Correlation Coefficient R	0.949						
164					Shapiro Wilk Test Statistic	0.911						
165					Shapiro Wilk Critical (0.05) Value	0.908						
166					Approximate Shapiro Wilk P Value	0.0548						
167					Lilliefors Test Statistic	0.238						
168					Lilliefors Critical (0.05) Value	0.188						
169					Data appear Approximate Normal at (0.05) Significance Level							
170												
171					Gamma GOF Test Results							
172												
173					Correlation Coefficient R	0.952						
174					A-D Test Statistic	1.002						
175					A-D Critical (0.05) Value	0.74						
176					K-S Test Statistic	0.249						
177					K-S Critical(0.05) Value	0.189						
178					Data not Gamma Distributed at (0.05) Significance Level							
179												
180					Lognormal GOF Test Results							
181												
182					Correlation Coefficient R	0.945						
183					Shapiro Wilk Test Statistic	0.903						
184					Shapiro Wilk Critical (0.05) Value	0.908						
185					Approximate Shapiro Wilk P Value	0.0376						
186					Lilliefors Test Statistic	0.259						
187					Lilliefors Critical (0.05) Value	0.188						
188					Data not Lognormal at (0.05) Significance Level							
189												
190					Calcium (mw-62)							
191												
192					Raw Statistics							
193					Number of Valid Observations	22						
194					Number of Distinct Observations	10						
195					Minimum	480						
196					Maximum	590						
197					Mean of Raw Data	532.7						
198					Standard Deviation of Raw Data	28.31						
199					Khat	372.8						
200					Theta hat	1.429						

	A	B	C	D	E	F	G	H	I	J	K	L
201					Kstar	322						
202					Theta star	1.655						
203					Mean of Log Transformed Data	6.277						
204					Standard Deviation of Log Transformed Data	0.053						
205												
206					Normal GOF Test Results							
207												
208					Correlation Coefficient R	0.981						
209					Shapiro Wilk Test Statistic	0.959						
210					Shapiro Wilk Critical (0.05) Value	0.911						
211					Approximate Shapiro Wilk P Value	0.472						
212					Lilliefors Test Statistic	0.133						
213					Lilliefors Critical (0.05) Value	0.184						
214					Data appear Normal at (0.05) Significance Level							
215												
216					Gamma GOF Test Results							
217												
218					Correlation Coefficient R	0.981						
219					A-D Test Statistic	0.439						
220					A-D Critical (0.05) Value	0.741						
221					K-S Test Statistic	0.137						
222					K-S Critical(0.05) Value	0.185						
223					Data appear Gamma Distributed at (0.05) Significance Level							
224												
225					Lognormal GOF Test Results							
226												
227					Correlation Coefficient R	0.983						
228					Shapiro Wilk Test Statistic	0.963						
229					Shapiro Wilk Critical (0.05) Value	0.911						
230					Approximate Shapiro Wilk P Value	0.547						
231					Lilliefors Test Statistic	0.131						
232					Lilliefors Critical (0.05) Value	0.184						
233					Data appear Lognormal at (0.05) Significance Level							
234												
235					Calcium (mw-63)							
236												
237					Raw Statistics							
238					Number of Valid Observations	21						
239					Number of Missing Observations	3						
240					Number of Distinct Observations	11						
241					Minimum	420						
242					Maximum	580						
243					Mean of Raw Data	520						
244					Standard Deviation of Raw Data	35.07						
245					Khat	219.1						
246					Theta hat	2.373						
247					Kstar	187.8						
248					Theta star	2.769						
249					Mean of Log Transformed Data	6.252						
250					Standard Deviation of Log Transformed Data	0.0702						

	A	B	C	D	E	F	G	H	I	J	K	L	
251													
252	Normal GOF Test Results												
253													
254					Correlation Coefficient R	0.96							
255					Shapiro Wilk Test Statistic	0.934							
256					Shapiro Wilk Critical (0.05) Value	0.908							
257					Approximate Shapiro Wilk P Value	0.159							
258					Lilliefors Test Statistic	0.141							
259					Lilliefors Critical (0.05) Value	0.188							
260	Data appear Normal at (0.05) Significance Level												
261													
262	Gamma GOF Test Results												
263													
264					Correlation Coefficient R	0.955							
265					A-D Test Statistic	0.54							
266					A-D Critical (0.05) Value	0.74							
267					K-S Test Statistic	0.147							
268					K-S Critical(0.05) Value	0.189							
269	Data appear Gamma Distributed at (0.05) Significance Level												
270													
271	Lognormal GOF Test Results												
272													
273					Correlation Coefficient R	0.945							
274					Shapiro Wilk Test Statistic	0.907							
275					Shapiro Wilk Critical (0.05) Value	0.908							
276					Approximate Shapiro Wilk P Value	0.0448							
277					Lilliefors Test Statistic	0.157							
278					Lilliefors Critical (0.05) Value	0.188							
279	Data appear Approximate_Lognormal at (0.05) Significance Level												
280													
281	Calcium (mw-64)												
282													
283	Raw Statistics												
284					Number of Valid Observations	21							
285					Number of Distinct Observations	9							
286					Minimum	82							
287					Maximum	93							
288					Mean of Raw Data	87.19							
289					Standard Deviation of Raw Data	2.892							
290					Khat	949.8							
291					Theta hat	0.0918							
292					Kstar	814.2							
293					Theta star	0.107							
294					Mean of Log Transformed Data	4.468							
295					Standard Deviation of Log Transformed Data	0.0333							
296													
297	Normal GOF Test Results												
298													
299					Correlation Coefficient R	0.98							
300					Shapiro Wilk Test Statistic	0.957							

	A	B	C	D	E	F	G	H	I	J	K	L
301	Shapiro Wilk Critical (0.05) Value					0.908						
302	Approximate Shapiro Wilk P Value					0.443						
303	Lilliefors Test Statistic					0.134						
304	Lilliefors Critical (0.05) Value					0.188						
305	Data appear Normal at (0.05) Significance Level											
306												
307	Gamma GOF Test Results											
308												
309	Correlation Coefficient R					0.978						
310	A-D Test Statistic					0.415						
311	A-D Critical (0.05) Value					0.74						
312	K-S Test Statistic					0.14						
313	K-S Critical(0.05) Value					0.189						
314	Data appear Gamma Distributed at (0.05) Significance Level											
315												
316	Lognormal GOF Test Results											
317												
318	Correlation Coefficient R					0.979						
319	Shapiro Wilk Test Statistic					0.954						
320	Shapiro Wilk Critical (0.05) Value					0.908						
321	Approximate Shapiro Wilk P Value					0.401						
322	Lilliefors Test Statistic					0.139						
323	Lilliefors Critical (0.05) Value					0.188						
324	Data appear Lognormal at (0.05) Significance Level											
325												
326	Calcium (mw-65)											
327												
328	Raw Statistics											
329	Number of Valid Observations					21						
330	Number of Distinct Observations					10						
331	Minimum					89						
332	Maximum					160						
333	Mean of Raw Data					107.7						
334	Standard Deviation of Raw Data					16.25						
335	Khat					53.54						
336	Theta hat					2.011						
337	Kstar					45.92						
338	Theta star					2.344						
339	Mean of Log Transformed Data					4.67						
340	Standard Deviation of Log Transformed Data					0.135						
341												
342	Normal GOF Test Results											
343												
344	Correlation Coefficient R					0.866						
345	Shapiro Wilk Test Statistic					0.764						
346	Shapiro Wilk Critical (0.05) Value					0.908						
347	Approximate Shapiro Wilk P Value					9.7177E-5						
348	Lilliefors Test Statistic					0.3						
349	Lilliefors Critical (0.05) Value					0.188						
350	Data not Normal at (0.05) Significance Level											

	A	B	C	D	E	F	G	H	I	J	K	L	
351													
352	Gamma GOF Test Results												
353													
354					Correlation Coefficient R	0.89							
355					A-D Test Statistic	1.468							
356					A-D Critical (0.05) Value	0.741							
357					K-S Test Statistic	0.277							
358					K-S Critical(0.05) Value	0.189							
359	Data not Gamma Distributed at (0.05) Significance Level												
360													
361	Lognormal GOF Test Results												
362													
363					Correlation Coefficient R	0.902							
364					Shapiro Wilk Test Statistic	0.826							
365					Shapiro Wilk Critical (0.05) Value	0.908							
366					Approximate Shapiro Wilk P Value	0.00116							
367					Lilliefors Test Statistic	0.267							
368					Lilliefors Critical (0.05) Value	0.188							
369	Data not Lognormal at (0.05) Significance Level												
370													
371	Non-parametric GOF Test Results												
372													
373	Data do not follow a discernible distribution at (0.05) Level of Significance												
374													
375	Chloride (mw-62)												
376													
377	Raw Statistics												
378					Number of Valid Observations	19							
379					Number of Missing Observations	3							
380					Number of Distinct Observations	6							
381					Minimum	99							
382					Maximum	150							
383					Mean of Raw Data	122.1							
384					Standard Deviation of Raw Data	13.66							
385					Khat	87.23							
386					Theta hat	1.399							
387					Kstar	73.49							
388					Theta star	1.661							
389					Mean of Log Transformed Data	4.799							
390					Standard Deviation of Log Transformed Data	0.109							
391													
392	Normal GOF Test Results												
393													
394					Correlation Coefficient R	0.95							
395					Shapiro Wilk Test Statistic	0.902							
396					Shapiro Wilk Critical (0.05) Value	0.901							
397					Approximate Shapiro Wilk P Value	0.0546							
398					Lilliefors Test Statistic	0.244							
399					Lilliefors Critical (0.05) Value	0.197							
400	Data appear Approximate Normal at (0.05) Significance Level												

	A	B	C	D	E	F	G	H	I	J	K	L	
401													
402	Gamma GOF Test Results												
403													
404	Correlation Coefficient R					0.957							
405	A-D Test Statistic					0.78							
406	A-D Critical (0.05) Value					0.739							
407	K-S Test Statistic					0.233							
408	K-S Critical(0.05) Value					0.198							
409	Data not Gamma Distributed at (0.05) Significance Level												
410													
411	Lognormal GOF Test Results												
412													
413	Correlation Coefficient R					0.959							
414	Shapiro Wilk Test Statistic					0.92							
415	Shapiro Wilk Critical (0.05) Value					0.901							
416	Approximate Shapiro Wilk P Value					0.118							
417	Lilliefors Test Statistic					0.225							
418	Lilliefors Critical (0.05) Value					0.197							
419	Data appear Approximate_Lognormal at (0.05) Significance Level												
420													
421	Chloride (mw-63)												
422													
423	Raw Statistics												
424	Number of Valid Observations					18							
425	Number of Missing Observations					6							
426	Number of Distinct Observations					10							
427	Minimum					77							
428	Maximum					110							
429	Mean of Raw Data					96.11							
430	Standard Deviation of Raw Data					7.63							
431	Khat					163.1							
432	Theta hat					0.589							
433	Kstar					136							
434	Theta star					0.707							
435	Mean of Log Transformed Data					4.562							
436	Standard Deviation of Log Transformed Data					0.0813							
437													
438	Normal GOF Test Results												
439													
440	Correlation Coefficient R					0.952							
441	Shapiro Wilk Test Statistic					0.922							
442	Shapiro Wilk Critical (0.05) Value					0.897							
443	Approximate Shapiro Wilk P Value					0.123							
444	Lilliefors Test Statistic					0.194							
445	Lilliefors Critical (0.05) Value					0.202							
446	Data appear Normal at (0.05) Significance Level												
447													
448	Gamma GOF Test Results												
449													
450	Correlation Coefficient R					0.951							

	A	B	C	D	E	F	G	H	I	J	K	L
451	A-D Test Statistic					0.646						
452	A-D Critical (0.05) Value					0.737						
453	K-S Test Statistic					0.185						
454	K-S Critical(0.05) Value					0.203						
455	Data appear Gamma Distributed at (0.05) Significance Level											
456												
457	Lognormal GOF Test Results											
458												
459	Correlation Coefficient R					0.944						
460	Shapiro Wilk Test Statistic					0.909						
461	Shapiro Wilk Critical (0.05) Value					0.897						
462	Approximate Shapiro Wilk P Value					0.0703						
463	Lilliefors Test Statistic					0.189						
464	Lilliefors Critical (0.05) Value					0.202						
465	Data appear Lognormal at (0.05) Significance Level											
466												
467	Chloride (mw-64)											
468												
469	Raw Statistics											
470	Number of Valid Observations					19						
471	Number of Missing Observations					2						
472	Number of Distinct Observations					8						
473	Minimum					44						
474	Maximum					53						
475	Mean of Raw Data					50.74						
476	Standard Deviation of Raw Data					2.469						
477	Khat					424.5						
478	Theta hat					0.12						
479	Kstar					357.5						
480	Theta star					0.142						
481	Mean of Log Transformed Data					3.925						
482	Standard Deviation of Log Transformed Data					0.0505						
483												
484	Normal GOF Test Results											
485												
486	Correlation Coefficient R					0.902						
487	Shapiro Wilk Test Statistic					0.816						
488	Shapiro Wilk Critical (0.05) Value					0.901						
489	Approximate Shapiro Wilk P Value					0.00139						
490	Lilliefors Test Statistic					0.227						
491	Lilliefors Critical (0.05) Value					0.197						
492	Data not Normal at (0.05) Significance Level											
493												
494	Gamma GOF Test Results											
495												
496	Correlation Coefficient R					0.894						
497	A-D Test Statistic					1.353						
498	A-D Critical (0.05) Value					0.738						
499	K-S Test Statistic					0.233						
500	K-S Critical(0.05) Value					0.198						

	A	B	C	D	E	F	G	H	I	J	K	L	
501	Data not Gamma Distributed at (0.05) Significance Level												
502													
503	Lognormal GOF Test Results												
504													
505	Correlation Coefficient R					0.893							
506	Shapiro Wilk Test Statistic					0.801							
507	Shapiro Wilk Critical (0.05) Value					0.901							
508	Approximate Shapiro Wilk P Value					7.6100E-4							
509	Lilliefors Test Statistic					0.234							
510	Lilliefors Critical (0.05) Value					0.197							
511	Data not Lognormal at (0.05) Significance Level												
512													
513	Non-parametric GOF Test Results												
514													
515	Data do not follow a discernible distribution at (0.05) Level of Significance												
516													
517	Chloride (mw-65)												
518													
519	Raw Statistics												
520	Number of Valid Observations					19							
521	Number of Missing Observations					2							
522	Number of Distinct Observations					9							
523	Minimum					51							
524	Maximum					77							
525	Mean of Raw Data					55.53							
526	Standard Deviation of Raw Data					6.552							
527	Khat					88.28							
528	Theta hat					0.629							
529	Kstar					74.38							
530	Theta star					0.747							
531	Mean of Log Transformed Data					4.011							
532	Standard Deviation of Log Transformed Data					0.105							
533													
534	Normal GOF Test Results												
535													
536	Correlation Coefficient R					0.787							
537	Shapiro Wilk Test Statistic					0.637							
538	Shapiro Wilk Critical (0.05) Value					0.901							
539	Approximate Shapiro Wilk P Value					2.0604E-6							
540	Lilliefors Test Statistic					0.329							
541	Lilliefors Critical (0.05) Value					0.197							
542	Data not Normal at (0.05) Significance Level												
543													
544	Gamma GOF Test Results												
545													
546	Correlation Coefficient R					0.815							
547	A-D Test Statistic					2.568							
548	A-D Critical (0.05) Value					0.739							
549	K-S Test Statistic					0.326							
550	K-S Critical(0.05) Value					0.198							

	A	B	C	D	E	F	G	H	I	J	K	L	
551	Data not Gamma Distributed at (0.05) Significance Level												
552													
553	Lognormal GOF Test Results												
554													
555	Correlation Coefficient R					0.812							
556	Shapiro Wilk Test Statistic					0.673							
557	Shapiro Wilk Critical (0.05) Value					0.901							
558	Approximate Shapiro Wilk P Value					6.8573E-6							
559	Lilliefors Test Statistic					0.32							
560	Lilliefors Critical (0.05) Value					0.197							
561	Data not Lognormal at (0.05) Significance Level												
562													
563	Non-parametric GOF Test Results												
564													
565	Data do not follow a discernible distribution at (0.05) Level of Significance												
566													
567	Fluoride (mw-62)												
568													
569	Raw Statistics												
570	Number of Valid Observations					21							
571	Number of Missing Observations					1							
572	Number of Distinct Observations					6							
573	Minimum					1.2							
574	Maximum					3.3							
575	Mean of Raw Data					1.526							
576	Standard Deviation of Raw Data					0.425							
577	Khat					21.03							
578	Theta hat					0.0726							
579	Kstar					18.06							
580	Theta star					0.0845							
581	Mean of Log Transformed Data					0.399							
582	Standard Deviation of Log Transformed Data					0.203							
583													
584	Normal GOF Test Results												
585													
586	Correlation Coefficient R					0.675							
587	Shapiro Wilk Test Statistic					0.486							
588	Shapiro Wilk Critical (0.05) Value					0.908							
589	Approximate Shapiro Wilk P Value					1.4650E-8							
590	Lilliefors Test Statistic					0.383							
591	Lilliefors Critical (0.05) Value					0.188							
592	Data not Normal at (0.05) Significance Level												
593													
594	Gamma GOF Test Results												
595													
596	Correlation Coefficient R					0.722							
597	A-D Test Statistic					2.857							
598	A-D Critical (0.05) Value					0.742							
599	K-S Test Statistic					0.338							
600	K-S Critical(0.05) Value					0.189							

	A	B	C	D	E	F	G	H	I	J	K	L	
601	Data not Gamma Distributed at (0.05) Significance Level												
602													
603	Lognormal GOF Test Results												
604													
605	Correlation Coefficient R					0.771							
606	Shapiro Wilk Test Statistic					0.623							
607	Shapiro Wilk Critical (0.05) Value					0.908							
608	Approximate Shapiro Wilk P Value					7.6593E-7							
609	Lilliefors Test Statistic					0.315							
610	Lilliefors Critical (0.05) Value					0.188							
611	Data not Lognormal at (0.05) Significance Level												
612													
613	Non-parametric GOF Test Results												
614													
615	Data do not follow a discernible distribution at (0.05) Level of Significance												
616													
617	Fluoride (mw-63)												
618													
619	Raw Statistics												
620	Number of Valid Observations					23							
621	Number of Missing Observations					1							
622	Number of Distinct Observations					10							
623	Minimum					1.55							
624	Maximum					2.4							
625	Mean of Raw Data					1.88							
626	Standard Deviation of Raw Data					0.196							
627	Khat					96.56							
628	Theta hat					0.0195							
629	Kstar					84							
630	Theta star					0.0224							
631	Mean of Log Transformed Data					0.626							
632	Standard Deviation of Log Transformed Data					0.104							
633													
634	Normal GOF Test Results												
635													
636	Correlation Coefficient R					0.963							
637	Shapiro Wilk Test Statistic					0.935							
638	Shapiro Wilk Critical (0.05) Value					0.914							
639	Approximate Shapiro Wilk P Value					0.138							
640	Lilliefors Test Statistic					0.148							
641	Lilliefors Critical (0.05) Value					0.18							
642	Data appear Normal at (0.05) Significance Level												
643													
644	Gamma GOF Test Results												
645													
646	Correlation Coefficient R					0.966							
647	A-D Test Statistic					0.613							
648	A-D Critical (0.05) Value					0.74							
649	K-S Test Statistic					0.163							
650	K-S Critical(0.05) Value					0.181							

	A	B	C	D	E	F	G	H	I	J	K	L	
651	Data appear Gamma Distributed at (0.05) Significance Level												
652													
653	Lognormal GOF Test Results												
654													
655	Correlation Coefficient R					0.967							
656	Shapiro Wilk Test Statistic					0.94							
657	Shapiro Wilk Critical (0.05) Value					0.914							
658	Approximate Shapiro Wilk P Value					0.181							
659	Lilliefors Test Statistic					0.168							
660	Lilliefors Critical (0.05) Value					0.18							
661	Data appear Lognormal at (0.05) Significance Level												
662													
663	Fluoride (mw-64)												
664													
665	Raw Statistics												
666	Number of Valid Observations					21							
667	Number of Distinct Observations					5							
668	Minimum					1.3							
669	Maximum					1.5							
670	Mean of Raw Data					1.445							
671	Standard Deviation of Raw Data					0.0568							
672	Khat					667.4							
673	Theta hat					0.00217							
674	Kstar					572.1							
675	Theta star					0.00253							
676	Mean of Log Transformed Data					0.368							
677	Standard Deviation of Log Transformed Data					0.0399							
678													
679	Normal GOF Test Results												
680													
681	Correlation Coefficient R					0.896							
682	Shapiro Wilk Test Statistic					0.801							
683	Shapiro Wilk Critical (0.05) Value					0.908							
684	Approximate Shapiro Wilk P Value					4.1353E-4							
685	Lilliefors Test Statistic					0.261							
686	Lilliefors Critical (0.05) Value					0.188							
687	Data not Normal at (0.05) Significance Level												
688													
689	Gamma GOF Test Results												
690													
691	Correlation Coefficient R					0.891							
692	A-D Test Statistic					1.777							
693	A-D Critical (0.05) Value					0.74							
694	K-S Test Statistic					0.265							
695	K-S Critical(0.05) Value					0.189							
696	Data not Gamma Distributed at (0.05) Significance Level												
697													
698	Lognormal GOF Test Results												
699													
700	Correlation Coefficient R					0.893							

	A	B	C	D	E	F	G	H	I	J	K	L
701	Shapiro Wilk Test Statistic					0.797						
702	Shapiro Wilk Critical (0.05) Value					0.908						
703	Approximate Shapiro Wilk P Value					3.6378E-4						
704	Lilliefors Test Statistic					0.258						
705	Lilliefors Critical (0.05) Value					0.188						
706	Data not Lognormal at (0.05) Significance Level											
707												
708	Non-parametric GOF Test Results											
709												
710	Data do not follow a discernible distribution at (0.05) Level of Significance											
711												
712	Fluoride (mw-65)											
713												
714	Raw Statistics											
715	Number of Valid Observations					21						
716	Number of Distinct Observations					7						
717	Minimum					1.6						
718	Maximum					2						
719	Mean of Raw Data					1.9						
720	Standard Deviation of Raw Data					0.113						
721	Khat					283						
722	Theta hat					0.00671						
723	Kstar					242.6						
724	Theta star					0.00783						
725	Mean of Log Transformed Data					0.64						
726	Standard Deviation of Log Transformed Data					0.0617						
727												
728	Normal GOF Test Results											
729												
730	Correlation Coefficient R					0.909						
731	Shapiro Wilk Test Statistic					0.824						
732	Shapiro Wilk Critical (0.05) Value					0.908						
733	Approximate Shapiro Wilk P Value					0.00108						
734	Lilliefors Test Statistic					0.262						
735	Lilliefors Critical (0.05) Value					0.188						
736	Data not Normal at (0.05) Significance Level											
737												
738	Gamma GOF Test Results											
739												
740	Correlation Coefficient R					0.899						
741	A-D Test Statistic					1.44						
742	A-D Critical (0.05) Value					0.74						
743	K-S Test Statistic					0.27						
744	K-S Critical(0.05) Value					0.189						
745	Data not Gamma Distributed at (0.05) Significance Level											
746												
747	Lognormal GOF Test Results											
748												
749	Correlation Coefficient R					0.901						
750	Shapiro Wilk Test Statistic					0.812						

	A	B	C	D	E	F	G	H	I	J	K	L
751			Shapiro Wilk Critical (0.05) Value			0.908						
752			Approximate Shapiro Wilk P Value			6.4862E-4						
753			Lilliefors Test Statistic			0.273						
754			Lilliefors Critical (0.05) Value			0.188						
755	Data not Lognormal at (0.05) Significance Level											
756												
757	Non-parametric GOF Test Results											
758												
759	Data do not follow a discernible distribution at (0.05) Level of Significance											
760												
761	H1drogen ion/pH (mw-62)											
762												
763	Raw Statistics											
764			Number of Valid Observations			21						
765			Number of Missing Observations			1						
766			Number of Distinct Observations			11						
767			Minimum			6.5						
768			Maximum			7.6						
769			Mean of Raw Data			6.939						
770			Standard Deviation of Raw Data			0.236						
771			Khat			919.8						
772			Theta hat			0.00754						
773			Kstar			788.4						
774			Theta star			0.0088						
775			Mean of Log Transformed Data			1.937						
776			Standard Deviation of Log Transformed Data			0.0337						
777												
778	Normal GOF Test Results											
779												
780			Correlation Coefficient R			0.957						
781			Shapiro Wilk Test Statistic			0.931						
782			Shapiro Wilk Critical (0.05) Value			0.908						
783			Approximate Shapiro Wilk P Value			0.144						
784			Lilliefors Test Statistic			0.207						
785			Lilliefors Critical (0.05) Value			0.188						
786	Data appear Approximate Normal at (0.05) Significance Level											
787												
788	Gamma GOF Test Results											
789												
790			Correlation Coefficient R			0.962						
791			A-D Test Statistic			0.524						
792			A-D Critical (0.05) Value			0.74						
793			K-S Test Statistic			0.2						
794			K-S Critical(0.05) Value			0.189						
795	Data follow Appr. Gamma Distribution at (0.05) Significance Level											
796												
797	Lognormal GOF Test Results											
798												
799			Correlation Coefficient R			0.962						
800			Shapiro Wilk Test Statistic			0.94						

	A	B	C	D	E	F	G	H	I	J	K	L
801	Shapiro Wilk Critical (0.05) Value					0.908						
802	Approximate Shapiro Wilk P Value					0.219						
803	Lilliefors Test Statistic					0.2						
804	Lilliefors Critical (0.05) Value					0.188						
805	Data appear Approximate_Lognormal at (0.05) Significance Level											
806												
807	H1drogen ion/pH (mw-63)											
808												
809	Raw Statistics											
810	Number of Valid Observations					19						
811	Number of Missing Observations					5						
812	Number of Distinct Observations					8						
813	Minimum					6.9						
814	Maximum					7.7						
815	Mean of Raw Data					7.192						
816	Standard Deviation of Raw Data					0.186						
817	Khat					1618						
818	Theta hat					0.00444						
819	Kstar					1363						
820	Theta star					0.00528						
821	Mean of Log Transformed Data					1.973						
822	Standard Deviation of Log Transformed Data					0.0254						
823												
824	Normal GOF Test Results											
825												
826	Correlation Coefficient R					0.888						
827	Shapiro Wilk Test Statistic					0.806						
828	Shapiro Wilk Critical (0.05) Value					0.901						
829	Approximate Shapiro Wilk P Value					8.1813E-4						
830	Lilliefors Test Statistic					0.325						
831	Lilliefors Critical (0.05) Value					0.197						
832	Data not Normal at (0.05) Significance Level											
833												
834	Gamma GOF Test Results											
835												
836	Correlation Coefficient R					0.894						
837	A-D Test Statistic					1.547						
838	A-D Critical (0.05) Value					0.738						
839	K-S Test Statistic					0.321						
840	K-S Critical(0.05) Value					0.198						
841	Data not Gamma Distributed at (0.05) Significance Level											
842												
843	Lognormal GOF Test Results											
844												
845	Correlation Coefficient R					0.894						
846	Shapiro Wilk Test Statistic					0.816						
847	Shapiro Wilk Critical (0.05) Value					0.901						
848	Approximate Shapiro Wilk P Value					0.00123						
849	Lilliefors Test Statistic					0.32						
850	Lilliefors Critical (0.05) Value					0.197						

	A	B	C	D	E	F	G	H	I	J	K	L	
851	Data not Lognormal at (0.05) Significance Level												
852													
853	Non-parametric GOF Test Results												
854													
855	Data do not follow a discernible distribution at (0.05) Level of Significance												
856													
857	H1drogen ion/pH (mw-64)												
858													
859	Raw Statistics												
860	Number of Valid Observations					20							
861	Number of Missing Observations					1							
862	Number of Distinct Observations					9							
863	Minimum					7.45							
864	Maximum					8.1							
865	Mean of Raw Data					7.734							
866	Standard Deviation of Raw Data					0.168							
867	Khat					2242							
868	Theta hat					0.00345							
869	Kstar					1906							
870	Theta star					0.00406							
871	Mean of Log Transformed Data					2.045							
872	Standard Deviation of Log Transformed Data					0.0217							
873													
874	Normal GOF Test Results												
875													
876	Correlation Coefficient R					0.961							
877	Shapiro Wilk Test Statistic					0.925							
878	Shapiro Wilk Critical (0.05) Value					0.905							
879	Approximate Shapiro Wilk P Value					0.13							
880	Lilliefors Test Statistic					0.197							
881	Lilliefors Critical (0.05) Value					0.192							
882	Data appear Approximate Normal at (0.05) Significance Level												
883													
884	Gamma GOF Test Results												
885													
886	Correlation Coefficient R					0.962							
887	A-D Test Statistic					0.737							
888	A-D Critical (0.05) Value					0.74							
889	K-S Test Statistic					0.191							
890	K-S Critical(0.05) Value					0.193							
891	Data appear Gamma Distributed at (0.05) Significance Level												
892													
893	Lognormal GOF Test Results												
894													
895	Correlation Coefficient R					0.961							
896	Shapiro Wilk Test Statistic					0.925							
897	Shapiro Wilk Critical (0.05) Value					0.905							
898	Approximate Shapiro Wilk P Value					0.129							
899	Lilliefors Test Statistic					0.194							
900	Lilliefors Critical (0.05) Value					0.192							

	A	B	C	D	E	F	G	H	I	J	K	L	
951	Raw Statistics												
952	Number of Valid Observations					19							
953	Number of Missing Observations					3							
954	Number of Distinct Observations					6							
955	Minimum					3200							
956	Maximum					3800							
957	Mean of Raw Data					3384							
958	Standard Deviation of Raw Data					153.7							
959	Khat					528.9							
960	Theta hat					6.399							
961	Kstar					445.4							
962	Theta star					7.598							
963	Mean of Log Transformed Data					8.126							
964	Standard Deviation of Log Transformed Data					0.0443							
965													
966	Normal GOF Test Results												
967													
968	Correlation Coefficient R					0.911							
969	Shapiro Wilk Test Statistic					0.837							
970	Shapiro Wilk Critical (0.05) Value					0.901							
971	Approximate Shapiro Wilk P Value					0.00323							
972	Lilliefors Test Statistic					0.287							
973	Lilliefors Critical (0.05) Value					0.197							
974	Data not Normal at (0.05) Significance Level												
975													
976	Gamma GOF Test Results												
977													
978	Correlation Coefficient R					0.919							
979	A-D Test Statistic					1.329							
980	A-D Critical (0.05) Value					0.738							
981	K-S Test Statistic					0.292							
982	K-S Critical(0.05) Value					0.198							
983	Data not Gamma Distributed at (0.05) Significance Level												
984													
985	Lognormal GOF Test Results												
986													
987	Correlation Coefficient R					0.918							
988	Shapiro Wilk Test Statistic					0.848							
989	Shapiro Wilk Critical (0.05) Value					0.901							
990	Approximate Shapiro Wilk P Value					0.00503							
991	Lilliefors Test Statistic					0.287							
992	Lilliefors Critical (0.05) Value					0.197							
993	Data not Lognormal at (0.05) Significance Level												
994													
995	Non-parametric GOF Test Results												
996													
997	Data do not follow a discernible distribution at (0.05) Level of Significance												
998													
999	Sulfate (mw-63)												
1000													

	A	B	C	D	E	F	G	H	I	J	K	L
1001	Raw Statistics											
1002	Number of Valid Observations					18						
1003	Number of Missing Observations					6						
1004	Number of Distinct Observations					5						
1005	Minimum					2500						
1006	Maximum					2900						
1007	Mean of Raw Data					2711						
1008	Standard Deviation of Raw Data					127.8						
1009	Khat					474.9						
1010	Theta hat					5.709						
1011	Kstar					395.8						
1012	Theta star					6.85						
1013	Mean of Log Transformed Data					7.904						
1014	Standard Deviation of Log Transformed Data					0.0473						
1015												
1016	Normal GOF Test Results											
1017												
1018	Correlation Coefficient R					0.97						
1019	Shapiro Wilk Test Statistic					0.924						
1020	Shapiro Wilk Critical (0.05) Value					0.897						
1021	Approximate Shapiro Wilk P Value					0.186						
1022	Lilliefors Test Statistic					0.146						
1023	Lilliefors Critical (0.05) Value					0.202						
1024	Data appear Normal at (0.05) Significance Level											
1025												
1026	Gamma GOF Test Results											
1027												
1028	Correlation Coefficient R					0.967						
1029	A-D Test Statistic					0.551						
1030	A-D Critical (0.05) Value					0.737						
1031	K-S Test Statistic					0.154						
1032	K-S Critical(0.05) Value					0.203						
1033	Data appear Gamma Distributed at (0.05) Significance Level											
1034												
1035	Lognormal GOF Test Results											
1036												
1037	Correlation Coefficient R					0.969						
1038	Shapiro Wilk Test Statistic					0.924						
1039	Shapiro Wilk Critical (0.05) Value					0.897						
1040	Approximate Shapiro Wilk P Value					0.184						
1041	Lilliefors Test Statistic					0.148						
1042	Lilliefors Critical (0.05) Value					0.202						
1043	Data appear Lognormal at (0.05) Significance Level											
1044												
1045	Sulfate (mw-64)											
1046												
1047	Raw Statistics											
1048	Number of Valid Observations					19						
1049	Number of Missing Observations					2						
1050	Number of Distinct Observations					9						

	A	B	C	D	E	F	G	H	I	J	K	L
1051					Minimum	320						
1052					Maximum	870						
1053					Mean of Raw Data	380						
1054					Standard Deviation of Raw Data	120.6						
1055					Khat	17.66						
1056					Theta hat	21.52						
1057					Kstar	14.91						
1058					Theta star	25.49						
1059					Mean of Log Transformed Data	5.912						
1060					Standard Deviation of Log Transformed Data	0.216						
1061												
1062					Normal GOF Test Results							
1063												
1064					Correlation Coefficient R	0.611						
1065					Shapiro Wilk Test Statistic	0.405						
1066					Shapiro Wilk Critical (0.05) Value	0.901						
1067					Approximate Shapiro Wilk P Value	2.5844E-9						
1068					Lilliefors Test Statistic	0.414						
1069					Lilliefors Critical (0.05) Value	0.197						
1070					Data not Normal at (0.05) Significance Level							
1071												
1072					Gamma GOF Test Results							
1073												
1074					Correlation Coefficient R	0.671						
1075					A-D Test Statistic	3.612						
1076					A-D Critical (0.05) Value	0.74						
1077					K-S Test Statistic	0.372						
1078					K-S Critical(0.05) Value	0.198						
1079					Data not Gamma Distributed at (0.05) Significance Level							
1080												
1081					Lognormal GOF Test Results							
1082												
1083					Correlation Coefficient R	0.689						
1084					Shapiro Wilk Test Statistic	0.506						
1085					Shapiro Wilk Critical (0.05) Value	0.901						
1086					Approximate Shapiro Wilk P Value	3.9488E-8						
1087					Lilliefors Test Statistic	0.348						
1088					Lilliefors Critical (0.05) Value	0.197						
1089					Data not Lognormal at (0.05) Significance Level							
1090												
1091					Non-parametric GOF Test Results							
1092												
1093					Data do not follow a discernible distribution at (0.05) Level of Significance							
1094												
1095					Sulfate (mw-65)							
1096												
1097					Raw Statistics							
1098					Number of Valid Observations	19						
1099					Number of Missing Observations	2						
1100					Number of Distinct Observations	12						

	A	B	C	D	E	F	G	H	I	J	K	L
1101					Minimum	400						
1102					Maximum	790						
1103					Mean of Raw Data	486.3						
1104					Standard Deviation of Raw Data	98.39						
1105					Khat	32.33						
1106					Theta hat	15.04						
1107					Kstar	27.26						
1108					Theta star	17.84						
1109					Mean of Log Transformed Data	6.171						
1110					Standard Deviation of Log Transformed Data	0.172						
1111												
1112					Normal GOF Test Results							
1113												
1114					Correlation Coefficient R	0.806						
1115					Shapiro Wilk Test Statistic	0.665						
1116					Shapiro Wilk Critical (0.05) Value	0.901						
1117					Approximate Shapiro Wilk P Value	5.1133E-6						
1118					Lilliefors Test Statistic	0.339						
1119					Lilliefors Critical (0.05) Value	0.197						
1120					Data not Normal at (0.05) Significance Level							
1121												
1122					Gamma GOF Test Results							
1123												
1124					Correlation Coefficient R	0.841						
1125					A-D Test Statistic	2.064						
1126					A-D Critical (0.05) Value	0.74						
1127					K-S Test Statistic	0.309						
1128					K-S Critical(0.05) Value	0.198						
1129					Data not Gamma Distributed at (0.05) Significance Level							
1130												
1131					Lognormal GOF Test Results							
1132												
1133					Correlation Coefficient R	0.853						
1134					Shapiro Wilk Test Statistic	0.74						
1135					Shapiro Wilk Critical (0.05) Value	0.901						
1136					Approximate Shapiro Wilk P Value	7.0189E-5						
1137					Lilliefors Test Statistic	0.295						
1138					Lilliefors Critical (0.05) Value	0.197						
1139					Data not Lognormal at (0.05) Significance Level							
1140												
1141					Non-parametric GOF Test Results							
1142												
1143					Data do not follow a discernible distribution at (0.05) Level of Significance							
1144												
1145					Total Dissolved Solids (mw-62)							
1146												
1147					Raw Statistics							
1148					Number of Valid Observations	21						
1149					Number of Missing Observations	1						
1150					Number of Distinct Observations	11						

	A	B	C	D	E	F	G	H	I	J	K	L
1151					Minimum	2400						
1152					Maximum	6700						
1153					Mean of Raw Data	5567						
1154					Standard Deviation of Raw Data	800.8						
1155					Khat	33.52						
1156					Theta hat	166.1						
1157					Kstar	28.76						
1158					Theta star	193.5						
1159					Mean of Log Transformed Data	8.61						
1160					Standard Deviation of Log Transformed Data	0.198						
1161												
1162					Normal GOF Test Results							
1163												
1164					Correlation Coefficient R	0.767						
1165					Shapiro Wilk Test Statistic	0.623						
1166					Shapiro Wilk Critical (0.05) Value	0.908						
1167					Approximate Shapiro Wilk P Value	7.6166E-7						
1168					Lilliefors Test Statistic	0.322						
1169					Lilliefors Critical (0.05) Value	0.188						
1170					Data not Normal at (0.05) Significance Level							
1171												
1172					Gamma GOF Test Results							
1173												
1174					Correlation Coefficient R	0.744						
1175					A-D Test Statistic	3.321						
1176					A-D Critical (0.05) Value	0.742						
1177					K-S Test Statistic	0.358						
1178					K-S Critical(0.05) Value	0.189						
1179					Data not Gamma Distributed at (0.05) Significance Level							
1180												
1181					Lognormal GOF Test Results							
1182												
1183					Correlation Coefficient R	0.681						
1184					Shapiro Wilk Test Statistic	0.496						
1185					Shapiro Wilk Critical (0.05) Value	0.908						
1186					Approximate Shapiro Wilk P Value	1.9687E-8						
1187					Lilliefors Test Statistic	0.374						
1188					Lilliefors Critical (0.05) Value	0.188						
1189					Data not Lognormal at (0.05) Significance Level							
1190												
1191					Non-parametric GOF Test Results							
1192												
1193					Data do not follow a discernible distribution at (0.05) Level of Significance							
1194												
1195					Total Dissolved Solids (mw-63)							
1196												
1197					Raw Statistics							
1198					Number of Valid Observations	20						
1199					Number of Missing Observations	4						
1200					Number of Distinct Observations	7						

	A	B	C	D	E	F	G	H	I	J	K	L
1201					Minimum	4100						
1202					Maximum	4700						
1203					Mean of Raw Data	4410						
1204					Standard Deviation of Raw Data	158.6						
1205					Khat	814.1						
1206					Theta hat	5.417						
1207					Kstar	692						
1208					Theta star	6.373						
1209					Mean of Log Transformed Data	8.391						
1210					Standard Deviation of Log Transformed Data	0.036						
1211												
1212					Normal GOF Test Results							
1213												
1214					Correlation Coefficient R	0.98						
1215					Shapiro Wilk Test Statistic	0.958						
1216					Shapiro Wilk Critical (0.05) Value	0.905						
1217					Approximate Shapiro Wilk P Value	0.515						
1218					Lilliefors Test Statistic	0.135						
1219					Lilliefors Critical (0.05) Value	0.192						
1220					Data appear Normal at (0.05) Significance Level							
1221												
1222					Gamma GOF Test Results							
1223												
1224					Correlation Coefficient R	0.98						
1225					A-D Test Statistic	0.409						
1226					A-D Critical (0.05) Value	0.74						
1227					K-S Test Statistic	0.129						
1228					K-S Critical(0.05) Value	0.193						
1229					Data appear Gamma Distributed at (0.05) Significance Level							
1230												
1231					Lognormal GOF Test Results							
1232												
1233					Correlation Coefficient R	0.981						
1234					Shapiro Wilk Test Statistic	0.959						
1235					Shapiro Wilk Critical (0.05) Value	0.905						
1236					Approximate Shapiro Wilk P Value	0.534						
1237					Lilliefors Test Statistic	0.132						
1238					Lilliefors Critical (0.05) Value	0.192						
1239					Data appear Lognormal at (0.05) Significance Level							
1240												
1241					Total Dissolved Solids (mw-64)							
1242												
1243					Raw Statistics							
1244					Number of Valid Observations	21						
1245					Number of Distinct Observations	8						
1246					Minimum	720						
1247					Maximum	890						
1248					Mean of Raw Data	790.5						
1249					Standard Deviation of Raw Data	29.91						
1250					Khat	751.1						

	A	B	C	D	E	F	G	H	I	J	K	L
1251					Theta hat	1.052						
1252					Kstar	643.9						
1253					Theta star	1.228						
1254					Mean of Log Transformed Data	6.672						
1255					Standard Deviation of Log Transformed Data	0.0372						
1256												
1257					Normal GOF Test Results							
1258												
1259					Correlation Coefficient R	0.866						
1260					Shapiro Wilk Test Statistic	0.787						
1261					Shapiro Wilk Critical (0.05) Value	0.908						
1262					Approximate Shapiro Wilk P Value	2.3668E-4						
1263					Lilliefors Test Statistic	0.232						
1264					Lilliefors Critical (0.05) Value	0.188						
1265					Data not Normal at (0.05) Significance Level							
1266												
1267					Gamma GOF Test Results							
1268												
1269					Correlation Coefficient R	0.874						
1270					A-D Test Statistic	1.568						
1271					A-D Critical (0.05) Value	0.74						
1272					K-S Test Statistic	0.224						
1273					K-S Critical(0.05) Value	0.189						
1274					Data not Gamma Distributed at (0.05) Significance Level							
1275												
1276					Lognormal GOF Test Results							
1277												
1278					Correlation Coefficient R	0.874						
1279					Shapiro Wilk Test Statistic	0.801						
1280					Shapiro Wilk Critical (0.05) Value	0.908						
1281					Approximate Shapiro Wilk P Value	4.1559E-4						
1282					Lilliefors Test Statistic	0.224						
1283					Lilliefors Critical (0.05) Value	0.188						
1284					Data not Lognormal at (0.05) Significance Level							
1285												
1286					Non-parametric GOF Test Results							
1287												
1288					Data do not follow a discernible distribution at (0.05) Level of Significance							
1289												
1290					Total Dissolved Solids (mw-65)							
1291												
1292					Raw Statistics							
1293					Number of Valid Observations	21						
1294					Number of Distinct Observations	10						
1295					Minimum	850						
1296					Maximum	1500						
1297					Mean of Raw Data	1062						
1298					Standard Deviation of Raw Data	156.2						
1299					Khat	55.03						
1300					Theta hat	19.3						

	A	B	C	D	E	F	G	H	I	J	K	L
1301					Kstar	47.2						
1302					Theta star	22.5						
1303					Mean of Log Transformed Data	6.959						
1304					Standard Deviation of Log Transformed Data	0.134						
1305												
1306					Normal GOF Test Results							
1307												
1308					Correlation Coefficient R	0.864						
1309					Shapiro Wilk Test Statistic	0.758						
1310					Shapiro Wilk Critical (0.05) Value	0.908						
1311					Approximate Shapiro Wilk P Value	7.6648E-5						
1312					Lilliefors Test Statistic	0.321						
1313					Lilliefors Critical (0.05) Value	0.188						
1314					Data not Normal at (0.05) Significance Level							
1315												
1316					Gamma GOF Test Results							
1317												
1318					Correlation Coefficient R	0.888						
1319					A-D Test Statistic	2.069						
1320					A-D Critical (0.05) Value	0.741						
1321					K-S Test Statistic	0.321						
1322					K-S Critical(0.05) Value	0.189						
1323					Data not Gamma Distributed at (0.05) Significance Level							
1324												
1325					Lognormal GOF Test Results							
1326												
1327					Correlation Coefficient R	0.889						
1328					Shapiro Wilk Test Statistic	0.802						
1329					Shapiro Wilk Critical (0.05) Value	0.908						
1330					Approximate Shapiro Wilk P Value	4.2768E-4						
1331					Lilliefors Test Statistic	0.314						
1332					Lilliefors Critical (0.05) Value	0.188						
1333					Data not Lognormal at (0.05) Significance Level							
1334												
1335					Non-parametric GOF Test Results							
1336												
1337					Data do not follow a discernible distribution at (0.05) Level of Significance							

	A	B	C	D	E	F	G	H	I	J	K	L
1	Outlier Tests for Selected Uncensored Variables											
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 1:46:23 PM								
4				From File	20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls							
5				Full Precision	OFF							
6												
7												
8	Dixon's Outlier Test for Boron (mw-62)											
9												
10	Number of Observations = 22											
11	10% critical value: 0.382											
12	5% critical value: 0.43											
13	1% critical value: 0.514											
14												
15	1. Observation Value 2.5 is a Potential Outlier (Upper Tail)?											
16												
17	Test Statistic: 0.333											
18												
19	For 10% significance level, 2.5 is not an outlier.											
20	For 5% significance level, 2.5 is not an outlier.											
21	For 1% significance level, 2.5 is not an outlier.											
22												
23	2. Observation Value 1.8 is a Potential Outlier (Lower Tail)?											
24												
25	Test Statistic: 0.200											
26												
27	For 10% significance level, 1.8 is not an outlier.											
28	For 5% significance level, 1.8 is not an outlier.											
29	For 1% significance level, 1.8 is not an outlier.											
30												
31												
32	Dixon's Outlier Test for Boron (mw-63)											
33												
34	Number of Observations = 21											
35	10% critical value: 0.391											
36	5% critical value: 0.44											
37	1% critical value: 0.524											
38												
39	1. Observation Value 2 is a Potential Outlier (Upper Tail)?											
40												
41	Test Statistic: 0.167											
42												
43	For 10% significance level, 2 is not an outlier.											
44	For 5% significance level, 2 is not an outlier.											
45	For 1% significance level, 2 is not an outlier.											
46												
47	2. Observation Value 1.3 is a Potential Outlier (Lower Tail)?											
48												
49	Test Statistic: 0.167											
50												

	A	B	C	D	E	F	G	H	I	J	K	L
101	For 1% significance level, 0.6 is not an outlier.											
102												
103												
104	Dixon's Outlier Test for Calcium (mw-62)											
105												
106	Number of Observations = 22											
107	10% critical value: 0.382											
108	5% critical value: 0.43											
109	1% critical value: 0.514											
110												
111	1. Observation Value 590 is a Potential Outlier (Upper Tail)?											
112												
113	Test Statistic: 0.222											
114												
115	For 10% significance level, 590 is not an outlier.											
116	For 5% significance level, 590 is not an outlier.											
117	For 1% significance level, 590 is not an outlier.											
118												
119	2. Observation Value 480 is a Potential Outlier (Lower Tail)?											
120												
121	Test Statistic: 0.222											
122												
123	For 10% significance level, 480 is not an outlier.											
124	For 5% significance level, 480 is not an outlier.											
125	For 1% significance level, 480 is not an outlier.											
126												
127												
128	Dixon's Outlier Test for Calcium (mw-63)											
129												
130	Number of Observations = 21											
131	10% critical value: 0.391											
132	5% critical value: 0.44											
133	1% critical value: 0.524											
134												
135	1. Observation Value 580 is a Potential Outlier (Upper Tail)?											
136												
137	Test Statistic: 0.300											
138												
139	For 10% significance level, 580 is not an outlier.											
140	For 5% significance level, 580 is not an outlier.											
141	For 1% significance level, 580 is not an outlier.											
142												
143	2. Observation Value 420 is a Potential Outlier (Lower Tail)?											
144												
145	Test Statistic: 0.462											
146												
147	For 10% significance level, 420 is an outlier.											
148	For 5% significance level, 420 is an outlier.											
149	For 1% significance level, 420 is not an outlier.											
150												

	A	B	C	D	E	F	G	H	I	J	K	L
151	Dixon's Outlier Test for Calcium (mw-64)											
152												
153												
154	Number of Observations = 21											
155	10% critical value: 0.391											
156	5% critical value: 0.44											
157	1% critical value: 0.524											
158												
159	1. Observation Value 93 is a Potential Outlier (Upper Tail)?											
160												
161	Test Statistic: 0.300											
162												
163	For 10% significance level, 93 is not an outlier.											
164	For 5% significance level, 93 is not an outlier.											
165	For 1% significance level, 93 is not an outlier.											
166												
167	2. Observation Value 82 is a Potential Outlier (Lower Tail)?											
168												
169	Test Statistic: 0.125											
170												
171	For 10% significance level, 82 is not an outlier.											
172	For 5% significance level, 82 is not an outlier.											
173	For 1% significance level, 82 is not an outlier.											
174												
175												
176	Dixon's Outlier Test for Calcium (mw-65)											
177												
178	Number of Observations = 21											
179	10% critical value: 0.391											
180	5% critical value: 0.44											
181	1% critical value: 0.524											
182												
183	1. Observation Value 160 is a Potential Outlier (Upper Tail)?											
184												
185	Test Statistic: 0.615											
186												
187	For 10% significance level, 160 is an outlier.											
188	For 5% significance level, 160 is an outlier.											
189	For 1% significance level, 160 is an outlier.											
190												
191	2. Observation Value 89 is a Potential Outlier (Lower Tail)?											
192												
193	Test Statistic: 0.194											
194												
195	For 10% significance level, 89 is not an outlier.											
196	For 5% significance level, 89 is not an outlier.											
197	For 1% significance level, 89 is not an outlier.											
198												
199												
200	Dixon's Outlier Test for Chloride (mw-62)											

	A	B	C	D	E	F	G	H	I	J	K	L
201												
202	Number of Observations = 19											
203	10% critical value: 0.412											
204	5% critical value: 0.462											
205	1% critical value: 0.547											
206												
207	1. Observation Value 150 is a Potential Outlier (Upper Tail)?											
208												
209	Test Statistic: 0.250											
210												
211	For 10% significance level, 150 is not an outlier.											
212	For 5% significance level, 150 is not an outlier.											
213	For 1% significance level, 150 is not an outlier.											
214												
215	2. Observation Value 99 is a Potential Outlier (Lower Tail)?											
216												
217	Test Statistic: 0.268											
218												
219	For 10% significance level, 99 is not an outlier.											
220	For 5% significance level, 99 is not an outlier.											
221	For 1% significance level, 99 is not an outlier.											
222												
223												
224	Dixon's Outlier Test for Chloride (mw-63)											
225												
226	Number of Observations = 18											
227	10% critical value: 0.424											
228	5% critical value: 0.475											
229	1% critical value: 0.561											
230												
231	1. Observation Value 110 is a Potential Outlier (Upper Tail)?											
232												
233	Test Statistic: 0.500											
234												
235	For 10% significance level, 110 is an outlier.											
236	For 5% significance level, 110 is an outlier.											
237	For 1% significance level, 110 is not an outlier.											
238												
239	2. Observation Value 77 is a Potential Outlier (Lower Tail)?											
240												
241	Test Statistic: 0.565											
242												
243	For 10% significance level, 77 is an outlier.											
244	For 5% significance level, 77 is an outlier.											
245	For 1% significance level, 77 is an outlier.											
246												
247												
248	Dixon's Outlier Test for Chloride (mw-64)											
249												
250	Number of Observations = 19											

	A	B	C	D	E	F	G	H	I	J	K	L
251	10% critical value: 0.412											
252	5% critical value: 0.462											
253	1% critical value: 0.547											
254												
255	1. Observation Value 53 is a Potential Outlier (Upper Tail)?											
256												
257	Test Statistic: 0.000											
258												
259	For 10% significance level, 53 is not an outlier.											
260	For 5% significance level, 53 is not an outlier.											
261	For 1% significance level, 53 is not an outlier.											
262												
263	2. Observation Value 44 is a Potential Outlier (Lower Tail)?											
264												
265	Test Statistic: 0.444											
266												
267	For 10% significance level, 44 is an outlier.											
268	For 5% significance level, 44 is not an outlier.											
269	For 1% significance level, 44 is not an outlier.											
270												
271												
272	Dixon's Outlier Test for Chloride (mw-65)											
273												
274	Number of Observations = 19											
275	10% critical value: 0.412											
276	5% critical value: 0.462											
277	1% critical value: 0.547											
278												
279	1. Observation Value 77 is a Potential Outlier (Upper Tail)?											
280												
281	Test Statistic: 0.680											
282												
283	For 10% significance level, 77 is an outlier.											
284	For 5% significance level, 77 is an outlier.											
285	For 1% significance level, 77 is an outlier.											
286												
287	2. Observation Value 51 is a Potential Outlier (Lower Tail)?											
288												
289	Test Statistic: 0.111											
290												
291	For 10% significance level, 51 is not an outlier.											
292	For 5% significance level, 51 is not an outlier.											
293	For 1% significance level, 51 is not an outlier.											
294												
295												
296	Dixon's Outlier Test for Fluoride (mw-62)											
297												
298	Number of Observations = 21											
299	10% critical value: 0.391											
300	5% critical value: 0.44											

	A	B	C	D	E	F	G	H	I	J	K	L
301	1% critical value: 0.524											
302												
303	1. Observation Value 3.3 is a Potential Outlier (Upper Tail)?											
304												
305	Test Statistic: 0.810											
306												
307	For 10% significance level, 3.3 is an outlier.											
308	For 5% significance level, 3.3 is an outlier.											
309	For 1% significance level, 3.3 is an outlier.											
310												
311	2. Observation Value 1.2 is a Potential Outlier (Lower Tail)?											
312												
313	Test Statistic: 0.000											
314												
315	For 10% significance level, 1.2 is not an outlier.											
316	For 5% significance level, 1.2 is not an outlier.											
317	For 1% significance level, 1.2 is not an outlier.											
318												
319												
320	Dixon's Outlier Test for Fluoride (mw-63)											
321												
322	Number of Observations = 23											
323	10% critical value: 0.374											
324	5% critical value: 0.421											
325	1% critical value: 0.505											
326												
327	1. Observation Value 2.4 is a Potential Outlier (Upper Tail)?											
328												
329	Test Statistic: 0.438											
330												
331	For 10% significance level, 2.4 is an outlier.											
332	For 5% significance level, 2.4 is an outlier.											
333	For 1% significance level, 2.4 is not an outlier.											
334												
335	2. Observation Value 1.55 is a Potential Outlier (Lower Tail)?											
336												
337	Test Statistic: 0.100											
338												
339	For 10% significance level, 1.55 is not an outlier.											
340	For 5% significance level, 1.55 is not an outlier.											
341	For 1% significance level, 1.55 is not an outlier.											
342												
343												
344	Dixon's Outlier Test for Fluoride (mw-64)											
345												
346	Number of Observations = 21											
347	10% critical value: 0.391											
348	5% critical value: 0.44											
349	1% critical value: 0.524											
350												

	A	B	C	D	E	F	G	H	I	J	K	L
351	1. Observation Value 1.5 is a Potential Outlier (Upper Tail)?											
352												
353	Test Statistic: 0.000											
354												
355	For 10% significance level, 1.5 is not an outlier.											
356	For 5% significance level, 1.5 is not an outlier.											
357	For 1% significance level, 1.5 is not an outlier.											
358												
359	2. Observation Value 1.3 is a Potential Outlier (Lower Tail)?											
360												
361	Test Statistic: 0.500											
362												
363	For 10% significance level, 1.3 is an outlier.											
364	For 5% significance level, 1.3 is an outlier.											
365	For 1% significance level, 1.3 is not an outlier.											
366												
367												
368	Dixon's Outlier Test for Fluoride (mw-65)											
369												
370	Number of Observations = 21											
371	10% critical value: 0.391											
372	5% critical value: 0.44											
373	1% critical value: 0.524											
374												
375	1. Observation Value 2 is a Potential Outlier (Upper Tail)?											
376												
377	Test Statistic: 0.000											
378												
379	For 10% significance level, 2 is not an outlier.											
380	For 5% significance level, 2 is not an outlier.											
381	For 1% significance level, 2 is not an outlier.											
382												
383	2. Observation Value 1.6 is a Potential Outlier (Lower Tail)?											
384												
385	Test Statistic: 0.375											
386												
387	For 10% significance level, 1.6 is not an outlier.											
388	For 5% significance level, 1.6 is not an outlier.											
389	For 1% significance level, 1.6 is not an outlier.											
390												
391												
392	Dixon's Outlier Test for H1drogen ion/pH (mw-62)											
393												
394	Number of Observations = 21											
395	10% critical value: 0.391											
396	5% critical value: 0.44											
397	1% critical value: 0.524											
398												
399	1. Observation Value 7.6 is a Potential Outlier (Upper Tail)?											
400												

	A	B	C	D	E	F	G	H	I	J	K	L
401	Test Statistic: 0.444											
402												
403	For 10% significance level, 7.6 is an outlier.											
404	For 5% significance level, 7.6 is an outlier.											
405	For 1% significance level, 7.6 is not an outlier.											
406												
407	2. Observation Value 6.5 is a Potential Outlier (Lower Tail)?											
408												
409	Test Statistic: 0.286											
410												
411	For 10% significance level, 6.5 is not an outlier.											
412	For 5% significance level, 6.5 is not an outlier.											
413	For 1% significance level, 6.5 is not an outlier.											
414												
415												
416	Dixon's Outlier Test for H1drogen ion/pH (mw-63)											
417												
418	Number of Observations = 19											
419	10% critical value: 0.412											
420	5% critical value: 0.462											
421	1% critical value: 0.547											
422												
423	1. Observation Value 7.7 is a Potential Outlier (Upper Tail)?											
424												
425	Test Statistic: 0.615											
426												
427	For 10% significance level, 7.7 is an outlier.											
428	For 5% significance level, 7.7 is an outlier.											
429	For 1% significance level, 7.7 is an outlier.											
430												
431	2. Observation Value 6.9 is a Potential Outlier (Lower Tail)?											
432												
433	Test Statistic: 0.375											
434												
435	For 10% significance level, 6.9 is not an outlier.											
436	For 5% significance level, 6.9 is not an outlier.											
437	For 1% significance level, 6.9 is not an outlier.											
438												
439												
440	Dixon's Outlier Test for H1drogen ion/pH (mw-64)											
441												
442	Number of Observations = 20											
443	10% critical value: 0.401											
444	5% critical value: 0.45											
445	1% critical value: 0.535											
446												
447	1. Observation Value 8.1 is a Potential Outlier (Upper Tail)?											
448												
449	Test Statistic: 0.333											
450												

	A	B	C	D	E	F	G	H	I	J	K	L
451	For 10% significance level, 8.1 is not an outlier.											
452	For 5% significance level, 8.1 is not an outlier.											
453	For 1% significance level, 8.1 is not an outlier.											
454												
455	2. Observation Value 7.45 is a Potential Outlier (Lower Tail)?											
456												
457	Test Statistic: 0.111											
458												
459	For 10% significance level, 7.45 is not an outlier.											
460	For 5% significance level, 7.45 is not an outlier.											
461	For 1% significance level, 7.45 is not an outlier.											
462												
463												
464	Dixon's Outlier Test for H1drogen ion/pH (mw-65)											
465												
466	Number of Observations = 20											
467	10% critical value: 0.401											
468	5% critical value: 0.45											
469	1% critical value: 0.535											
470												
471	1. Observation Value 7.9 is a Potential Outlier (Upper Tail)?											
472												
473	Test Statistic: 0.328											
474												
475	For 10% significance level, 7.9 is not an outlier.											
476	For 5% significance level, 7.9 is not an outlier.											
477	For 1% significance level, 7.9 is not an outlier.											
478												
479	2. Observation Value 7.1 is a Potential Outlier (Lower Tail)?											
480												
481	Test Statistic: 0.317											
482												
483	For 10% significance level, 7.1 is not an outlier.											
484	For 5% significance level, 7.1 is not an outlier.											
485	For 1% significance level, 7.1 is not an outlier.											
486												
487												
488	Dixon's Outlier Test for Sulfate (mw-62)											
489												
490	Number of Observations = 19											
491	10% critical value: 0.412											
492	5% critical value: 0.462											
493	1% critical value: 0.547											
494												
495	1. Observation Value 3800 is a Potential Outlier (Upper Tail)											
496												
497	Test Statistic: 0.400											
498												
499	For 10% significance level, 3800 is not an outlier.											
500	For 5% significance level, 3800 is not an outlier.											

	A	B	C	D	E	F	G	H	I	J	K	L
501	For 1% significance level, 3800 is not an outlier.											
502												
503	2. Observation Value 3200 is a Potential Outlier (Lower Tail)?											
504												
505	Test Statistic: 0.250											
506												
507	For 10% significance level, 3200 is not an outlier.											
508	For 5% significance level, 3200 is not an outlier.											
509	For 1% significance level, 3200 is not an outlier.											
510												
511												
512	Dixon's Outlier Test for Sulfate (mw-63)											
513												
514	Number of Observations = 18											
515	10% critical value: 0.424											
516	5% critical value: 0.475											
517	1% critical value: 0.561											
518												
519	1. Observation Value 2900 is a Potential Outlier (Upper Tail)?											
520												
521	Test Statistic: 0.000											
522												
523	For 10% significance level, 2900 is not an outlier.											
524	For 5% significance level, 2900 is not an outlier.											
525	For 1% significance level, 2900 is not an outlier.											
526												
527	2. Observation Value 2500 is a Potential Outlier (Lower Tail)?											
528												
529	Test Statistic: 0.250											
530												
531	For 10% significance level, 2500 is not an outlier.											
532	For 5% significance level, 2500 is not an outlier.											
533	For 1% significance level, 2500 is not an outlier.											
534												
535												
536	Dixon's Outlier Test for Sulfate (mw-64)											
537												
538	Number of Observations = 19											
539	10% critical value: 0.412											
540	5% critical value: 0.462											
541	1% critical value: 0.547											
542												
543	1. Observation Value 870 is a Potential Outlier (Upper Tail)?											
544												
545	Test Statistic: 0.889											
546												
547	For 10% significance level, 870 is an outlier.											
548	For 5% significance level, 870 is an outlier.											
549	For 1% significance level, 870 is an outlier.											
550												

	A	B	C	D	E	F	G	H	I	J	K	L
551	2. Observation Value 320 is a Potential Outlier (Lower Tail)?											
552												
553	Test Statistic: 0.143											
554												
555	For 10% significance level, 320 is not an outlier.											
556	For 5% significance level, 320 is not an outlier.											
557	For 1% significance level, 320 is not an outlier.											
558												
559												
560	Dixon's Outlier Test for Sulfate (mw-65)											
561												
562	Number of Observations = 19											
563	10% critical value: 0.412											
564	5% critical value: 0.462											
565	1% critical value: 0.547											
566												
567	1. Observation Value 790 is a Potential Outlier (Upper Tail)?											
568												
569	Test Statistic: 0.763											
570												
571	For 10% significance level, 790 is an outlier.											
572	For 5% significance level, 790 is an outlier.											
573	For 1% significance level, 790 is an outlier.											
574												
575	2. Observation Value 400 is a Potential Outlier (Lower Tail)?											
576												
577	Test Statistic: 0.100											
578												
579	For 10% significance level, 400 is not an outlier.											
580	For 5% significance level, 400 is not an outlier.											
581	For 1% significance level, 400 is not an outlier.											
582												
583												
584	Dixon's Outlier Test for Total Dissolved Solids (mw-62)											
585												
586	Number of Observations = 21											
587	10% critical value: 0.391											
588	5% critical value: 0.44											
589	1% critical value: 0.524											
590												
591	1. Observation Value 6700 is a Potential Outlier (Upper Tail)?											
592												
593	Test Statistic: 0.538											
594												
595	For 10% significance level, 6700 is an outlier.											
596	For 5% significance level, 6700 is an outlier.											
597	For 1% significance level, 6700 is an outlier.											
598												
599	2. Observation Value 2400 is a Potential Outlier (Lower Tail)?											
600												

	A	B	C	D	E	F	G	H	I	J	K	L
601	Test Statistic: 0.833											
602												
603	For 10% significance level, 2400 is an outlier.											
604	For 5% significance level, 2400 is an outlier.											
605	For 1% significance level, 2400 is an outlier.											
606												
607												
608	Dixon's Outlier Test for Total Dissolved Solids (mw-63)											
609												
610	Number of Observations = 20											
611	10% critical value: 0.401											
612	5% critical value: 0.45											
613	1% critical value: 0.535											
614												
615	1. Observation Value 4700 is a Potential Outlier (Upper Tail)											
616												
617	Test Statistic: 0.200											
618												
619	For 10% significance level, 4700 is not an outlier.											
620	For 5% significance level, 4700 is not an outlier.											
621	For 1% significance level, 4700 is not an outlier.											
622												
623	2. Observation Value 4100 is a Potential Outlier (Lower Tail)?											
624												
625	Test Statistic: 0.200											
626												
627	For 10% significance level, 4100 is not an outlier.											
628	For 5% significance level, 4100 is not an outlier.											
629	For 1% significance level, 4100 is not an outlier.											
630												
631												
632	Dixon's Outlier Test for Total Dissolved Solids (mw-64)											
633												
634	Number of Observations = 21											
635	10% critical value: 0.391											
636	5% critical value: 0.44											
637	1% critical value: 0.524											
638												
639	1. Observation Value 890 is a Potential Outlier (Upper Tail)?											
640												
641	Test Statistic: 0.667											
642												
643	For 10% significance level, 890 is an outlier.											
644	For 5% significance level, 890 is an outlier.											
645	For 1% significance level, 890 is an outlier.											
646												
647	2. Observation Value 720 is a Potential Outlier (Lower Tail)?											
648												
649	Test Statistic: 0.556											
650												

	A	B	C	D	E	F	G	H	I	J	K	L
651	For 10% significance level, 720 is an outlier.											
652	For 5% significance level, 720 is an outlier.											
653	For 1% significance level, 720 is an outlier.											
654												
655												
656	Dixon's Outlier Test for Total Dissolved Solids (mw-65)											
657												
658	Number of Observations = 21											
659	10% critical value: 0.391											
660	5% critical value: 0.44											
661	1% critical value: 0.524											
662												
663	1. Observation Value 1500 is a Potential Outlier (Upper Tail)											
664												
665	Test Statistic: 0.377											
666												
667	For 10% significance level, 1500 is not an outlier.											
668	For 5% significance level, 1500 is not an outlier.											
669	For 1% significance level, 1500 is not an outlier.											
670												
671	2. Observation Value 850 is a Potential Outlier (Lower Tail)?											
672												
673	Test Statistic: 0.267											
674												
675	For 10% significance level, 850 is not an outlier.											
676	For 5% significance level, 850 is not an outlier.											
677	For 1% significance level, 850 is not an outlier.											
678												

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	General Statistics on Uncensored Data												
2	Date/Time of Computation	ProUCL 5.14/11/2020 12:19:06 PM											
3	User Selected Options												
4	From File	20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls											
5	Full Precision	OFF											
6													
7	From File: 20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls												
8													
9	General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method												
10													
11	Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV	
12	Boron (mw-62)	22	0	22	0	0.00%	N/A	N/A	2.1	0.0362	0.19	0.0906	
13	Boron (mw-63)	21	3	21	0	0.00%	N/A	N/A	1.643	0.0546	0.234	0.142	
14	Boron (mw-64)	21	0	21	0	0.00%	N/A	N/A	0.596	0.00293	0.0541	0.0908	
15	Boron (mw-65)	21	0	21	0	0.00%	N/A	N/A	0.776	0.00751	0.0867	0.112	
16	Calcium (mw-62)	22	0	22	0	0.00%	N/A	N/A	532.7	801.7	28.31	0.0532	
17	Calcium (mw-63)	21	3	21	0	0.00%	N/A	N/A	520	1230	35.07	0.0674	
18	Calcium (mw-64)	21	0	21	0	0.00%	N/A	N/A	87.19	8.362	2.892	0.0332	
19	Calcium (mw-65)	21	0	21	0	0.00%	N/A	N/A	107.7	264	16.25	0.151	
20	Chloride (mw-62)	19	3	19	0	0.00%	N/A	N/A	122.1	186.7	13.66	0.112	
21	Chloride (mw-63)	18	6	18	0	0.00%	N/A	N/A	96.11	58.22	7.63	0.0794	
22	Chloride (mw-64)	19	2	19	0	0.00%	N/A	N/A	50.74	6.094	2.469	0.0487	
23	Chloride (mw-65)	19	2	19	0	0.00%	N/A	N/A	55.53	42.93	6.552	0.118	
24	Fluoride (mw-62)	21	1	21	0	0.00%	N/A	N/A	1.526	0.18	0.425	0.278	
25	Fluoride (mw-63)	23	1	23	0	0.00%	N/A	N/A	1.88	0.0386	0.196	0.104	
26	Fluoride (mw-64)	21	0	21	0	0.00%	N/A	N/A	1.445	0.00323	0.0568	0.0393	
27	Fluoride (mw-65)	21	0	21	0	0.00%	N/A	N/A	1.9	0.0128	0.113	0.0594	
28	Hydrogen ion/pH (mw-62)	21	1	21	0	0.00%	N/A	N/A	6.939	0.0558	0.236	0.0341	
29	Hydrogen ion/pH (mw-63)	19	5	19	0	0.00%	N/A	N/A	7.192	0.0345	0.186	0.0258	
30	Hydrogen ion/pH (mw-64)	20	1	20	0	0.00%	N/A	N/A	7.734	0.0281	0.168	0.0217	
31	Hydrogen ion/pH (mw-65)	20	1	20	0	0.00%	N/A	N/A	7.532	0.0368	0.192	0.0255	
32	Sulfate (mw-62)	19	3	19	0	0.00%	N/A	N/A	3384	23626	153.7	0.0454	
33	Sulfate (mw-63)	18	6	18	0	0.00%	N/A	N/A	2711	16340	127.8	0.0471	
34	Sulfate (mw-64)	19	2	19	0	0.00%	N/A	N/A	380	14544	120.6	0.317	
35	Sulfate (mw-65)	19	2	19	0	0.00%	N/A	N/A	486.3	9680	98.39	0.202	
36	Dissolved Solids (mw-62)	21	1	21	0	0.00%	N/A	N/A	5567	641333	800.8	0.144	
37	Dissolved Solids (mw-63)	20	4	20	0	0.00%	N/A	N/A	4410	25158	158.6	0.036	
38	Dissolved Solids (mw-64)	21	0	21	0	0.00%	N/A	N/A	790.5	894.8	29.91	0.0378	
39	Dissolved Solids (mw-65)	21	0	21	0	0.00%	N/A	N/A	1062	24396	156.2	0.147	
40													
41	General Statistics for Raw Data Sets using Detected Data Only												
42													
43	Variable	NumObs	# Missing	Minimum	Maximum	Mean	Median	Var	SD	MAD/0.675	Skewness	CV	
44	Boron (mw-62)	22	0	1.8	2.5	2.1	2.1	0.0362	0.19	0.222	0.228	0.0906	
45	Boron (mw-63)	21	3	1.3	2	1.643	1.7	0.0546	0.234	0.297	-0.00425	0.142	
46	Boron (mw-64)	21	0	0.48	0.67	0.596	0.61	0.00293	0.0541	0.0445	-0.727	0.0908	
47	Boron (mw-65)	21	0	0.6	0.98	0.776	0.77	0.00751	0.0867	0.0297	0.0861	0.112	
48	Calcium (mw-62)	22	0	480	590	532.7	530	801.7	28.31	22.24	0.249	0.0532	
49	Calcium (mw-63)	21	3	420	580	520	530	1230	35.07	29.65	-1.068	0.0674	
50	Calcium (mw-64)	21	0	82	93	87.19	88	8.362	2.892	2.965	-0.196	0.0332	
51	Calcium (mw-65)	21	0	89	160	107.7	100	264	16.25	14.83	2.089	0.151	
52	Chloride (mw-62)	19	3	99	150	122.1	120	186.7	13.66	14.83	0.727	0.112	

	A	B	C	D	E	F	G	H	I	J	K	L	M
53	Chloride (mw-63)	18	6	77	110	96.11	97.5	58.22	7.63	3.706	-0.383	0.0794	
54	Chloride (mw-64)	19	2	44	53	50.74	52	6.094	2.469	1.483	-1.569	0.0487	
55	Chloride (mw-65)	19	2	51	77	55.53	53	42.93	6.552	1.483	2.538	0.118	
56	Fluoride (mw-62)	21	1	1.2	3.3	1.526	1.45	0.18	0.425	0.0741	3.941	0.278	
57	Fluoride (mw-63)	23	1	1.55	2.4	1.88	1.9	0.0386	0.196	0.148	0.356	0.104	
58	Fluoride (mw-64)	21	0	1.3	1.5	1.445	1.45	0.00323	0.0568	0.0741	-0.701	0.0393	
59	Fluoride (mw-65)	21	0	1.6	2	1.9	1.9	0.0128	0.113	0.148	-1.238	0.0594	
60	Hydrogen ion/pH (mw-62)	21	1	6.5	7.6	6.939	6.94	0.0558	0.236	0.208	0.854	0.0341	
61	Hydrogen ion/pH (mw-63)	19	5	6.9	7.7	7.192	7.2	0.0345	0.186	0.148	1.562	0.0258	
62	Hydrogen ion/pH (mw-64)	20	1	7.45	8.1	7.734	7.75	0.0281	0.168	0.0741	0.0857	0.0217	
63	Hydrogen ion/pH (mw-65)	20	1	7.1	7.9	7.532	7.55	0.0368	0.192	0.0741	-0.144	0.0255	
64	Sulfate (mw-62)	19	3	3200	3800	3384	3300	23626	153.7	148.3	1.32	0.0454	
65	Sulfate (mw-63)	18	6	2500	2900	2711	2700	16340	127.8	148.3	-0.0407	0.0471	
66	Sulfate (mw-64)	19	2	320	870	380	350	14544	120.6	29.65	4.129	0.317	
67	Sulfate (mw-65)	19	2	400	790	486.3	460	9680	98.39	29.65	2.418	0.202	
68	Dissolved Solids (mw-62)	21	1	2400	6700	5567	5700	641333	800.8	296.5	-3.236	0.144	
69	Dissolved Solids (mw-63)	20	4	4100	4700	4410	4400	25158	158.6	148.3	0.0827	0.036	
70	Dissolved Solids (mw-64)	21	0	720	890	790.5	790	894.8	29.91	14.83	1.262	0.0378	
71	Dissolved Solids (mw-65)	21	0	850	1500	1062	1000	24396	156.2	44.48	1.751	0.147	
72													
73	Percentiles using all Detects (Ds) and Non-Detects (NDs)												
74													
75	Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile	
76	Boron (mw-62)	22	0	1.9	1.9	1.925	2.1	2.2	2.28	2.3	2.395	2.479	
77	Boron (mw-63)	21	3	1.4	1.4	1.4	1.7	1.8	1.9	1.9	2	2	
78	Boron (mw-64)	21	0	0.55	0.55	0.56	0.61	0.64	0.64	0.65	0.67	0.67	
79	Boron (mw-65)	21	0	0.65	0.75	0.76	0.77	0.8	0.83	0.86	0.92	0.968	
80	Calcium (mw-62)	22	0	501	512	520	530	547.5	566	570	570	585.8	
81	Calcium (mw-63)	21	3	480	500	500	530	540	550	550	560	576	
82	Calcium (mw-64)	21	0	83	85	85	88	89	90	90	90	92.4	
83	Calcium (mw-65)	21	0	95	98	100	100	110	110	120	140	156	
84	Chloride (mw-62)	19	3	110	110	110	120	130	130	142	150	150	
85	Chloride (mw-63)	18	6	89.4	90.4	91.5	97.5	99.5	100	103	110	110	
86	Chloride (mw-64)	19	2	47.6	49.6	50	52	52	52.4	53	53	53	
87	Chloride (mw-65)	19	2	51.8	52	52	53	54.5	56.2	61.6	68.9	75.38	
88	Fluoride (mw-62)	21	1	1.2	1.4	1.4	1.45	1.5	1.6	1.6	1.6	2.96	
89	Fluoride (mw-63)	23	1	1.6	1.72	1.775	1.9	2	2	2.04	2.095	2.334	
90	Fluoride (mw-64)	21	0	1.4	1.4	1.4	1.45	1.5	1.5	1.5	1.5	1.5	
91	Fluoride (mw-65)	21	0	1.75	1.8	1.9	1.9	2	2	2	2	2	
92	Hydrogen ion/pH (mw-62)	21	1	6.7	6.8	6.8	6.94	7	7	7.2	7.2	7.52	
93	Hydrogen ion/pH (mw-63)	19	5	7.04	7.1	7.1	7.2	7.2	7.2	7.36	7.61	7.682	
94	Hydrogen ion/pH (mw-64)	20	1	7.497	7.628	7.69	7.75	7.8	7.8	7.91	8.005	8.081	
95	Hydrogen ion/pH (mw-65)	20	1	7.285	7.408	7.478	7.55	7.6	7.6	7.72	7.9	7.9	
96	Sulfate (mw-62)	19	3	3280	3300	3300	3300	3450	3500	3600	3620	3764	
97	Sulfate (mw-63)	18	6	2570	2600	2600	2700	2800	2800	2900	2900	2900	
98	Sulfate (mw-64)	19	2	328	336	340	350	375	380	390	438	783.6	
99	Sulfate (mw-65)	19	2	410	432	445	460	485	494	542	718	775.6	
100	Dissolved Solids (mw-62)	21	1	5400	5400	5500	5700	5900	5900	6000	6100	6580	
101	Dissolved Solids (mw-63)	20	4	4200	4300	4300	4400	4500	4500	4610	4700	4700	
102	Dissolved Solids (mw-64)	21	0	770	780	780	790	800	800	810	810	874	
103	Dissolved Solids (mw-65)	21	0	970	980	990	1000	1100	1100	1300	1400	1480	

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 1:14:41 PM								
4	From File			20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Boron-mw-62											
10												
11	General Statistics											
12	Number of Events Reported (m)			22								
13	Number of Missing Events			0								
14	Number or Reported Events Used			22								
15	Number Values Reported (n)			22								
16	Minimum			1.8								
17	Maximum			2.5								
18	Mean			2.1								
19	Geometric Mean			2.092								
20	Median			2.1								
21	Standard Deviation			0.19								
22	Coefficient of Variation			0.0906								
23												
24	Mann-Kendall Test											
25	M-K Test Value (S)			0								
26	Tabulated p-value			0.5								
27	Standard Deviation of S			34.8								
28	Standardized Value of S			N/A								
29	Approximate p-value			N/A								
30												
31	Insufficient evidence to identify a significant											
32	trend at the specified level of significance.											
33	Boron-mw-63											
34												
35	General Statistics											
36	Number of Events Reported (m)			24								
37	Number of Missing Events			3								
38	Number or Reported Events Used			21								
39	Number Values Reported (n)			24								
40	Number Values Missing			3								
41	Number Values Used			21								
42	Minimum			1.3								
43	Maximum			2								
44	Mean			1.643								
45	Geometric Mean			1.627								
46	Median			1.7								
47	Standard Deviation			0.234								

	A	B	C	D	E	F	G	H	I	J	K	L
48			Coefficient of Variation		0.142							
49												
50			Mann-Kendall Test									
51			M-K Test Value (S)		-14							
52			Tabulated p-value		0.349							
53			Standard Deviation of S		32.65							
54			Standardized Value of S		-0.398							
55			Approximate p-value		0.345							
56												
57			Insufficient evidence to identify a significant									
58			trend at the specified level of significance.									
59			Boron-mw-64									
60												
61			General Statistics									
62			Number of Events Reported (m)		21							
63			Number of Missing Events		0							
64			Number or Reported Events Used		21							
65			Number Values Reported (n)		21							
66			Minimum		0.48							
67			Maximum		0.67							
68			Mean		0.596							
69			Geometric Mean		0.593							
70			Median		0.61							
71			Standard Deviation		0.0541							
72			Coefficient of Variation		0.0908							
73												
74			Mann-Kendall Test									
75			M-K Test Value (S)		-44							
76			Tabulated p-value		0.098							
77			Standard Deviation of S		32.81							
78			Standardized Value of S		-1.31							
79			Approximate p-value		0.095							
80												
81			Insufficient evidence to identify a significant									
82			trend at the specified level of significance.									
83			Boron-mw-65									
84												
85			General Statistics									
86			Number of Events Reported (m)		21							
87			Number of Missing Events		0							
88			Number or Reported Events Used		21							
89			Number Values Reported (n)		21							
90			Minimum		0.6							
91			Maximum		0.98							
92			Mean		0.776							
93			Geometric Mean		0.772							
94			Median		0.77							

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 1:24:01 PM								
4	From File			20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Calcium-mw-62											
10												
11	General Statistics											
12	Number of Events Reported (m)			22								
13	Number of Missing Events			0								
14	Number or Reported Events Used			22								
15	Number Values Reported (n)			22								
16	Minimum			480								
17	Maximum			590								
18	Mean			532.7								
19	Geometric Mean			532								
20	Median			530								
21	Standard Deviation			28.31								
22	Coefficient of Variation			0.0532								
23												
24	Mann-Kendall Test											
25	M-K Test Value (S)			38								
26	Tabulated p-value			0.144								
27	Standard Deviation of S			34.99								
28	Standardized Value of S			1.058								
29	Approximate p-value			0.145								
30												
31	Insufficient evidence to identify a significant											
32	trend at the specified level of significance.											
33	Calcium-mw-63											
34												
35	General Statistics											
36	Number of Events Reported (m)			24								
37	Number of Missing Events			3								
38	Number or Reported Events Used			21								
39	Number Values Reported (n)			24								
40	Number Values Missing			3								
41	Number Values Used			21								
42	Minimum			420								
43	Maximum			580								
44	Mean			520								
45	Geometric Mean			518.8								
46	Median			530								
47	Standard Deviation			35.07								

	A	B	C	D	E	F	G	H	I	J	K	L
48			Coefficient of Variation		0.0674							
49												
50			Mann-Kendall Test									
51			M-K Test Value (S)		91							
52			Tabulated p-value		0.003							
53			Standard Deviation of S		32.83							
54			Standardized Value of S		2.742							
55			Approximate p-value		0.00306							
56												
57			Statistically significant evidence of an increasing									
58			trend at the specified level of significance.									
59			Calcium-mw-64									
60												
61			General Statistics									
62			Number of Events Reported (m)		21							
63			Number of Missing Events		0							
64			Number or Reported Events Used		21							
65			Number Values Reported (n)		21							
66			Minimum		82							
67			Maximum		93							
68			Mean		87.19							
69			Geometric Mean		87.14							
70			Median		88							
71			Standard Deviation		2.892							
72			Coefficient of Variation		0.0332							
73												
74			Mann-Kendall Test									
75			M-K Test Value (S)		-13							
76			Tabulated p-value		0.371							
77			Standard Deviation of S		32.75							
78			Standardized Value of S		-0.366							
79			Approximate p-value		0.357							
80												
81			Insufficient evidence to identify a significant									
82			trend at the specified level of significance.									
83			Calcium-mw-65									
84												
85			General Statistics									
86			Number of Events Reported (m)		21							
87			Number of Missing Events		0							
88			Number or Reported Events Used		21							
89			Number Values Reported (n)		21							
90			Minimum		89							
91			Maximum		160							
92			Mean		107.7							
93			Geometric Mean		106.7							
94			Median		100							

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 1:26:48 PM								
4	From File			20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Chloride-mw-62											
10												
11	General Statistics											
12	Number of Events Reported (m)			22								
13	Number of Missing Events			3								
14	Number or Reported Events Used			19								
15	Number Values Reported (n)			22								
16	Number Values Missing			3								
17	Number Values Used			19								
18	Minimum			99								
19	Maximum			150								
20	Mean			122.1								
21	Geometric Mean			121.4								
22	Median			120								
23	Standard Deviation			13.66								
24	Coefficient of Variation			0.112								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			-54								
28	Tabulated p-value			0.029								
29	Standard Deviation of S			27.41								
30	Standardized Value of S			-1.934								
31	Approximate p-value			0.0266								
32												
33	Statistically significant evidence of a decreasing											
34	trend at the specified level of significance.											
35	Chloride-mw-63											
36												
37	General Statistics											
38	Number of Events Reported (m)			24								
39	Number of Missing Events			6								
40	Number or Reported Events Used			18								
41	Number Values Reported (n)			24								
42	Number Values Missing			6								
43	Number Values Used			18								
44	Minimum			77								
45	Maximum			110								
46	Mean			96.11								
47	Geometric Mean			95.82								

	A	B	C	D	E	F	G	H	I	J	K	L
48				Median	97.5							
49				Standard Deviation	7.63							
50				Coefficient of Variation	0.0794							
51												
52				Mann-Kendall Test								
53				M-K Test Value (S)	-59							
54				Tabulated p-value	0.013							
55				Standard Deviation of S	26.11							
56				Standardized Value of S	-2.221							
57				Approximate p-value	0.0132							
58												
59				Statistically significant evidence of a decreasing								
60				trend at the specified level of significance.								
61				Chloride-mw-64								
62												
63				General Statistics								
64				Number of Events Reported (m)	21							
65				Number of Missing Events	2							
66				Number or Reported Events Used	19							
67				Number Values Reported (n)	21							
68				Number Values Missing	2							
69				Number Values Used	19							
70				Minimum	44							
71				Maximum	53							
72				Mean	50.74							
73				Geometric Mean	50.68							
74				Median	52							
75				Standard Deviation	2.469							
76				Coefficient of Variation	0.0487							
77												
78				Mann-Kendall Test								
79				M-K Test Value (S)	8							
80				Tabulated p-value	0.391							
81				Standard Deviation of S	27.84							
82				Standardized Value of S	0.251							
83				Approximate p-value	0.401							
84												
85				Insufficient evidence to identify a significant								
86				trend at the specified level of significance.								
87				Chloride-mw-65								
88												
89				General Statistics								
90				Number of Events Reported (m)	21							
91				Number of Missing Events	2							
92				Number or Reported Events Used	19							
93				Number Values Reported (n)	21							
94				Number Values Missing	2							

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 1:29:47 PM								
4	From File			20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Fluoride-mw-62											
10												
11	General Statistics											
12	Number of Events Reported (m)			22								
13	Number of Missing Events			1								
14	Number or Reported Events Used			21								
15	Number Values Reported (n)			22								
16	Number Values Missing			1								
17	Number Values Used			21								
18	Minimum			1.2								
19	Maximum			3.3								
20	Mean			1.526								
21	Geometric Mean			1.49								
22	Median			1.45								
23	Standard Deviation			0.425								
24	Coefficient of Variation			0.278								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			10								
28	Tabulated p-value			0.394								
29	Standard Deviation of S			31.99								
30	Standardized Value of S			0.281								
31	Approximate p-value			0.389								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Fluoride-mw-63											
36												
37	General Statistics											
38	Number of Events Reported (m)			24								
39	Number of Missing Events			1								
40	Number or Reported Events Used			23								
41	Number Values Reported (n)			24								
42	Number Values Missing			1								
43	Number Values Used			23								
44	Minimum			1.55								
45	Maximum			2.4								
46	Mean			1.88								
47	Geometric Mean			1.871								

	A	B	C	D	E	F	G	H	I	J	K	L
48				Median	1.9							
49				Standard Deviation	0.196							
50				Coefficient of Variation	0.104							
51												
52				Mann-Kendall Test								
53				M-K Test Value (S)	-60							
54				Critical Value (0.05)	-1.645							
55				Standard Deviation of S	37.17							
56				Standardized Value of S	-1.587							
57				Approximate p-value	0.0562							
58												
59				Insufficient evidence to identify a significant								
60				trend at the specified level of significance.								
61				Fluoride-mw-64								
62												
63				General Statistics								
64				Number of Events Reported (m)	21							
65				Number of Missing Events	0							
66				Number or Reported Events Used	21							
67				Number Values Reported (n)	21							
68				Minimum	1.3							
69				Maximum	1.5							
70				Mean	1.445							
71				Geometric Mean	1.444							
72				Median	1.45							
73				Standard Deviation	0.0568							
74				Coefficient of Variation	0.0393							
75												
76				Mann-Kendall Test								
77				M-K Test Value (S)	-21							
78				Tabulated p-value	0.285							
79				Standard Deviation of S	30.63							
80				Standardized Value of S	-0.653							
81				Approximate p-value	0.257							
82												
83				Insufficient evidence to identify a significant								
84				trend at the specified level of significance.								
85				Fluoride-mw-65								
86												
87				General Statistics								
88				Number of Events Reported (m)	21							
89				Number of Missing Events	0							
90				Number or Reported Events Used	21							
91				Number Values Reported (n)	21							
92				Minimum	1.6							
93				Maximum	2							
94				Mean	1.9							

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 1:34:56 PM								
4	From File			20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	H1drogen ion/pH-mw-62											
10												
11	General Statistics											
12	Number of Events Reported (m)			22								
13	Number of Missing Events			1								
14	Number or Reported Events Used			21								
15	Number Values Reported (n)			22								
16	Number Values Missing			1								
17	Number Values Used			21								
18	Minimum			6.5								
19	Maximum			7.6								
20	Mean			6.939								
21	Geometric Mean			6.935								
22	Median			6.94								
23	Standard Deviation			0.236								
24	Coefficient of Variation			0.0341								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			30								
28	Tabulated p-value			0.193								
29	Standard Deviation of S			32.5								
30	Standardized Value of S			0.892								
31	Approximate p-value			0.186								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	H1drogen ion/pH-mw-63											
36												
37	General Statistics											
38	Number of Events Reported (m)			24								
39	Number of Missing Events			5								
40	Number or Reported Events Used			19								
41	Number Values Reported (n)			24								
42	Number Values Missing			5								
43	Number Values Used			19								
44	Minimum			6.9								
45	Maximum			7.7								
46	Mean			7.192								
47	Geometric Mean			7.19								

	A	B	C	D	E	F	G	H	I	J	K	L
48				Median	7.2							
49				Standard Deviation	0.186							
50				Coefficient of Variation	0.0258							
51												
52				Mann-Kendall Test								
53				M-K Test Value (S)	-11							
54				Tabulated p-value	0.365							
55				Standard Deviation of S	27.11							
56				Standardized Value of S	-0.369							
57				Approximate p-value	0.356							
58												
59				Insufficient evidence to identify a significant								
60				trend at the specified level of significance.								
61				H1drogen ion/pH-mw-64								
62												
63				General Statistics								
64				Number of Events Reported (m)	21							
65				Number of Missing Events	1							
66				Number or Reported Events Used	20							
67				Number Values Reported (n)	21							
68				Number Values Missing	1							
69				Number Values Used	20							
70				Minimum	7.45							
71				Maximum	8.1							
72				Mean	7.734							
73				Geometric Mean	7.732							
74				Median	7.75							
75				Standard Deviation	0.168							
76				Coefficient of Variation	0.0217							
77												
78				Mann-Kendall Test								
79				M-K Test Value (S)	46							
80				Tabulated p-value	0.073							
81				Standard Deviation of S	29.8							
82				Standardized Value of S	1.51							
83				Approximate p-value	0.0655							
84												
85				Insufficient evidence to identify a significant								
86				trend at the specified level of significance.								
87				H1drogen ion/pH-mw-65								
88												
89				General Statistics								
90				Number of Events Reported (m)	21							
91				Number of Missing Events	1							
92				Number or Reported Events Used	20							
93				Number Values Reported (n)	21							
94				Number Values Missing	1							

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 1:38:59 PM								
4	From File			20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Sulfate-mw-62											
10												
11	General Statistics											
12	Number of Events Reported (m)			22								
13	Number of Missing Events			3								
14	Number or Reported Events Used			19								
15	Number Values Reported (n)			22								
16	Number Values Missing			3								
17	Number Values Used			19								
18	Minimum			3200								
19	Maximum			3800								
20	Mean			3384								
21	Geometric Mean			3381								
22	Median			3300								
23	Standard Deviation			153.7								
24	Coefficient of Variation			0.0454								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			13								
28	Tabulated p-value			0.339								
29	Standard Deviation of S			26.8								
30	Standardized Value of S			0.448								
31	Approximate p-value			0.327								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Sulfate-mw-63											
36												
37	General Statistics											
38	Number of Events Reported (m)			24								
39	Number of Missing Events			6								
40	Number or Reported Events Used			18								
41	Number Values Reported (n)			24								
42	Number Values Missing			6								
43	Number Values Used			18								
44	Minimum			2500								
45	Maximum			2900								
46	Mean			2711								
47	Geometric Mean			2708								

	A	B	C	D	E	F	G	H	I	J	K	L
48				Median	2700							
49				Standard Deviation	127.8							
50				Coefficient of Variation	0.0471							
51												
52				Mann-Kendall Test								
53				M-K Test Value (S)	13							
54				Tabulated p-value	0.327							
55				Standard Deviation of S	25.66							
56				Standardized Value of S	0.468							
57				Approximate p-value	0.32							
58												
59				Insufficient evidence to identify a significant								
60				trend at the specified level of significance.								
61				Sulfate-mw-64								
62												
63				General Statistics								
64				Number of Events Reported (m)	21							
65				Number of Missing Events	2							
66				Number or Reported Events Used	19							
67				Number Values Reported (n)	21							
68				Number Values Missing	2							
69				Number Values Used	19							
70				Minimum	320							
71				Maximum	870							
72				Mean	380							
73				Geometric Mean	369.3							
74				Median	350							
75				Standard Deviation	120.6							
76				Coefficient of Variation	0.317							
77												
78				Mann-Kendall Test								
79				M-K Test Value (S)	61							
80				Tabulated p-value	0.017							
81				Standard Deviation of S	28.28							
82				Standardized Value of S	2.122							
83				Approximate p-value	0.0169							
84												
85				Statistically significant evidence of an increasing								
86				trend at the specified level of significance.								
87				Sulfate-mw-65								
88												
89				General Statistics								
90				Number of Events Reported (m)	21							
91				Number of Missing Events	2							
92				Number or Reported Events Used	19							
93				Number Values Reported (n)	21							
94				Number Values Missing	2							

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 1:41:50 PM								
4	From File			20200411APS_FCPP_CWTP_DetMon_Dec2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Total Dissolved Solids-mw-62											
10												
11	General Statistics											
12	Number of Events Reported (m)			22								
13	Number of Missing Events			1								
14	Number or Reported Events Used			21								
15	Number Values Reported (n)			22								
16	Number Values Missing			1								
17	Number Values Used			21								
18	Minimum			2400								
19	Maximum			6700								
20	Mean			5567								
21	Geometric Mean			5484								
22	Median			5700								
23	Standard Deviation			800.8								
24	Coefficient of Variation			0.144								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			-64								
28	Tabulated p-value			0.028								
29	Standard Deviation of S			32.8								
30	Standardized Value of S			-1.921								
31	Approximate p-value			0.0274								
32												
33	Statistically significant evidence of a decreasing											
34	trend at the specified level of significance.											
35	Total Dissolved Solids-mw-63											
36												
37	General Statistics											
38	Number of Events Reported (m)			24								
39	Number of Missing Events			4								
40	Number or Reported Events Used			20								
41	Number Values Reported (n)			24								
42	Number Values Missing			4								
43	Number Values Used			20								
44	Minimum			4100								
45	Maximum			4700								
46	Mean			4410								
47	Geometric Mean			4407								

	A	B	C	D	E	F	G	H	I	J	K	L
48				Median	4400							
49				Standard Deviation	158.6							
50				Coefficient of Variation	0.036							
51												
52				Mann-Kendall Test								
53				M-K Test Value (S)	-12							
54				Tabulated p-value	0.362							
55				Standard Deviation of S	30.1							
56				Standardized Value of S	-0.365							
57				Approximate p-value	0.357							
58												
59				Insufficient evidence to identify a significant								
60				trend at the specified level of significance.								
61				Total Dissolved Solids-mw-64								
62												
63				General Statistics								
64				Number of Events Reported (m)	21							
65				Number of Missing Events	0							
66				Number or Reported Events Used	21							
67				Number Values Reported (n)	21							
68				Minimum	720							
69				Maximum	890							
70				Mean	790.5							
71				Geometric Mean	790							
72				Median	790							
73				Standard Deviation	29.91							
74				Coefficient of Variation	0.0378							
75												
76				Mann-Kendall Test								
77				M-K Test Value (S)	-50							
78				Tabulated p-value	0.07							
79				Standard Deviation of S	32.28							
80				Standardized Value of S	-1.518							
81				Approximate p-value	0.0645							
82												
83				Insufficient evidence to identify a significant								
84				trend at the specified level of significance.								
85				Total Dissolved Solids-mw-65								
86												
87				General Statistics								
88				Number of Events Reported (m)	21							
89				Number of Missing Events	0							
90				Number or Reported Events Used	21							
91				Number Values Reported (n)	21							
92				Minimum	850							
93				Maximum	1500							
94				Mean	1062							

APPENDIX G

**WOOD TECHNICAL MEMORANDUM DOCUMENTING THE STATISTICAL ANALYSIS
OF APPENDIX III CONSTITUENT DATA COLLECTED FROM THE CWTP THROUGH
JUNE 2020**



Technical Memorandum

To:	Arizona Public Service Company	File No:	14-2020-2015
From:	Dane Andersen, GIT	Reviewed by:	Maren Henley, PE Tim Glover
Date:	October 13, 2020		
Subject:	CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS AND RESULTS FOR THE CWTP APPENDIX III CONSTITUENT DATA COLLECTED THROUGH JUNE 2020 Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico		

1.0 INTRODUCTION

This Technical Memorandum presents the results of a statistical evaluation of groundwater monitoring data collected from monitoring wells downgradient of the Combined Waste Treatment Pond (CWTP) located at the Arizona Public Service Company Four Corners Power Plant (Site) in Fruitland, new Mexico. The statistical evaluation was performed by Wood Environment and Infrastructure Solutions, Inc.’s subcontractor, Formation Environmental, LLC (Formation Environmental) pursuant to Coal Combustion Residuals (CCR) Rule requirements for groundwater monitoring and corrective action detailed in 40 Code of Federal Regulations Sections 257.90 through 257.98 (Federal Register, 2018).

The CWTP is a Site CCR unit that is currently in the detection monitoring program. The CCR Rule requires routine evaluations of Appendix III constituent data collected from BAM downgradient wells to determine if a statistically significant increase (SSI) over background threshold values (BTVs) has occurred. The statistical evaluation documented herein incorporates Appendix III constituent data collected from BAM downgradient wells MW-62, MW-63, MW-64, and MW-65 through June 2020.

To address an initial exceedance of the boron BTV at MW-62, the previous statistical evaluation for the CWTP recommended implementing the 1 of 3 resampling strategy to determine if the initial boron exceedance was statistically significant (Wood, 2020a). The June 2020 sampling event constitutes the first resampling event practicable in the 1 of 3 resampling strategy; results of the resampling are presented in Section 2.0.

The evaluation presented in Attachment A also includes the recalculation of the calcium BTV for the CWTP downgradient wells based on the conclusions and recommendations of an alternative source demonstration (ASD) completed in 2020 (Wood, 2020). The ASD recommended calculating two separate calcium BTVs using a grouped well approach; a new calcium BTV using data collected from background well MW-73 for interwell comparison to MW-62 and MW-63, and a new calcium BTV using data collected from background wells MW-71 and MW-72 for interwell comparison to MW-63 and MW-64 (Wood, 2020b).



2.0 STATISTICAL EVALUATION RESULTS

Attachment A presents the statistical evaluation and calcium BTV recalculations performed by Formation Environmental. The results of the evaluation are summarized as follows:

- There are currently no SSIs over BTVs for Appendix III constituents at the CWTP downgradient wells.
- An initial exceedance of 1.8 mg/L over the fluoride BTV of 1.6 mg/L was detected at MW-62; this exceedance triggers a 1 of 3 resampling strategy for this constituent and monitoring location.
- Boron was detected at 1.9 mg/L in June 2020 which is below the BTV of 2.0 mg/L at MW-62; this resampling result nullifies the initial exceedance of 2.1 mg/L identified in April 2020 pursuant to sampling conducted in December 2019.
- There is a statistically significant increasing trend for calcium at MW-63.

3.0 RECOMMENDATIONS

Based on the results of the statistical evaluation presented in Attachment A and pursuant to the CCR Rule, continuation of detection monitoring at a semiannual frequency for Appendix III constituents at the CWTP is warranted because there are currently no SSIs over Appendix III constituent BTVs. In accordance with the Statistical Data Analysis Workplan developed for the Site and the US EPA's Unified Guidance (Wood, 2018; US EPA 2009), a 1 of 3 resampling strategy for MW-62 should be implemented as soon as practicable to determine if the initial exceedance for fluoride is statistically significant. Wood also recommends trend testing after each monitoring event and updates to the statistical method selection and BTVs after 1-2 years of future sampling events.

4.0 REFERENCES

- Federal Register, 2018. *40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.*
- United States Environmental Protection Agency (U.S. EPA), 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance.* EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.
- Wood Environment & Infrastructure Solutions, Inc. (Wood), 2018. *Statistical Data Analysis Work Plan. Coal Combustion Residual Rule Groundwater Monitoring System Compliance. Cholla Power Plant. Navajo County, Arizona.* Prepared for Arizona Public Service. October 15, 2018.
- Wood, 2020a. *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the CWTP Appendix III Constituent Data Collected Through December 2019.* Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated April 13, 2020.
- Wood, 2020b. *Alternative Source Demonstration for Calcium at the CWTP.* Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated June 29, 2020.

ATTACHMENT A



Technical Memorandum

To: Maren Henley, PE
Dane Andersen, GIT
Wood Environment & Infrastructure Solutions, Inc.

From: Carla Landrum, PhD
Formation Environmental

Date: October 5, 2020

Subject: **CCR Groundwater Detection Monitoring
Statistical Evaluation of June 2020 & Preceding CWTP Data
Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico**

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents the ongoing statistical evaluation of detection monitoring (i.e., Appendix III constituent) groundwater data associated with the Combined Waste Treatment Pond (CWTP) unit located at the Arizona Public Service (APS) Four Corners Power Plant (FCPP) in Fruitland, New Mexico. This routine statistical evaluation is completed by Formation Environmental, LLC in accordance with the Statistical Data Analysis Work Plan for the Cholla Power Plant and the Coal Combustion Residuals (CCR) Rule (Federal Register, 2018; Wood Environment & Infrastructure Solutions, Inc. [Wood], 2020a).

In 2019 the CWTP underwent an Alternative Source Demonstration (ASD) in response to multiple declarations of statistically significant increases over respective Background Threshold Values (BTVs) for fluoride, pH, boron and calcium (Wood, 2019a; Wood, 2019b). The ASD concluded that the exceedances were not due to a release from the CWTP but were attributable to:

- The varying presence of fill materials at the compliance and background monitoring locations for fluoride;
- Surface-groundwater interactions for pH; and
- Spatial and temporal heterogeneity in the compliance and background well sample concentrations of boron and calcium.

In 2020 the CWTP underwent a second Alternative Source Demonstration (ASD) in response to the declaration of a statistically significant increase in calcium concentrations over its BTV (Wood, 2020b; Wood, 2020c). The 2020 ASD indicates there is reasonable uncertainty in identifying the CWTP as the source of the SSI declaration; rather, the ASD identifies spatial heterogeneity in groundwater conditions between monitoring locations as a likely source of the SSI declaration. To adequately address this heterogeneity, the 2020 ASD recommends updating the calcium BTV by using MW-73 to establish the BTV for MW-62 and MW-63 and MW-71 and MW-72 to establish the BTV for MW-64 and MW-65 (Wood, 2020b).

This Tech Memo documents the routine statistical evaluation of detection monitoring groundwater data collected through June 2020 at the CWTP and the calcium BTV re-calculation put forth in the 2020 ASD

(Wood, 2020b). The following sections present data inputs, statistical methods, results and recommendations for the subject analysis.

2.0 DATA INPUTS

The CWTP groundwater monitoring well network consists of three background monitoring wells (MW-71, MW-72, and MW-73) and four compliance (i.e., downgradient), monitoring wells (M-62, M-63, MW-64 and M-65). The period of evaluation for this CWTP Appendix III constituent statistical analysis ranges from November 2015 through June 2020 and includes the minimum of eight initial, or baseline, sampling rounds required by the Coal Combustion Residuals (CCR) Rule and five subsequent sampling rounds of detection monitoring that occur on a semi-annual frequency. Due principally to the CCR Rule requirement that a minimum of eight initial rounds of data be collected from the site prior to October 17, 2017, the frequency of sample collection prior to this date is short and variable (e.g., biweekly to quarterly sampling).

This data evaluation includes 20 to 23 sample results for boron, calcium, chloride, fluoride, sulfate, total dissolved solids (TDS), and pH at each compliance monitoring well. The first, second, third, fourth, fifth and sixth rounds of detection monitoring at the CWTP were conducted in November 2017, June 2018, November 2018, May 2019, December 2019 and June 2020, respectively; all Appendix III constituents were evaluated in collected samples during these monitoring events with the exception of chloride and sulfate in May 2019 due to the inadvertent exclusion of these analytes on the Chain of Custody in the field.

Appendix A contains the contents of the ProUCL data upload tables for the subject analysis. Data inputs for this statistical analysis were prepared, and provided by, Wood. The Appendix III analytes are listed by name or chemical symbol as column headers in the ProUCL data upload table. By ProUCL convention (United States Environmental Protection Agency [USEPA], 2015), each analyte has a corresponding data column (indicated with a "D_" prefix) that indicates if the analyte was detected or not at a concentration that exceeds the analytical reporting limit, where detectable concentrations are symbolized by a "1" and non-detectable concentrations are symbolized by a "0." The detection frequency is 100% for all compliance well sample data listed in Appendix A.

3.0 METHODS

The statistical methods and approach to complete the subject analysis are documented in the *Statistical Data Analysis Work Plan (SDAWP)* (Wood, 2020a).

Table 1 summarizes previously calculated interwell and intrawell BTVs (Wood 2018a, Wood, 2018b and Wood, 2018c) and the new calcium BTVs (Wood, 2019b; Wood, 2020b). Table 1 also identifies the type of resampling strategy in effect by constituent.

The statistical analysis consists of comparing the June 2020 sample concentrations to corresponding not-to-exceed threshold values in Table 1. If an exceedance exists, the statistical significance of this exceedance is assessed through the prescribed resampling strategy.

4.0 RESULTS

Table 2 summarizes: 1) which Appendix III constituents exhibit exceedances above their respective BTVs/intrawell UPL for each compliance well and 2) which constituents exhibit statistically significant ($p < 0.05$) temporal trends.

Exploratory Data Analysis (EDA) is a relevant precursor assessment of overall data adequacy for completing the subject analysis. Appendix B and Appendix C contain the raw ProUCL EDA outputs.

This statistical analysis results in the following:

Monitoring Well MW-62. There is an initial exceedance for fluoride for the June 2020 sampling event. The remaining Appendix III constituent concentrations are below their respective BTVs for the June 2020 sampling event. There are statistically significant ($p < 0.05$) decreasing trends for chloride and TDS at this monitoring location for sample data shown in Appendix A.

Monitoring Well MW-63. There are no Appendix III exceedances for the June 2020 sampling event for this well. There are statistically significant ($p < 0.05$) decreasing trends for chloride and pH, and a statistically significant ($p < 0.05$) increasing trend for calcium at this monitoring location for sample data shown in Appendix A.

Monitoring Well MW-64. There are no Appendix III exceedances for the June 2020 sampling event for this well. There are statistically significant ($p < 0.05$) decreasing trends for boron and pH at this monitoring location for sample data shown in Appendix A.

Monitoring Well MW-65. There are no Appendix III exceedances for the June 2020 sampling event for this well. There are statistically significant ($p < 0.05$) decreasing trends for chloride, boron, pH and TDS at this monitoring location for sample data shown in Appendix A.

Calcium BTV Updates: Table 1 documents the new parametric UPL BTVs for calcium, as recommended by the 2020 ASD (Wood, 2020b), to address spatial heterogeneity in groundwater calcium concentrations at the CWTP. The EDA outputs informing these updates are put forth in Appendix C.

5.0 CONCLUSIONS

This statistical analysis results in the following conclusions for the June 2020 CWTP detection monitoring event:

- There is insufficient evidence to declare statistically significant increases in Appendix III constituent concentrations over respective BTVs at this time (Table 1 and Table 2).
- Formation Environmental puts forth the following recommendations to Wood for completing future statistical evaluations:
 - The initial exceedance at MW-62 for fluoride triggers a 1 of 3 resampling procedure for this monitoring location. The resampling is put forth in accordance with the SDAWP (Wood, 2020a) and the Unified Guidance (US EPA, 2009) and is necessary to determine if the initial exceedance is statistically significant.

- Trend testing after each sampling round should continue to assess changes in temporal trend significance.
- Statistical method selection and background threshold values should be reassessed after 1-2 years of future sampling events and updated as appropriate.

6.0 REFERENCES

Federal Register, 2018. 40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.

United States Environmental Protection Agency (U.S. EPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance. EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.

U.S. EPA, 2015. ProUCL (Version 5.1.1) User Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations. EPA/600/R-07/041. Washington D.C. October 2015.

Wood, 2018a. Statistical Data Analysis Work Plan. Coal Combustion Residual Rule Groundwater Monitoring System Compliance, Four Corners Power Plant, Fruitland, New Mexico. Report prepared for Arizona Public Service. Report dated October 13, 2017 and updated October 15, 2018.

Wood, 2018b. Statistical Analysis of Initial Detection Monitoring Appendix III Constituent Data. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated January 12, 2018 and revised August 20, 2018.

Wood, 2018c. *CCR Groundwater Detection Monitoring Evaluation of June 2018 Data Collected from the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated October 15, 2018.

Wood, 2019a. *CCR Groundwater Detection Monitoring Evaluation of November 2018 Data Collected from the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated April 15, 2019.

Wood, 2019b. *Alternative Source Demonstration for Boron, Calcium, Fluoride and pH at the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated July 15, 2019.

Wood, 2019c. *CCR Groundwater Detection Monitoring Evaluation of May 2019 Data Collected from the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated, October 15, 2019.

Wood, 2020a. *Statistical Data Analysis Work Plan*. Coal Combustion Residual Rule Groundwater Monitoring System Compliance, Four Corners Power Plan, Fruitland, New Mexico. Prepared for Arizona Public Service. June 2020.

Wood, 2020b. *Alternative Source Demonstration for Calcium at the CWTP*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated July 12, 2020.

Wood, 2020c. *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the CWTP Appendix III Constituent Data Collected through December 2020*. Arizona Public Service Four Corners Power Plan – Fruitland, New Mexico. Technical Memorandum dated April 13, 2020.

ATTACHMENTS

Table 1 – Interwell and Intrawell BTVs for the Four Corners CWTP

Table 2 – CWTP Downgradient Sample Data Summary

Appendix A – ProUCL Data Upload Table

Appendix B – ProUCL EDA Output Files

Appendix C – ProUCL EDA for Calcium BTV Updates

TABLES

Table 1
Interwell and Intrawell BTVs for the Four Corners CWTP
Appendix III Statistical Analysis

Background Wells	Dates Corresponding to Data Used to Derive UPL	Constituent	Interwell (BTV Calculation Method)	Units	Resampling Strategy ¹	Reference
MW-71 and MW-72	3/5/2016-5/6/2019	Boron	0.69 (NP-UPL) ²	mg/L	1 of 3	Wood, 2019c
MW-73	2/2/2017-5/6/2019	Boron	2.0 (NP-UPL) ³	mg/L	1 of 3	Wood, 2019c
MW-71 and MW-72	3/5/2016-6/19/2020	Calcium	498 (P-UPL) ²	mg/L	1 of 2	New BTV
MW-73	3/5/2016-6/19/2020	Calcium	563 (P-UPL) ³	mg/L	1 of 2	New BTV
MW-71, MW-72, and MW-73	3/5/2016-10/13/2017	Chloride	710 (P-UPL)	mg/L	1 of 2	Wood, 2018b
MW-71, MW-72, and MW-73	3/5/2016-6/3/2018	pH (upper limit)	7.04 (P-UPL) ³	SU	1 of 2	Wood, 2018c
MW-71, MW-72, and MW-73	3/5/2016-6/3/2018	pH (lower limit)	6.33 (P-LPL)	SU	1 of 2	Wood, 2018c
MW-71, MW-72, and MW-73	3/5/2016-10/13/2017	Sulfate	13,000 (NP-UPL)	mg/L	1 of 3	Wood, 2018b
MW-71, MW-72, and MW-73	3/5/2016-10/13/2017	TDS	20,000 (NP-UPL)	mg/L	1 of 3	Wood, 2018b

Compliance Well	Dates Corresponding to Data Used to Derive UPL	Constituent	Intrawell UPL (BTV Calculation Method ¹)	Units	Resampling Strategy ²	Reference
MW-62	11/9/2015-10/13/2017	Fluoride	1.6 (NP-UPL)	mg/L	1 of 3	Wood, 2019c
MW-63	11/4/2015-10/13/2017	Fluoride	2.3 (P-UPL)	mg/L	1 of 3	Wood, 2019c
MW-64	11/5/2015-10/13/2017	Fluoride	1.5 (NP-UPL)	mg/L	1 of 3	Wood, 2019c
MW-64	11/5/2015-10/13/2017	pH	7.68 (P-UPL)	SU	1 of 2	Wood, 2019c
MW-64	11/5/2015-10/13/2017	pH	7.25 (P-LPL)	SU	1 of 2	Wood, 2019c
MW-65	11/5/2015-10/13/2017	Fluoride	2.0 (NP-UPL)	mg/L	1 of 3	Wood, 2019c
MW-65	11/5/2015-10/13/2017	pH	8.27 (NP-UPL)	SU	1 of 3	Wood, 2019c
MW-65	11/5/2015-10/13/2017	pH	6.96 (NP-LPL)	SU	1 of 3	Wood, 2019c

Notes:

BTV = background threshold value
 CWTP = Combined Waste Treatment Pond
 LPL = Lower Prediction Limit

mg/L = milligrams per liter
 NP = Non Parametric
 P = Parametric

SU = standard units
 UPL = Upper Prediction Limit

¹ A 1 of 2 resampling strategy is in place for parametric prediction limits. A 1 of 3 resampling strategy is in place for non-parametric prediction limits and the limit represents the maximum concentration value of the data set (i.e., maximum order statistic).

² Only applicable to MW-64 and MW-65

³ Only applicable to MW-62 and MW-63

Table 2
Four Corners CWTP Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
MW-62	FC-CCR-MW62-110915	11/9/2015	2.1	520	150	1.6	6.63	3600	6700
MW-62	FC-CCR-MW-62-042716	4/27/2016	2.0	530	150	1.6	6.77	3200	6100
MW-62	FC-CCR-MW62-616	6/5/2016	2.0	510	140	1.5	6.50	3300	5900
MW-62	FC-CCR-MW62-816	8/20/2016	2.3	530	120	1.5	7.40	3300	5800
MW-62	FC-CCR-MW62-916	9/12/2016	2.5	570	130	1.5	6.73	3300	2400
MW-62	FC-CCR-MW62-1016	10/19/2016	2.2	480	120	1.2	6.57	3300	6000
MW-62	FC-CCR-MW62-117	2/1/2017	2.1	510	110		6.68	3400	5600
MW-62	FC-CCR-MW62-41617	4/16/2017	1.9	500	120	1.2	6.64	3300	5900
MW-62	FC-CCR-MW62-5117	5/1/2017	1.9	520	110	3.3	6.64	3800	5800
MW-62	FC-CCR-MW62-52917	5/29/2017	1.9	570	120	1.2	6.50	3500	5500
MW-62	FC-CCR-MW62-62117	6/21/2017	1.9	520	120	1.4	6.54	3600	5700
MW-62	FC-CCR-MW62-72117	7/21/2017	2.1	540	99	1.5	6.69	3300	5400
MW-62	FC-CCR-MW62-8917	8/9/2017	2.2	540	110	1.4	6.41	3400	5400
MW-62	FC-CCR-MW62-81617	8/16/2017	2.1	590	110	1.6	6.36	3200	5400
MW-62	FC-CCR-MW62-9917	9/9/2017	2.3	570	120	1.5	6.41	3300	5500
MW-62	FC-CCR-MW62-101317	10/13/2017	2.2	520	130	1.5	6.46	3300	5600
MW-62	FC-CCR-MW62-113017	11/30/2017	2.3	570	130	1.4	6.43	3400	5900
MW-62	FC-CCR-MW62-4618	4/6/2018	2.1	520	--	--	6.70	--	--
MW-62	FC-CCR-MW-62-6318	6/3/2018	1.8	490	120	1.6	6.59	3500	5900
MW-62	FC-CCR-MW62-11218	11/2/2018	2.4	550	110	1.5	6.46	3300	5600
MW-62	FC-CCR-MW62-5719-01	5/7/2019	1.8	540	--	1.4	6.65	--	5800
MW-62	FC-CCR-MW62-120319	12/3/2019	2.1	530	--	1.5	6.37	--	5000
MW-62	FC-CCR-MW62-0620	6/19/2020	1.9	490	82	1.8	7	2800	4700
		Units:	mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
		BTV or IntraWell UPL ^{1,2} :	2.0	563	710	1.6	7.04/6.33	13,000	20,000
		Temporal Trend ³ :	None	None	Decreasing	None	None	None	Decreasing

Table 2
Four Corners CWTP Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
MW-63	FC-CCR-MW63-110415	11/4/2015	1.6	420	77	2.4	6.86	2800	4100
MW-63	FC-CCR-MW-63-042716	4/27/2016	1.3	500	100	2.0	6.88	2300	4300
MW-63	FC-CCR-MW63-616	6/5/2016	1.4	500	110	1.9	6.70	2500	4400
MW-63	FC-CCR-MW63-816	8/20/2016	1.9	530	98	1.9	6.92	2800	4700
MW-63	FC-CCR-MW63-916	9/12/2016	2.0	550	110	2.1	7.03	2800	4700
MW-63	FC-CCR-MW63-1016	10/19/2016	1.7	470	100	1.8	6.82	2700	4500
MW-63	FC-CCR-MW63-117	1/31/2017	1.4	510	95	2.0	6.67	2600	4200
MW-63	FC-CCR-MW63-41717	4/17/2017	1.4	520	98	1.6	6.78	2600	4400
MW-63	FC-CCR-MW63-5217	5/2/2017	1.4	510	92	2.5	6.79	4300	4300
MW-63	FC-CCR-MW63-52817	5/28/2017	1.5	550	98	1.6	6.80	2700	4300
MW-63	FC-CCR-MW63-62117	6/21/2017	1.6	520	100	1.9	6.78	2900	4400
MW-63	FC-CCR-MW63-72117	7/21/2017	1.8	530	98	2.0	6.87	2900	4600
MW-63	FC-CCR-MW63-8917	8/9/2017	1.9	530	97	1.9	6.56	2900	4500
MW-63	FC-CCR-MW63-81617	8/16/2017	1.8	580	100	2.1	6.53	2700	4500
MW-63	FC-CCR-MW63-9917	9/9/2017	2.0	540	97	2.0	6.83	2700	4300
MW-63	FC-CCR-MW63-101317	10/13/2017	1.8	500	90	2.0	6.69	2700	4300
MW-63	FC-CCR-MW63-113017	11/30/2017	1.7	560	91	1.8	6.72	2700	4500
MW-63	FC-CCR-MW63-4618	4/6/2018	1.3	530	--	--	6.75	--	--
MW-63	FC-CCR-MW-63-6318	6/3/2018	1.4	510	90	1.7	6.76	2600	4500
MW-63	FC-CCR-MW63-112818	11/2/2018	1.9	550	88	1.9	6.66	2800	4300
MW-63	FC-CCR-MW63-5719-02	5/7/2019	1.3	540	--	1.6	6.63	--	4400
MW-63	FC-CCR-MW63-120319	12/3/2019	1.6	550	--	1.8	6.58	--	4300
MW-63	FC-CCR-MW63-0620	06/19/2020	1.5	540	77	2.1	6.53	2400	4200
<i>Units:</i>			<i>mg/L</i>	<i>mg/L</i>	<i>mg/L</i>	<i>mg/L</i>	<i>SU</i>	<i>mg/L</i>	<i>mg/L</i>
<i>BTV or Intrawell UPL ^{1,2}:</i>			2.0	563	710	2.3	7.04/6.33	13,000	20,000
<i>Temporal Trend ³:</i>			<i>None</i>	<i>Increasing</i>	<i>Decreasing</i>	<i>None</i>	<i>Decreasing</i>	<i>None</i>	<i>None</i>

Table 2
Four Corners CWTP Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
MW-64	FC-CCR-MW64-110515	11/5/2015	0.6	87	49	1.5	7.64	320	780
MW-64	FC-CCR-MW-64-042716	4/27/2016	0.62	90	53	1.4	7.50	340	810
MW-64	FC-CCR-MW64-616	6/5/2016	0.58	86	52	1.4	7.29	350	800
MW-64	FC-CCR-MW64-816	8/20/2016	0.65	89	46	1.3	7.68	330	790
MW-64	FC-CCR-MW64-916	9/12/2016	0.67	90	52	1.5	7.54	320	790
MW-64	FC-CCR-MW64-1016	10/19/2016	0.64	83	53	1.5	7.52	330	790
MW-64	FC-CCR-MW64-117	1/31/2017	0.61	85	48	1.4	7.38	340	800
MW-64	FC-CCR-MW64-41717	4/17/2017	0.58	85	51	1.4	7.53	870	800
MW-64	FC-CCR-MW64-5217	5/2/2017	0.55	86	44	1.3	7.47	340	780
MW-64	FC-CCR-MW64-52817	5/28/2017	0.55	93	51	1.5	7.45	380	780
MW-64	FC-CCR-MW64-62117	6/21/2017	0.55	86	51	1.4	7.50	390	770
MW-64	FC-CCR-MW64-72117	7/21/2017	0.59	88	52	1.5	7.61	370	790
MW-64	FC-CCR-MW64-8917	8/9/2017	0.61	89	52	1.5	7.31	380	890
MW-64	FC-CCR-MW64-81617	8/16/2017	0.58	89	53	1.5	7.29	360	790
MW-64	FC-CCR-MW64-9917	9/9/2017	0.67	90	53	1.5	7.36	350	810
MW-64	FC-CCR-MW64-101317	10/13/2017	0.62	82	52	1.4	7.42	360	790
MW-64	FC-CCR-MW64-113017	11/30/2017	0.64	90	52	1.4	7.37	350	780
MW-64	FC-CCR-MW-64-6318	6/3/2018	0.48	85	50	1.4	7.54	390	800
MW-64	FC-CCR-MW64-11218	11/2/2018	0.64	88	50	1.4	7.43	350	760
MW-64	FC-CCR-MW64-5719-03	5/7/2019	0.49	89	--	1.4	7.41	--	790
MW-64	FC-CCR-MW64-120319	12/3/2019	0.56	82	--	1.5	7.29	--	720
MW-64	FC-CCR-MW64-0620	06/19/2020	0.47	77	49	1.3	7.22	300	790
		Units:	mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
		BTV or IntraWell UPL ^{1,2} :	0.7	498	710	1.5	7.68/7.25	13,000	20,000
		Temporal Trend ³ :	Decreasing	None	None	None	Decreasing	None	None

Table 2
Four Corners CWTP Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
MW-65	FC-CCR-MW65-110515	11/5/2015	0.86	100	52	2.0	7.50	440	1000
MW-65	FC-CCR-MW-65-042716	4/27/2016	0.76	110	55	1.8	7.29	460	1100
MW-65	FC-CCR-MW65-616	6/5/2016	0.75	100	54	2.0	7.08	460	1100
MW-65	FC-CCR-MW65-816	8/20/2016	0.79	100	52	1.7	8.27	450	1000
MW-65	FC-CCR-MW65-916	9/12/2016	0.83	110	54	2.0	7.52	480	1100
MW-65	FC-CCR-MW65-1016	10/19/2016	0.77	95	54	2.0	7.36	450	1000
MW-65	FC-CCR-MW65-117	2/1/2017	0.76	96	51	1.8	7.35	410	970
MW-65	FC-CCR-MW65-41617	4/16/2017	0.83	120	60	1.8	7.21	490	1300
MW-65	FC-CCR-MW65-5117	5/1/2017	0.79	110	58	1.6	7.24	500	1100
MW-65	FC-CCR-MW65-52917	5/29/2017	0.98	160	77	1.8	7.10	790	1500
MW-65	FC-CCR-MW65-62117	6/21/2017	0.92	140	68	1.9	7.06	710	1400
MW-65	FC-CCR-MW65-72117	7/21/2017	0.76	110	53	2.0	7.31	470	1000
MW-65	FC-CCR-MW65-8917	8/9/2017	0.76	110	53	2.0	7.15	500	1000
MW-65	FC-CCR-MW65-81617	8/16/2017	0.75	110	53	2.0	6.96	500	1000
MW-65	FC-CCR-MW65-9917	9/9/2017	0.80	110	53	2.0	7.04	450	1000
MW-65	FC-CCR-MW65-101317	10/13/2017	0.75	92	52	1.9	7.13	400	960
MW-65	FC-CCR-MW65-113017	11/30/2017	0.79	100	53	2.0	7.21	410	990
MW-65	FC-CCR-MW-65-6318	6/3/2018	0.62	98	52	1.9	7.22	480	1000
MW-65	FC-CCR-MW65-11218	11/2/2018	0.77	100	51	1.9	7.18	420	940
MW-65	FC-CCR-MW65-5719-05	5/7/2019	0.60	100	--	1.7	7.13	--	970
MW-65	FC-CCR-MW65-120319	12/3/2019	0.65	89	--	1.9	7.10	--	850
MW-65	FC-CCR-MW65-0620	06/19/2020	0.57	88	48	1.7	7.18	380	940
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or IntraWell UPL ^{1,2} :			0.7	498	710	2	8.27/6.96	13,000	20,000
Temporal Trend ³ :			Decreasing	None	Decreasing	None	Decreasing	None	Decreasing

Table 2
Four Corners CWTP Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS

Notes:

BTV = background threshold value

mg/L = milligrams per liter

TDS = total dissolved solids

UPL = upper prediction limit

SU = standard units

<i>0.75</i>	Value from baseline monitoring period (November 2015 thru October 2017)
	Reported value in current sampling round (June 2020) exceeds the BTV or UPL
	Statistically significant increasing trend present
	Statistically significant decreasing trend present
None	Insufficient evidence to identify a trend

¹ New values calculated for this sampling round presented in bolded red text; see Table 1 for relevant BTV and Intrawell UPL information

² For pH, values presented refer to the Upper Prediction Limit/Lower Prediction Limit, respectively

³ Temporal trends evaluated with Mann-Kendall trend tests ($p < 0.05$); tied values (sequential sample concentrations)

APPENDIX A

PROUCL DATA UPLOAD TABLE

Appendix A
ProUCL Data

Well Name	Field Sample ID	Sample Date	Boron	D_Boron	Calcium	D_Calcium	Chloride	D_Chloride	Fluoride	D_Fluoride	TDS	D_TDS	Sulfate	D_Sulfate	pH	D_pH
MW-62	FC-CCR-MW62-110915	11/9/2015 0:00	2.1	1	520	1	150	1	1.6	1	3600	1	6700	1	6.63	1
MW-62	FC-CCR-MW-62-042716	4/27/2016 0:00	2	1	530	1	150	1	1.6	1	3200	1	6100	1	6.77	1
MW-62	FC-CCR-MW62-616	6/5/2016 0:00	2	1	510	1	140	1	1.5	1	3300	1	5900	1	6.50	1
MW-62	FC-CCR-MW62-816	8/20/2016 0:00	2.3	1	530	1	120	1	1.5	1	3300	1	5800	1	7.40	1
MW-62	FC-CCR-MW62-916	9/12/2016 0:00	2.5	1	570	1	130	1	1.5	1	3300	1	2400	1	6.73	1
MW-62	FC-CCR-MW62-1016	10/19/2016 0:00	2.2	1	480	1	120	1	1.2	1	3300	1	6000	1	6.57	1
MW-62	FC-CCR-MW62-117	2/1/2017 0:00	2.1	1	510	1	110	1	1.4	1	3400	1	5600	1	6.68	1
MW-62	FC-CCR-MW62-41617	4/16/2017 0:00	1.9	1	500	1	120	1	1.2	1	3300	1	5900	1	6.64	1
MW-62	FC-CCR-MW62-5117	5/1/2017 0:00	1.9	1	520	1	110	1	3.3	1	3800	1	5800	1	6.64	1
MW-62	FC-CCR-MW62-52917	5/29/2017 0:00	1.9	1	570	1	120	1	1.2	1	3500	1	5500	1	6.50	1
MW-62	FC-CCR-MW62-62117	6/21/2017 0:00	1.9	1	520	1	120	1	1.4	1	3600	1	5700	1	6.54	1
MW-62	FC-CCR-MW62-72117	7/21/2017 0:00	2.1	1	540	1	99	1	1.5	1	3300	1	5400	1	6.69	1
MW-62	FC-CCR-MW62-8917	8/9/2017 0:00	2.2	1	540	1	110	1	1.4	1	3400	1	5400	1	6.41	1
MW-62	FC-CCR-MW62-81617	8/16/2017 0:00	2.1	1	590	1	110	1	1.6	1	3200	1	5400	1	6.36	1
MW-62	FC-CCR-MW62-9917	9/9/2017 0:00	2.3	1	570	1	120	1	1.5	1	3300	1	5500	1	6.41	1
MW-62	FC-CCR-MW62-101317	10/13/2017 0:00	2.2	1	520	1	130	1	1.5	1	3300	1	5600	1	6.46	1
MW-62	FC-CCR-MW62-113017	11/30/2017 0:00	2.3	1	570	1	130	1	1.4	1	3400	1	5900	1	6.43	1
MW-62	FC-CCR-MW62-4618	4/6/2018 0:00	2.1	1	520	1	--	--	--	--	--	--	--	--	6.70	1
MW-62	FC-CCR-MW-62-6318	6/3/2018 0:00	1.8	1	490	1	120	1	1.6	1	3500	1	5900	1	6.59	1
MW-62	FC-CCR-MW62-11218	11/2/2018 0:00	2.4	1	550	1	110	1	1.5	1	3300	1	5600	1	6.46	1
MW-62	FC-CCR-MW62-5719-01	5/7/2019 0:00	1.8	1	540	1	--	--	1.4	1	--	--	5800	1	6.65	1
MW-62	FC-CCR-MW62-120319	12/03/2019	2.1	1	530	1	NA	0	1.5	1	NA	0	5000	1	6.37	1
MW-62	FC-CCR-MW62-0620	06/19/2020	1.9	1	490	1	82	1	1.8	1	2800	1	4700	1	6.90	1
MW-63	FC-CCR-MW63-110415	11/4/2015 0:00	1.6	1	420	1	77	1	2.4	1	2800	1	4100	1	6.86	1
MW-63	FC-CCR-MW-63-042716	4/27/2016 0:00	1.3	1	500	1	100	1	2	1	2300	1	4300	1	6.88	1
MW-63	FC-CCR-MW63-616	6/5/2016 0:00	1.4	1	500	1	110	1	1.9	1	2500	1	4400	1	6.70	1
MW-63	FC-CCR-MW63-816	8/20/2016 0:00	1.9	1	530	1	98	1	1.9	1	2800	1	4700	1	6.92	1
MW-63	FC-CCR-MW63-916	9/12/2016 0:00	2	1	550	1	110	1	2.1	1	2800	1	4700	1	7.03	1
MW-63	FC-CCR-MW63-1016	10/19/2016 0:00	1.7	1	470	1	100	1	1.8	1	2700	1	4500	1	6.82	1
MW-63	FC-CCR-MW63-117	1/31/2017 0:00	1.4	1	510	1	95	1	2	1	2600	1	4200	1	6.67	1
MW-63	FC-CCR-MW63-41717	4/17/2017 0:00	1.4	1	520	1	98	1	1.6	1	2600	1	4400	1	6.78	1
MW-63	FC-CCR-MW63-5217	5/2/2017 0:00	1.4	1	510	1	92	1	2.5	1	4300	1	4300	1	6.79	1
MW-63	FC-CCR-MW63-52817	5/28/2017 0:00	1.5	1	550	1	98	1	1.6	1	2700	1	4300	1	6.80	1
MW-63	FC-CCR-MW63-62117	6/21/2017 0:00	1.6	1	520	1	100	1	1.9	1	2900	1	4400	1	6.78	1
MW-63	FC-CCR-MW63-72117	7/21/2017 0:00	1.8	1	530	1	98	1	2	1	2900	1	4600	1	6.87	1
MW-63	FC-CCR-MW63-8917	8/9/2017 0:00	1.9	1	530	1	97	1	1.9	1	2900	1	4500	1	6.56	1
MW-63	FC-CCR-MW63-81617	8/16/2017 0:00	1.8	1	580	1	100	1	2.1	1	2700	1	4500	1	6.53	1
MW-63	FC-CCR-MW63-9917	9/9/2017 0:00	2	1	540	1	97	1	2	1	2700	1	4300	1	6.83	1
MW-63	FC-CCR-MW63-101317	10/13/2017 0:00	1.8	1	500	1	90	1	2	1	2700	1	4300	1	6.69	1
MW-63	FC-CCR-MW63-113017	11/30/2017 0:00	1.7	1	560	1	91	1	1.8	1	2700	1	4500	1	6.72	1
MW-63	FC-CCR-MW63-4618	4/6/2018 0:00	1.3	1	530	1	--	--	--	--	--	--	--	--	6.75	1
MW-63	FC-CCR-MW-63-6318	6/3/2018 0:00	1.4	1	510	1	90	1	1.7	1	2600	1	4500	1	6.76	1
MW-63	FC-CCR-MW63-112818	11/2/2018 0:00	1.9	1	550	1	88	1	1.9	1	2800	1	4300	1	6.66	1
MW-63	FC-CCR-MW63-5719-02	5/7/2019 0:00	1.3	1	540	1	--	--	1.6	1	--	--	4400	1	6.63	1
MW-63	FC-CCR-MW63-120319	12/03/2019	1.5	1	550	1	NA	0	1.8	1	NA	0	4300	1	6.58	1
MW-63	FC-CCR-MW63-0620	06/19/2020	1.5	1	540	1	77	1	2.1	1	2400	1	4200	1	6.53	1
MW-64	FC-CCR-MW64-110515	11/5/2015 0:00	0.64	1	87	1	49	1	1.5	1	320	1	780	1	7.64	1
MW-64	FC-CCR-MW-64-042716	4/27/2016 0:00	0.62	1	90	1	53	1	1.4	1	340	1	810	1	7.50	1
MW-64	FC-CCR-MW64-616	6/5/2016 0:00	0.58	1	86	1	52	1	1.4	1	350	1	800	1	7.29	1
MW-64	FC-CCR-MW64-816	8/20/2016 0:00	0.65	1	89	1	46	1	1.3	1	330	1	790	1	7.68	1
MW-64	FC-CCR-MW64-916	9/12/2016 0:00	0.67	1	90	1	52	1	1.5	1	320	1	790	1	7.54	1
MW-64	FC-CCR-MW64-1016	10/19/2016 0:00	0.64	1	83	1	53	1	1.5	1	330	1	790	1	7.52	1

Appendix A
ProUCL Data

Well Name	Field Sample ID	Sample Date	Boron	D_Boron	Calcium	D_Calcium	Chloride	D_Chloride	Fluoride	D_Fluoride	pH	D_pH	Sulfate	D_Sulfate	TDS	D_TDS
MW-64	FC-CCR-MW64-117	1/31/2017 0:00	0.61	1	85	1	48	1	1.4	1	340	1	800	1	7.38	1
MW-64	FC-CCR-MW64-41717	4/17/2017 0:00	0.58	1	85	1	51	1	1.4	1	870	1	800	1	7.53	1
MW-64	FC-CCR-MW64-5217	5/2/2017 0:00	0.55	1	86	1	44	1	1.3	1	340	1	780	1	7.47	1
MW-64	FC-CCR-MW64-52817	5/28/2017 0:00	0.55	1	93	1	51	1	1.5	1	380	1	780	1	7.45	1
MW-64	FC-CCR-MW64-62117	6/21/2017 0:00	0.55	1	86	1	51	1	1.4	1	390	1	770	1	7.50	1
MW-64	FC-CCR-MW64-72117	7/21/2017 0:00	0.59	1	88	1	52	1	1.5	1	370	1	790	1	7.61	1
MW-64	FC-CCR-MW64-8917	8/9/2017 0:00	0.61	1	89	1	52	1	1.5	1	380	1	890	1	7.31	1
MW-64	FC-CCR-MW64-81617	8/16/2017 0:00	0.58	1	89	1	53	1	1.5	1	360	1	790	1	7.29	1
MW-64	FC-CCR-MW64-9917	9/9/2017 0:00	0.67	1	90	1	53	1	1.5	1	350	1	810	1	7.36	1
MW-64	FC-CCR-MW64-101317	10/13/2017 0:00	0.62	1	82	1	52	1	1.4	1	360	1	790	1	7.42	1
MW-64	FC-CCR-MW64-113017	11/30/2017 0:00	0.64	1	90	1	52	1	1.4	1	350	1	780	1	7.37	1
MW-64	FC-CCR-MW-64-6318	6/3/2018 0:00	0.48	1	85	1	50	1	1.4	1	390	1	800	1	7.54	1
MW-64	FC-CCR-MW64-11218	11/2/2018 0:00	0.64	1	88	1	50	1	1.4	1	350	1	760	1	7.43	1
MW-64	FC-CCR-MW64-5719-03	5/7/2019 0:00	0.49	1	89	1	--	--	1.4	1	--	--	790	1	7.41	1
MW-64	FC-CCR-MW64-120319	12/03/2019	0.56	1	82	1	NA	0	1.5	1	NA	0	720	1	7.29	1
MW-64	FC-CCR-MW64-0620	06/19/2020	0.47	1	77	1	49	1	1.3	1	300	1	790	1	7.22	1
MW-65	FC-CCR-MW65-110515	11/5/2015 0:00	0.86	1	100	1	52	1	2	1	440	1	1000	1	7.50	1
MW-65	FC-CCR-MW-65-042716	4/27/2016 0:00	0.76	1	110	1	55	1	1.8	1	460	1	1100	1	7.29	1
MW-65	FC-CCR-MW65-616	6/5/2016 0:00	0.75	1	100	1	54	1	2	1	460	1	1100	1	7.08	1
MW-65	FC-CCR-MW65-816	8/20/2016 0:00	0.79	1	100	1	52	1	1.7	1	450	1	1000	1	8.27	1
MW-65	FC-CCR-MW65-916	9/12/2016 0:00	0.83	1	110	1	54	1	2	1	480	1	1100	1	7.52	1
MW-65	FC-CCR-MW65-1016	10/19/2016 0:00	0.77	1	95	1	54	1	2	1	450	1	1000	1	7.36	1
MW-65	FC-CCR-MW65-117	2/1/2017 0:00	0.76	1	96	1	51	1	1.8	1	410	1	970	1	7.35	1
MW-65	FC-CCR-MW65-41617	4/16/2017 0:00	0.83	1	120	1	60	1	1.8	1	490	1	1300	1	7.21	1
MW-65	FC-CCR-MW65-5117	5/1/2017 0:00	0.79	1	110	1	58	1	1.6	1	500	1	1100	1	7.24	1
MW-65	FC-CCR-MW65-52917	5/29/2017 0:00	0.98	1	160	1	77	1	1.8	1	790	1	1500	1	7.10	1
MW-65	FC-CCR-MW65-62117	6/21/2017 0:00	0.92	1	140	1	68	1	1.9	1	710	1	1400	1	7.06	1
MW-65	FC-CCR-MW65-72117	7/21/2017 0:00	0.76	1	110	1	53	1	2	1	470	1	1000	1	7.31	1
MW-65	FC-CCR-MW65-8917	8/9/2017 0:00	0.76	1	110	1	53	1	2	1	500	1	1000	1	7.15	1
MW-65	FC-CCR-MW65-81617	8/16/2017 0:00	0.75	1	110	1	53	1	2	1	500	1	1000	1	6.96	1
MW-65	FC-CCR-MW65-9917	9/9/2017 0:00	0.8	1	110	1	53	1	2	1	450	1	1000	1	7.04	1
MW-65	FC-CCR-MW65-101317	10/13/2017 0:00	0.75	1	92	1	52	1	1.9	1	400	1	960	1	7.13	1
MW-65	FC-CCR-MW65-113017	11/30/2017 0:00	0.79	1	100	1	53	1	2	1	410	1	990	1	7.21	1
MW-65	FC-CCR-MW-65-6318	6/3/2018 0:00	0.62	1	98	1	52	1	1.9	1	480	1	1000	1	7.22	1
MW-65	FC-CCR-MW65-11218	11/2/2018 0:00	0.77	1	100	1	51	1	1.9	1	420	1	940	1	7.18	1
MW-65	FC-CCR-MW65-5719-05	5/7/2019 0:00	0.6	1	100	1	--	--	1.7	1	--	--	970	1	7.13	1
MW-65	FC-CCR-MW65-120319	12/03/2019	0.65	1	89	1	NA	0	1.9	1	NA	0	850	1	7.10	1
MW-65	FC-CCR-MW65-0620	06/19/2020	0.57	1	88	1	48	1	1.7	1	380	1	940	1	7.18	1
MW-71	FC-CCR-MW-71-030516	3/5/2016 0:00	0.44	1	450	1	660	1	0.05	0	8500	1	13000	1	7.73	1
MW-71	FC-CCR-MW-71-042616	4/26/2016 0:00	0.69	1	470	1	670	1	2	0	13000	1	21000	1	6.58	1
MW-71	FC-CCR-MW71-616	6/6/2016 0:00	0.7	1	460	1	750	1	0.4	0	13000	1	20000	1	6.47	1
MW-71	FC-CCR-MW71-816	8/21/2016 0:00	0.56	1	450	1	590	1	0.8	0	8400	1	14000	1	7.04	1
MW-71	FC-CCR-MW71-916	9/12/2016 0:00	0.58	1	460	1	570	1	0.4	0	9300	1	16000	1	6.86	1
MW-71	FC-CCR-MW71-1016	10/20/2016 0:00	0.55	1	410	1	580	1	0.4	0	9100	1	15000	1	6.90	1
MW-71	FC-CCR-MW71-117	2/2/2017 0:00	0.62	1	440	1	610	1	0.4	0	14000	1	17000	1	6.64	1
MW-71	FC-CCR-MW71-41717	4/17/2017 0:00	0.52	1	400	1	550	1	2	0	9400	1	15000	1	6.81	1
MW-71	FC-CCR-MW71-5217	5/2/2017 0:00	0.58	1	450	1	560	1	2	0	11000	1	15000	1	6.86	1
MW-71	FC-CCR-MW71-52917	5/29/2017 0:00	0.58	1	460	1	580	1	2	0	9900	1	14000	1	6.76	1
MW-71	FC-CCR-MW71-62217	6/22/2017 0:00	0.6	1	460	1	620	1	2	0	4600	1	17000	1	6.79	1
MW-71	FC-CCR-MW71-72117	7/21/2017 0:00	0.55	1	450	1	590	1	2	0	10000	1	15000	1	7.00	1
MW-71	FC-CCR-MW71-81017	8/10/2017 0:00	0.55	1	450	1	560	1	2	0	10000	1	15000	1	6.59	1

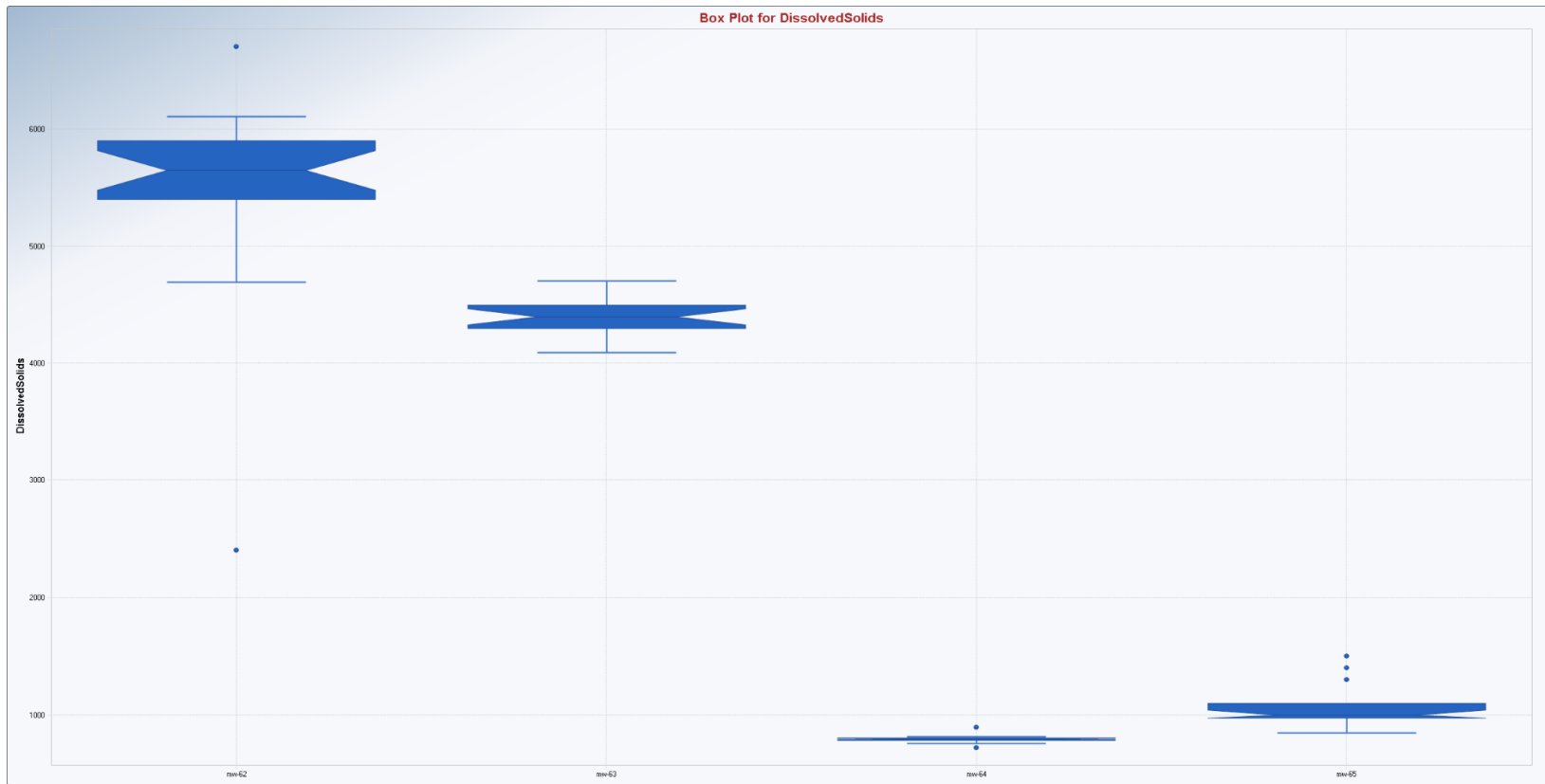
Appendix A
ProUCL Data

Well Name	Field Sample ID	Sample Date	Boron	D_Boron	Calcium	D_Calcium	Chloride	D_Chloride	Fluoride	D_Fluoride	pH	D_pH	Sulfate	D_Sulfate	TDS	D_TDS
MW-71	FC-CCR-MW71-81717	8/17/2017 0:00	0.56	1	480	1	570	1	2	0	9500	1	15000	1	6.62	1
MW-71	FC-CCR-MW71-91117	9/11/2017 0:00	0.55	1	470	1	570	1	2	0	9900	1	15000	1	6.56	1
MW-71	FC-CCR-MW71-101317	10/13/2017 0:00	0.54	1	420	1	570	1	2	0	10000	1	15000	1	6.79	1
MW-71	FC-CCR-MW71-113017	11/30/2017 0:00	0.56	1	490	1	540	1	2	0	10000	1	15000	1	6.71	1
MW-71	FC-CCR-MW-71-6218	6/2/2018 0:00	0.55	1	420	1	520	1	0.8	0	10000	1	15000	1	6.85	1
MW-71	FC-CCR-MW71-11318	11/3/2018 0:00	0.56	1	470	1	520	1	0.8	0	11000	1	16000	1	6.81	1
MW-71	FC-CCR-MW71-031819	3/18/2019 0:00	--	--	--	--	--	--	0.8	0	--	--	--	--	6.68	1
MW-71	FC-CCR-MW71-5719	5/6/2019 0:00	0.5	1	400	1	--	--	0.8	0	--	--	16000	1	6.66	1
MW-71	FC-CCR-MW71-120219	12/02/2019	0.50	1	440	1	500	1	0.8	0	10000	1	16000	1	6.66	1
MW-71	FC-CCR-MW71-0620	06/20/2020	0.59	1	450	1	480	1	0.8	0	9900	1	15000	1	6.71	1
MW-72	FC-CCR-MW72-030716	3/7/2016 0:00	0.16	1	480	1	490	1	0.05	0	12000	1	17000	1	7.71	1
MW-72	FC-CCR-MW-72-042616	4/26/2016 0:00	0.22	1	470	1	430	1	2	0	11000	1	19000	1	6.87	1
MW-72	FC-CCR-MW72-616	6/6/2016 0:00	0.25	1	570	1	530	1	0.4	0	4500	1	9500	1	6.56	1
MW-72	FC-CCR-MW72-816	8/21/2016 0:00	0.23	1	450	1	440	1	0.4	0	10000	1	17000	1	6.72	1
MW-72	FC-CCR-MW72-916	9/13/2016 0:00	0.24	1	470	1	450	1	0.4	0	10000	1	17000	1	6.17	1
MW-72	FC-CCR-MW72-1016	10/20/2016 0:00	0.23	1	400	1	480	1	0.4	0	11000	1	17000	1	6.84	1
MW-72	FC-CCR-MW72-117	2/2/2017 0:00	0.23	1	420	1	430	1	0.4	0	11000	1	16000	1	6.63	1
MW-72	FC-CCR-MW72-41717	4/17/2017 0:00	0.2	1	440	1	450	1	2	0	610	1	17000	1	6.73	1
MW-72	FC-CCR-MW72-5217	5/2/2017 0:00	0.25	1	430	1	450	1	2	0	11000	1	16000	1	6.83	1
MW-72	FC-CCR-MW72-52917	5/29/2017 0:00	0.25	1	470	1	460	1	2	0	11000	1	15000	1	6.68	1
MW-72	FC-CCR-MW72-62217	6/22/2017 0:00	0.23	1	450	1	450	1	2	0	11000	1	17000	1	6.65	1
MW-72	FC-CCR-MW72-72117	7/21/2017 0:00	0.23	1	450	1	460	1	2	0	11000	1	17000	1	6.93	1
MW-72	FC-CCR-MW72-81017	8/10/2017 0:00	0.21	1	450	1	460	1	2	0	11000	1	17000	1	6.47	1
MW-72	FC-CCR-MW72-81717	8/17/2017 0:00	0.26	1	490	1	450	1	2	0	11000	1	17000	1	6.18	1
MW-72	FC-CCR-MW72-91017	9/10/2017 0:00	0.21	1	470	1	460	1	2	0	11000	1	17000	1	6.61	1
MW-72	FC-CCR-MW72-101317	10/13/2017 0:00	0.22	1	430	1	450	1	2	0	11000	1	16000	1	6.65	1
MW-72	FC-CCR-MW72-113017	11/30/2017 0:00	0.22	1	500	1	450	1	2	0	10000	1	16000	1	6.63	1
MW-72	FC-CCR-MW-72-6218	6/2/2018 0:00	0.21	1	410	1	450	1	0.8	0	11000	1	16000	1	6.75	1
MW-72	FC-CCR-MW72-11318	11/3/2018 0:00	0.22	1	470	1	450	1	0.8	0	11000	1	16000	1	6.75	1
MW-72	FC-CCR-MW72-031719	3/17/2019 0:00	--	--	--	--	--	--	0.8	0	--	--	--	--	6.68	1
MW-72	FC-CCR-MW72-5719	5/6/2019 0:00	0.22	1	400	1	--	--	0.8	0	--	--	16000	1	6.85	1
MW-72	FC-CCR-MW72-120219	12/02/2019	0.19	1	430	1	430	1	0.8	0	11000	1	16000	1	6.62	1
MW-72	FC-CCR-MW72-0620	06/19/2020	0.23	1	440	1	400	1	0.8	0	11000	1	16000	1	6.65	1
MW-73	FC-CCR-MW73-117	2/2/2017 0:00	1.6	1	480	1	380	1	0.4	0	5400	1	8800	1	6.65	1
MW-73	FC-CCR-MW73-41817	4/18/2017 0:00	1.6	1	450	1	340	1	0.8	0	5700	1	9200	1	6.70	1
MW-73	FC-CCR-MW73-5217	5/2/2017 0:00	1.6	1	470	1	570	1	0.8	0	6900	1	11000	1	6.70	1
MW-73	FC-CCR-MW73-52917	5/29/2017 0:00	1.8	1	510	1	290	1	0.8	0	4300	1	6100	1	6.70	1
MW-73	FC-CCR-MW73-62217	6/22/2017 0:00	1.6	1	490	1	450	1	0.8	0	6700	1	11000	1	6.74	1
MW-73	FC-CCR-MW73-72217	7/22/2017 0:00	1.6	1	490	1	520	1	0.8	0	8000	1	12000	1	6.83	1
MW-73	FC-CCR-MW73-81017	8/10/2017 0:00	1.7	1	500	1	540	1	0.8	0	7700	1	12000	1	6.45	1
MW-73	FC-CCR-MW73-81717	8/17/2017 0:00	1.7	1	540	1	550	1	0.8	0	7600	1	11000	1	6.50	1
MW-73	FC-CCR-MW73-91017	9/10/2017 0:00	1.9	1	520	1	470	1	0.8	0	6000	1	9900	1	6.62	1
MW-73	FC-CCR-MW73-101217	10/12/2017 0:00	2	1	510	1	310	1	0.8	0	3900	1	6600	1	6.64	1
MW-73	FC-CCR-MW73-113017	11/30/2017 0:00	1.8	1	550	1	420	1	0.8	0	5600	1	8900	1	6.61	1
MW-73	FC-CCR-MW-73-6218	6/2/2018 0:00	1.6	1	460	1	550	1	0.8	0	7100	1	12000	1	6.67	1
MW-73	FC-CCR-MW73-11318	11/3/2018 0:00	1.7	1	480	1	660	1	0.8	0	7500	1	12000	1	6.64	1
MW-73	FC-CCR-MW73-031819	3/18/2019 0:00	--	--	--	--	--	--	0.8	0	--	--	--	--	6.95	1
MW-73	FC-CCR-MW73-5619	5/6/2019 0:00	1.6	1	420	1	--	--	0.8	0	--	--	13000	1	6.51	1
MW-73	FC-CCR-MW73-120219	12/02/2019	1.6	1	460	1	520	1	0.8	0	7100	1	11000	1	6.49	1
MW-73	FC-CCR-MW73-0620	06/20/2020	1.7	1	450	1	520	1	0.8	0	7200	1	12000	1	6.53	1

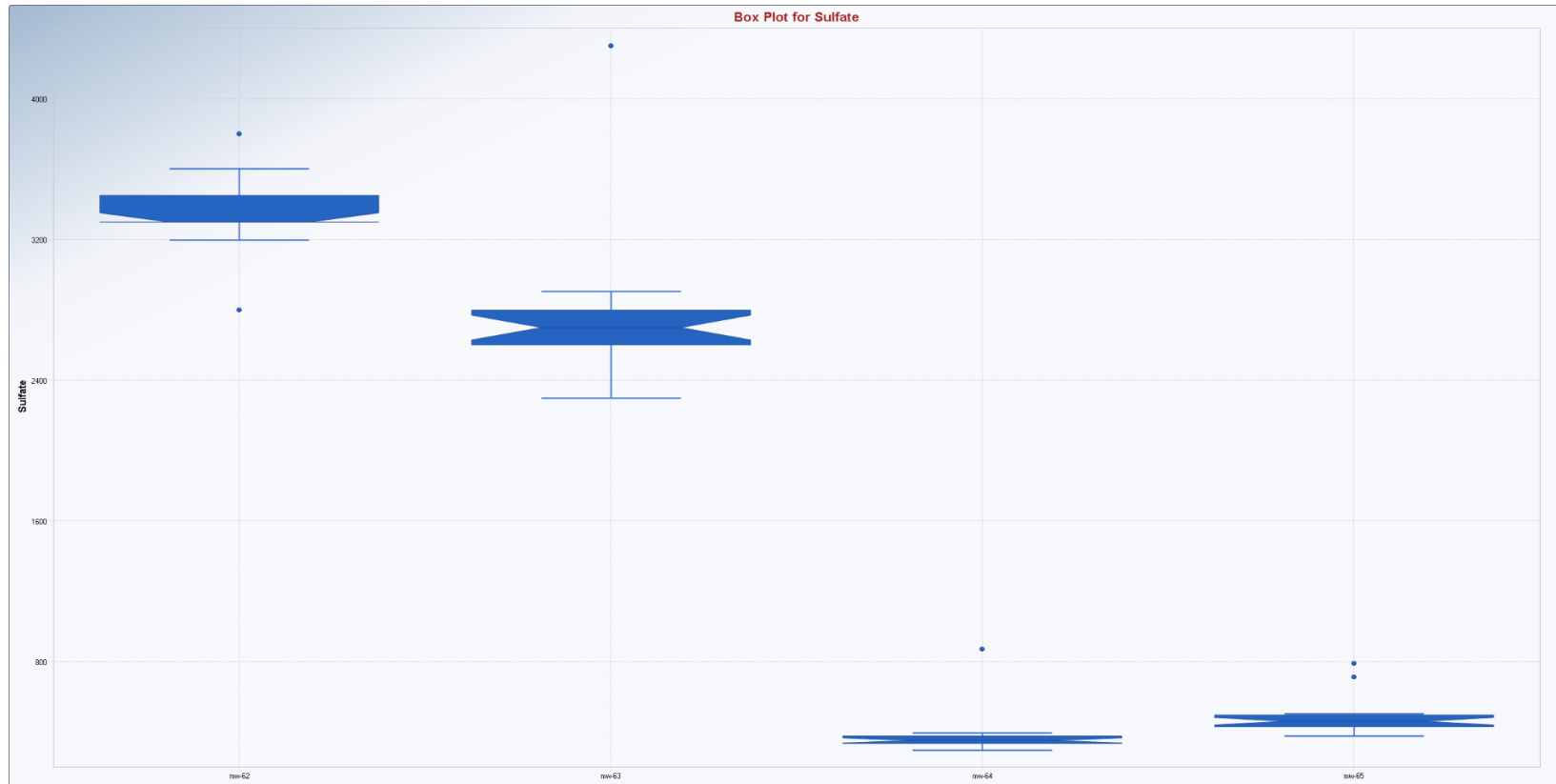
APPENDIX B

PROUCL EDA OUTPUT FILES

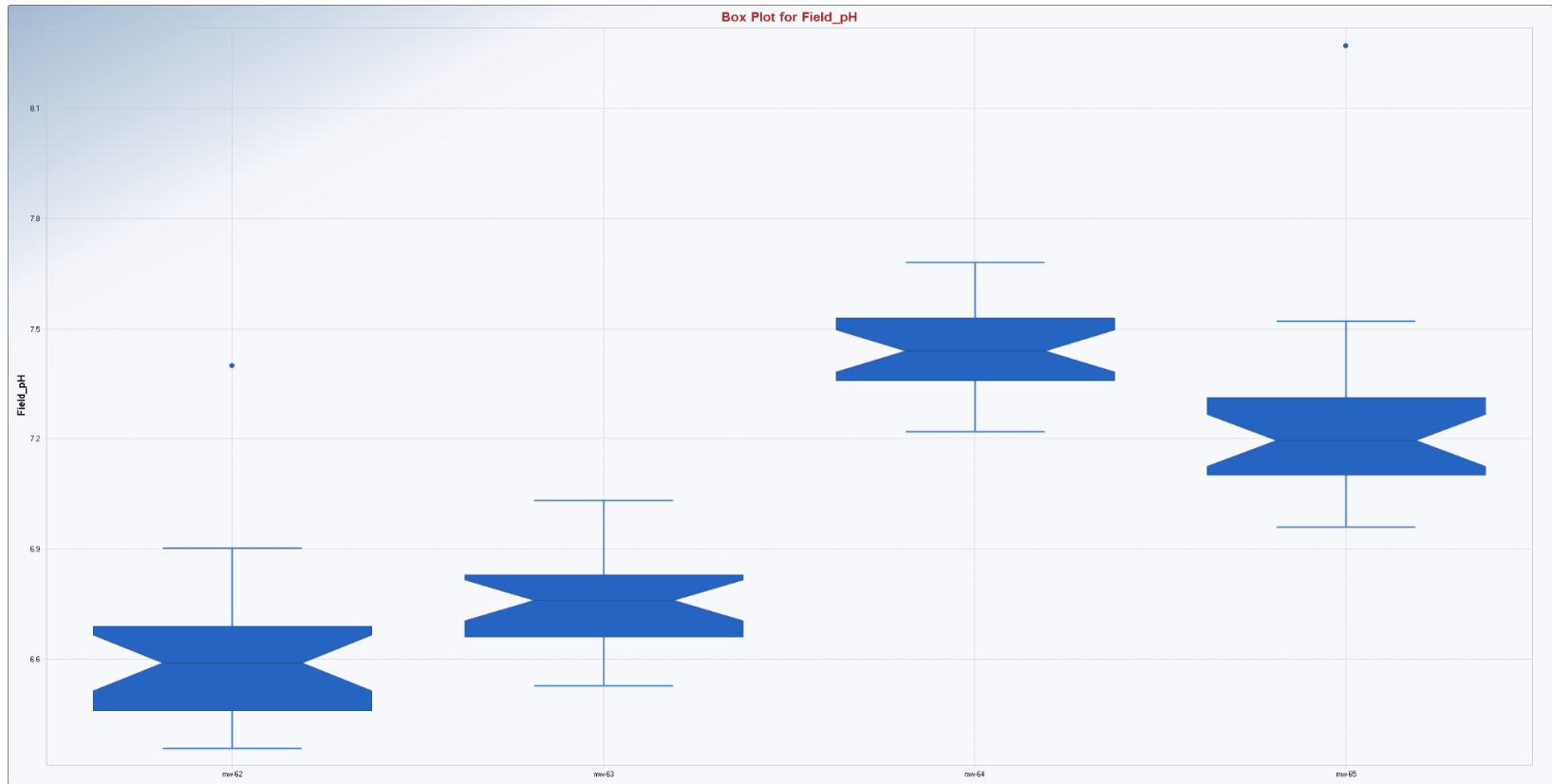
Appendix B Box and Whisker Plots



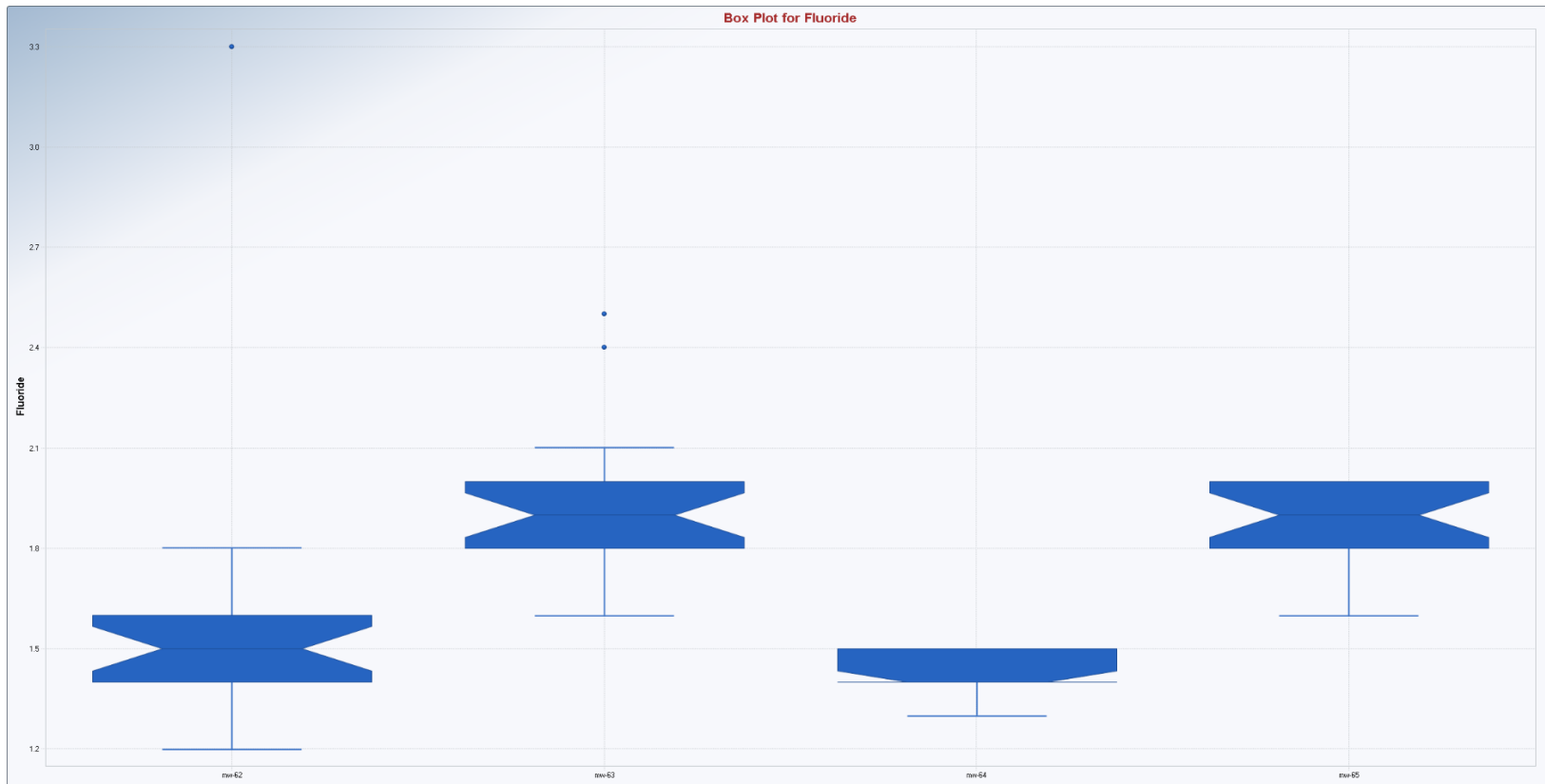
Appendix B Box and Whisker Plots



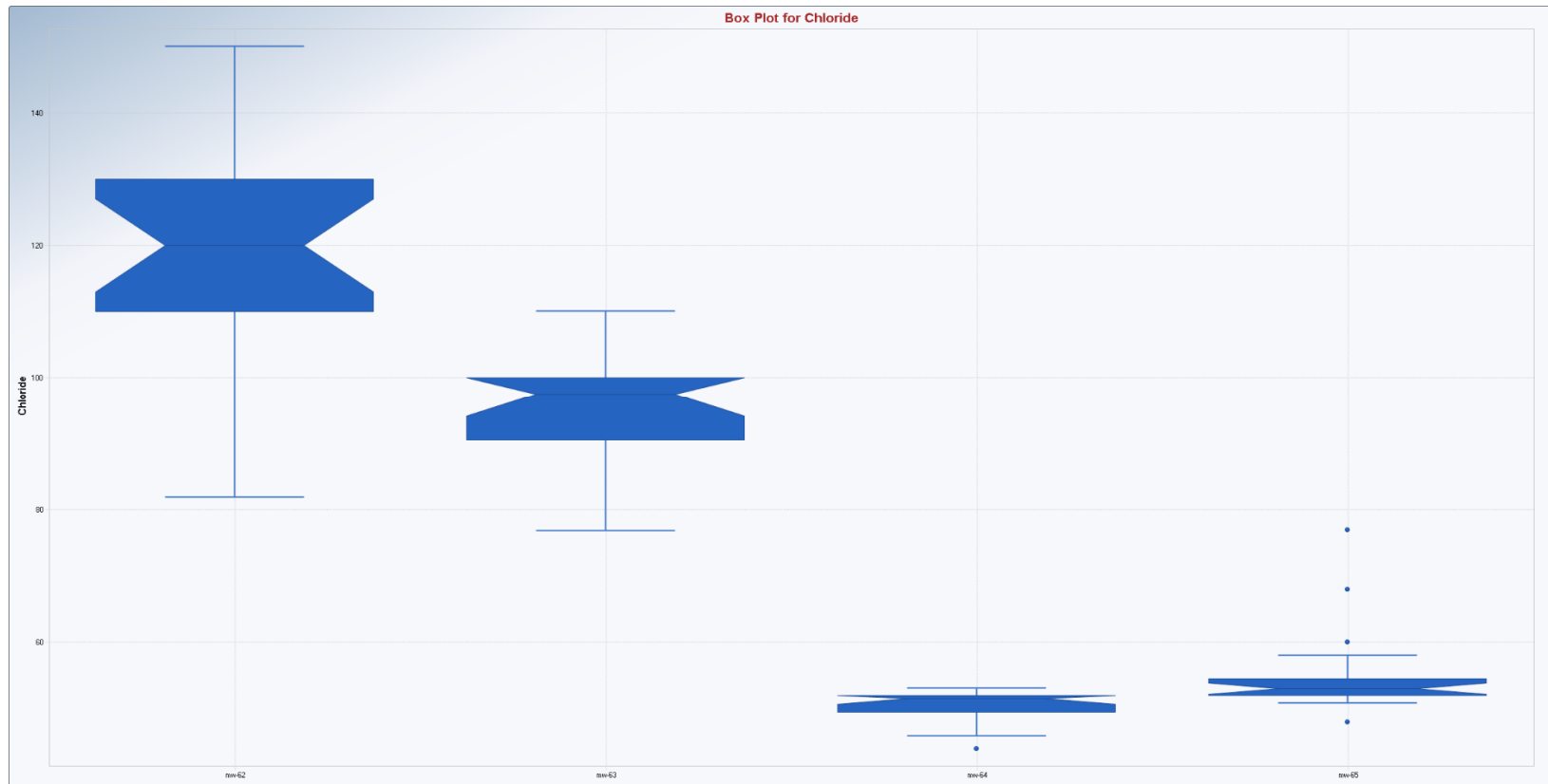
Appendix B Box and Whisker Plots



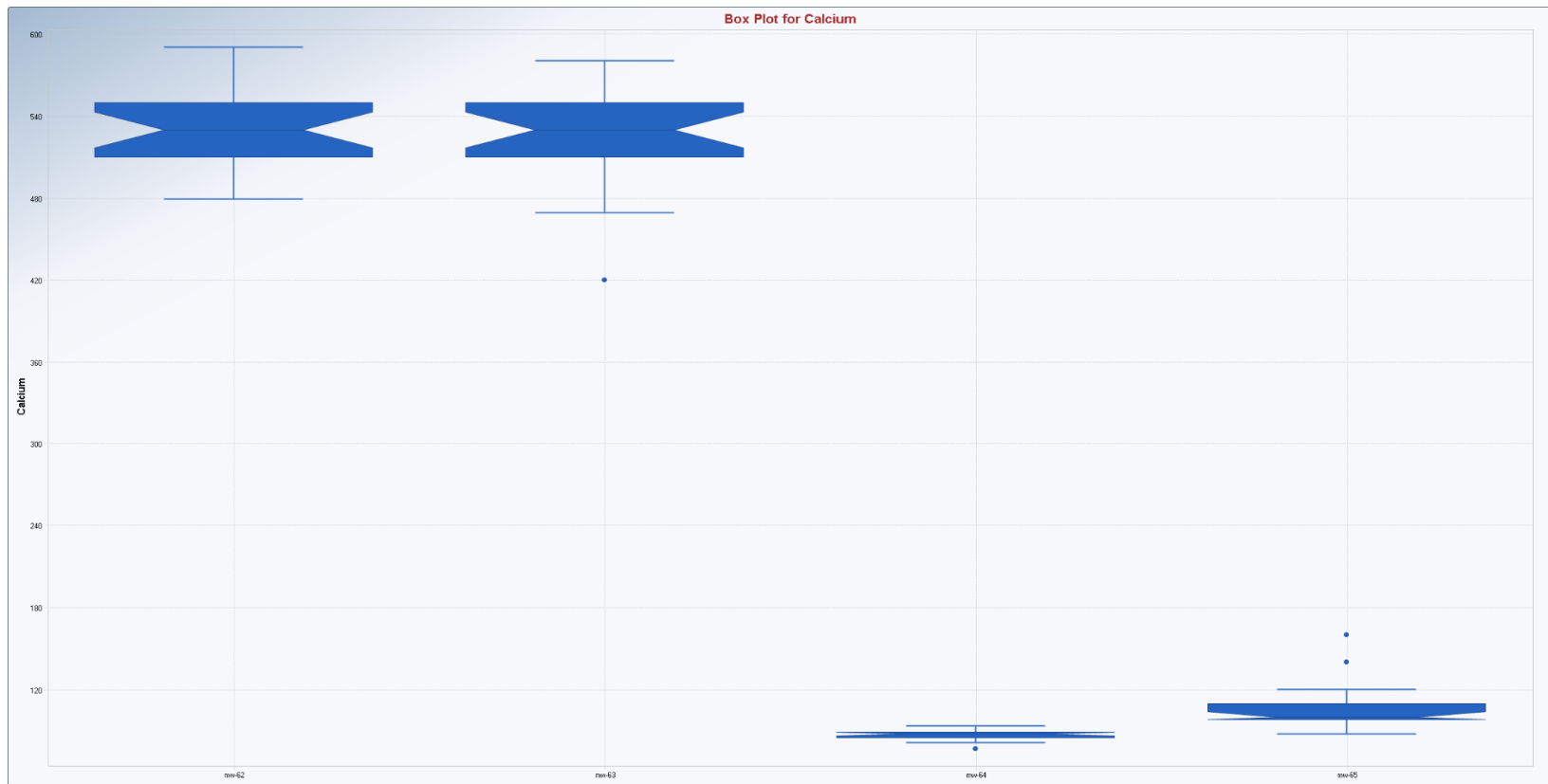
Appendix B Box and Whisker Plots



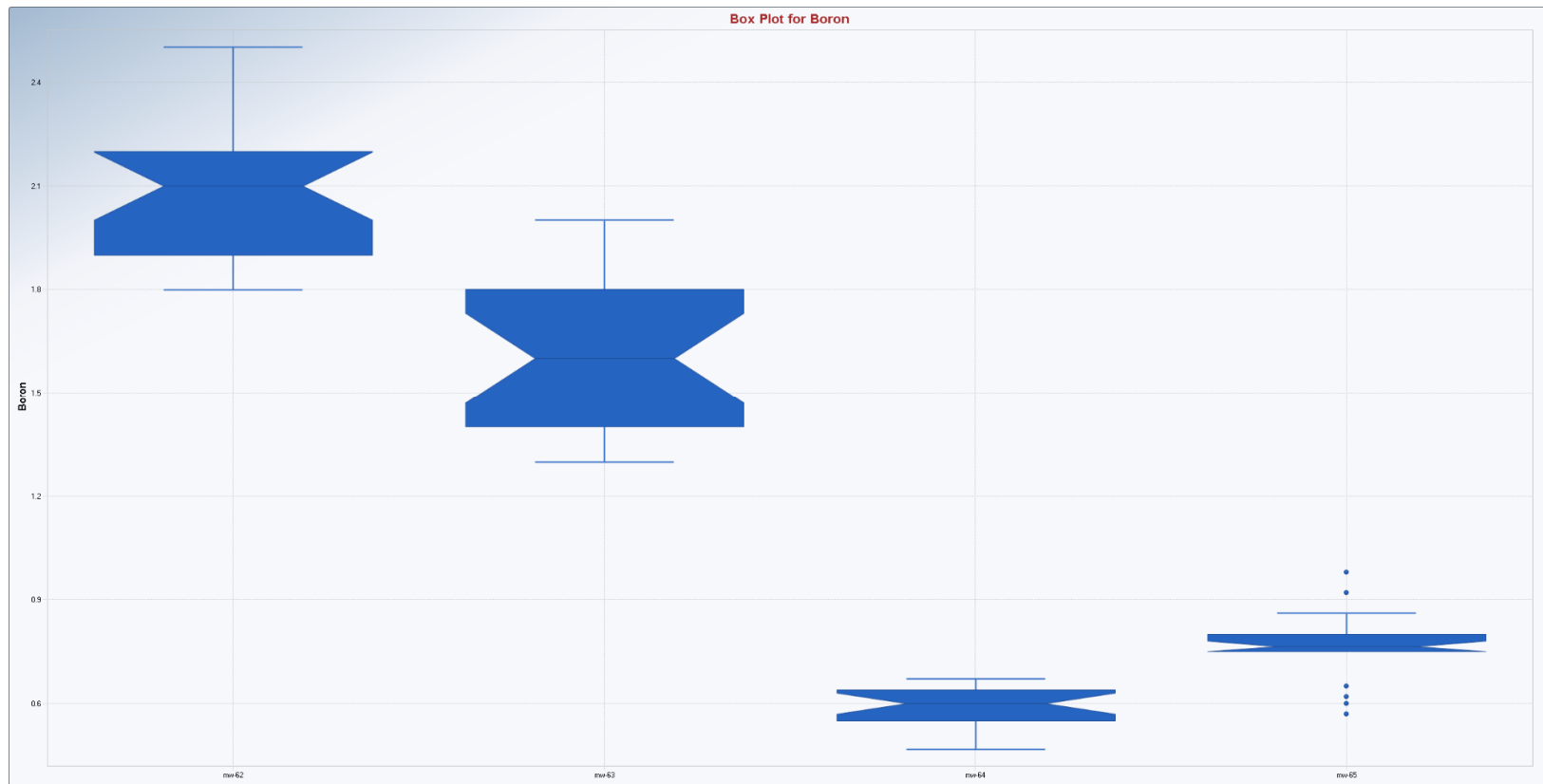
Appendix B Box and Whisker Plots



Appendix B Box and Whisker Plots



Appendix B Box and Whisker Plots



Appendix B Summary Statistics

General Statistics on Uncensored Data

User Selected Options

From File Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls

Full Precision OFF

From File: Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls

General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method

Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV
Boron (mw-62)	23	0	23	0	0.00%	N/A	N/A	2.091	0.0363	0.19	0.0911
Boron (mw-63)	23	0	23	0	0.00%	N/A	N/A	1.613	0.0557	0.236	0.146
Boron (mw-64)	22	0	22	0	0.00%	N/A	N/A	0.59	0.0034	0.0583	0.0988
Boron (mw-65)	22	0	22	0	0.00%	N/A	N/A	0.766	0.0091	0.0954	0.124
Calcium (mw-62)	23	0	23	0	0.00%	N/A	N/A	530.9	844.7	29.06	0.0547
Calcium (mw-63)	23	0	23	0	0.00%	N/A	N/A	523.5	1096	33.11	0.0633
Calcium (mw-64)	22	0	22	0	0.00%	N/A	N/A	86.77	12.85	3.585	0.0413
Calcium (mw-65)	22	0	22	0	0.00%	N/A	N/A	106.7	270.4	16.44	0.154
Chloride (mw-62)	20	3	20	0	0.00%	N/A	N/A	120.1	257.1	16.03	0.134
Chloride (mw-63)	20	3	20	0	0.00%	N/A	N/A	95.3	71.8	8.473	0.0889
Chloride (mw-64)	20	2	20	0	0.00%	N/A	N/A	50.65	5.924	2.434	0.0481
Chloride (mw-65)	20	2	20	0	0.00%	N/A	N/A	55.15	43.5	6.596	0.12
Fluoride (mw-62)	22	1	22	0	0.00%	N/A	N/A	1.55	0.173	0.416	0.268
Fluoride (mw-63)	22	1	22	0	0.00%	N/A	N/A	1.936	0.0519	0.228	0.118
Fluoride (mw-64)	22	0	22	0	0.00%	N/A	N/A	1.427	0.00494	0.0703	0.0492
Fluoride (mw-65)	22	0	22	0	0.00%	N/A	N/A	1.882	0.0158	0.126	0.0669
Sulfate (mw-62)	20	3	20	0	0.00%	N/A	N/A	3355	39447	198.6	0.0592
Sulfate (mw-63)	20	3	20	0	0.00%	N/A	N/A	2770	154842	393.5	0.142
Sulfate (mw-64)	20	2	20	0	0.00%	N/A	N/A	376	14099	118.7	0.316
Sulfate (mw-65)	20	2	20	0	0.00%	N/A	N/A	482.5	9746	98.72	0.205
DissolvedSolids (mw-62)	22	1	22	0	0.00%	N/A	N/A	5527	644935	803.1	0.145
DissolvedSolids (mw-63)	22	1	22	0	0.00%	N/A	N/A	4395	24264	155.8	0.0354
DissolvedSolids (mw-64)	22	0	22	0	0.00%	N/A	N/A	790.9	846.8	29.1	0.0368
DissolvedSolids (mw-65)	22	0	22	0	0.00%	N/A	N/A	1055	24074	155.2	0.147
Field_pH (mw-62)	23	0	23	0	0.00%	N/A	N/A	6.61	0.0491	0.222	0.0335
Field_pH (mw-63)	23	0	23	0	0.00%	N/A	N/A	6.745	0.0166	0.129	0.0191
Field_pH (mw-64)	22	0	22	0	0.00%	N/A	N/A	7.443	0.0151	0.123	0.0165
Field_pH (mw-65)	22	0	22	0	0.00%	N/A	N/A	7.254	0.0711	0.267	0.0368

Appendix B Goodness of Fit Statistics

User Selected Options		Goodness-of-Fit Test Statistics for Data Sets with Non-Detects					
From File	Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls						
Full Precision	OFF						
Confidence Coefficient	0.95						
Boron (mw-62)							
Raw Statistics							
Number of Valid Observations	23						
Number of Distinct Observations	8						
Minimum	1.8						
Maximum	2.5						
Mean of Raw Data	2.091						
Standard Deviation of Raw Data	0.19						
Khat	127.2						
Theta hat	0.0164						
Kstar	110.7						
Theta star	0.0189						
Mean of Log Transformed Data	0.734						
Standard Deviation of Log Transformed Data	0.0906						
Normal GOF Test Results							
Correlation Coefficient R	0.979						
Shapiro Wilk Test Statistic	0.951						
Shapiro Wilk Critical (0.05) Value	0.914						
Approximate Shapiro Wilk P Value	0.308						
Lilliefors Test Statistic	0.147						
Lilliefors Critical (0.05) Value	0.18						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.981						
A-D Test Statistic	0.476						
A-D Critical (0.05) Value	0.74						

Appendix B Goodness of Fit Statistics

Raw Statistics							
K-S Test Statistic	0.154						
K-S Critical(0.05) Value	0.181						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.981						
Shapiro Wilk Test Statistic	0.954						
Shapiro Wilk Critical (0.05) Value	0.914						
Approximate Shapiro Wilk P Value	0.348						
Lilliefors Test Statistic	0.15						
Lilliefors Critical (0.05) Value	0.18						
Data appear Lognormal at (0.05) Significance Level							
Boron (mw-63)							
Raw Statistics							
Number of Valid Observations	23						
Number of Distinct Observations	8						
Minimum	1.3						
Maximum	2						
Mean of Raw Data	1.613						
Standard Deviation of Raw Data	0.236						
Khat	49.21						
Theta hat	0.0328						
Kstar	42.82						
Theta star	0.0377						
Mean of Log Transformed Data	0.468						
Standard Deviation of Log Transformed Data	0.146						
Normal GOF Test Results							
Correlation Coefficient R	0.965						
Shapiro Wilk Test Statistic	0.911						
Shapiro Wilk Critical (0.05) Value	0.914						
Approximate Shapiro Wilk P Value	0.0425						
Lilliefors Test Statistic	0.164						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Lilliefors Critical (0.05) Value	0.18						
Data appear Approximate Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.965						
A-D Test Statistic	0.729						
A-D Critical (0.05) Value	0.741						
K-S Test Statistic	0.17						
K-S Critical(0.05) Value	0.181						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.967						
Shapiro Wilk Test Statistic	0.915						
Shapiro Wilk Critical (0.05) Value	0.914						
Approximate Shapiro Wilk P Value	0.0512						
Lilliefors Test Statistic	0.164						
Lilliefors Critical (0.05) Value	0.18						
Data appear Lognormal at (0.05) Significance Level							
Boron (mw-64)							
Raw Statistics							
Number of Valid Observations	22						
Number of Distinct Observations	12						
Minimum	0.47						
Maximum	0.67						
Mean of Raw Data	0.59						
Standard Deviation of Raw Data	0.0583						
Khat	102						
Theta hat	0.00579						
Kstar	88.09						
Theta star	0.0067						
Mean of Log Transformed Data	-0.532						
Standard Deviation of Log Transformed Data	0.103						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Normal GOF Test Results							
Correlation Coefficient R	0.968						
Shapiro Wilk Test Statistic	0.927						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.105						
Lilliefors Test Statistic	0.131						
Lilliefors Critical (0.05) Value	0.184						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.958						
A-D Test Statistic	0.643						
A-D Critical (0.05) Value	0.741						
K-S Test Statistic	0.142						
K-S Critical(0.05) Value	0.185						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.957						
Shapiro Wilk Test Statistic	0.908						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.041						
Lilliefors Test Statistic	0.142						
Lilliefors Critical (0.05) Value	0.184						
Data appear Approximate_Lognormal at (0.05) Significance Level							
Boron (mw-65)							
Raw Statistics							
Number of Valid Observations	22						
Number of Distinct Observations	13						
Minimum	0.57						
Maximum	0.98						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Mean of Raw Data	0.766						
Standard Deviation of Raw Data	0.0954						
Khat	65.45						
Theta hat	0.0117						
Kstar	56.55						
Theta star	0.0136						
Mean of Log Transformed Data	-0.274						
Standard Deviation of Log Transformed Data	0.128						
Normal GOF Test Results							
Correlation Coefficient R	0.957						
Shapiro Wilk Test Statistic	0.924						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.0877						
Lilliefors Test Statistic	0.25						
Lilliefors Critical (0.05) Value	0.184						
Data appear Approximate Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.957						
A-D Test Statistic	1.002						
A-D Critical (0.05) Value	0.742						
K-S Test Statistic	0.265						
K-S Critical(0.05) Value	0.185						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.95						
Shapiro Wilk Test Statistic	0.909						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.0417						
Lilliefors Test Statistic	0.275						
Lilliefors Critical (0.05) Value	0.184						
Data not Lognormal at (0.05) Significance Level							

Appendix B Goodness of Fit Statistics

Raw Statistics						
Calcium (mw-62)						
Raw Statistics						
Number of Valid Observations	23					
Number of Distinct Observations	10					
Minimum	480					
Maximum	590					
Mean of Raw Data	530.9					
Standard Deviation of Raw Data	29.06					
Khat	351					
Theta hat	1.513					
Kstar	305.2					
Theta star	1.739					
Mean of Log Transformed Data	6.273					
Standard Deviation of Log Transformed Data	0.0545					
Normal GOF Test Results						
Correlation Coefficient R	0.982					
Shapiro Wilk Test Statistic	0.958					
Shapiro Wilk Critical (0.05) Value	0.914					
Approximate Shapiro Wilk P Value	0.431					
Lilliefors Test Statistic	0.128					
Lilliefors Critical (0.05) Value	0.18					
Data appear Normal at (0.05) Significance Level						
Gamma GOF Test Results						
Correlation Coefficient R	0.982					
A-D Test Statistic	0.417					
A-D Critical (0.05) Value	0.74					
K-S Test Statistic	0.131					
K-S Critical(0.05) Value	0.181					
Data appear Gamma Distributed at (0.05) Significance Level						
Lognormal GOF Test Results						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Correlation Coefficient R	0.984						
Shapiro Wilk Test Statistic	0.962						
Shapiro Wilk Critical (0.05) Value	0.914						
Approximate Shapiro Wilk P Value	0.506						
Lilliefors Test Statistic	0.126						
Lilliefors Critical (0.05) Value	0.18						
Data appear Lognormal at (0.05) Significance Level							
Calcium (mw-63)							
Raw Statistics							
Number of Valid Observations	23						
Number of Distinct Observations	10						
Minimum	420						
Maximum	580						
Mean of Raw Data	523.5						
Standard Deviation of Raw Data	33.11						
Khat	245.7						
Theta hat	2.131						
Kstar	213.7						
Theta star	2.45						
Mean of Log Transformed Data	6.258						
Standard Deviation of Log Transformed Data	0.0663						
Normal GOF Test Results							
Correlation Coefficient R	0.94						
Shapiro Wilk Test Statistic	0.901						
Shapiro Wilk Critical (0.05) Value	0.914						
Approximate Shapiro Wilk P Value	0.0252						
Lilliefors Test Statistic	0.152						
Lilliefors Critical (0.05) Value	0.18						
Data appear Approximate Normal at (0.05) Significance Level							
Gamma GOF Test Results							

Appendix B Goodness of Fit Statistics

Raw Statistics							
Correlation Coefficient R	0.936						
A-D Test Statistic	0.784						
A-D Critical (0.05) Value	0.74						
K-S Test Statistic	0.157						
K-S Critical(0.05) Value	0.181						
Data follow Appr. Gamma Distribution at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.922						
Shapiro Wilk Test Statistic	0.87						
Shapiro Wilk Critical (0.05) Value	0.914						
Approximate Shapiro Wilk P Value	0.00523						
Lilliefors Test Statistic	0.167						
Lilliefors Critical (0.05) Value	0.18						
Data appear Approximate_Lognormal at (0.05) Significance Level							
Calcium (mw-64)							
Raw Statistics							
Number of Valid Observations	22						
Number of Distinct Observations	10						
Minimum	77						
Maximum	93						
Mean of Raw Data	86.77						
Standard Deviation of Raw Data	3.585						
Khat	598.4						
Theta hat	0.145						
Kstar	516.9						
Theta star	0.168						
Mean of Log Transformed Data	4.462						
Standard Deviation of Log Transformed Data	0.0421						
Normal GOF Test Results							
Correlation Coefficient R	0.961						
Shapiro Wilk Test Statistic	0.933						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.144						
Lilliefors Test Statistic	0.142						
Lilliefors Critical (0.05) Value	0.184						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.959						
A-D Test Statistic	0.59						
A-D Critical (0.05) Value	0.741						
K-S Test Statistic	0.147						
K-S Critical(0.05) Value	0.185						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.954						
Shapiro Wilk Test Statistic	0.922						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.0813						
Lilliefors Test Statistic	0.142						
Lilliefors Critical (0.05) Value	0.184						
Data appear Lognormal at (0.05) Significance Level							
Calcium (mw-65)							
Raw Statistics							
Number of Valid Observations	22						
Number of Distinct Observations	11						
Minimum	88						
Maximum	160						
Mean of Raw Data	106.7						
Standard Deviation of Raw Data	16.44						
Khat	50.99						
Theta hat	2.093						
Kstar	44.07						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Theta star	2.422						
Mean of Log Transformed Data	4.66						
Standard Deviation of Log Transformed Data	0.139						
Normal GOF Test Results							
Correlation Coefficient R	0.878						
Shapiro Wilk Test Statistic	0.785						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	1.5789E-4						
Lilliefors Test Statistic	0.285						
Lilliefors Critical (0.05) Value	0.184						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.902						
A-D Test Statistic	1.305						
A-D Critical (0.05) Value	0.743						
K-S Test Statistic	0.26						
K-S Critical(0.05) Value	0.185						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.915						
Shapiro Wilk Test Statistic	0.848						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.00238						
Lilliefors Test Statistic	0.25						
Lilliefors Critical (0.05) Value	0.184						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							

Appendix B Goodness of Fit Statistics

Raw Statistics						
Chloride (mw-62)						
Raw Statistics						
Number of Valid Observations	20					
Number of Missing Observations	3					
Number of Distinct Observations	7					
Minimum	82					
Maximum	150					
Mean of Raw Data	120.1					
Standard Deviation of Raw Data	16.03					
Khat	57					
Theta hat	2.106					
Kstar	48.48					
Theta star	2.476					
Mean of Log Transformed Data	4.779					
Standard Deviation of Log Transformed Data	0.138					
Normal GOF Test Results						
Correlation Coefficient R	0.961					
Shapiro Wilk Test Statistic	0.932					
Shapiro Wilk Critical (0.05) Value	0.905					
Approximate Shapiro Wilk P Value	0.169					
Lilliefors Test Statistic	0.201					
Lilliefors Critical (0.05) Value	0.192					
Data appear Approximate Normal at (0.05) Significance Level						
Gamma GOF Test Results						
Correlation Coefficient R	0.961					
A-D Test Statistic	0.673					
A-D Critical (0.05) Value	0.74					
K-S Test Statistic	0.184					
K-S Critical(0.05) Value	0.193					
Data appear Gamma Distributed at (0.05) Significance Level						
Lognormal GOF Test Results						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Correlation Coefficient R	0.951						
Shapiro Wilk Test Statistic	0.917						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	0.0825						
Lilliefors Test Statistic	0.184						
Lilliefors Critical (0.05) Value	0.192						
Data appear Lognormal at (0.05) Significance Level							
Chloride (mw-63)							
Raw Statistics							
Number of Valid Observations	20						
Number of Missing Observations	3						
Number of Distinct Observations	10						
Minimum	77						
Maximum	110						
Mean of Raw Data	95.3						
Standard Deviation of Raw Data	8.473						
Khat	127.4						
Theta hat	0.748						
Kstar	108.4						
Theta star	0.879						
Mean of Log Transformed Data	4.553						
Standard Deviation of Log Transformed Data	0.0921						
Normal GOF Test Results							
Correlation Coefficient R	0.95						
Shapiro Wilk Test Statistic	0.905						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	0.0511						
Lilliefors Test Statistic	0.19						
Lilliefors Critical (0.05) Value	0.192						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							

Appendix B Goodness of Fit Statistics

Raw Statistics							
Correlation Coefficient R	0.945						
A-D Test Statistic	0.882						
A-D Critical (0.05) Value	0.74						
K-S Test Statistic	0.191						
K-S Critical(0.05) Value	0.193						
Data follow Appr. Gamma Distribution at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.939						
Shapiro Wilk Test Statistic	0.885						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	0.0206						
Lilliefors Test Statistic	0.193						
Lilliefors Critical (0.05) Value	0.192						
Data not Lognormal at (0.05) Significance Level							
Chloride (mw-64)							
Raw Statistics							
Number of Valid Observations	20						
Number of Missing Observations	2						
Number of Distinct Observations	8						
Minimum	44						
Maximum	53						
Mean of Raw Data	50.65						
Standard Deviation of Raw Data	2.434						
Khat	435.7						
Theta hat	0.116						
Kstar	370.4						
Theta star	0.137						
Mean of Log Transformed Data	3.924						
Standard Deviation of Log Transformed Data	0.0497						
Normal GOF Test Results							

Appendix B Goodness of Fit Statistics

Raw Statistics							
Correlation Coefficient R	0.916						
Shapiro Wilk Test Statistic	0.841						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	0.00303						
Lilliefors Test Statistic	0.21						
Lilliefors Critical (0.05) Value	0.192						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.909						
A-D Test Statistic	1.182						
A-D Critical (0.05) Value	0.74						
K-S Test Statistic	0.215						
K-S Critical(0.05) Value	0.193						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.908						
Shapiro Wilk Test Statistic	0.826						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	0.00163						
Lilliefors Test Statistic	0.214						
Lilliefors Critical (0.05) Value	0.192						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Chloride (mw-65)							
Raw Statistics							
Number of Valid Observations	20						
Number of Missing Observations	2						
Number of Distinct Observations	10						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Minimum	48						
Maximum	77						
Mean of Raw Data	55.15						
Standard Deviation of Raw Data	6.596						
Khat	85.3						
Theta hat	0.647						
Kstar	72.54						
Theta star	0.76						
Mean of Log Transformed Data	4.004						
Standard Deviation of Log Transformed Data	0.107						
Normal GOF Test Results							
Correlation Coefficient R	0.814						
Shapiro Wilk Test Statistic	0.685						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	6.3964E-6						
Lilliefors Test Statistic	0.319						
Lilliefors Critical (0.05) Value	0.192						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.84						
A-D Test Statistic	2.302						
A-D Critical (0.05) Value	0.74						
K-S Test Statistic	0.313						
K-S Critical(0.05) Value	0.193						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.844						
Shapiro Wilk Test Statistic	0.732						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	3.5065E-5						
Lilliefors Test Statistic	0.306						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Lilliefors Critical (0.05) Value	0.192						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Fluoride (mw-62)							
Raw Statistics							
Number of Valid Observations	22						
Number of Missing Observations	1						
Number of Distinct Observations	6						
Minimum	1.2						
Maximum	3.3						
Mean of Raw Data	1.55						
Standard Deviation of Raw Data	0.416						
Khat	21.87						
Theta hat	0.0709						
Kstar	18.92						
Theta star	0.0819						
Mean of Log Transformed Data	0.415						
Standard Deviation of Log Transformed Data	0.2						
Normal GOF Test Results							
Correlation Coefficient R	0.704						
Shapiro Wilk Test Statistic	0.526						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	2.6003E-8						
Lilliefors Test Statistic	0.361						
Lilliefors Critical (0.05) Value	0.184						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.749						

Appendix B Goodness of Fit Statistics

Raw Statistics							
A-D Test Statistic	2.633						
A-D Critical (0.05) Value	0.74						
K-S Test Statistic	0.322						
K-S Critical(0.05) Value	0.185						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.801						
Shapiro Wilk Test Statistic	0.67						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	2.2889E-6						
Lilliefors Test Statistic	0.301						
Lilliefors Critical (0.05) Value	0.184						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Fluoride (mw-63)							
Raw Statistics							
Number of Valid Observations	22						
Number of Missing Observations	1						
Number of Distinct Observations	8						
Minimum	1.6						
Maximum	2.5						
Mean of Raw Data	1.936						
Standard Deviation of Raw Data	0.228						
Khat	78.02						
Theta hat	0.0248						
Kstar	67.41						
Theta star	0.0287						
Mean of Log Transformed Data	0.654						
Standard Deviation of Log Transformed Data	0.115						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Normal GOF Test Results							
Correlation Coefficient R	0.96						
Shapiro Wilk Test Statistic	0.922						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.08						
Lilliefors Test Statistic	0.163						
Lilliefors Critical (0.05) Value	0.184						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.967						
A-D Test Statistic	0.545						
A-D Critical (0.05) Value	0.742						
K-S Test Statistic	0.145						
K-S Critical(0.05) Value	0.185						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.969						
Shapiro Wilk Test Statistic	0.938						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.175						
Lilliefors Test Statistic	0.141						
Lilliefors Critical (0.05) Value	0.184						
Data appear Lognormal at (0.05) Significance Level							
Fluoride (mw-64)							
Raw Statistics							
Number of Valid Observations	22						
Number of Distinct Observations	3						
Minimum	1.3						
Maximum	1.5						
Mean of Raw Data	1.427						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Standard Deviation of Raw Data	0.0703						
Khat	425.9						
Theta hat	0.00335						
Kstar	367.8						
Theta star	0.00388						
Mean of Log Transformed Data	0.355						
Standard Deviation of Log Transformed Data	0.0498						
Normal GOF Test Results							
Correlation Coefficient R	0.897						
Shapiro Wilk Test Statistic	0.79						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	1.9814E-4						
Lilliefors Test Statistic	0.259						
Lilliefors Critical (0.05) Value	0.184						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.891						
A-D Test Statistic	2.059						
A-D Critical (0.05) Value	0.741						
K-S Test Statistic	0.262						
K-S Critical(0.05) Value	0.185						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.896						
Shapiro Wilk Test Statistic	0.789						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	1.8728E-4						
Lilliefors Test Statistic	0.256						
Lilliefors Critical (0.05) Value	0.184						
Data not Lognormal at (0.05) Significance Level							

Appendix B Goodness of Fit Statistics

Raw Statistics							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Fluoride (mw-65)							
Raw Statistics							
Number of Valid Observations	22						
Number of Distinct Observations	5						
Minimum	1.6						
Maximum	2						
Mean of Raw Data	1.882						
Standard Deviation of Raw Data	0.126						
Khat	226.4						
Theta hat	0.00831						
Kstar	195.6						
Theta star	0.00962						
Mean of Log Transformed Data	0.63						
Standard Deviation of Log Transformed Data	0.0686						
Normal GOF Test Results							
Correlation Coefficient R	0.925						
Shapiro Wilk Test Statistic	0.845						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.00207						
Lilliefors Test Statistic	0.235						
Lilliefors Critical (0.05) Value	0.184						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.915						
A-D Test Statistic	1.39						
A-D Critical (0.05) Value	0.741						
K-S Test Statistic	0.238						
K-S Critical(0.05) Value	0.185						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.922						
Shapiro Wilk Test Statistic	0.841						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.00173						
Lilliefors Test Statistic	0.23						
Lilliefors Critical (0.05) Value	0.184						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Sulfate (mw-62)							
Raw Statistics							
Number of Valid Observations	20						
Number of Missing Observations	3						
Number of Distinct Observations	7						
Minimum	2800						
Maximum	3800						
Mean of Raw Data	3355						
Standard Deviation of Raw Data	198.6						
Khat	293.5						
Theta hat	11.43						
Kstar	249.5						
Theta star	13.45						
Mean of Log Transformed Data	8.117						
Standard Deviation of Log Transformed Data	0.0603						
Normal GOF Test Results							
Correlation Coefficient R	0.921						
Shapiro Wilk Test Statistic	0.876						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	0.0125						
Lilliefors Test Statistic	0.241						
Lilliefors Critical (0.05) Value	0.192						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.925						
A-D Test Statistic	1.158						
A-D Critical (0.05) Value	0.74						
K-S Test Statistic	0.246						
K-S Critical(0.05) Value	0.193						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.912						
Shapiro Wilk Test Statistic	0.861						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	0.00619						
Lilliefors Test Statistic	0.253						
Lilliefors Critical (0.05) Value	0.192						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Sulfate (mw-63)							
Raw Statistics							
Number of Valid Observations	20						
Number of Missing Observations	3						
Number of Distinct Observations	8						
Minimum	2300						
Maximum	4300						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Mean of Raw Data	2770						
Standard Deviation of Raw Data	393.5						
Khat	64.68						
Theta hat	42.83						
Kstar	55.01						
Theta star	50.35						
Mean of Log Transformed Data	7.919						
Standard Deviation of Log Transformed Data	0.122						
Normal GOF Test Results							
Correlation Coefficient R	0.765						
Shapiro Wilk Test Statistic	0.62						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	6.8354E-7						
Lilliefors Test Statistic	0.321						
Lilliefors Critical (0.05) Value	0.192						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.789						
A-D Test Statistic	2.012						
A-D Critical (0.05) Value	0.74						
K-S Test Statistic	0.29						
K-S Critical(0.05) Value	0.193						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.822						
Shapiro Wilk Test Statistic	0.71						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	1.5326E-5						
Lilliefors Test Statistic	0.28						
Lilliefors Critical (0.05) Value	0.192						
Data not Lognormal at (0.05) Significance Level							

Appendix B Goodness of Fit Statistics

Raw Statistics							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Sulfate (mw-64)							
Raw Statistics							
Number of Valid Observations	20						
Number of Missing Observations	2						
Number of Distinct Observations	10						
Minimum	300						
Maximum	870						
Mean of Raw Data	376						
Standard Deviation of Raw Data	118.7						
Khat	17.78						
Theta hat	21.15						
Kstar	15.14						
Theta star	24.83						
Mean of Log Transformed Data	5.901						
Standard Deviation of Log Transformed Data	0.216						
Normal GOF Test Results							
Correlation Coefficient R	0.625						
Shapiro Wilk Test Statistic	0.423						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	2.0062E-9						
Lilliefors Test Statistic	0.403						
Lilliefors Critical (0.05) Value	0.192						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.682						
A-D Test Statistic	3.457						
A-D Critical (0.05) Value	0.741						

Appendix B Goodness of Fit Statistics

Raw Statistics							
K-S Test Statistic	0.357						
K-S Critical(0.05) Value	0.194						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.714						
Shapiro Wilk Test Statistic	0.544						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	6.3692E-8						
Lilliefors Test Statistic	0.332						
Lilliefors Critical (0.05) Value	0.192						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Sulfate (mw-65)							
Raw Statistics							
Number of Valid Observations	20						
Number of Missing Observations	2						
Number of Distinct Observations	13						
Minimum	380						
Maximum	790						
Mean of Raw Data	482.5						
Standard Deviation of Raw Data	98.72						
Khat	31.16						
Theta hat	15.48						
Kstar	26.52						
Theta star	18.19						
Mean of Log Transformed Data	6.163						
Standard Deviation of Log Transformed Data	0.175						
Normal GOF Test Results							

Appendix B Goodness of Fit Statistics

Raw Statistics							
Correlation Coefficient R	0.831						
Shapiro Wilk Test Statistic	0.706						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	1.3913E-5						
Lilliefors Test Statistic	0.33						
Lilliefors Critical (0.05) Value	0.192						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.864						
A-D Test Statistic	1.725						
A-D Critical (0.05) Value	0.74						
K-S Test Statistic	0.298						
K-S Critical(0.05) Value	0.193						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.882						
Shapiro Wilk Test Statistic	0.791						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	3.5164E-4						
Lilliefors Test Statistic	0.284						
Lilliefors Critical (0.05) Value	0.192						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
DissolvedSolids (mw-62)							
Raw Statistics							
Number of Valid Observations	22						
Number of Missing Observations	1						
Number of Distinct Observations	12						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Minimum	2400						
Maximum	6700						
Mean of Raw Data	5527						
Standard Deviation of Raw Data	803.1						
Khat	33.72						
Theta hat	163.9						
Kstar	29.15						
Theta star	189.6						
Mean of Log Transformed Data	8.603						
Standard Deviation of Log Transformed Data	0.196						
Normal GOF Test Results							
Correlation Coefficient R	0.804						
Shapiro Wilk Test Statistic	0.679						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	3.1097E-6						
Lilliefors Test Statistic	0.301						
Lilliefors Critical (0.05) Value	0.184						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.779						
A-D Test Statistic	2.968						
A-D Critical (0.05) Value	0.742						
K-S Test Statistic	0.333						
K-S Critical(0.05) Value	0.185						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.716						
Shapiro Wilk Test Statistic	0.546						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	4.5726E-8						
Lilliefors Test Statistic	0.347						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Lilliefors Critical (0.05) Value	0.184						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
DissolvedSolids (mw-63)							
Raw Statistics							
Number of Valid Observations	22						
Number of Missing Observations	1						
Number of Distinct Observations	7						
Minimum	4100						
Maximum	4700						
Mean of Raw Data	4395						
Standard Deviation of Raw Data	155.8						
Khat	839						
Theta hat	5.239						
Kstar	724.6						
Theta star	6.066						
Mean of Log Transformed Data	8.388						
Standard Deviation of Log Transformed Data	0.0353						
Normal GOF Test Results							
Correlation Coefficient R	0.972						
Shapiro Wilk Test Statistic	0.943						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.227						
Lilliefors Test Statistic	0.185						
Lilliefors Critical (0.05) Value	0.184						
Data appear Approximate Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.973						

Appendix B Goodness of Fit Statistics

Raw Statistics							
A-D Test Statistic	0.597						
A-D Critical (0.05) Value	0.741						
K-S Test Statistic	0.188						
K-S Critical(0.05) Value	0.185						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.974						
Shapiro Wilk Test Statistic	0.946						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.264						
Lilliefors Test Statistic	0.182						
Lilliefors Critical (0.05) Value	0.184						
Data appear Lognormal at (0.05) Significance Level							
DissolvedSolids (mw-64)							
Raw Statistics							
Number of Valid Observations	22						
Number of Distinct Observations	8						
Minimum	720						
Maximum	890						
Mean of Raw Data	790.9						
Standard Deviation of Raw Data	29.1						
Khat	792.1						
Theta hat	0.999						
Kstar	684.1						
Theta star	1.156						
Mean of Log Transformed Data	6.673						
Standard Deviation of Log Transformed Data	0.0362						
Normal GOF Test Results							
Correlation Coefficient R	0.855						
Shapiro Wilk Test Statistic	0.771						
Shapiro Wilk Critical (0.05) Value	0.911						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Approximate Shapiro Wilk P Value	9.0921E-5						
Lilliefors Test Statistic	0.241						
Lilliefors Critical (0.05) Value	0.184						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.863						
A-D Test Statistic	1.831						
A-D Critical (0.05) Value	0.741						
K-S Test Statistic	0.233						
K-S Critical(0.05) Value	0.185						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.863						
Shapiro Wilk Test Statistic	0.784						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	1.5601E-4						
Lilliefors Test Statistic	0.233						
Lilliefors Critical (0.05) Value	0.184						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
DissolvedSolids (mw-65)							
Raw Statistics							
Number of Valid Observations	22						
Number of Distinct Observations	10						
Minimum	850						
Maximum	1500						
Mean of Raw Data	1055						
Standard Deviation of Raw Data	155.2						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Khat	55.2						
Theta hat	19.12						
Kstar	47.7						
Theta star	22.13						
Mean of Log Transformed Data	6.953						
Standard Deviation of Log Transformed Data	0.134						
Normal GOF Test Results							
Correlation Coefficient R	0.866						
Shapiro Wilk Test Statistic	0.761						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	6.1451E-5						
Lilliefors Test Statistic	0.321						
Lilliefors Critical (0.05) Value	0.184						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.89						
A-D Test Statistic	2.038						
A-D Critical (0.05) Value	0.743						
K-S Test Statistic	0.32						
K-S Critical(0.05) Value	0.185						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.893						
Shapiro Wilk Test Statistic	0.808						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	4.0859E-4						
Lilliefors Test Statistic	0.313						
Lilliefors Critical (0.05) Value	0.184						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							

Appendix B Goodness of Fit Statistics

Raw Statistics						
Data do not follow a discernible distribution at (0.05) Level of Significance						
Field_pH (mw-62)						
Raw Statistics						
Number of Valid Observations	23					
Number of Distinct Observations	19					
Minimum	6.36					
Maximum	7.4					
Mean of Raw Data	6.61					
Standard Deviation of Raw Data	0.222					
Khat	968.7					
Theta hat	0.00682					
Kstar	842.4					
Theta star	0.00785					
Mean of Log Transformed Data	1.888					
Standard Deviation of Log Transformed Data	0.0325					
Normal GOF Test Results						
Correlation Coefficient R	0.892					
Shapiro Wilk Test Statistic	0.813					
Shapiro Wilk Critical (0.05) Value	0.914					
Approximate Shapiro Wilk P Value	3.9836E-4					
Lilliefors Test Statistic	0.168					
Lilliefors Critical (0.05) Value	0.18					
Data appear Approximate Normal at (0.05) Significance Level						
Gamma GOF Test Results						
Correlation Coefficient R	0.899					
A-D Test Statistic	0.899					
A-D Critical (0.05) Value	0.74					
K-S Test Statistic	0.159					
K-S Critical(0.05) Value	0.181					
Data follow Appr. Gamma Distribution at (0.05) Significance Level						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Lognormal GOF Test Results							
Correlation Coefficient R	0.904						
Shapiro Wilk Test Statistic	0.833						
Shapiro Wilk Critical (0.05) Value	0.914						
Approximate Shapiro Wilk P Value	9.5556E-4						
Lilliefors Test Statistic	0.159						
Lilliefors Critical (0.05) Value	0.18						
Data appear Approximate_Lognormal at (0.05) Significance Level							
Field_pH (mw-63)							
Raw Statistics							
Number of Valid Observations	23						
Number of Distinct Observations	21						
Minimum	6.53						
Maximum	7.03						
Mean of Raw Data	6.745						
Standard Deviation of Raw Data	0.129						
Khat	2866						
Theta hat	0.00235						
Kstar	2492						
Theta star	0.00271						
Mean of Log Transformed Data	1.909						
Standard Deviation of Log Transformed Data	0.0191						
Normal GOF Test Results							
Correlation Coefficient R	0.991						
Shapiro Wilk Test Statistic	0.977						
Shapiro Wilk Critical (0.05) Value	0.914						
Approximate Shapiro Wilk P Value	0.841						
Lilliefors Test Statistic	0.0847						
Lilliefors Critical (0.05) Value	0.18						
Data appear Normal at (0.05) Significance Level							

Appendix B Goodness of Fit Statistics

Raw Statistics						
Gamma GOF Test Results						
Correlation Coefficient R	0.99					
A-D Test Statistic	0.194					
A-D Critical (0.05) Value	0.74					
K-S Test Statistic	0.0892					
K-S Critical(0.05) Value	0.181					
Data appear Gamma Distributed at (0.05) Significance Level						
Lognormal GOF Test Results						
Correlation Coefficient R	0.991					
Shapiro Wilk Test Statistic	0.977					
Shapiro Wilk Critical (0.05) Value	0.914					
Approximate Shapiro Wilk P Value	0.834					
Lilliefors Test Statistic	0.0879					
Lilliefors Critical (0.05) Value	0.18					
Data appear Lognormal at (0.05) Significance Level						
Field_pH (mw-64)						
Raw Statistics						
Number of Valid Observations	22					
Number of Distinct Observations	18					
Minimum	7.22					
Maximum	7.68					
Mean of Raw Data	7.443					
Standard Deviation of Raw Data	0.123					
Khat	3834					
Theta hat	0.00194					
Kstar	3312					
Theta star	0.00225					
Mean of Log Transformed Data	2.007					
Standard Deviation of Log Transformed Data	0.0165					
Normal GOF Test Results						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Correlation Coefficient R	0.992						
Shapiro Wilk Test Statistic	0.978						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.864						
Lilliefors Test Statistic	0.0877						
Lilliefors Critical (0.05) Value	0.184						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.991						
A-D Test Statistic	0.248						
A-D Critical (0.05) Value	0.741						
K-S Test Statistic	0.0967						
K-S Critical(0.05) Value	0.185						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.992						
Shapiro Wilk Test Statistic	0.978						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	0.868						
Lilliefors Test Statistic	0.0892						
Lilliefors Critical (0.05) Value	0.184						
Data appear Lognormal at (0.05) Significance Level							
Field_pH (mw-65)							
Raw Statistics							
Number of Valid Observations	22						
Number of Distinct Observations	18						
Minimum	6.96						
Maximum	8.27						
Mean of Raw Data	7.254						
Standard Deviation of Raw Data	0.267						
Khat	821.8						

Appendix B Goodness of Fit Statistics

Raw Statistics							
Theta hat	0.00883						
Kstar	709.8						
Theta star	0.0102						
Mean of Log Transformed Data	1.981						
Standard Deviation of Log Transformed Data	0.0352						
Normal GOF Test Results							
Correlation Coefficient R	0.831						
Shapiro Wilk Test Statistic	0.716						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	1.1237E-5						
Lilliefors Test Statistic	0.209						
Lilliefors Critical (0.05) Value	0.184						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.842						
A-D Test Statistic	1.615						
A-D Critical (0.05) Value	0.741						
K-S Test Statistic	0.2						
K-S Critical(0.05) Value	0.185						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.846						
Shapiro Wilk Test Statistic	0.74						
Shapiro Wilk Critical (0.05) Value	0.911						
Approximate Shapiro Wilk P Value	2.8198E-5						
Lilliefors Test Statistic	0.198						
Lilliefors Critical (0.05) Value	0.184						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							

Appendix B Goodness of Fit Statistics

Raw Statistics							
Data do not follow a discernible distribution at (0.05) Level of Significance							

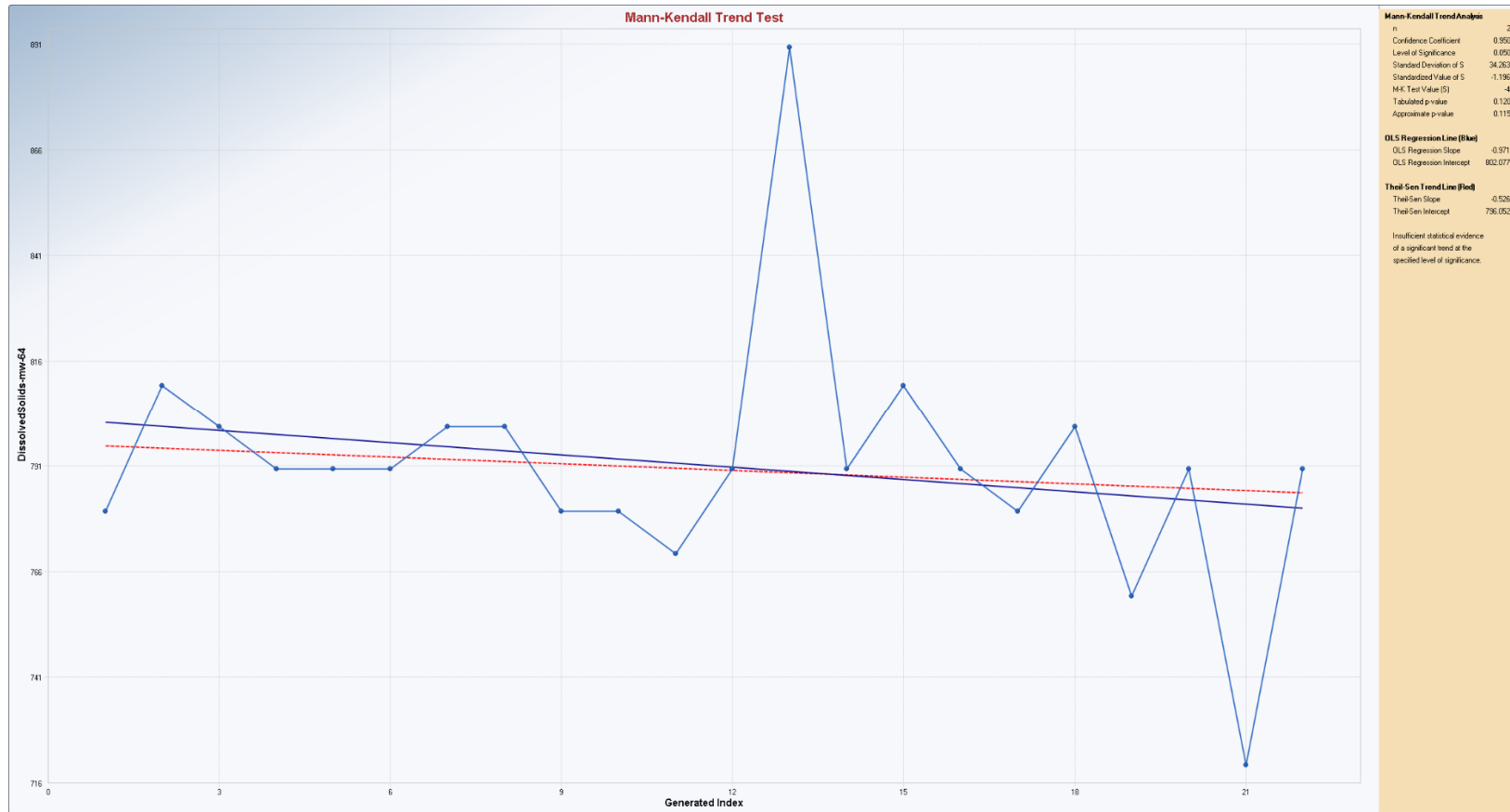
Appendix B Mann-Kendall Trend Test



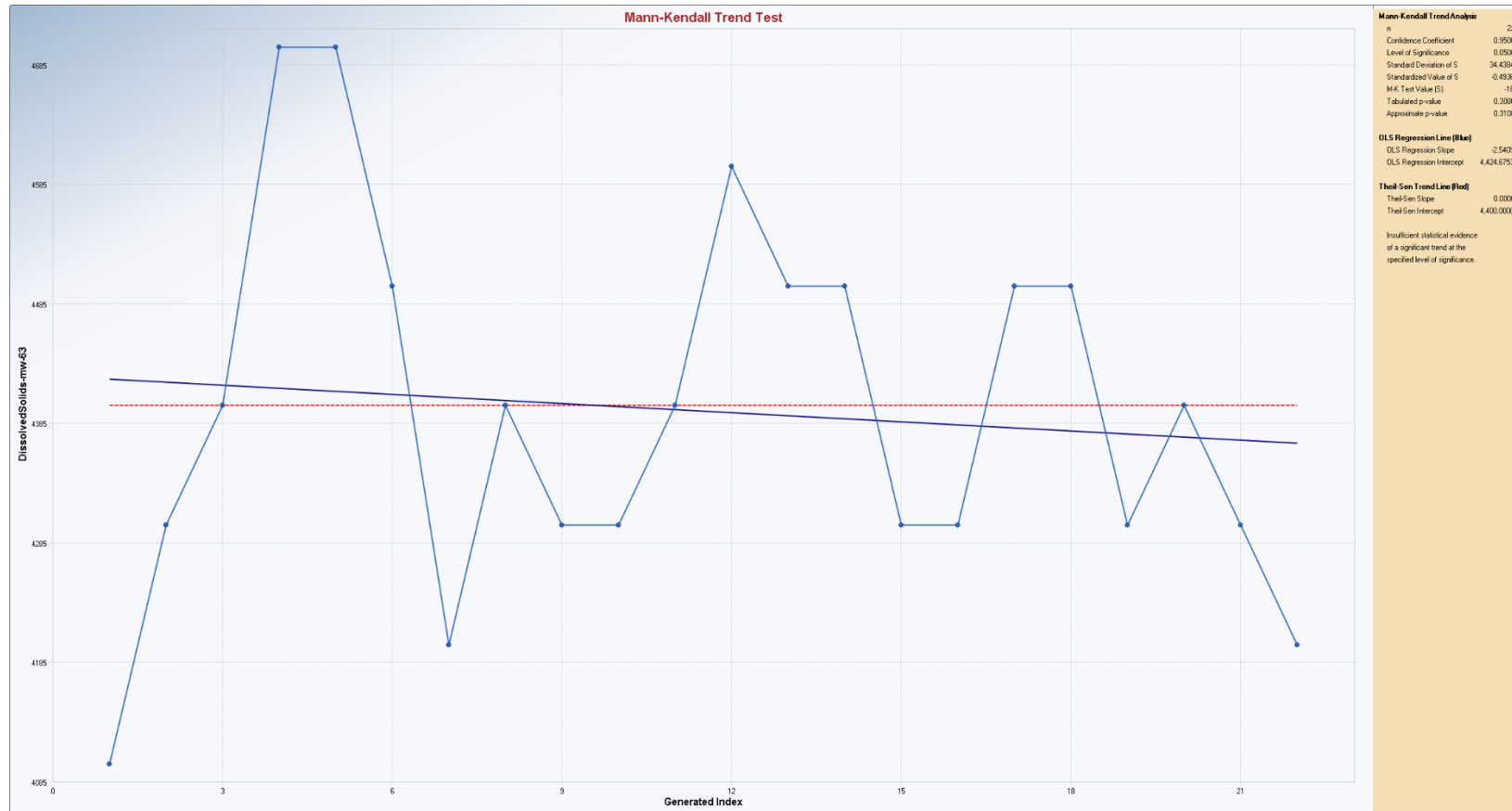
Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



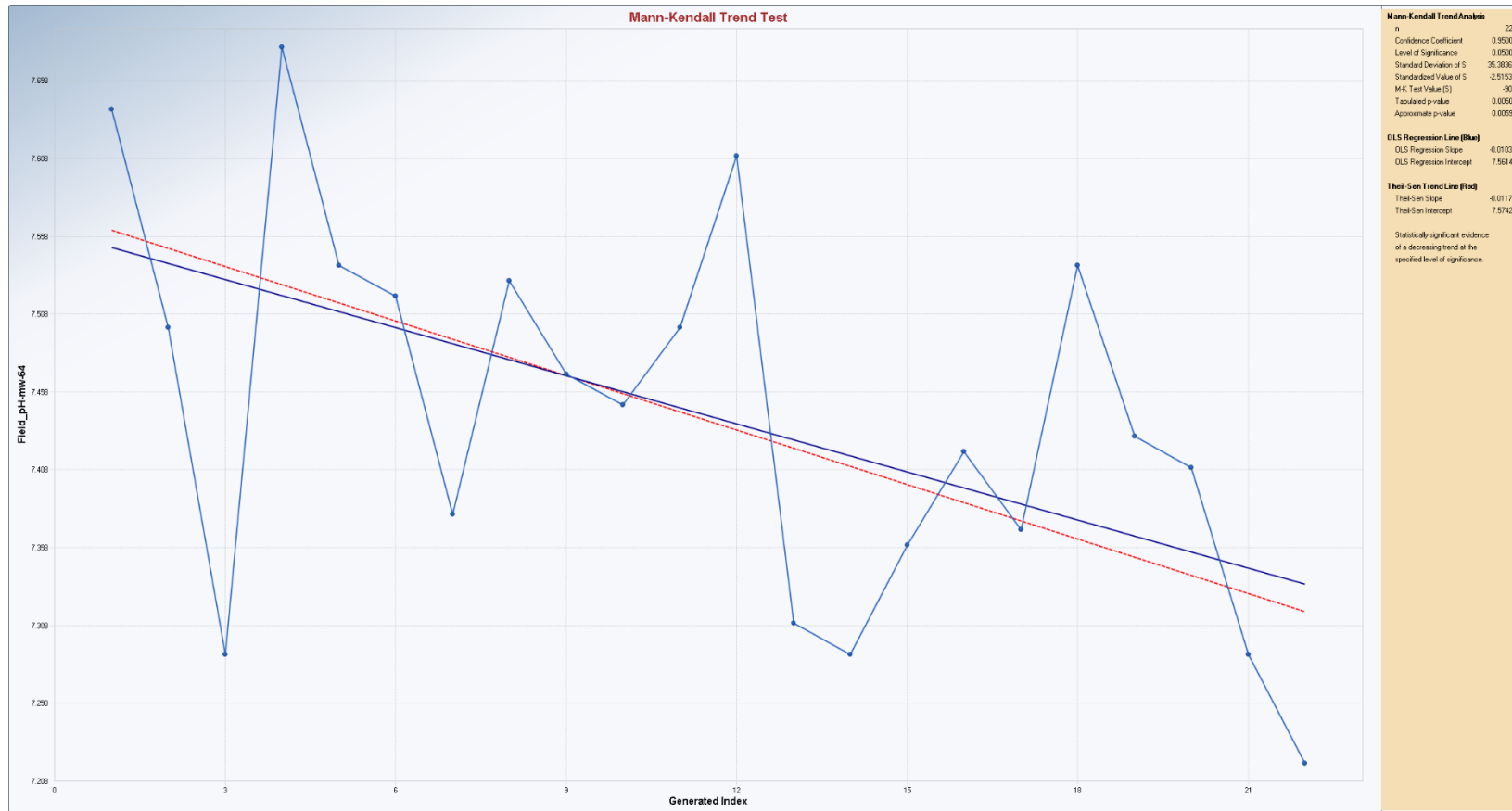
Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



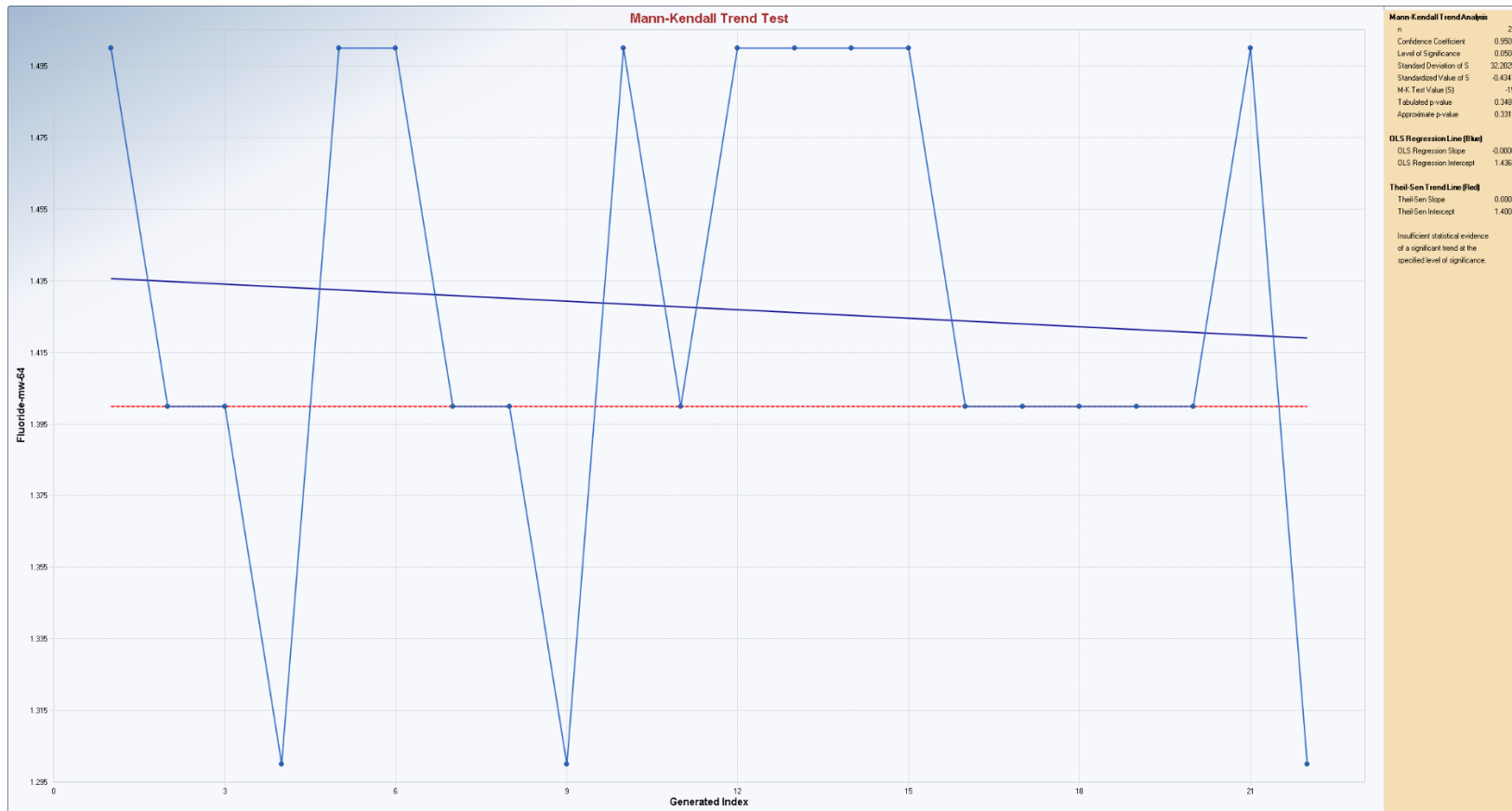
Appendix B Mann-Kendall Trend Test



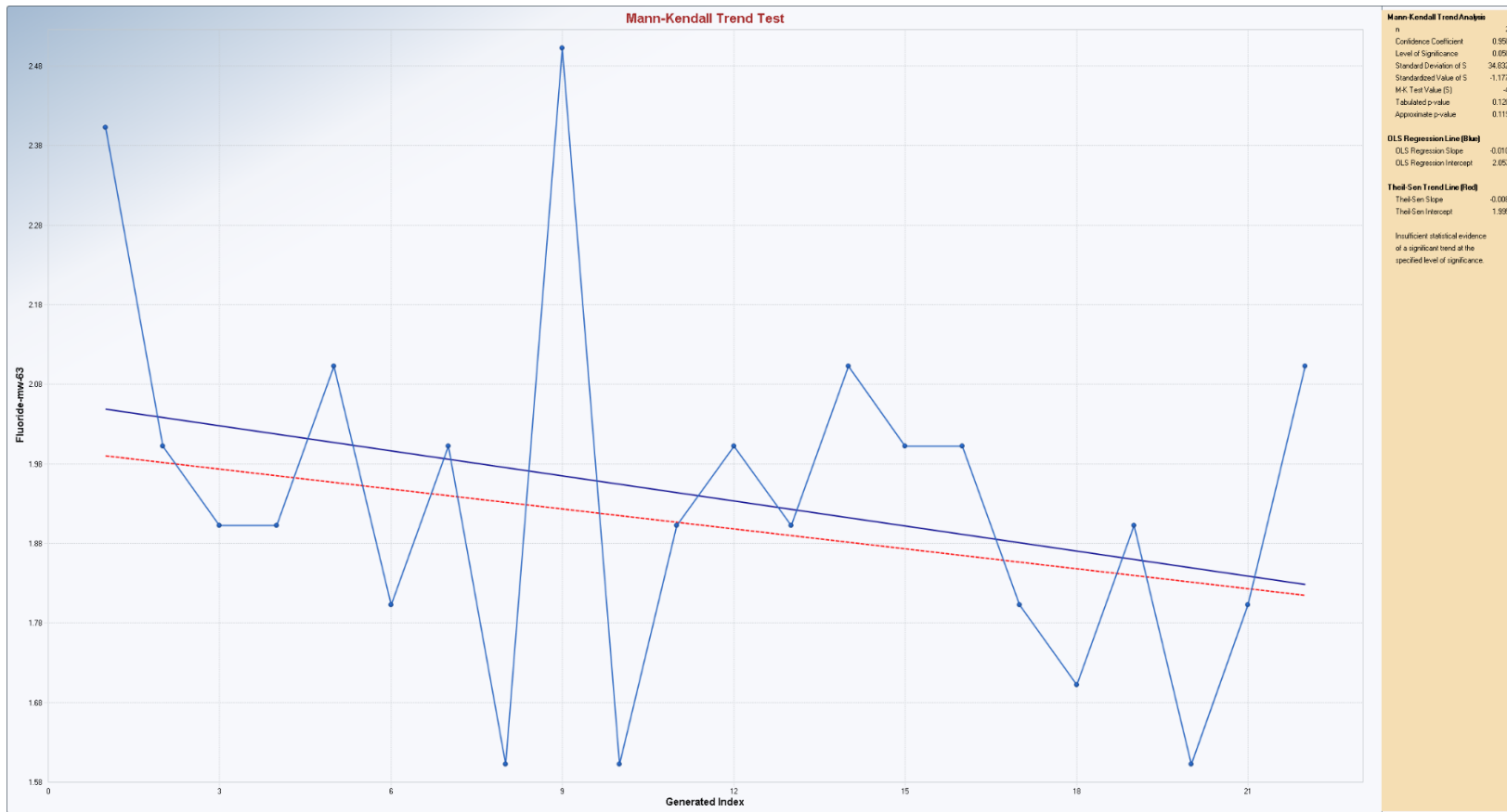
Appendix B Mann-Kendall Trend Test



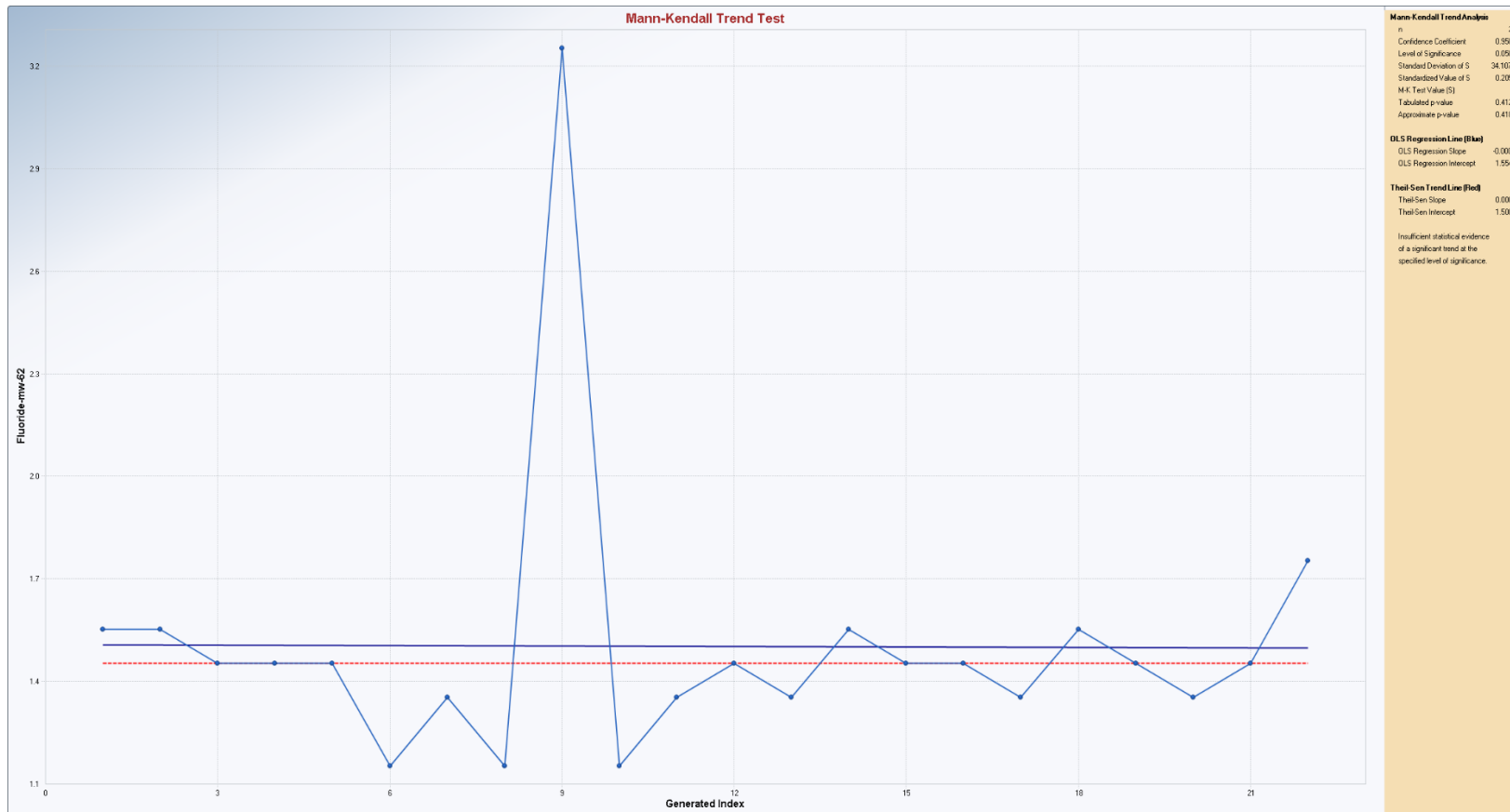
Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



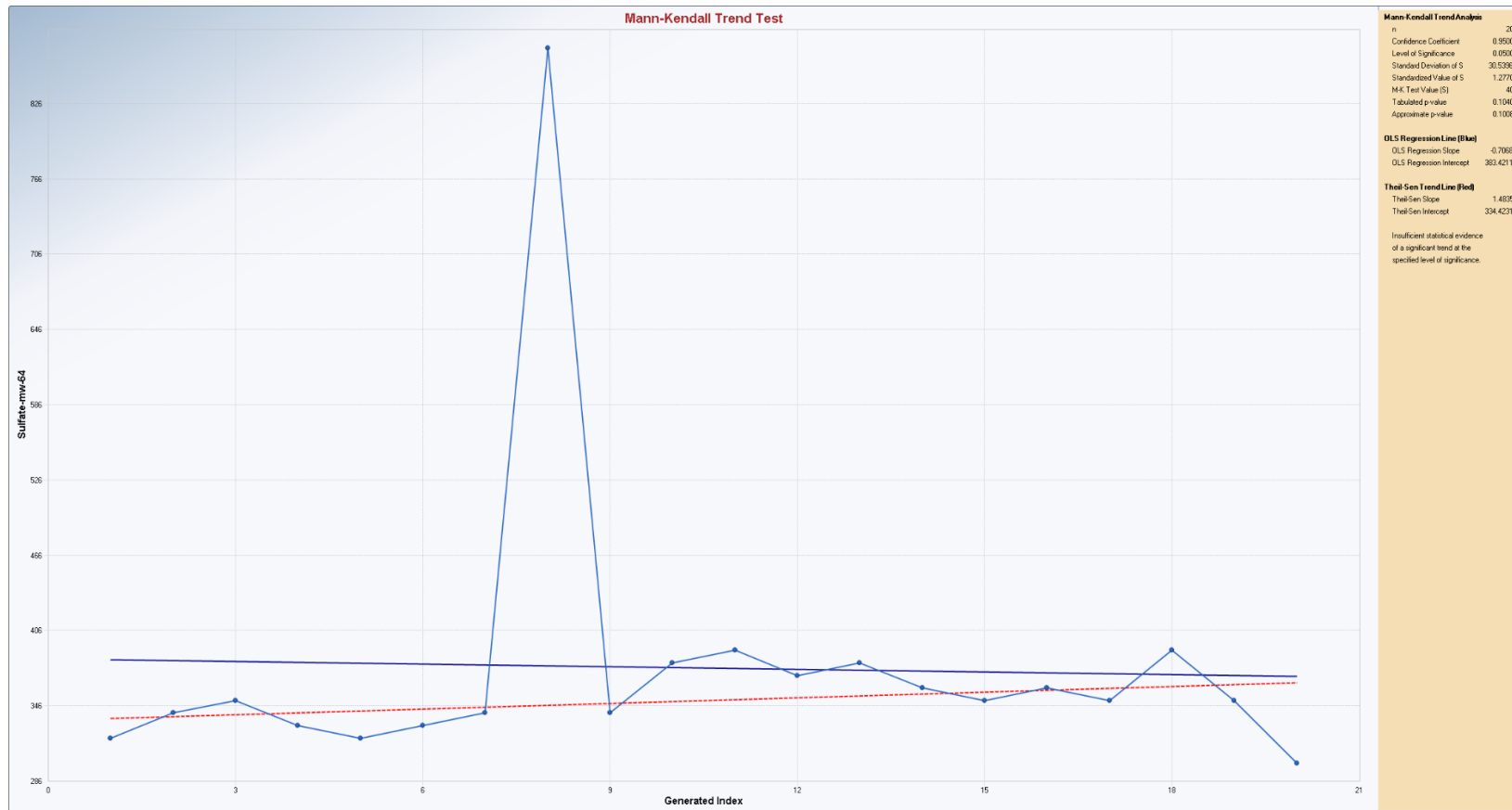
Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



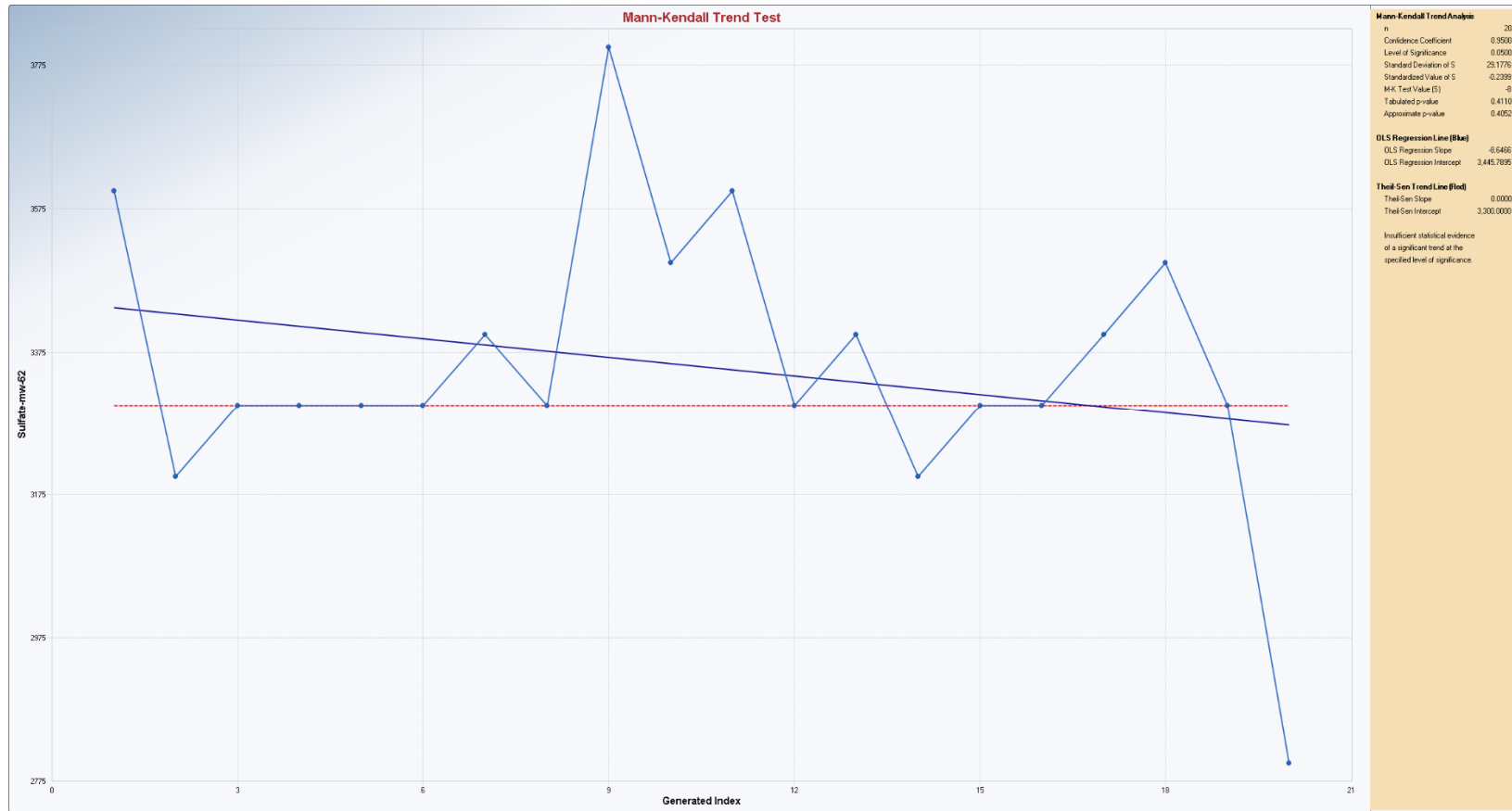
Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



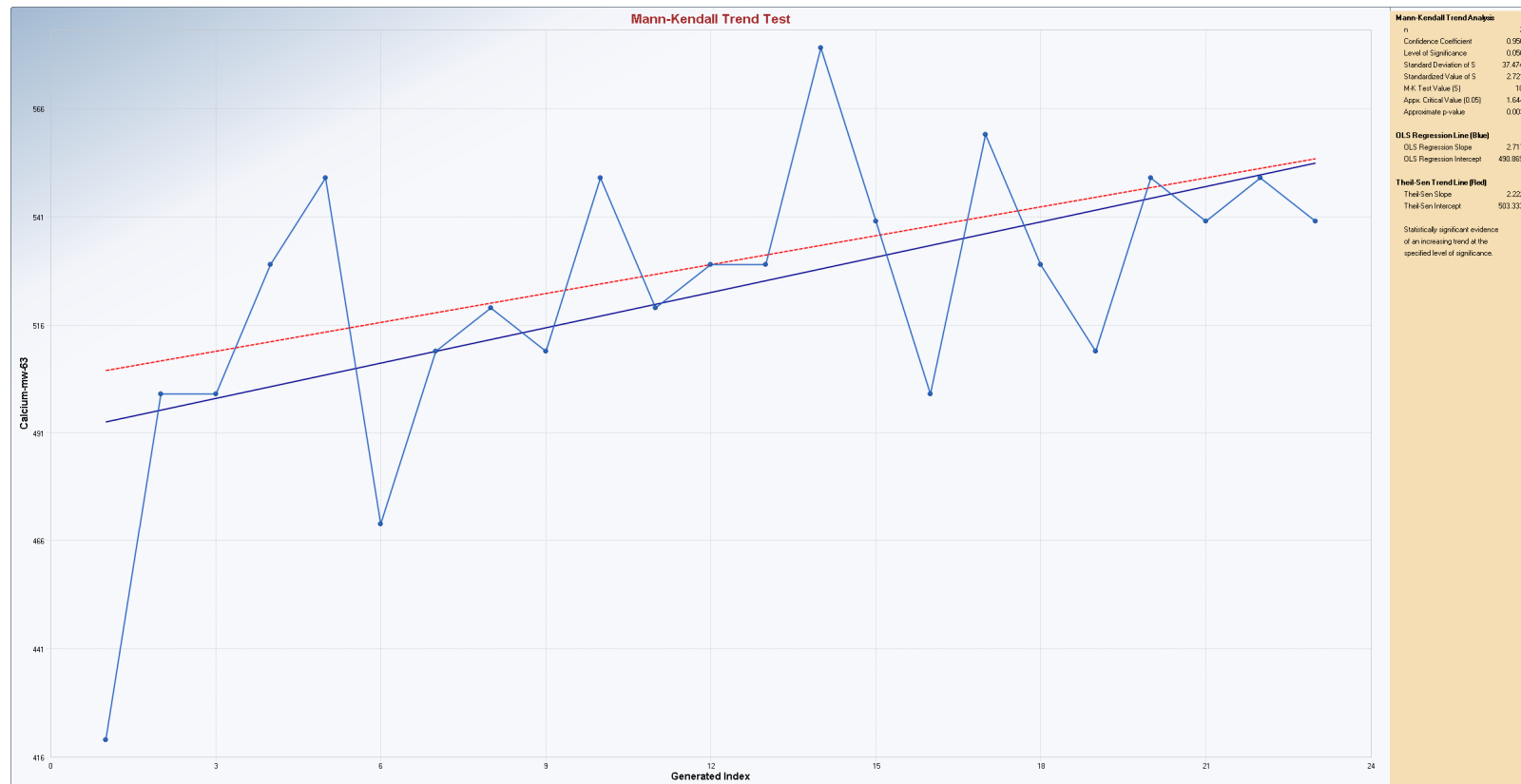
Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



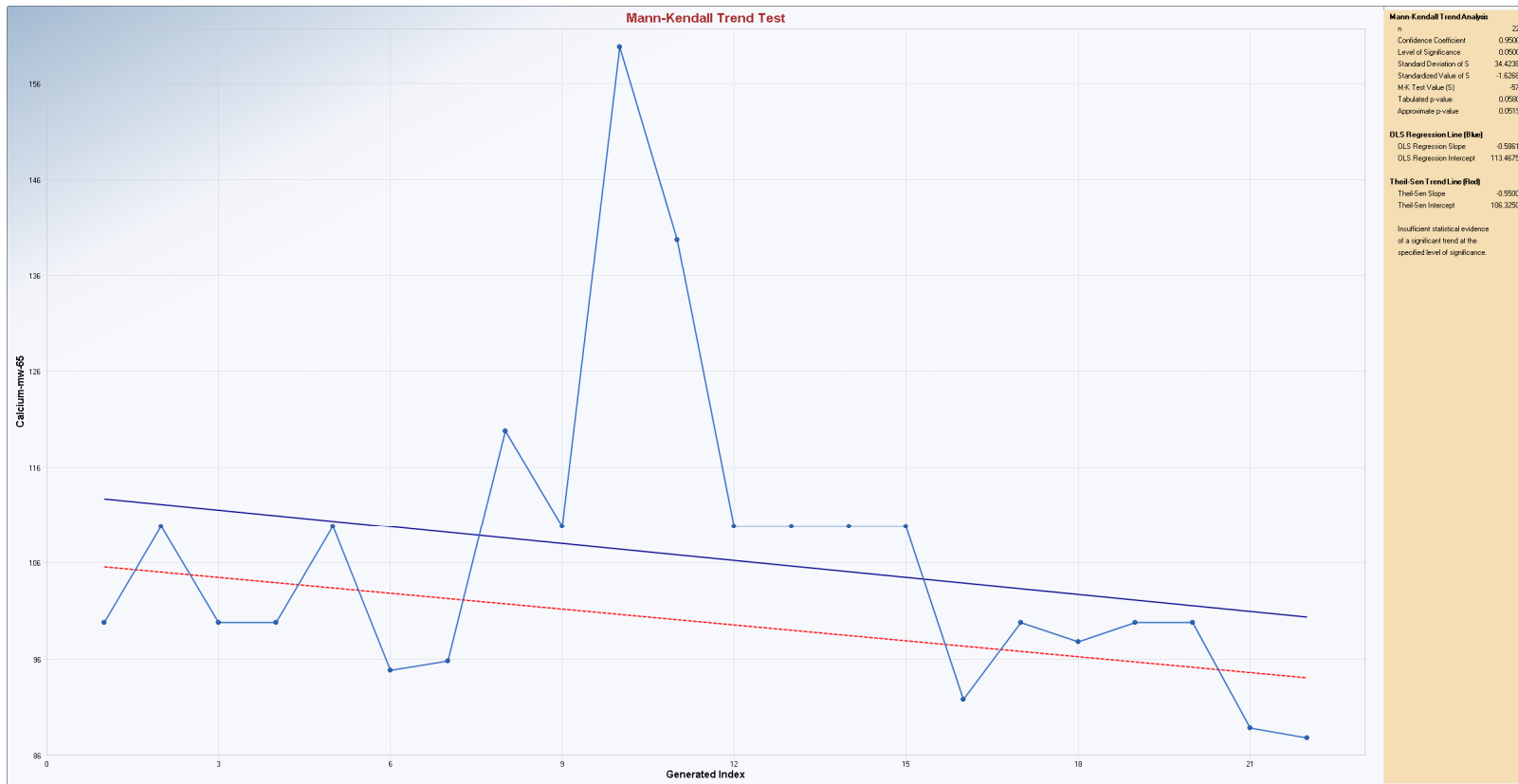
Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



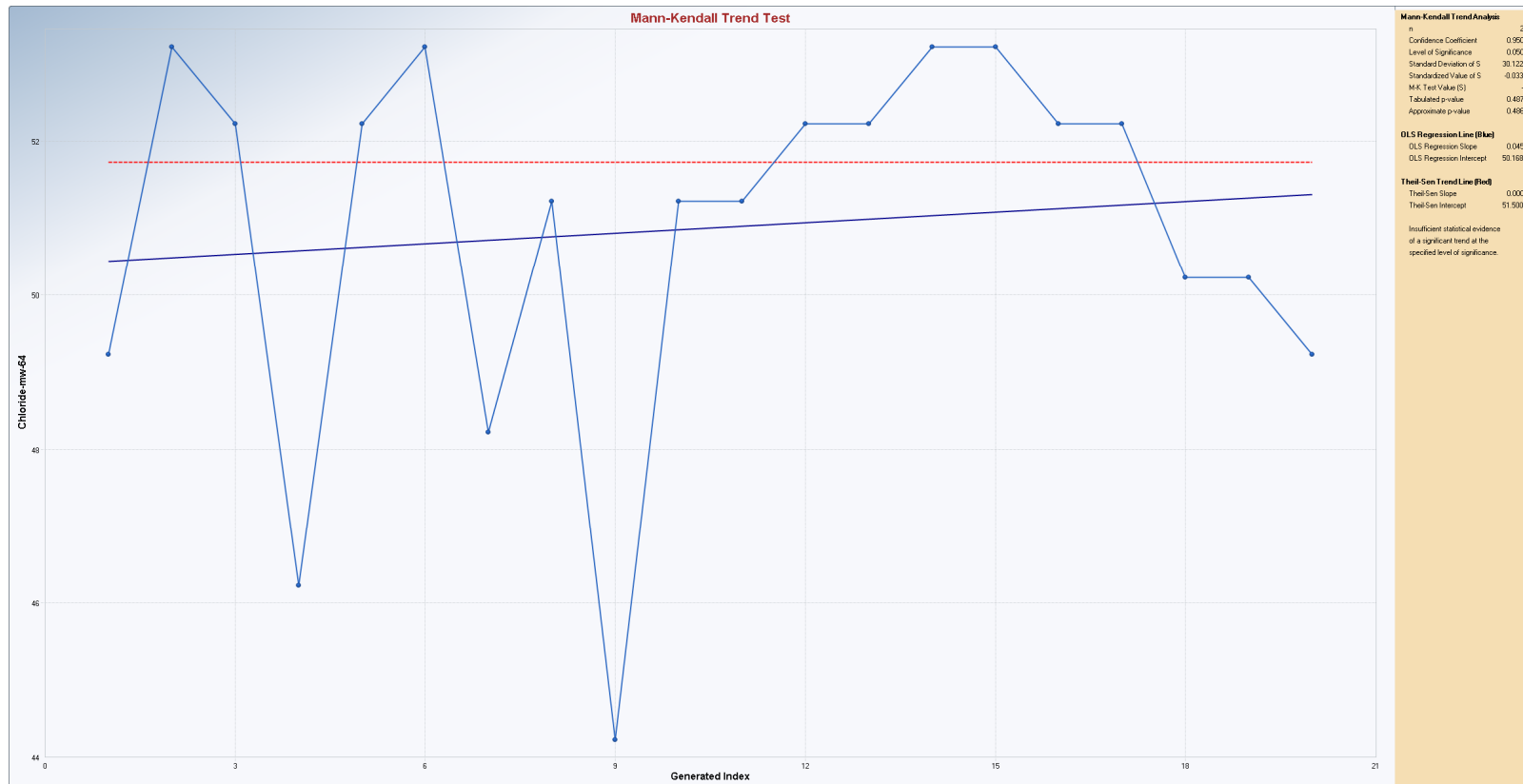
Appendix B Mann-Kendall Trend Test



Appendix B Mann-Kendall Trend Test



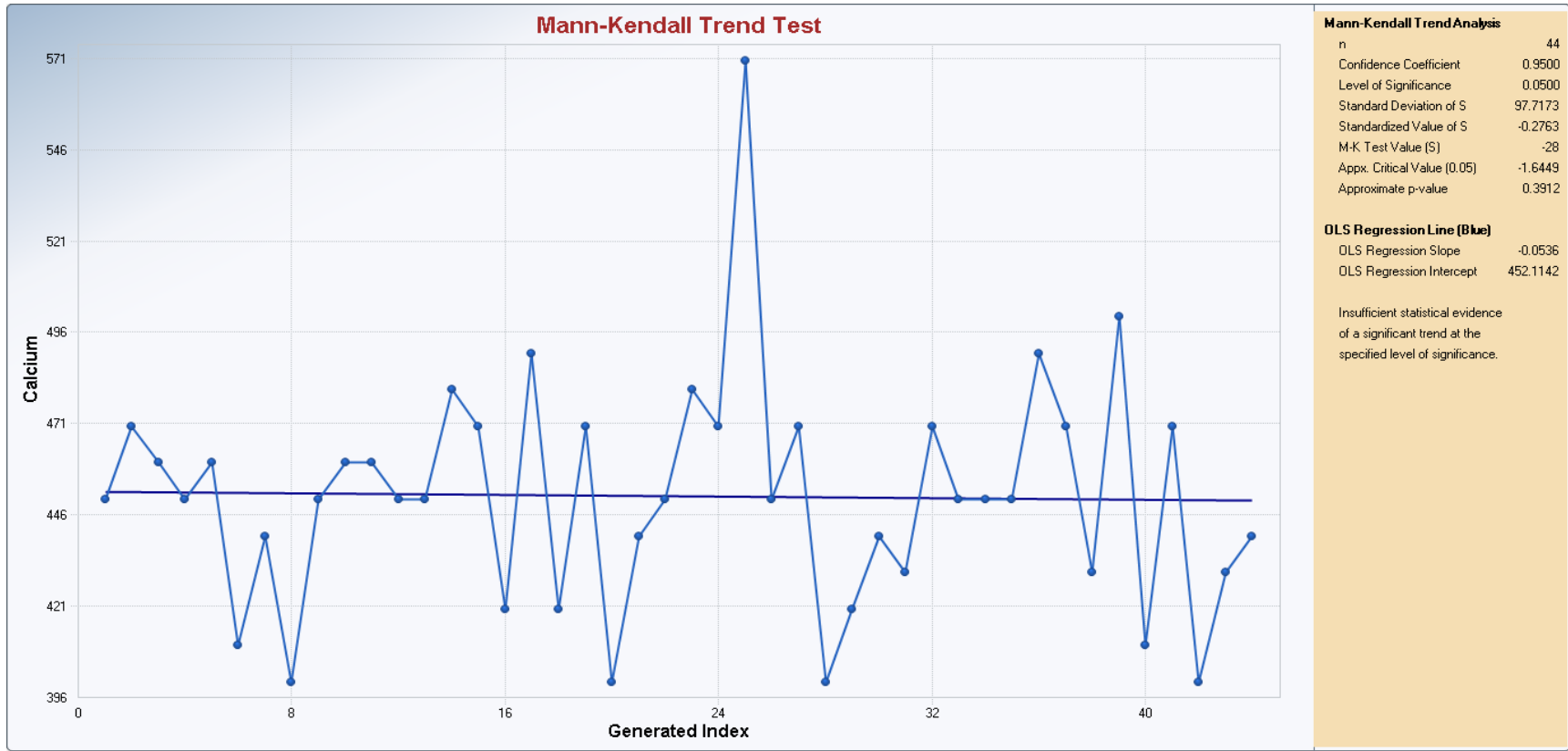
Appendix B Mann-Kendall Trend Test



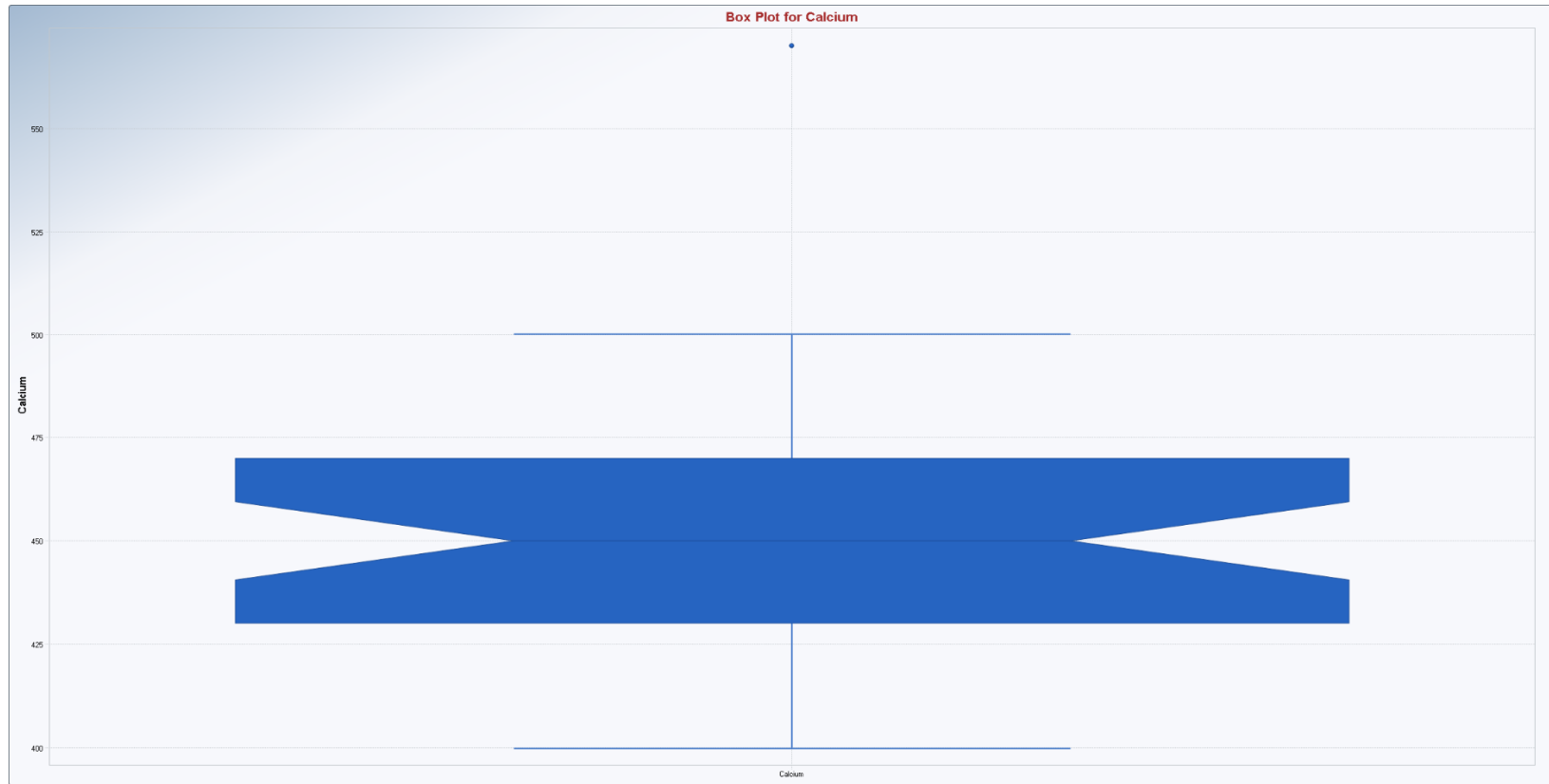
APPENDIX C

**PROUCL EDA OUTPUT FILES
(CALCIUM BTV UPDATES)**

Appendix C MW-71 and MW-72 Calcium EDA Results



Appendix C MW-71 and MW-72 Calcium EDA Results



Appendix C MW-71 and MW-72 Calcium EDA Results

General Statistics on Uncensored Data

Date/Time of Computation ProUCL 5.110/6/2020 1:54:17 AM

User Selected Options

From File Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls
 Full Precision OFF

From File: Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls

General Statistics for Censored Datasets (with NDs) using Kaplan Meier Method

Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV
Calcium	44	2	44	0	0.00%	N/A	N/A	450.9	999.2	31.61	0.0701

General Statistics for Raw Dataset using Detected Data Only

Variable	NumObs	# Missing	Minimum	Maximum	Mean	Median	Var	SD	MAD/0.675	Skewness	CV
Calcium	44	2	400	570	450.9	450	999.2	31.61	29.65	0.963	0.0701

Percentiles using all Detects (Ds) and Non-Detects (NDs)

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Calcium	44	2	410	426	430	450	470	470	480	490	539.9

Appendix C MW-71 and MW-72 Calcium EDA Results

Goodness-of-Fit Test Statistics for Data Sets with Non-Detects

User Selected Options

From File Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls
 Full Precision OFF
 Confidence Coefficient 0.95

Calcium - Outlier removed

Raw Statistics

Number of Valid Observations	43
Number of Missing Observations	3
Number of Distinct Observations	11
Minimum	400
Maximum	500
Mean of Raw Data	448.1
Standard Deviation of Raw Data	26.03
Khat	299.3
Theta hat	1.497
Kstar	278.4
Theta star	1.609
Mean of Log Transformed Data	6.103
Standard Deviation of Log Transformed Data	0.0587

Normal GOF Test Results

Correlation Coefficient R	0.981
Shapiro Wilk Test Statistic	0.949
Shapiro Wilk Critical (0.05) Value	0.943
Approximate Shapiro Wilk P Value	0.0696
Lilliefors Test Statistic	0.156
Lilliefors Critical (0.05) Value	0.134

Data appear Approximate Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.978
A-D Test Statistic	0.791
A-D Critical (0.05) Value	0.747
K-S Test Statistic	0.164
K-S Critical(0.05) Value	0.134

Data not Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.978
Shapiro Wilk Test Statistic	0.942
Shapiro Wilk Critical (0.05) Value	0.943
Approximate Shapiro Wilk P Value	0.037
Lilliefors Test Statistic	0.167
Lilliefors Critical (0.05) Value	0.134

Data not Lognormal at (0.05) Significance Level

Appendix C MW-71 and MW-72 Calcium EDA Results

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation ProUCL 5.110/6/2020 1:57:52 AM
From File Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls
Full Precision OFF

Rosner's Outlier Test for Calcium

Mean 450.9
Standard Deviation 31.61
Number of data 44
Number of suspected outliers 1

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	450.9	31.25	570	25	3.811	3.08	3.43

For 5% Significance Level, there is 1 Potential Outlier

Potential outliers is: 570

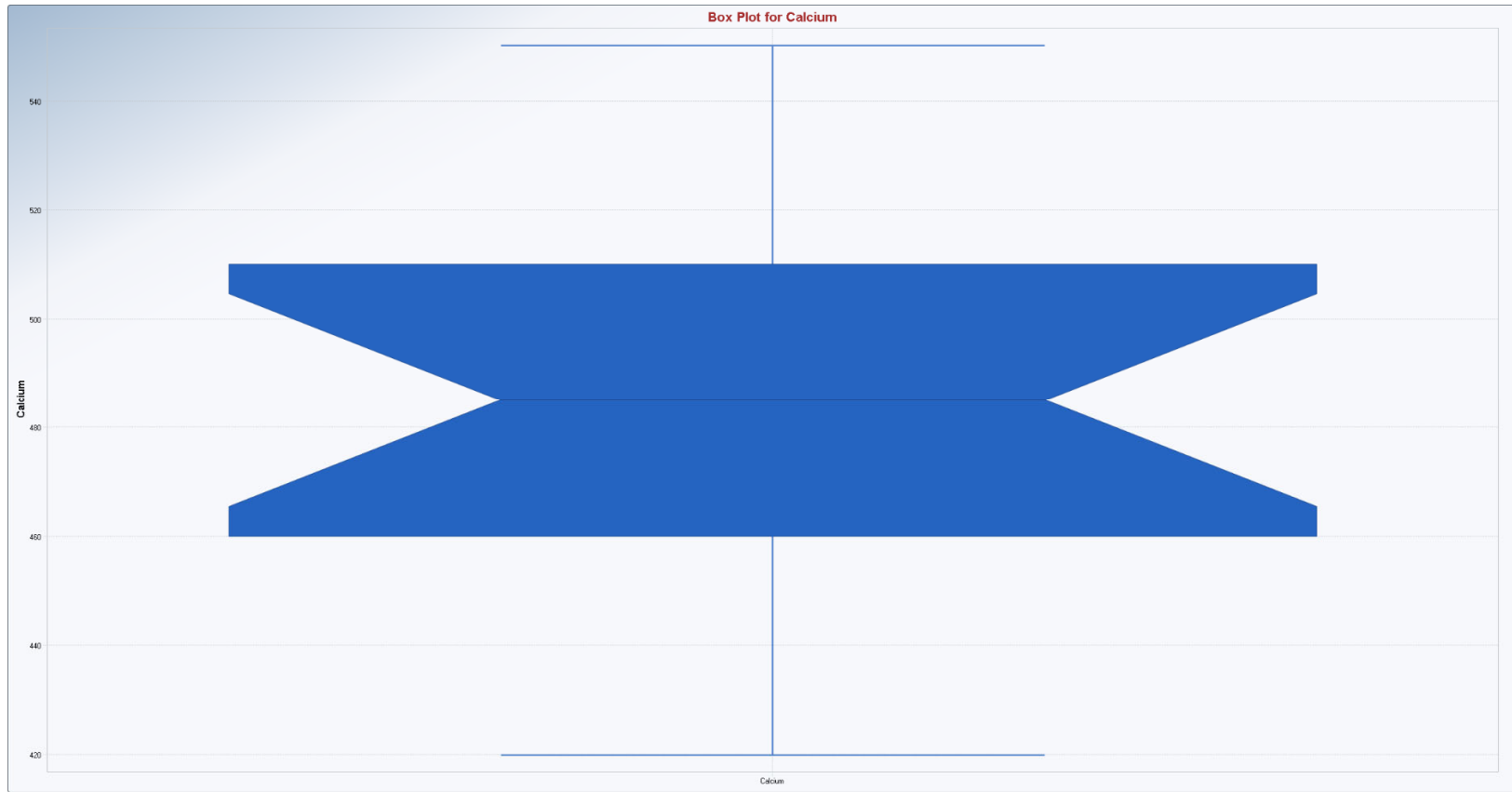
For 1% Significance Level, there is 1 Potential Outlier

Potential outliers is: 570

Appendix C MW-73 Calcium EDA Results



Appendix C MW-73 Calcium EDA Results



Appendix C MW-73 Calcium EDA Results

General Statistics on Uncensored Data

Date/Time of Computation ProUCL 5.110/6/2020 1:54:17 AM

User Selected Options

From File Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls
 Full Precision OFF

From File: Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls

General Statistics for Censored Datasets (with NDs) using Kaplan Meier Method

Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV
Calcium	44	2	44	0	0.00%	N/A	N/A	450.9	999.2	31.61	0.0701

General Statistics for Raw Dataset using Detected Data Only

Variable	NumObs	# Missing	Minimum	Maximum	Mean	Median	Var	SD	MAD/0.675	Skewness	CV
Calcium	44	2	400	570	450.9	450	999.2	31.61	29.65	0.963	0.0701

Percentiles using all Detects (Ds) and Non-Detects (NDs)

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Calcium	44	2	410	426	430	450	470	470	480	490	539.9

Appendix C MW-73 Calcium EDA Results

Goodness-of-Fit Test Statistics for Data Sets with Non-Detects

User Selected Options

From File Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls
 Full Precision OFF
 Confidence Coefficient 0.95

Calcium

Raw Statistics

Number of Valid Observations	44
Number of Missing Observations	2
Number of Distinct Observations	12
Minimum	400
Maximum	570
Mean of Raw Data	450.9
Standard Deviation of Raw Data	31.61
Khat	214.9
Theta hat	2.098
Kstar	200.3
Theta star	2.251
Mean of Log Transformed Data	6.109
Standard Deviation of Log Transformed Data	0.0686

Normal GOF Test Results

Correlation Coefficient R	0.951
Shapiro Wilk Test Statistic	0.92
Shapiro Wilk Critical (0.05) Value	0.944
Approximate Shapiro Wilk P Value	0.00493
Lilliefors Test Statistic	0.137
Lilliefors Critical (0.05) Value	0.132

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.956
A-D Test Statistic	0.74
A-D Critical (0.05) Value	0.747
K-S Test Statistic	0.134
K-S Critical(0.05) Value	0.133

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.963
Shapiro Wilk Test Statistic	0.937
Shapiro Wilk Critical (0.05) Value	0.944
Approximate Shapiro Wilk P Value	0.0258
Lilliefors Test Statistic	0.138
Lilliefors Critical (0.05) Value	0.132

Data not Lognormal at (0.05) Significance Level

Appendix C MW-73 Calcium EDA Results

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation ProUCL 5.110/6/2020 1:57:52 AM
From File Corrected_APS_FCPP_CWTP_DetMon_Jun2020.xls
Full Precision OFF

Rosner's Outlier Test for Calcium

Mean 450.9
Standard Deviation 31.61
Number of data 44
Number of suspected outliers 1

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	450.9	31.25	570	25	3.811	3.08	3.43

For 5% Significance Level, there is 1 Potential Outlier

Potential outliers is: 570

For 1% Significance Level, there is 1 Potential Outlier

Potential outliers is: 570

APPENDIX H

**WOOD REPORT DOCUMENTING THE INSTALLATION AND TESTING OF PRE-
DESIGN WELLS AT THE URS**





**WELL COMPLETION REPORT
CORRECTIVE MEASURES PRE-DESIGN WELLS
UPPER RETENTION SUMP
Four Corners Power Plant
Fruitland, New Mexico**

Submitted to:

**Arizona Public Service Company
400 North 5th Street
Phoenix, Arizona 85004**

Submitted by:

**Wood Environment & Infrastructure Solutions, Inc.
Phoenix, Arizona**

January 31, 2021

Wood Project No. 14-2018-2068



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List of Abbreviations

amsl	above mean sea level
APS	Arizona Public Service
b	aquifer thickness
bgs	below ground surface
CCR	coal combustion residuals
CM	corrective measures
CMA	Corrective Measures Assessment
CWTP	Combined Waste Treatment Pond
d	day
DFADA	Dry Fly Ash Disposal Area
FCPP	Four Corners Power Plant
FGD	flue gas desulfurization
ft	foot, feet
gpd	gallons per day
gpm	gallons per minute
GWPS	groundwater protection standard
in.	inch
k	hydraulic conductivity
LAI	Lined Ash Impoundment
LDWP	Lined Decant Water Pond
Multiunit 1	CCR multiunit comprised of the LAI and LDWP
PVC	polyvinyl chloride
RWP	Return Water Pond
SCH	schedule
SSI	statistically significant increase
swl	static water level
T	transmissivity
URS	Upper Retention Sump
URT	Upper Retention Tank
Wood	Wood Environment & Infrastructure Solutions, Inc.

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) prepared this Well Completion Report to document the installation, development, and aquifer testing of four new wells at the Four Corners Power Plant (FCPP, the plant, or the Site) in Fruitland, New Mexico (Site). The work described herein was performed pursuant to requirements specified in 40 Code of Federal Regulations Part 257 (herein referred to as the Coal Combustion Residuals [CCR] Rule; Federal Register, 2018). The new wells, designated CM-01, CM-02, CM-03, and CM-04, were installed near the former Upper Retention Sump (URS) as part of a corrective measures (CM) pre-design study to address groundwater impacts resulting from the URS.

The remainder of this section provides a summary description of the power generating facility, the facility's environmental setting, the hydrostratigraphic conceptual model developed for the Site, and the basis for installation of the new wells. Section 2.0 documents the drilling, installation, and development of the wells. Section 3.0 documents and analyzes aquifer tests conducted at CM-01 and CM-02. Section 4.0 presents a summary of the well installation and recommendations, while Section 5.0 provides report references.

1.1 Site Description

1.1.1 Facility Description

FCPP is an operating power plant owned by Arizona Public Service (APS) and four other utilities. The plant burns low sulfur coal in two electrical generating units (Units 4 and 5) and has a net generating capacity of 1,540 megawatts. FCPP formerly had five generating units and a capacity of 2,040 megawatts; Units 1, 2, and 3 were retired in December 2013 and decommissioned between 2014 and 2016. Coal burned at the plant is generally sourced from the nearby Navajo Mine (Navajo Transitional Energy Company, 2016).

The plant and associated infrastructure are located approximately 20 miles southwest of the city of Farmington, in the Colorado Plateau physiographic province of northwestern New Mexico (Figure 1). The land on which the plant resides is leased from the Navajo Nation and is primarily located in Section 36, Township 29 North, and Range 16 West.

1.1.2 Environmental Setting

Unless otherwise noted, the following information is abstracted from AECOM, 2017.

Climate. The plant is located in a semi-arid climate on the western flank of the San Juan Basin. The area receives an average of 8.6 inches of precipitation and 12.6 inches of snow per year.

Topography. The main plant area of the FCPP is located at an elevation of approximately 5,340 to 5,360 feet (ft) above mean sea level (amsl). The topography of the FCPP area is characterized by rolling terrain, steep escarpments, and incised drainages/arroyos. In the vicinity of the plant, the ground surface is relatively flat, sloping to the west at approximately 20 ft per mile; however, surface drainage immediately near Morgan Lake flows towards the lake. About one mile west of the plant, the level ground surface drops rapidly to 5,200 ft amsl. Chaco Wash (a.k.a. Chaco River) is located west of this abrupt change in elevation and ephemerally flows north to the San Juan River.

Surface Water Hydrology. FCPP is situated on the southern bank of Morgan Lake, an approximately 1,300-acre man-made lake that has a maximum storage capacity of 39,000 acre-ft of water and supplies cooling water to the plant. Morgan Lake was formed by damming a westerly flowing stream (now known as 'No

Name Wash') and is replenished by an underground pipeline (i.e., aqueduct) that routes flow from the San Juan River located approximately 3 miles north of the FCPP. The typical water surface elevation of the lake is 5,330 ft amsl. Morgan Dam discharges to 'No Name Wash' which flows west of the lake to Chaco Wash. Chaco Wash (sometimes referred to as the Chaco River) is a northward-flowing tributary of the San Juan River and is located west and hydraulically downgradient of the Site.

Site Geology. The San Juan Basin is a structural depression that lies at the eastern edge of the Colorado Plateau (Dames & Moore, 1988). The dominant geographic feature in the vicinity of FCPP is the Hogback Monocline located to the west of the plant; this monocline is a steep (38 degree) eastward-dipping flank composed of Cretaceous sedimentary rock (Dames & Moore, 1988).

There are two 'uppermost geologic units' that underlie the FCPP site and immediate vicinity. These units are expected to influence groundwater flow and variations in naturally occurring constituent concentrations across the site. The units are as follows:

- **Pictured Cliffs Sandstone:** The Pictured Cliffs Sandstone is the uppermost geologic unit beneath the plant and the CCR units located in this vicinity (i.e., the URS, the Combined Waste Treatment Pond [CWTP], and the Return Water Pond [RWP]). This unit is a fine- to medium-grained marine sandstone. The lower portions of the Pictured Cliffs Sandstone represent a transitional sequence between this formation and the underlying Lewis Shale as indicated by alternating thin beds of very fine-grained sandstone and silty shale. The Pictured Cliffs Sandstone forms a capstone on an exposed cliff face located between the plant site and the CCR units located to the west (i.e., the Lined Ash Impoundment [LAI], LDWP and the Dry Fly Ash Disposal Area [DFADA]).
- **Lewis Shale:** The Lewis Shale is a marine shale that contains evaporite deposits resulting in naturally occurring saline groundwater conditions. The Lewis Shale is the uppermost geologic unit that underlies the LAI, LDWP, and DFADA and spans west of the Pictured Cliffs Sandstone cliff face approximately 1.5 miles westward to the base of the Hogback Monocline. The regional thickness of the Lewis Shale is approximately 500 ft and is underlain by Cliff House Sandstone. The Lewis Shale consists of a weathered shale subunit overlying a hard, unweathered shale subunit. The thickness of the weathered shale varies between 11 and 47 ft with an average thickness of 30 ft within the vicinity of the site (Dames & Moore, 1988). The weathered shale is not as thick when overlain by Pictured Cliffs Sandstone in the vicinity of the plant site and can be difficult to differentiate within the fine-grained rocks that comprise the gradational contact between the Pictured Cliffs Sandstone and underlying Lewis Shale. The Weathered Lewis Shale contains thin sandstone lenses that vary in thickness from 1 to 7 ft; the sandstone is fine- to very fine-grained and cemented by calcium carbonate (Dames & Moore, 1988). The unweathered shale is significantly less permeable than the weathered shale. The unweathered shale is very fine-grained to silty and contains periodic siltstone and sandstone lenses (Dames & Moore, 1988). The surface of the unweathered shale slopes towards the Chaco Wash at approximately the same slope as land surface (Dames & Moore, 1988) but displays some irregularity resulting in varying levels of saturated thickness in the weathered shale. The weathered subunit of the Lewis Shale is variably saturated and hydraulically interconnected with alluvial deposits of Chaco Wash. The low-permeability unweathered shale underlying the Pictured Cliffs Sandstone results in a perched saturated zone beneath the plant.

Applicable Hydrostratigraphy. Three general hydrostratigraphic units are conceptualized beneath the FCPP that have the potential to interact with releases from CCR units, if they occur. These units form the basis for the Conceptual Site Model developed by AECOM (2017) for the purpose of designing the site CCR

groundwater monitoring system and establish the working basis for statistically evaluating groundwater conditions underlying the site.

The first hydrostratigraphic unit (Pictured Cliffs Sandstone) is dominant only under the plant area, which is located in an elevated area south of Morgan Lake. The former URS, CWTP, and RWP reside within this area. While the Pictured Cliffs Sandstone is unsaturated in the vicinity of the RWP, it is the uppermost water bearing unit for the plant area and extends from ground surface (between approximately 5,340 to 5,360 ft amsl) to approximately 5,300 ft amsl in the plant area. Groundwater in this area is locally influenced by Morgan Lake (at a surface elevation of approximately 5,330 ft amsl) and operations at the Plant (e.g., the former URS and the CWTP) and generally flows northward towards the lake. However, construction and operations of the plant have resulted in disturbed ground conditions and associated impacts are not well understood.

The second hydrostratigraphic unit (Weathered Lewis Shale/Alluvium) underlies the Pictured Cliffs Sandstone in the plant area and the Multiunit 1/DFADA CCR units in the disposal area, approximately 1 mile west of the plant. The Weathered Lewis Shale and the hydraulically connected alluvial deposits along Chaco Wash are designated as the uppermost water bearing unit in the disposal area. Although the Lewis Shale is geologically continuous in this area, it is unsaturated in the vicinity of the DFADA. The water table in the Weathered Lewis Shale can exhibit local seasonal fluctuations that are attributed to interactions between rates of groundwater recharge and discharge (Dames & Moore, 1988) from/to Morgan Lake, historical unlined ponds, and Chaco Wash. Groundwater flow generally follows the surface topography and descends to the west-southwest in the disposal area, mainly in the weathered shale and in local alluvial channels that drain toward the Chaco Wash (APS, 2013).

The third hydrostratigraphic unit (Unweathered Lewis Shale) consists of the Unweathered Lewis Shale and is a regionally extensive confining unit that forms the base of the uppermost aquifers in the plant and disposal areas. Although minor amounts of water may be present in the Unweathered Lewis Shale, this unit is sufficiently thick (hundreds of ft) and acts as an aquitard between the Weathered Lewis Shale/Alluvium and the underlying Cliff House Sandstone.

Ambient Groundwater Quality. APS began evaluating groundwater and the hydrogeology in the area of the Plant as early as 1971. Due to the natural heterogeneity of the geologic and hydrogeologic conditions underlying the FCPP, background constituent concentrations are expected to be spatially heterogeneous (varying) across the site. The site is also expected to exhibit both spatial and temporal heterogeneity attributable to local climatic regimes, potential leakage from Morgan Lake, and potential operational activity at the site.

1.2 BASIS FOR WELL INSTALLATION

1.2.1 CCR Groundwater Monitoring Compliance at the URS

The groundwater monitoring and corrective action process defined in the CCR Rule includes a phased approach to groundwater monitoring at the Site. The initial phase is detection monitoring, which focuses on a set of constituents (listed in Appendix III of the CCR Rule) that are relatively mobile components of CCR and therefore represent indicators of possible impacts from CCR in groundwater. If statistically significant increases (SSIs) of any of the Appendix III constituents relative to background conditions are detected in the downgradient waste boundary wells and cannot be demonstrated to be associated with a source other than the CCR unit, then groundwater monitoring moves into assessment monitoring.

In January 2018, APS completed a statistical analysis of Appendix III constituent data collected during the detection monitoring phase at the URS from November 2015 to October 2017. The analysis declared an SSI over background for one or more Appendix III constituents at the URS (Amec Foster Wheeler, 2018). Accordingly, the URS was placed into the assessment monitoring program pursuant to the CCR Rule.

Assessment monitoring focuses on the constituents listed in Appendix IV of the CCR Rule. The Appendix IV constituents are generally less mobile and occur at lower concentrations in groundwater than the Appendix III constituents. Concentrations of Appendix IV constituents measured in groundwater samples collected from CCR compliance wells are compared to Groundwater Protection Standards (GWPSs), which are the higher of either the federal Safe Drinking Water Act Maximum Contaminant Level, an alternative risk-based GWPS identified in the CCR Rule, or a statistically-driven background threshold value for each constituent. A statistical analysis of Appendix IV constituent data collected from URS compliance wells indicated exceedances of the fluoride GWPS at statistically significant levels (Wood, 2018).

In response to the fluoride GWPS exceedance and pursuant to CCR Rule requirements, APS performed a hydrogeologic investigation to characterize the nature and extent of groundwater impacts resulting from the URS (Wood, 2020). Additionally, APS completed a Corrective Measures Assessment (CMA) to evaluate potential remedies to address the fluoride exceedances in groundwater (Wood, 2019a). The CMA screened several applicable technologies to evaluate the benefits, constraints, risks, and relative time to benefit from implementation of a given technology. As indicated in the CMA, a containment well network was identified as a viable remedial technology (Wood, 2019a). The new wells, CM-01, CM-02, CM-03, and CM-04, were installed to evaluate the effectiveness of a containment well network as a potential remedial technology.

1.2.2 Conceptual Site Model for the URS

To characterize the nature and extent of fluoride impacts in groundwater downgradient of the URS, a conceptual site model for the URS was developed and is summarized as follows:

- The former URS is located in the southern portion of the plant area (Figure 1) which is underlain by the Pictured Cliffs Sandstone hydrostratigraphic unit. The predominant direction of groundwater flow in the Pictured Cliffs Sandstone hydrostratigraphic unit is northerly towards Morgan Lake, and static groundwater elevations beneath the former URS range from approximately 5,330 to 5,332 ft amsl (or approximately 14 to 26 ft bgs depending on ground surface elevations). Groundwater in the Pictured Cliffs Sandstone occurs under unconfined conditions.
- The URS was a surge pond for process water associated with the plant's flue gas desulfurization (FGD) system. The URS was placed in service around 1983 and removed from service on December 10, 2018 when a new concrete tank was connected to operations to assume the function of the URS. The process water discharged to the URS contained elevated levels of fluoride. The pond was approximately 1 acre in size and was lined with soil cement on the bottom and on the inside slopes of the pond. The level in the pond varied with operation of the FGD system.
- Prior to demolition of the unit, groundwater levels were locally elevated in the vicinity of the URS, suggesting that the URS was in hydraulic communication with underlying groundwater. Groundwater monitoring conducted in November 2018 (after most of the URS had been drained) indicated that the extent of mounding under the former URS was limited and had declined from levels observed while the sump was in operation (Wood, 2019b).
- APS initiated activities to prepare for closure of the URS in June 2018. Activities included construction of a new above-ground replacement tank (the Upper Retention Tank or URT), draining

of the URS, and demolition of the URS with removal of underlying soils. A notice of intent to initiate closure of the URS was published on December 10, 2018.

- The URT was constructed from August 2018 to November 2018. A temporary cofferdam was constructed in the southwest corner of the former URS footprint to constrain flows and allow demolition of the URS and construction of the new URT while the FGD system continued to function. The cofferdam remained in use until December 10, 2018, at which point all inflow to the old URS was halted and diverted to the URT.
- Figure 2 depicts fluoride concentrations and groundwater elevations measured in wells surrounding the former URS in June 2020. The highest concentrations of fluoride are generally associated with wells that are hydraulically downgradient of the CCR unit (i.e., MW-66 and MW-67), although fluoride concentrations in upgradient well MW-69 and cross-gradient well MW-68 are also elevated above the GWPS. The inferred direction of groundwater flow at the former URS is northwest toward Morgan Lake. However, the analytical data indicate that no off-site migration of groundwater with elevated fluoride concentrations has occurred.

2.0 WELL INSTALLATION ACTIVITIES

This section summarizes the installation of the CM pre-design wells and includes a well location map, well construction table, lithologic logs, well construction diagrams, a photograph log, and survey data for the new wells. The lithologic logs and well construction diagrams are included as Appendix A, and the photograph log is included as Appendix B. Appendix C presents the final survey report for the new monitoring wells.

2.1 Well Siting and Pre-mobilization Activities

Siting of the CM pre-design wells was constrained by the congested area around the former URS and controlled-access regions within the Plant. Wells CM-01 and CM-02 were sited downgradient of the former URS and CCR monitoring wells MW-66 and MW-67, while CM-03 and CM-04 were sited within the footprint of the former URS directly downgradient of MW-68 and MW-69. Figure 3 depicts the final installation locations of the CM pre-design wells.

Prior to site mobilization, Wood updated the existing Health and Safety Plan for the Site and ensured all Wood field personnel and subcontractors received APS Fossil Generation Contractor Safety training.

2.2 Well Drilling

Utility clearance was performed by ELM Locating and Utility Services on December 2, 2019. Hydro-excavation of the well locations was performed by Riley Industrial Services, Inc. to depths of approximately 5 ft below ground surface (bgs) prior to well drilling. Wood contracted with a licensed New Mexico driller, Cascade Drilling, LP, to drill and install the CM pre-design wells using a truck-mounted sonic drill rig powered with a diesel engine.

Well drilling occurred between December 8 and December 11, 2019. The boreholes were drilled to a 10-inch (in.) diameter. Drilling and well construction was supervised by a Wood field geologist, and continuous formation samples were logged at 2.5-ft depth intervals using the Unified Soil Classification System. Lithologies encountered during drilling include alluvium (sandy silt and sandy clay), shale, mudstone, siltstone, limestone, and coal. With the exception of the coal deposits, the bedrock lithologies encountered

are typical of the lower portions of the Pictured Cliffs Sandstone. Descriptions of the formation samples are recorded on the lithologic logs (Appendix A). Photographs of the formation samples are provided in the photograph log (Appendix B).

While groundwater was not encountered during drilling, moisture was noted in each boring in the alluvium and Pictured Cliffs Sandstone above an approximately 0.5 to 1 ft thick limestone bed. The top of the limestone bed is present at depths ranging between 25 and 31 ft bgs. The limestone bed and bedrock units below it were consistently observed to be dry. These observations suggest that the limestone bed acts as a relatively impermeable boundary upon which groundwater near the former URS is perched.

2.3 Well Installation

Well construction occurred between December 8 and December 13, 2019. Well construction details are presented in Table 1 and included on the lithologic logs (Appendix A). The wells are each constructed of a 6-in. nominal diameter Schedule (SCH) 80 polyvinyl chloride (PVC) well casing with a 6-in. nominal diameter SCH 80 PVC screen with 0.020-in. slots. The screened interval depths were selected to intercept the saturated portion of the Pictured Cliffs Sandstone; each well is screened from 20 to 30 ft bgs and contains a 5-ft sump from 30 to 35 ft bgs. Filter pack material consists of 10-20 silica sand and a transition seal of 20-40 silica sand was installed above the filter pack. A well seal consisting of bentonite was installed above the transition seal, followed by a surface seal consisting of cement-bentonite grout. Surface completions consist of 2-ft above-grade steel vaults placed within a concrete pad surrounded by traffic bollards.

2.4 Well Development

The CM pre-design wells were developed between December 13 and December 18, 2019. Development techniques varied based on the amount of water produced at each well, but generally consisted of:

- Surging and bailing the well until the amount of sediment produced by each cycle was reduced to trace amounts; and
- Development pumping using a 12-volt Mega-Monsoon® pump.

Well development results are summarized in the Table 2. Successful well development (which is typically defined by purging a well until water turbidity reaches less than 5 nephelometric units) was achieved at CM-01 and CM-02, while development of CM-03 and CM-04 was unsuccessful due to low yield which prohibited sustained development pumping.

2.5 Management of Investigation-Derived Waste

Investigation-derived waste consisted of groundwater pumped during well development and soil cuttings produced during drilling. Groundwater pumped from the monitoring wells during development was directed to 55-gallon drums and then transported to the LAI via a water truck for disposal. Drill cuttings were spread on the ground surface near the well site.

2.6 Well Survey

The location, surface elevation, and measuring point elevation for each well was surveyed by Sakura Engineering & Surveying, a registered New Mexico land surveyor, on March 30, 2020. Table 1 summarizes the survey data, and the final survey report is included as Appendix C.

3.0 AQUIFER TESTING

This section summarizes the performance and analysis of aquifer tests performed at the CM wells to evaluate local aquifer properties (e.g., transmissivity and hydraulic conductivity). Wells CM-01 and CM-02 were selected for aquifer testing; the limited yield and unsustainable pumping rates at CM-03 and CM-04 during well development precluded these wells from testing.

3.1 Aquifer Test Equipment and Groundwater Disposal

A 3-in nominal diameter test pump (Grundfos Model B/B P2 1943) was used to conduct the aquifer tests. Pumping rates were determined by observing the time required to fill a container of known volume and were verified at approximately 5 to 10-minute intervals throughout the aquifer tests. Water-level data at test wells were measured using an In-Situ Level TROLL® 500 with a vented cable and verified with a water-level meter. Groundwater pumped during the aquifer tests was containerized at the test well location before conveyance to the LAI for disposal.

3.2 CM-01 Testing

Step-rate testing of CM-01 was performed on July 11, 2020. The test pump intake was installed at 32.30 ft bgs and the CM-01 static water level (swl) was 22.34 ft bgs. The step-rate test consisted of pumping CM-01 at four different steps (i.e., pumping rates) for approximately 30 minutes per step. Pumping rates ranged from 2.0 to 3.5 gallons per minute (gpm) and drawdown was relatively stable during the second pumping step of 2.3 gpm. Approximately 3.01 ft of drawdown occurred during the second step, equating to a specific capacity of 0.76 gpm/ft. Table 3 summarizes the results of the CM-01 step-rate test, and Figure 4 depicts the drawdown data collected throughout test.

Constant-rate testing of CM-01 was performed on July 12, 2020. Prior to starting the test, the swl was measured at 22.37 ft bgs, which equates to over 99% recovery to the swl after conducting the step-rate test. Based on the results of the step-rate test, a pumping rate of 2.3 gpm was selected for the constant-rate test. The test began at 7:33 a.m. at a pumping rate of 2.3 gpm and continued for approximately 10 hours. Figure 5 presents a semi-log plot of CM-01 time-drawdown data.

After stopping the test pump, water-level recovery was monitored for approximately 13 hours. The CM-01 water level recovered to the swl approximately 1 hour and 47 minutes after stopping the pump. The residual drawdown data collected during the recovery period is presented as Figure 6. Analysis of the test data is provided in Section 3.4.

3.3 CM-02 Testing

Step-rate testing of CM-02 was performed on July 11, 2020. The test pump intake was installed at 32.20 ft bgs and the swl was 18.31 ft bgs. The step-rate test consisted of pumping CM-02 at four different steps for approximately 30 minutes per step, with pumping rates ranging from 1.3 to 4.0 gpm. Relatively stable drawdown occurred during the third step at 3.0 gpm. Approximately 1.64 ft of drawdown occurred during the third step, equating to a specific capacity of 1.8 gpm/ft. Table 3 summarizes the results of the CM-02 step-rate test, and Figure 7 depicts the drawdown data collected throughout the test.

Aquifer testing of CM-02 was performed on July 13, 2020. Prior to starting the test, the swl was 18.26 ft bgs, indicating a full recovery to the swl. The test was started at 07:40 a.m. at a flow rate of 3.0 gpm. Approximately 5 hours after starting the test, approximately 1.6 ft of drawdown had occurred, and the

pumping rate was increased to 4.0 gpm to further evaluate the well's pumping capabilities. The well was pumped at 4.0 gpm for an additional 5 hours. A semi-log plot depicting the CM-02 aquifer test time-drawdown data is presented as Figure 8.

After stopping the test, water-level recovery was monitored for approximately 12 hours. The well recovered to the swl approximately 1 hour and 37 minutes after stopping the pump. The residual drawdown data collected during the recovery period is presented as Figure 9. Analysis of the test data is provided in the following section (Section 3.4).

3.4 Aquifer Test Analysis

This section analyzes the aquifer test data to evaluate aquifer properties using several analytical solutions included in the AQTESOLV (Duffield, 1996) software package. Analytical solutions used are based on the assumption of unconfined conditions for the Pictured Cliffs hydrostratigraphic unit and include the Cooper-Jacob method (1946) and the Theis drawdown method (1935). Results of the AQTESOLV analyses are described in the following sections and presented as Appendix D.

Hydraulic conductivities were estimated using the following equation:

$$T=kb$$

(T=transmissivity [ft²/day], k=hydraulic conductivity [ft/day], and b=aquifer thickness [ft])

Table 4 summarizes the results of the aquifer test analyses.

3.4.1 CM-01 Aquifer Test Analysis

The CM-01 constant-rate test drawdown data was analyzed using the Cooper-Jacob and Theis methods, which produced transmissivity values of **159.9 ft²/d (1,196 gallons per day [gpd])/ft** and **171.9 ft²/d (1,286 gpd/ft)**, respectively (Appendix D). Hydraulic conductivity estimates are obtained by dividing the transmissivity values by an assumed saturated thickness of 6.6 ft; this saturated thickness equals the vertical distance from the CM-01 swl prior to aquifer testing (22.37 ft bgs) to the top of the underlying limestone bed (29.0 ft bgs). Hydraulic conductivities of **24 ft/d** and **26 ft/d** were estimated using the transmissivities obtained from the Cooper-Jacobs and Theis analyses, respectively.

As indicated on the CM-01 time-drawdown curve (Figure 5), drawdown did not stabilize during the ten-hour constant-rate test at a pumping rate of 2.3 gpm, an unexpected result given the relatively stable drawdown experienced while pumping the well at 2.3 gpm during the step-rate test. Additionally, an increase in the drawdown rate occurred approximately 74 minutes after starting the CM-01 constant-rate test, suggesting the cone of depression induced by the pumping test intercepted a less permeable boundary in the aquifer. Minor fluctuations in the residual drawdown curve depicted on Figure 6 support the interpretation of boundary conditions.

3.4.2 CM-02 Aquifer Test Analysis

The CM-02 drawdown data was analyzed using the Cooper-Jacob and Theis methods, which calculated transmissivity values of **372.5 ft²/d (2,786 gpd/ft)** and **444.1 ft²/d (3,322 gpd/ft)**, respectively (Appendix D). Hydraulic conductivity estimates are obtained by dividing the transmissivity values by an assumed saturated thickness of 6.7 ft; this saturated thickness equals the vertical distance from the CM-02 swl prior

to aquifer testing (18.26 ft bgs) to the underlying limestone bed (25.0 ft bgs). Hydraulic conductivities of **55 ft/d and 66 ft/d** were estimated using the transmissivities obtained from the Cooper-Jacob and Theis analyses, respectively.

The CM-02 time-drawdown data (Figure 8) and residual drawdown data (Figure 9) suggest the presence of a recharge boundary in the aquifer. As depicted on Figure 8, a decrease in the drawdown rate occurred approximately 381 minutes after starting the CM-01 constant-rate test, suggesting the cone of depression induced by pumping the well at 4.0 gpm reached a recharge boundary. Fluctuations in the residual drawdown curve depicted on Figure 9 support the interpretation of boundary conditions.

4.0 SUMMARY AND RECOMMENDATIONS

The CM pre-design wells are installed within the Pictured Cliffs Sandstone hydrostratigraphic unit. The saturated thickness at the wells ranges between approximately 7 and 10 ft based on observations made during drilling and June 2020 water-level measurements. Groundwater is perched upon the surface of a dry limestone bed identified at depths ranging between 25 and 31 ft bgs. The lithologic logs from nearby monitoring wells MW-66, MW-67, MW-68, and MW-69 noted the presence of dry sandstone, sandstone, or well-cemented and calcareous lithologies at similar depths, suggesting the perching horizon observed at the CM pre-design wells may be laterally continuous beneath the URS.

As indicated by the results of well development and aquifer testing, CM-01 and CM-02 are installed within relatively productive zones compared to CM-03 and CM-04. Recommended pumping rates to achieve sustained drawdown at CM-01 and CM-02 are inferred from the aquifer test data. As indicated in Section 3.4.1, drawdown did not stabilize after pumping CM-01 for 10 hours at 2.3 gpm, suggesting an ideal pumping rate of no greater than 1.0 gpm at CM-01. At CM-02, drawdown stabilized after pumping the well at 3.0 gpm for approximately five hours. However, a recharge boundary was intercepted after pumping CM-02 at 4.0 gpm for approximately 80 minutes. Therefore, to avoid the interception of recharge boundaries, an ideal pumping rate of no greater than 3.0 gpm is recommended for CM-02. Sustained groundwater pumping is not possible at CM-03 and CM-04 due to low yield at these wells.

The hydrogeologic data collected from the installation and testing of the CM pre-design wells should be used to examine the assumptions and predictions of the numerical groundwater model developed for the URS (Wood, 2019a).

5.0 REFERENCES

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- Wood, 2019b. *Annual Groundwater Monitoring and Corrective Action Report for 2018*. Coal Combustion Residual Rule Groundwater Monitoring System Compliance. Arizona Public Service Four Corners Power Plant, Fruitland, New Mexico. Report dated January 31, 2019.
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TABLES



Table 1
CM Pre-Design Well Construction Summary

Well	Date Installed	Borehole Depth (ft bgs)	Well Depth (ft bgs)	Northing	Easting	Top of Casing Elevation (ft amsl)	Ground Surface Elevation (ft amsl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Screen Length (ft)	Top Screen Elevation (ft amsl)	Bottom Screen Elevation (ft amsl)	Bottom Borehole Elevation (ft amsl)
CM-01	12/13/2019	37	35	2070334.792	2534111.297	5,353.42	5,351.19	20	30	10	5331.19	5321.19	5314.19
CM-02	12/13/2019	37	35	2070366.138	2534157.054	5348.50	5,346.54	20	30	10	5326.54	5316.54	5309.54
CM-03	12/12/2019	37	35	2070149.712	2534182.752	5354.85	5,352.32	20	30	10	5332.32	5322.32	5315.32
CM-04	12/12/2019	36	35	2070134.870	2534271.072	5,353.94	5,351.81	20	30	10	5331.81	5321.81	5315.81

Notes:

Horizontal Coordinate System: New Mexico West State Plane (ft), North American Datum 1983

Vertical datum is North American Vertical Datum 1988

Source of elevation and location data is Sakura Engineering and Surveying, 2020

Abbreviations:

amsl - above mean sea level

bgs - below ground surface

CM - Corrective Measures

ft - feet

Table 2
Well Development Summary

Well ID	Development Date(s)	Approximate Development Pumping Rates (gpm)	One Borehole Volume (gal)	Total Volume Purged (gal)	Number of Borehole Volumes Purged	Final Turbidity	Comments
CM-01	12/14/2019 - 12/16/2019	0.46	35	608	17	1.64 NTUs	---
CM-02	12/17/2019	1-2	43	560	13	0.69 NTUs	---
CM-03	12/13/2019- 12/14/2019	0.5-0.6	44	217	5	500 NTUs	Low yield - well pumped dry several times, remained turbid at end of development.
CM-04	12/17/2019	N/A	35	181	5	Very Turbid	Very low yield - well bailed dry several times, development pumping not possible due to low yield.

Abbreviations:

gal - gallons

gpm - gallons per minute

NTU - Nephelometric turbidity unit

Table 3
Step-Rate Test Summary

Well ID	Pumping Step	Pumping Rate (gpm)	Approximate Step Duration (min)	Total Elapsed Pumping Time (min)	Drawdown (ft)	Specific Capacity (gpm/ft)
CM-01	1	2.0	30	30	2.42	0.83
	2	2.3	30	60	3.01	0.76
	3	3.0	30	90	4.98	0.60
	4	3.5	30	120	8.89	0.39
CM-02	1	1.3	30	30	0.82	1.6
	2	2.4	30	60	1.25	1.9
	3	3.0	30	90	1.64	1.8
	4	4.0	30	120	2.38	1.7

Abbreviations:

ft - foot/feet

gpm - gallons per minute

min - minutes

**Table 4
 Aquifer Test Summary**

Well ID	Analytical Method	Transmissivity		Saturated Thickness (ft)	Hydraulic Conductivity (ft/d)
		(ft ² /d)	(gpd/ft)		
CM-01	Cooper-Jacob	159.9	1,196	6.6	24
	Theis	171.9	1,286	6.6	26
CM-02	Cooper-Jacob	372.5	2,786	6.7	55
	Theis	444.1	3,322	6.7	66

Abbreviations:

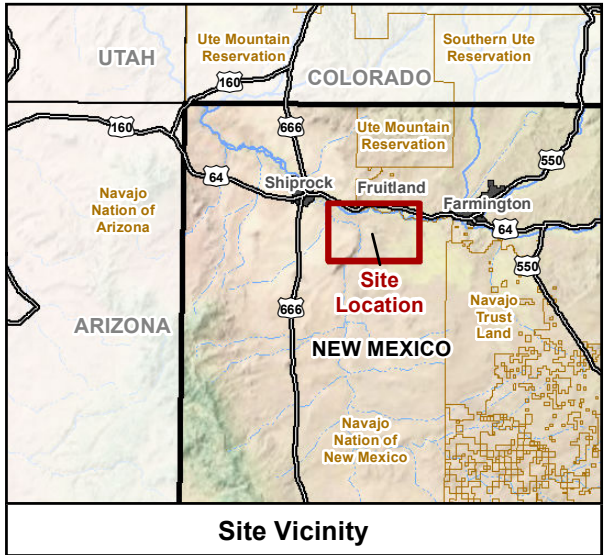
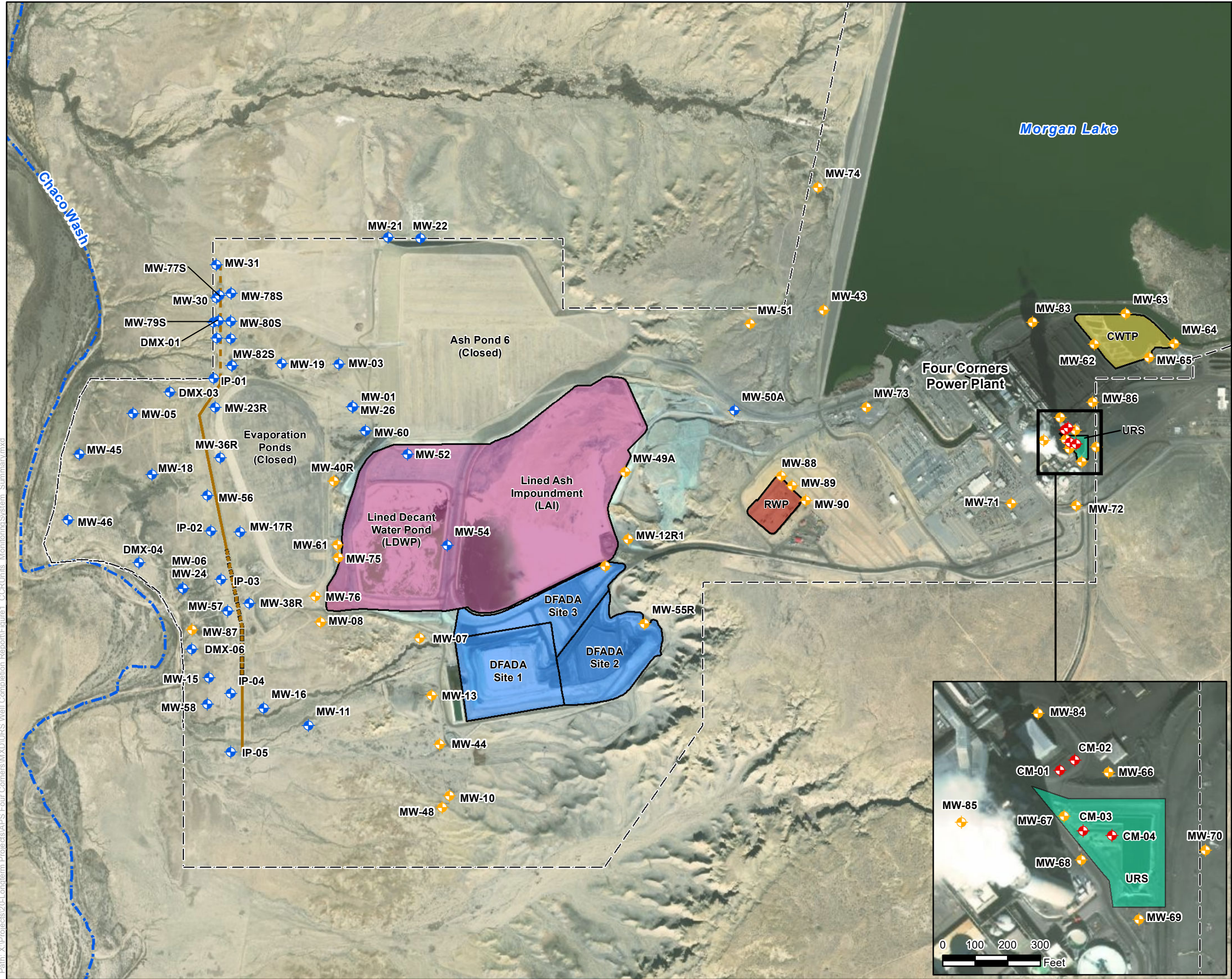
d - day

ft - foot/feet

gpd - gallons per day

FIGURES





- Legend**
- CCR Monitoring Well Location
 - Supplementary Site Monitoring Well Location
 - CM Pre-Design Wells
 - FCPP Lease Boundary
 - North Intercept Trench
 - South Intercept Trench
 - Approximate Extent of High Flow Zone
 - Ephemeral Surface Water Feature

- CCR Units**
- Multiunit 1(LAI and LDWP)
 - Dry Fly Ash Disposal Area (DFADA)
 - Combined Waste Treatment Pond (CWTP)
 - Upper Retention Sump (URS)
 - Return Water Pond (RWP)

- Notes:**
- CCR Coal Combustion Residuals
 - CM Corrective Measures
 - CWTP Combined Waste Treatment Pond
 - DFADA Dry Fly Ash Disposal Area
 - FCPP Four Corners Power Plant
 - LAI Lined Ash Impoundment
 - LDWP Lined Decant Water Pond
 - URS Upper Retention Sump
 - RWP Return Water Pond



**Arizona Public Service
Four Corners Power Plant
Fruitland, New Mexico**

FIGURE 1 CCR Units and Monitoring System Summary

Job No.	14-2018-2068
PM:	MBH
Date:	10/23/2020
Scale:	1" = 1400'



The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 14-2018-2068. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

Path: X:\Projects\20-L\comterm\Projects\APS\Four Corners\MXD\URS Well Completion Report\Figure1_CCRUnits_MonitoringSystem_Summary.mxd



Legend

- CCR Monitoring Well Location
- CM Pre-Design Well Location
- CCR Unit Boundary
- FCPP Lease Boundary
- Groundwater Flow Direction with Gradient (ft/ft)
- Potentiometric Surface - June 2020

Fluoride Concentration - June 2020

- >4 mg/L
- GWPS (4 mg/L)

Notes:

- MW-86** Well identification
- 5329.77** Groundwater Elevation (ft amsl) measured in June 2020
- 0.83** Fluoride concentration (mg/L) sampled in June 2020
- *** Well not used in groundwater contouring
- NS** Not Sampled – Well not selected for sampling

CCR Coal Combustion Residuals
 CM Corrective Measures
 FCPP Four Corners Power Plant
 CWTP Combined Waste Treatment Pond
 URS Upper Retention Sump
 ft Feet
 ft amsl Feet above mean sea level
 GWPS Groundwater Protection Standard
 mg/L milligram per liter

0 200 400
 Feet

N

Arizona Public Service
 Four Corners Power Plant
 Fruitland, New Mexico

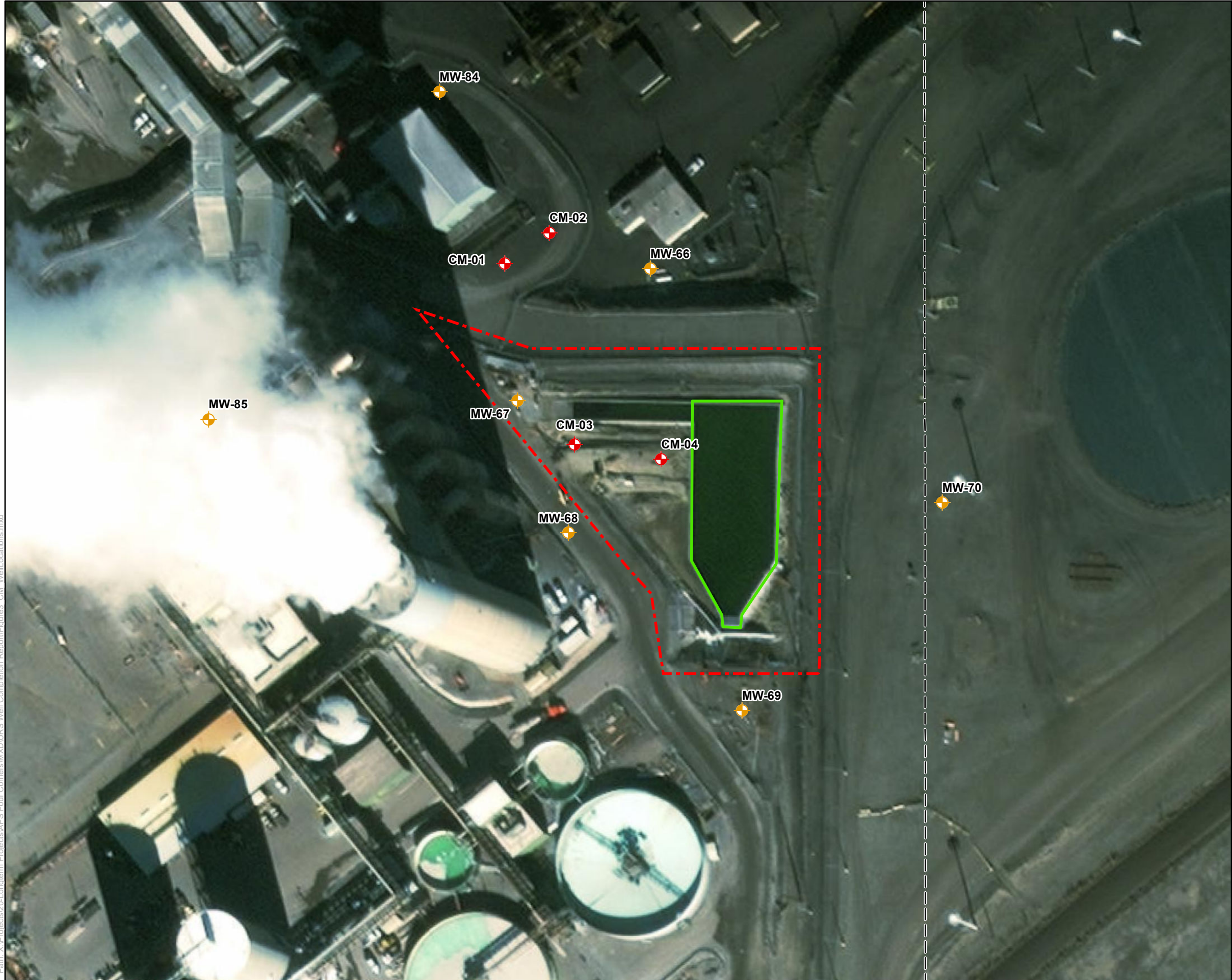
FIGURE 2 Fluoride Iso-Concentration Contours for the URS

Job No.	14-2018-2068
PM:	MBH
Date:	10/28/2020
Scale:	1" = 400'

wood.

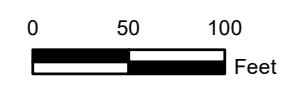
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- Legend**
- CCR Compliance
 - CM Pre-Design Well
 - FCPP Lease Boundary
 - URS
 - URT

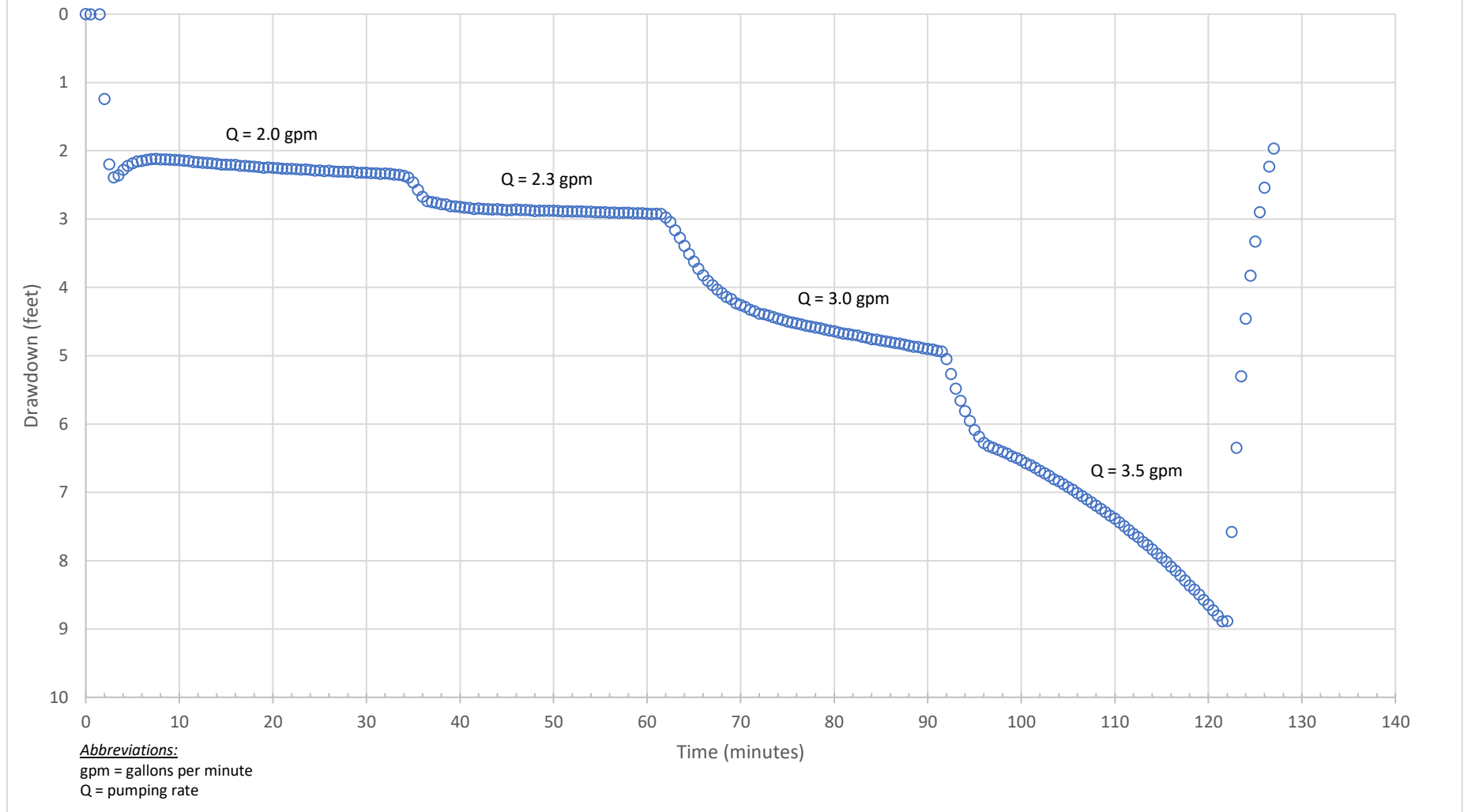
- Notes:**
- CM-01** Well identification
 - CCR** Coal Combustion Residuals
 - CM** Corrective Measures
 - FCPP** Four Corners Power Plant
 - URS** Upper Retention Sump
 - URT** Upper Retention Tank



Arizona Public Service Four Corners Power Plant Fruitland, New Mexico	
FIGURE 3	CM Pre-Design Well Location Map
Job No. 14-2018-2068 PM: MBH Date: 10/27/2020 Scale: 1" = 1400'	
<p>The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 14-2018-2068. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.</p>	

Path: X:\Projects\2018\Longterm Projects\APS Four Corners\MXD\URS Well Completion Report\Figure3_CM_WellLocations.mxd

Figure 4 - CM-01 Step-Rate Test Drawdown Plot



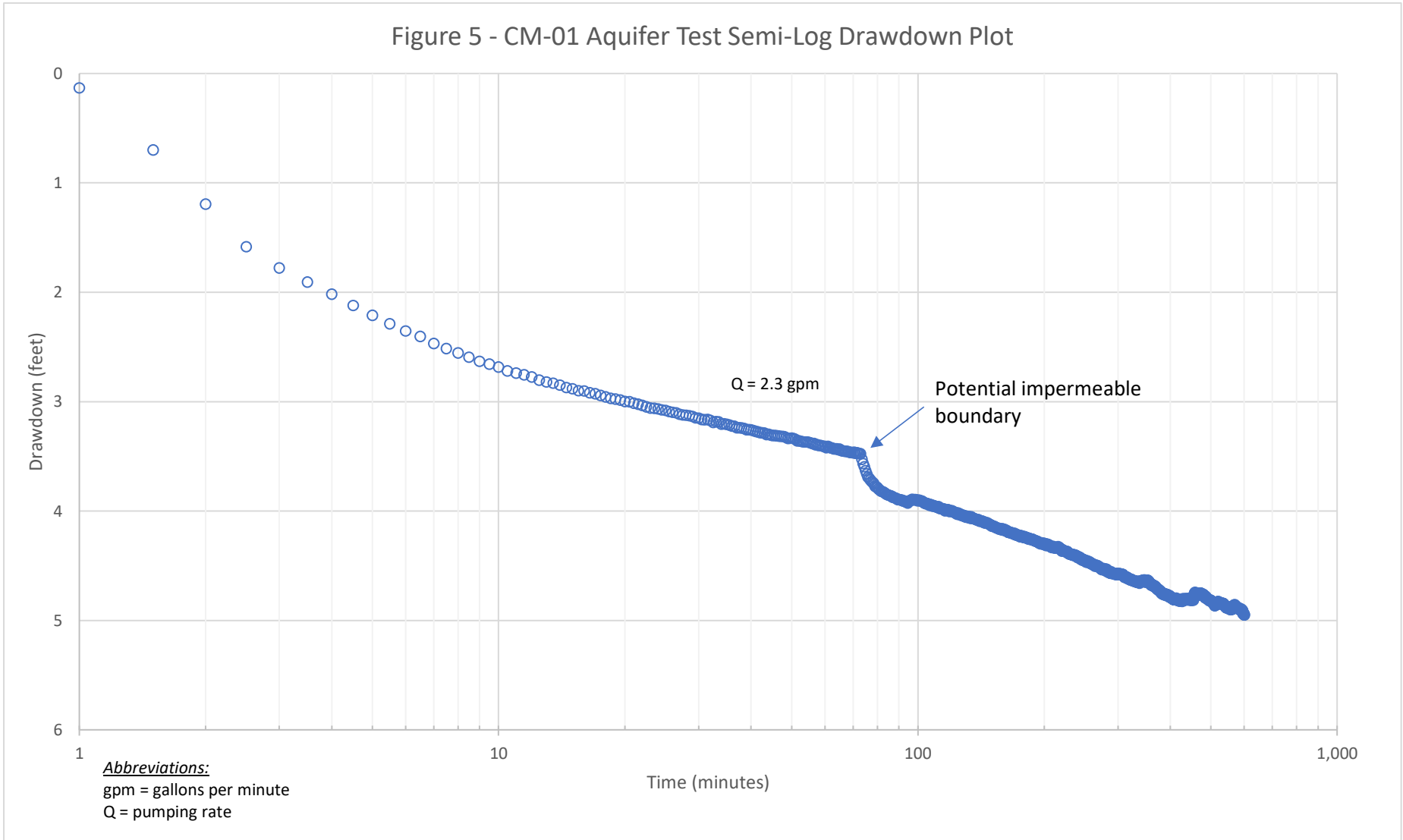


Figure 6 - CM-01 Residual Drawdown Plot

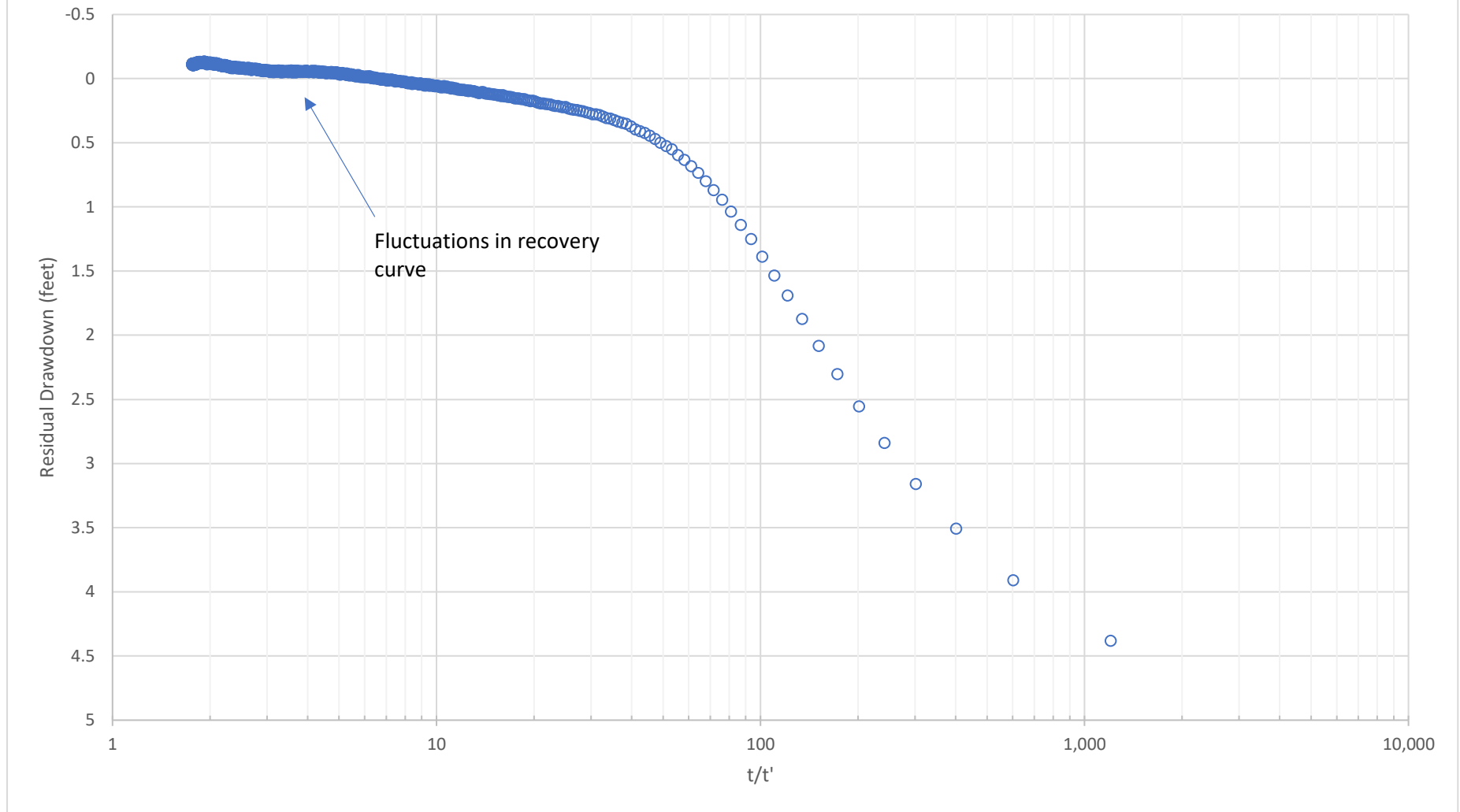
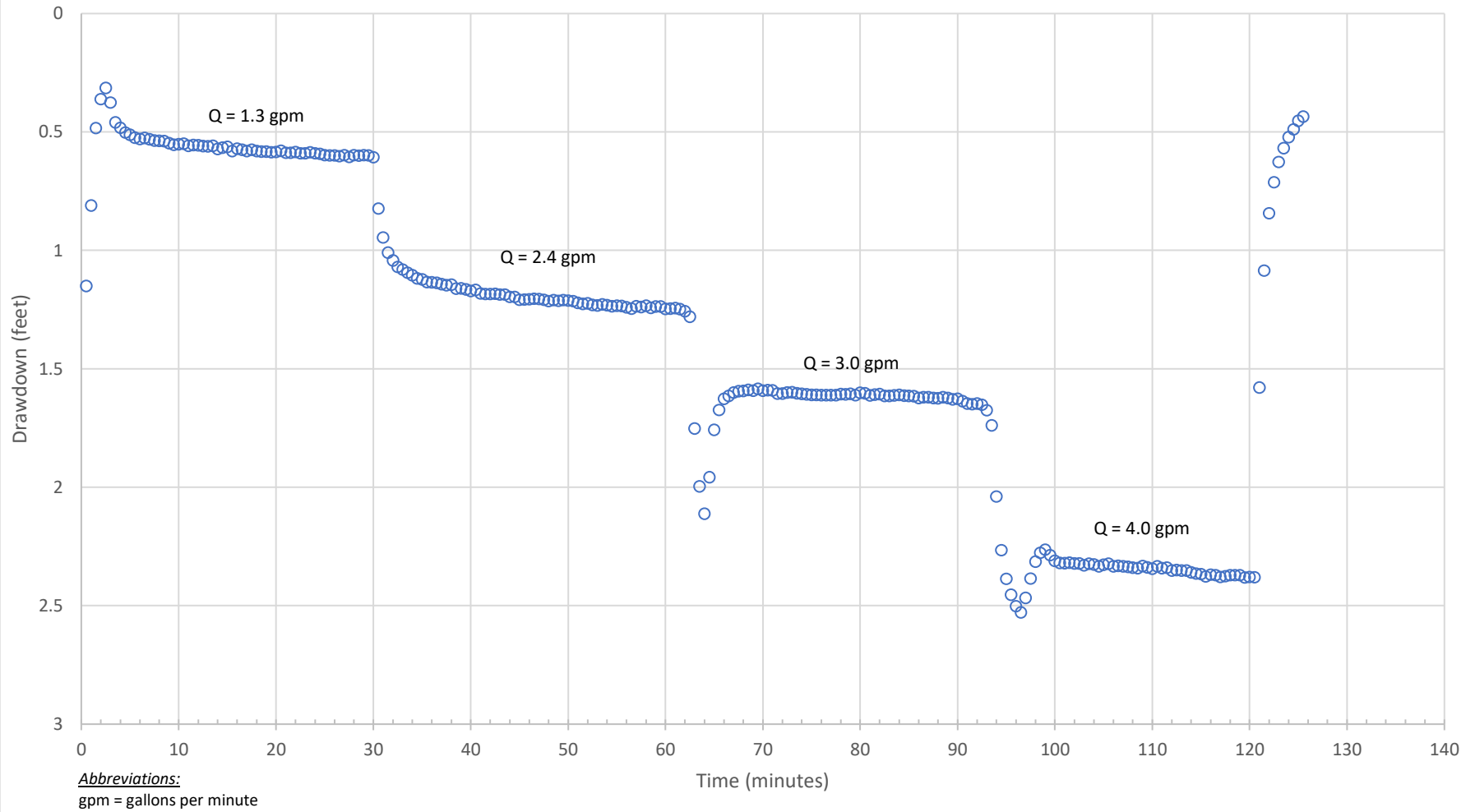


Figure 7 - CM-02 Step-Rate Test Drawdown Plot



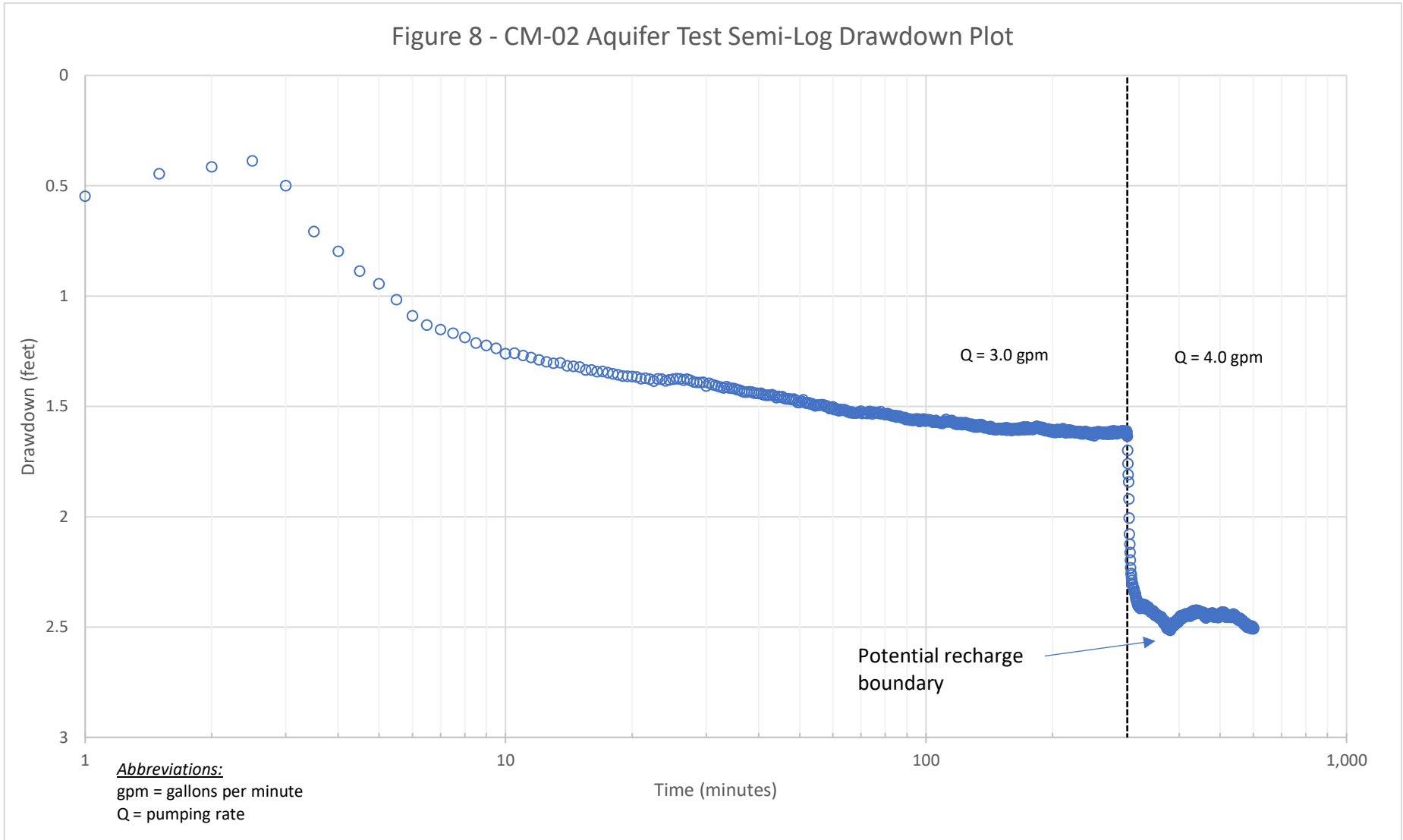
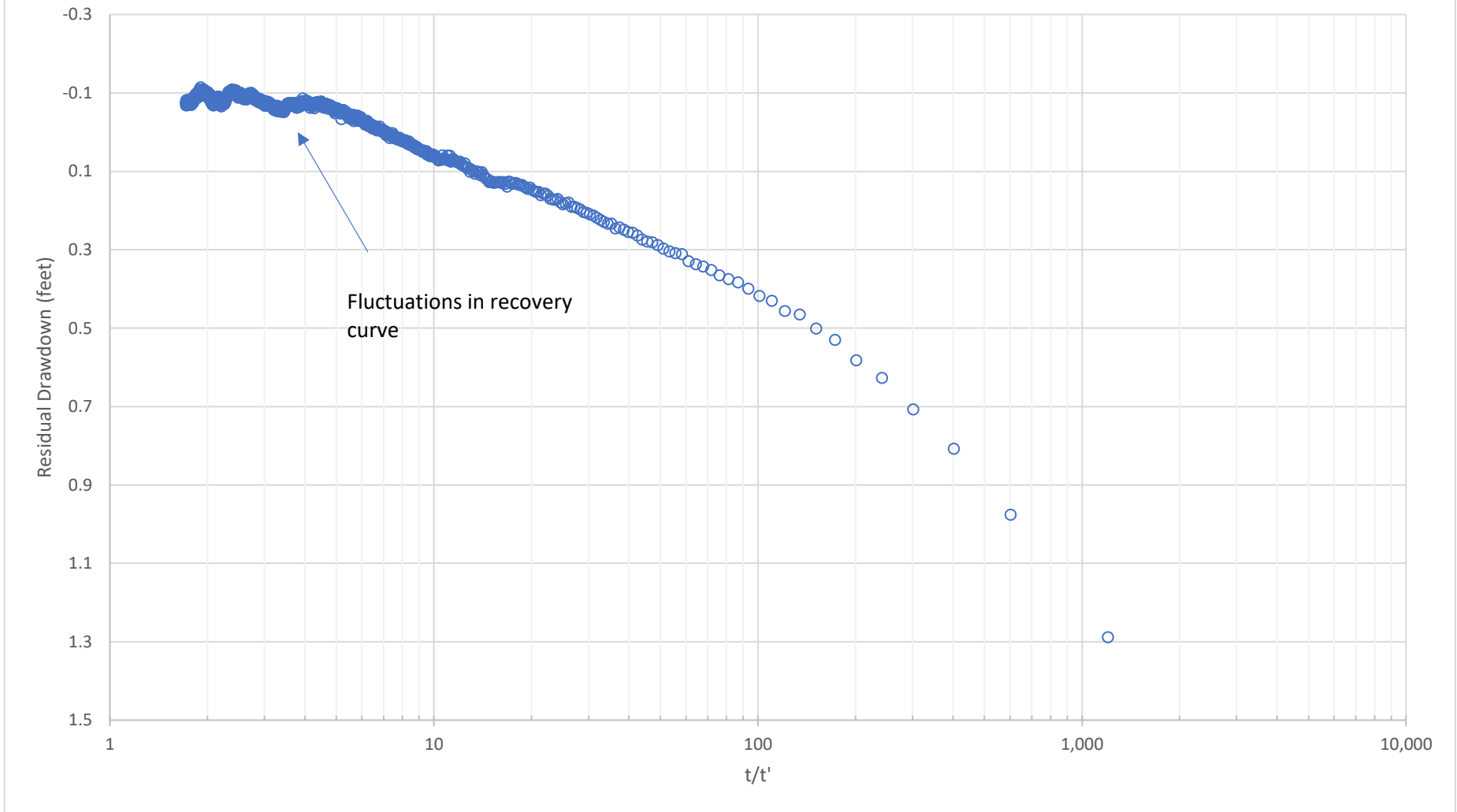


Figure 9 - CM-02 Residual Drawdown Plot



APPENDIX A

LITHOLOGIC LOGS AND WELL CONSTRUCTION DIAGRAMS



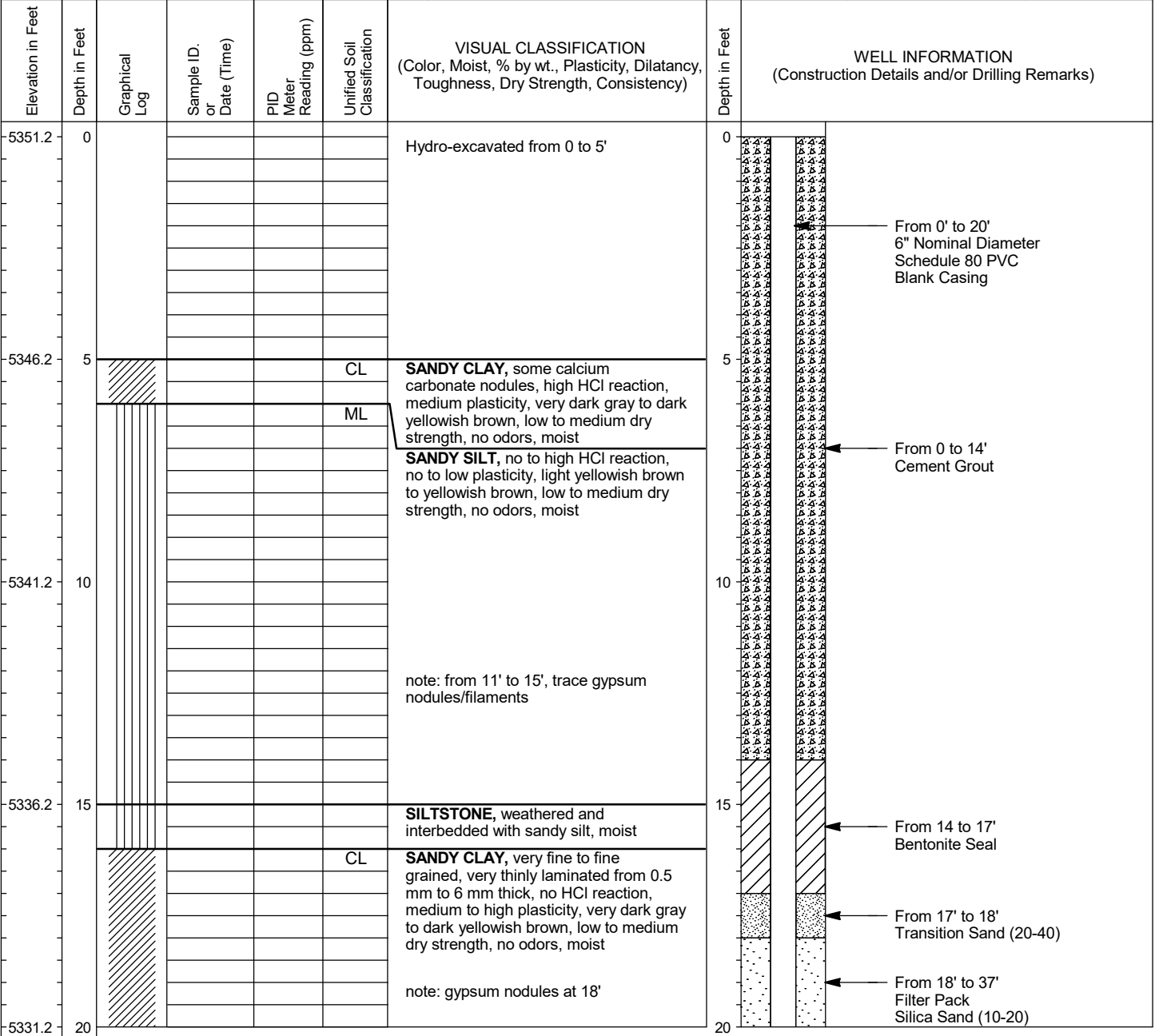


Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

BORING LOG I.D.: CM-01

Page 1 of 2

PROJECT:	APS Four Corners		PROJECT LOCATION:	APS Four Corners Plant, Fruitland, NM	
PROJECT MANAGER:	Maren Henley		PROJECT FEATURE:	Upper Retention Sump	
LOGGED BY:	I. Torres		WOOD PROJECT #:	14-2018-2068	
DRILLER:	J. Vankirk		ADWR REG. #:	N/A	
DRILLER FIRM:	Cascade Drilling		COORDINATES:	N2070334.792, E2534111.297	
RIG I.D.:	N/A		COORDINATE SYS:	New Mexico West State Plane NAD83	
RIG TYPE:	Sonic		SURFACE ELEV. (FT):	5351.19	
BORING TYPE:	N/A	BORING DIA.:	10"	MEAS. PT. ELEV (FT):	5353.42
ORIENTATION:	90°		VERTICAL DATUM:	NAVD88	
HAMMER TYPE:	N/A		START DATE:	12/02/2019	START TIME: 9:45
HAMMER CALIBRATION-ENERGY TRANSFER RATIO:			N/A	COMPLETION DATE:	12/09/19
				COMPLETION TIME:	13:20



GROUNDWATER

(Continued Next Page)

DEPTH(ft bgs)	HOUR	DATE
20.3	16:30	12/14/2019

METHOD _____

	UNIT	DISC.	TYPE	SYS	NUMBER	SHEET	WELL
							N/A



Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

BORING LOG I.D.: CM-01

Page 2 of 2

PROJECT:	APS Four Corners	PROJECT LOCATION:	APS Four Corners Plant, Fruitland, NM
ADWR REG. #:	N/A	PROJECT FEATURE:	Upper Retention Sump

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
5331.2	20				CL	SANDY CLAY , continued	20	(Continued)
						MUDSTONE , mudstone with inclusion of gypsum. medium to high plasticity, moist		
5326.2	25				CL	SANDY CLAY , very fine to fine grained, very thinly laminated from 0.5mm to 6mm thick, no HCl reaction, medium to high plasticity, very dark gray to dark yellowish brown, medium to high dry strength, no odors, moist	25	
						MUDSTONE AND SILTSTONE , interbedded mudstone and siltstone, slow HCl reaction, siltstone has no to low plasticity and medium dry strength, mudstone has medium to high plasticity and low dry strength, mudstone and siltstone are dark gray and dark yellowish brown, moist		
5321.2	30					LIMESTONE , fossiliferous, blue to gray colored, very fast HCl reaction, hard, dry	30	
						SHALE , reddish to dull olive brown colored sandy shale, no to low plasticity, slow HCl reaction, no odors, hard, dry		
						MUDSTONE AND SILTSTONE , interbedded mudstone and siltstone, slow HCl reaction, siltstone has no to low plasticity and medium dry strength, mudstone has medium to high plasticity and low dry strength, very dark gray to yellow colored, no odors, dry		
5316.2	35						35	End Cap
								Total Depth = 37'
5311.2	40						40	
5306.2	45						45	

GROUNDWATER

DEPTH(ft bgs)	HOUR	DATE
20.3	16:30	12/14/2019

METHOD _____

	UNIT	DISC.	TYPE	SYS	NUMBER	SHEET	WELL
							N/A

PROJECT:	APS Four Corners		PROJECT LOCATION:	APS Four Corners Plant, Fruitland, NM	
PROJECT MANAGER:	Maren Henley		PROJECT FEATURE:	Upper Retention Sump	
LOGGED BY:	I. Torres		WOOD PROJECT #:	14-2018-2068	
DRILLER:	J. Vankirk		ADWR REG. #:	N/A	
DRILLER FIRM:	Cascade Drilling		COORDINATES:	N2070366.138, E2534157.054	
RIG I.D.:	N/A		COORDINATE SYS:	New Mexico West State Plane NAD83	
RIG TYPE:	Sonic		SURFACE ELEV. (FT):	5346.54	
BORING TYPE:	N/A	BORING DIA.:	10"	MEAS. PT. ELEV (FT):	5348.5
ORIENTATION:	90°		VERTICAL DATUM:	NAVD88	
HAMMER TYPE:	N/A		START DATE:	12/02/2019	START TIME: 11:15
HAMMER CALIBRATION-ENERGY TRANSFER RATIO:			N/A		COMPLETION DATE: 12/08/19
					COMPLETION TIME: 13:30

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
5346.5	0					Hydro-excavated from 0 to 6'	0	
5341.5	5						5	
5336.5	10				ML	SANDY SILT , no to low HCl reaction, low to high plasticity, dark grayish brown to yellowish brown to strong brown, moist, low to high dry strength, no odors, (wet from 6' to 7' due to hydro-excavation), trace amounts of subrounded to subangular gravels to cobbles between 0.5 and 8 cm diameter from 6' to 6.5'	10	From 0' to 20' 6" Nominal Diameter Schedule 80 PVC Blank Casing
5331.5	15					SANDY SHALE , friable, thinly laminated sandy shale, medium to high plasticity	15	From 0 to 15' Cement Grout
5326.5	20					note: interbedded lense of very fine grained, calcareous sandy shale, high HCl reaction, no plasticity, dull yellowish brown, very high dry strength (breaks with 3lb mini-sledge) from 19' to 20'	20	From 15 to 18' Bentonite Seal From 18' to 19' Transition Sand (20-40)

GROUNDWATER

(Continued Next Page)

DEPTH(ft bgs)	HOUR	DATE
17.0	08:30	12/17/2019

METHOD _____

	UNIT	DISC.	TYPE	SYS	NUMBER	SHEET	WELL
--	------	-------	------	-----	--------	-------	------

PROJECT:	APS Four Corners	PROJECT LOCATION:	APS Four Corners Plant, Fruitland, NM
ADWR REG. #:	N/A	PROJECT FEATURE:	Upper Retention Sump

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
5326.5	20					SANDY SHALE , continued	20	(Continued)
					CL	SANDY CLAY , no HCl reaction, medium to high plasticity, very dark gray to dark yellowish brown, low to medium dry strength, no odors, moist		From 19' to 37' Filter Pack Silica Sand (10-20)
5321.5	25					LIMESTONE , fossiliferous, blue to gray colored, very fast HCl reaction, hard, dry	25	From 20' to 30' 6" Nominal Diameter Schedule 80 PVC Screen (Slots 0.020")
						SHALE , very fine grained to fine grained, very thinly laminated upto 0.5mm thick, thickly bedded upto 30cm, reddish to olive brown colored sandy shale, no to low plasticity, slow HCl reaction, no odors, hard, dry		From 19' to 37' Filter Pack Silica Sand (10-20)
5316.5	30					MUDSTONE AND SILTSTONE , olive to very dark gray and yellow brown colored interbedded mudstone and siltstone, slow HCl reaction, siltstone has no to low plasticity and medium dry strength, mudstone has medium to high plasticity and low dry strength, no odors, dry	30	From 30' to 35' 6" Nominal Diameter Schedule 80 PVC Sump
5311.5	35						35	End Cap
						Total Depth = 37'		Total Depth = 37'
5306.5	40						40	
5301.5	45						45	

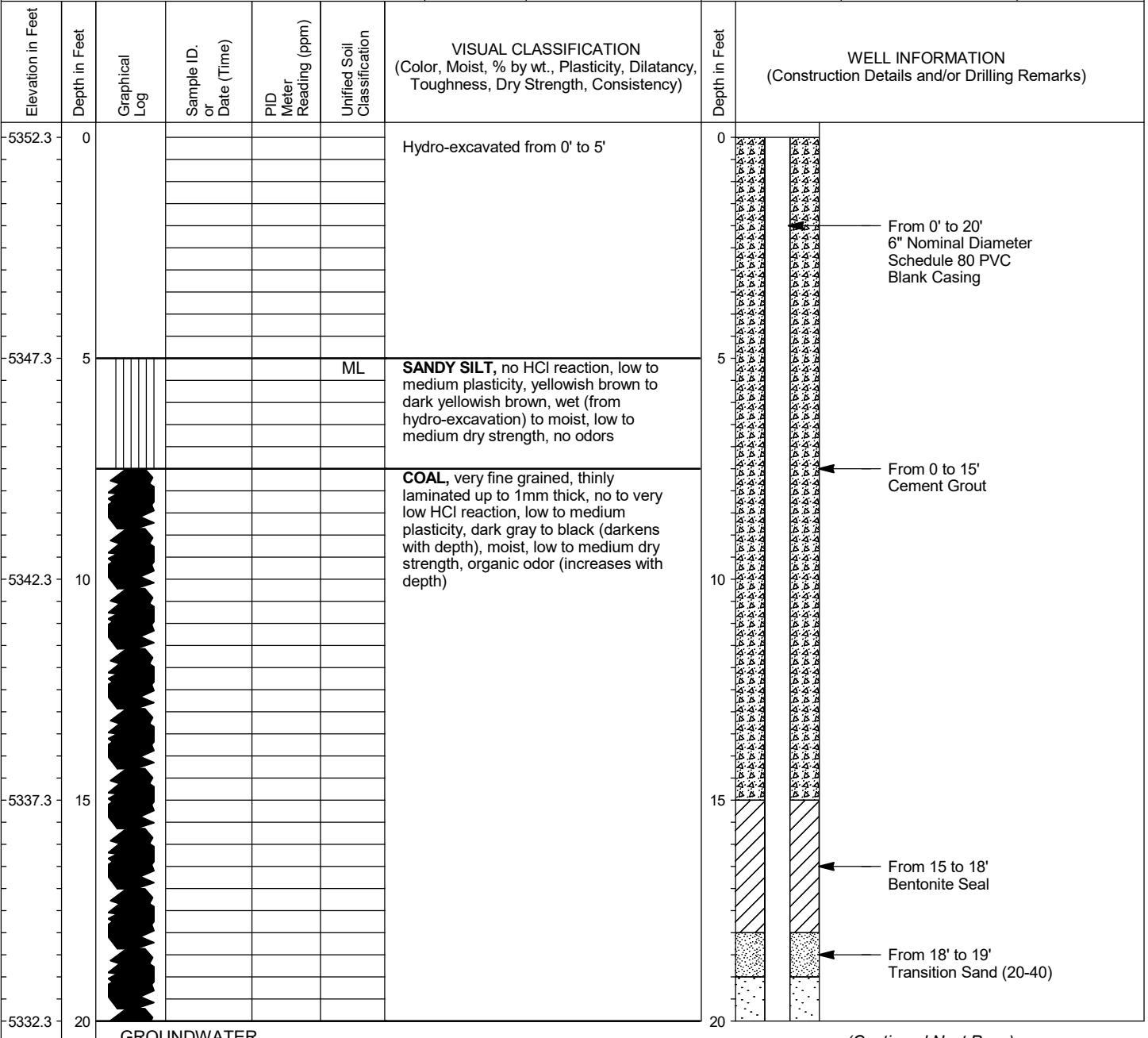
GROUNDWATER

DEPTH(ft bgs)	HOUR	DATE
17.0	08:30	12/17/2019

METHOD _____

	UNIT	DISC.	TYPE	SYS	NUMBER	SHEET	WELL
--	------	-------	------	-----	--------	-------	------

PROJECT:	APS Four Corners	PROJECT LOCATION:	APS Four Corners Plant, Fruitland, NM
PROJECT MANAGER:	Maren Henley	PROJECT FEATURE:	Upper Retention Sump
LOGGED BY:	I. Torres	WOOD PROJECT #:	14-2018-2068
DRILLER:	J. Vankirk	ADWR REG. #:	N/A
DRILLER FIRM:	Cascade Drilling	COORDINATES:	N2070149.712, E2534182.752
RIG I.D.:	N/A	COORDINATE SYS:	New Mexico West State Plane NAD83
RIG TYPE:	Sonic	SURFACE ELEV. (FT):	5352.32
BORING TYPE:	N/A	BORING DIA.:	10"
ORIENTATION:	90°	MEAS. PT. ELEV (FT):	5354.85
HAMMER TYPE:	N/A	VERTICAL DATUM:	NAVD88
HAMMER CALIBRATION-ENERGY TRANSFER RATIO:	N/A	START DATE:	12/10/2019
		START TIME:	12:45
		COMPLETION DATE:	12/10/2019
		COMPLETION TIME:	15:15




GROUNDWATER

(Continued Next Page)

DEPTH(ft bgs)	HOUR	DATE
21.5	09:30	12/13/2019

METHOD _____

	UNIT	DISC.	TYPE	SYS	NUMBER	SHEET	WELL
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Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

BORING LOG I.D.: CM-03

Page 2 of 2

PROJECT:	APS Four Corners	PROJECT LOCATION:	APS Four Corners Plant, Fruitland, NM
ADWR REG. #:	N/A	PROJECT FEATURE:	Upper Retention Sump

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)	
5332.3	20				CL	SANDY CLAY , trace gypsum crystals/filaments, interbedded lenses of mudstone up to 0.5" to 1" thick, predominantly no HCl reaction (except near basal contact, high HCl reaction), medium to high plasticity, very dark gray to dark grayish brown, low to medium high strength, no odors, clay swells (when collected from core barrel), moist	20	(Continued)	
5327.3	25						25	From 19' to 37' Filter Pack Silica Sand (10-20)	
								30	From 20' to 30' 4" Nominal Diameter Schedule 80 PVC Screen (Slots 0.020")
								35	From 19' to 37' Filter Pack Silica Sand (10-20)
5322.3	30					LIMESTONE , blue to gray colored, fossiliferous, hard, dry			
						MUDSTONE AND SILTSTONE , interbedded mudstone and siltstone, very dark gray, yellow, red, and olive brown colored, slow to no HCl reaction, mudstone has low dry strength, siltstone has medium dry strength, no odors, dry			
						SHALE , reddish to dull olive-brown colored sandy shale, no to low plasticity, slow HCl reaction, no odors, hard, dry			
5317.3	35						30	From 30' to 35' 6" Nominal Diameter Schedule 80 PVC Sump	
							35	End Cap	
						MUDSTONE AND SILTSTONE , interbedded mudstone and siltstone, very dark gray, yellow, red, and olive brown colored, slow HCl reaction, siltstone has no to low plasticity and medium dry strength, mudstone has medium to high plasticity and low dry strength, no odors, dry			
						Total Depth = 37'		Total Depth = 37'	
5312.3	40						40		
5307.3	45						45		

GROUNDWATER

DEPTH(ft bgs)	HOUR	DATE
21.5	09:30	12/13/2019

METHOD _____

	UNIT	DISC.	TYPE	SYS	NUMBER	SHEET	WELL
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Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

BORING LOG I.D.: CM-04

Page 1 of 2

PROJECT:	APS Four Corners		PROJECT LOCATION:	APS Four Corners Plant, Fruitland, NM	
PROJECT MANAGER:	Maren Henley		PROJECT FEATURE:	Upper Retention Sump	
LOGGED BY:	I. Torres		WOOD PROJECT #:	14-2018-2068	
DRILLER:	J. Vankirk		ADWR REG. #:	N/A	
DRILLER FIRM:	Cascade Drilling		COORDINATES:	N2070134.87, E2534271.072	
RIG I.D.:	N/A		COORDINATE SYS:	New Mexico West State Plane NAD83	
RIG TYPE:	Sonic		SURFACE ELEV. (FT):	5353.94	
BORING TYPE:	N/A	BORING DIA.:	10"	MEAS. PT. ELEV (FT):	5351.81
ORIENTATION:	90°		VERTICAL DATUM:	NAVD88	
HAMMER TYPE:	N/A		START DATE:	12-11-2019	START TIME: 8:30
HAMMER CALIBRATION-ENERGY TRANSFER RATIO:			N/A	COMPLETION DATE:	12-12-2019
				COMPLETION TIME:	09:50

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
5353.9	0					Hydro-excavated from 0 to 6'	0	
5348.9	5						5	
					CL	SANDY CLAY , very dark grayish brown to yellowish brown, no HCl reaction, high PL, low dry strength, no odors, no stains, wet (from hydro-excavation)		From 0 to 20' 6" Nominal Diameter Schedule 80 PVC Blank Casing
						SANDY SHALE , friable sandy shale, moist		From 0 to 14' Cement Grout
5343.9	10						10	
						COAL , dark gray to black (darkens with depth), no-very low HCl reaction (decreases with depth), low to medium plasticity, low dry strength, organic odor, moist,		
5338.9	15						15	From 14 to 17' Bentonite Seal
								From 17' to 18' Transition Sand (20-40)
								From 18' to 36' Filter Pack Silica Sand (10-20)
5333.9	20						20	

GROUNDWATER

(Continued Next Page)

DEPTH(ft bgs)	HOUR	DATE
20.0	13:00	12/14/2019

METHOD _____

	UNIT	DISC.	TYPE	SYS	NUMBER	SHEET	WELL
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Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

BORING LOG I.D.: CM-04

Page 2 of 2

PROJECT:	APS Four Corners	PROJECT LOCATION:	APS Four Corners Plant, Fruitland, NM
ADWR REG. #:	N/A	PROJECT FEATURE:	Upper Retention Sump

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
5333.9	20					<p>SANDY SHALE, very dark gray to dark grayish brown, no to slow HCl reaction, medium to high plasticity, low to medium dry strength, no odors, trace gypsum, moist</p> <p>reddish to dull olive brown colored sandy shale with gypsum, hard, moist from 22.5' to 23.5'</p>	20	(Continued)
						<p>LIMESTONE, fossiliferous, blue to gray colored, fast HCl reaction, hard, dry</p>		
5328.9	25					<p>MUDSTONE AND SILTSTONE, interbedded mudstone and siltstone, very dark gray, yellow, red, and olive brown colored, slow HCl reaction, siltstone has no to low plasticity and medium dry strength, mudstone had medium to high plasticity and low dry strength, no odors, dry, gypsum at 31.5'</p>	25	From 18' to 36' Filter Pack Silica Sand (10-20)
5323.9	30					<p>SHALE, reddish to dull olive brown colored sandy shale, no to low plasticity, slow HCl reaction, no odors, hard, dry</p>	30	From 30' to 35' 6" Nominal Diameter Schedule 80 PVC Sump
5318.9	35						35	End Cap
						Total Depth = 36'		Total Depth = 36'
5313.9	40						40	
5308.9	45						45	

GROUNDWATER

DEPTH(ft bgs)	HOUR	DATE
20.0	13:00	12/14/2019

METHOD _____

	UNIT	DISC.	TYPE	SYS	NUMBER	SHEET	WELL
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APPENDIX B
PHOTOGRAPH LOG





Photo 1: CM-01 soil borings from 5' to 10'.



Photo 2: CM-01 soil borings from 10' to 14'.



Photo 3: CM-01 soil borings from 14' to 16'.



Photo 4: CM-01 soil borings from 16' to 19'.



Photo 5: CM-01 soil borings from 19' to 23'.



Photo 6: CM-01 soil borings from 23' to 28'.



Photo 7: CM-01 soil boring from 28' to 32'.



Photo 8: CM-01 soil borings from 32' to 37'.



Photo 9: CM-02 soil borings from 6' to 10'.

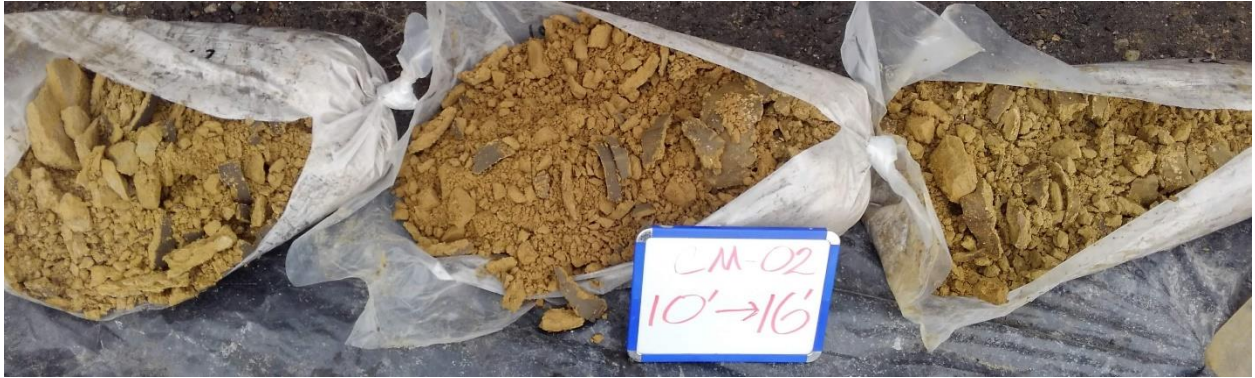


Photo 10: CM-02 soil borings from 10' to 16'.



Photo 11: CM-02 soil borings from 16' to 21'.



Photo 12: CM-02 soil borings from 21' to 25'.

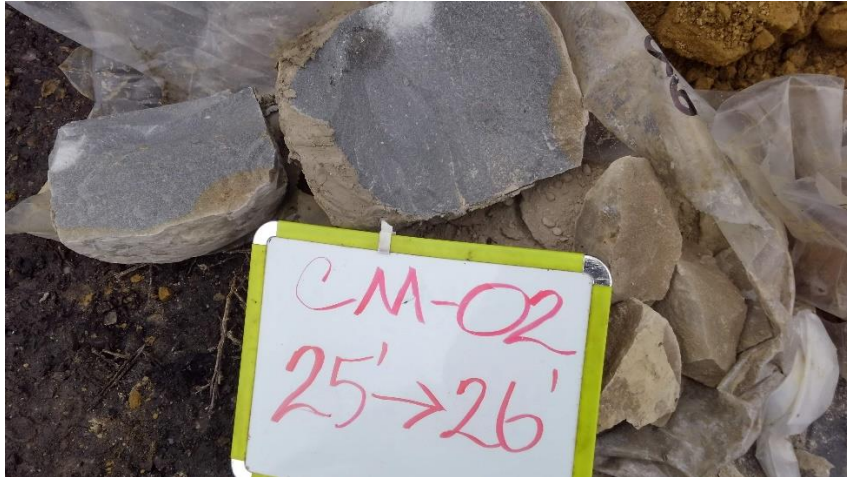


Photo 13: CM-02 soil boring from 25' to 26'.



Photo 14: CM-02 soil borings from 26' to 30'.



Photo 15: CM-02 soil borings from 30' to 33'.



Photo 16: CM-03 soil borings from 5' to 11'.



Photo 17: CM-03 soil borings from 11' to 15'.



Photo 18: CM-03 soil boring from 15' to 16'.

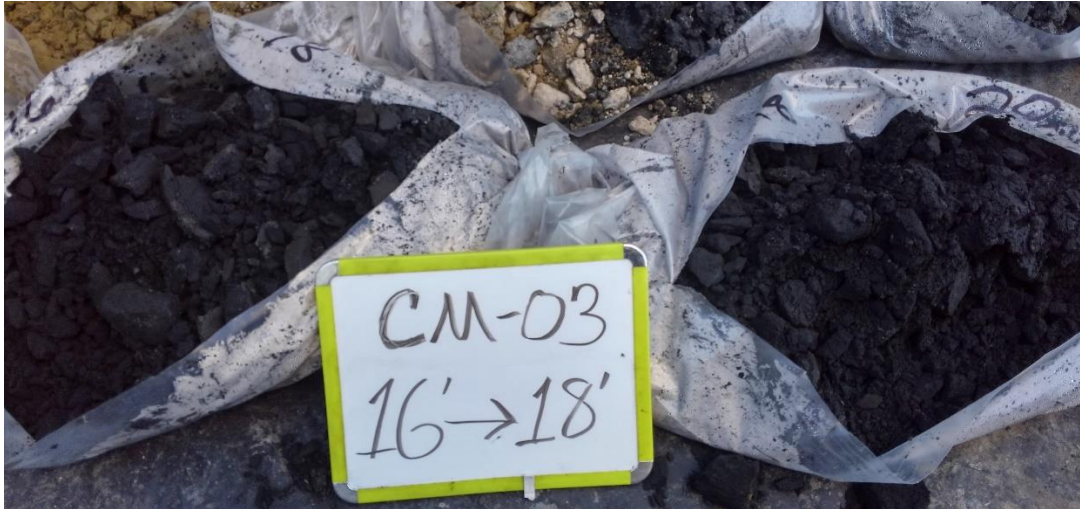


Photo 19: CM-03 soil borings from 16' to 18'.



Photo 20: CM-03 soil borings from 20' to 23'.



Photo 21: CM-03 soil borings from 23' to 27'.



Photo 23: CM-03 soil borings from 27' to 29'.



Photo 24: CM-03 soil borings from 29' to 35'.



Photo 25: CM-03 soil borings from 35' to 37'.



Photo 26: CM-04 soil borings from 6' to 13'.



Photo 27: CM-04 soil borings from 13' to 19'.



Photo 28: CM-04 soil borings from 19' to 23'.



Photo 29: CM-04 soil borings from 23' to 28'.



Photo 30: CM-04 soil borings from 28' to 32'.



Photo 31: CM-04 soil borings from 32' to 35'.



Photo 32: At CM-02. Drillers trip into well on 7/11/2020.

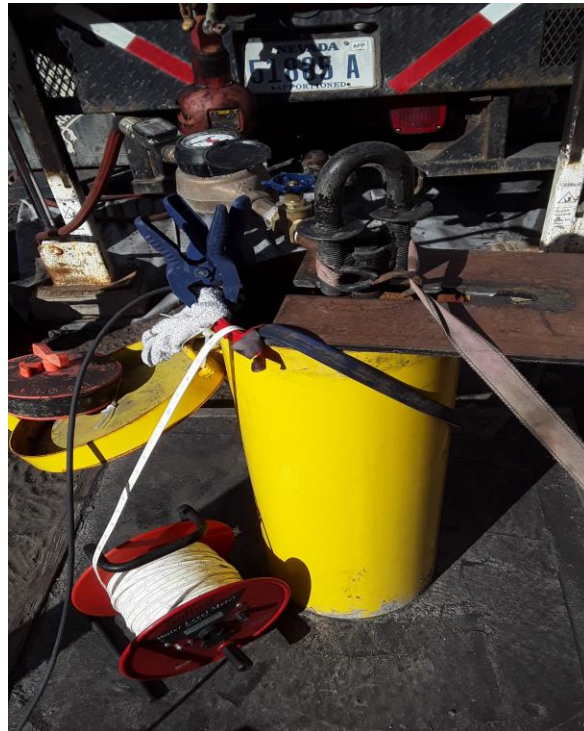


Photo 33: Pump setup at CM-01 on 7/12/2020.



Photo 34: Pump setup at CM-02 on 07/13/2020.



Photo 35: Discharge bins used during pumping at CM-01 and CM-02.

APPENDIX C
WELL SURVEY REPORT





NEW MEXICO WEST STATE PLANE COORDINATE SYSTEM NAD83
NAVD 88
CONTROL POINT- HV53 N2070581.505, E 2529275.542, ELEV 5331.214

MW 88) N 2069671.787, E 2530047.219 ELEV 5362.705 NORTH SIDE OF DIRT/GRD
5365.249 "X" NORTH SIDE OF PVC
5365.664 NORTH SIDE OF STEEL

MW 89) N 2069533.942, E 2530205.136 ELEV 5367.509 NORTH SIDE OF DIRT/GRD
5370.208 "X" NORTH SIDE OF PVC
5370.220 NORTH SIDE OF STEEL

MW 90) N 2069323.274, E 2530400.262 ELEV 5372.925 NORTH SIDE OF DIRT/GRD
5374.082 "X" NORTH SIDE OF PVC
5375.548 NORTH SIDE OF STEEL

RW 02) N 2068762.671, E 2529919.089 ELEV 5380.546

RW 05) N 2069257.503, E 2529536.136 ELEV 5375.749

CM 03) N 2070149.712, E 2534182.752 ELEV 5352.315 NORTH SIDE OF DIRT/GRD
5354.845 "X" NORTH SIDE OF PVC
5355.284 NORTH SIDE OF STEEL

CM 04) N 2070134.870, E 2534271.072 ELEV 5351.81 NORTH SIDE OF DIRT/GRD
5353.941 "X" NORTH SIDE OF PVC
5354.817 NORTH SIDE OF STEEL

CM 01) N 2070334.792, E 2534111.297 ELEV 5351.188 NORTH SIDE OF DIRT/GRD
5353.422 "X" NORTH SIDE OF PVC
5354.04 NORTH SIDE OF STEEL

CM 02) N 2070366.138, E 2534157.054 ELEV 5346.539 NORTH SIDE OF DIRT/GRD
5348.504 "X" NORTH SIDE OF PVC W
5349.717 NORTH SIDE OF STEEL

**125 West Main
Suite "A"
Farmington New Mexico 87401**

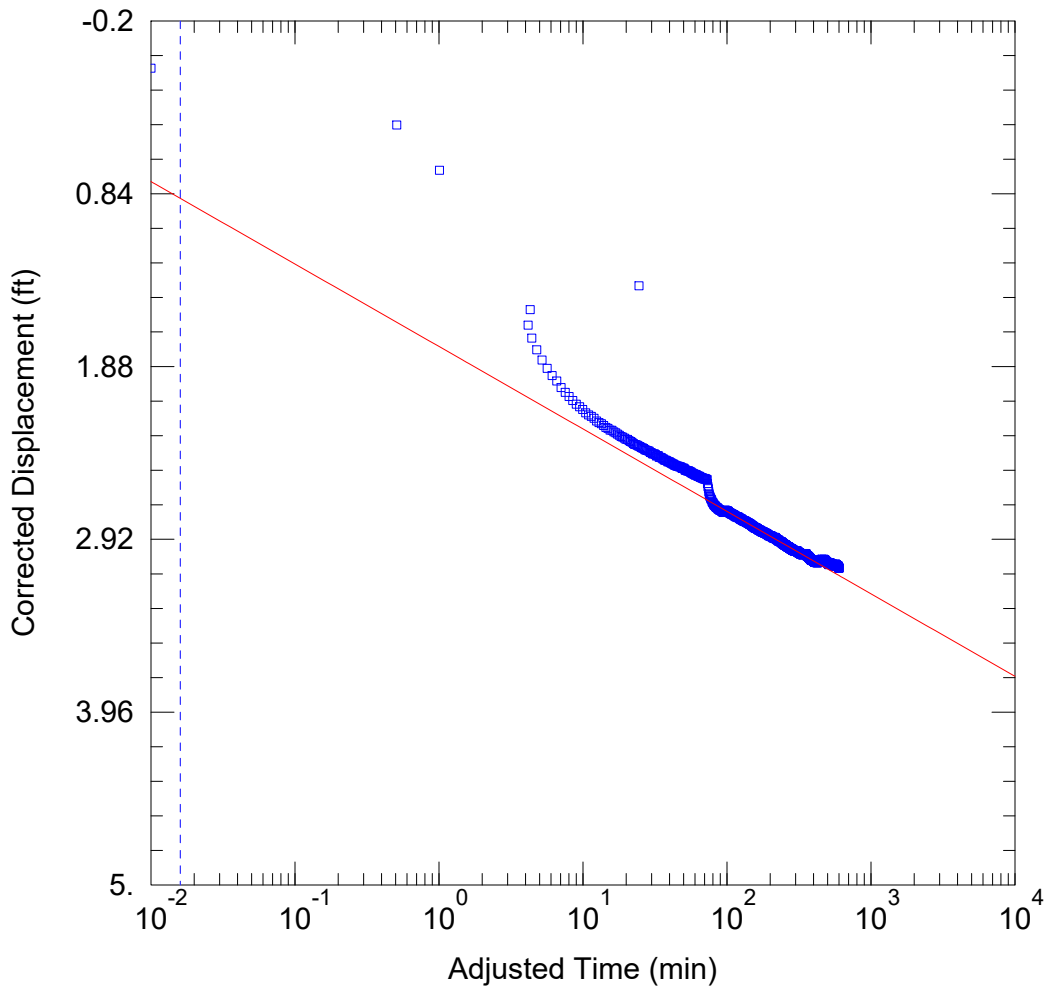
I, Scott A Martin, a New Mexico Professional Surveyor No. 21663, do hereby certify this Monitor Well Survey Report was prepared by me or under my supervision based on an actual survey on the ground that I am responsible for this survey; and that the survey and report meets the minimum standards for surveying in New Mexico.



**125 West Main
Suite "A"
Farmington New Mexico 87401**

APPENDIX D
AQTESOLV ANALYSIS RESULTS





CM-01 CONSTANT-RATE TEST

Data Set: G:\...\CM-01 CRT CJ latetime.aqt

Date: 11/03/20

Time: 15:23:30

PROJECT INFORMATION

Company: Wood PLC

Client: Arizona Public Service

Project: 1420182068.0020.0005

Location: Fruitland, NM

Test Well: CM-01

Test Date: 7/12/2020

AQUIFER DATA

Saturated Thickness: 6.6 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
CM-01	0	0

Well Name	X (ft)	Y (ft)
□ CM-01	0	0

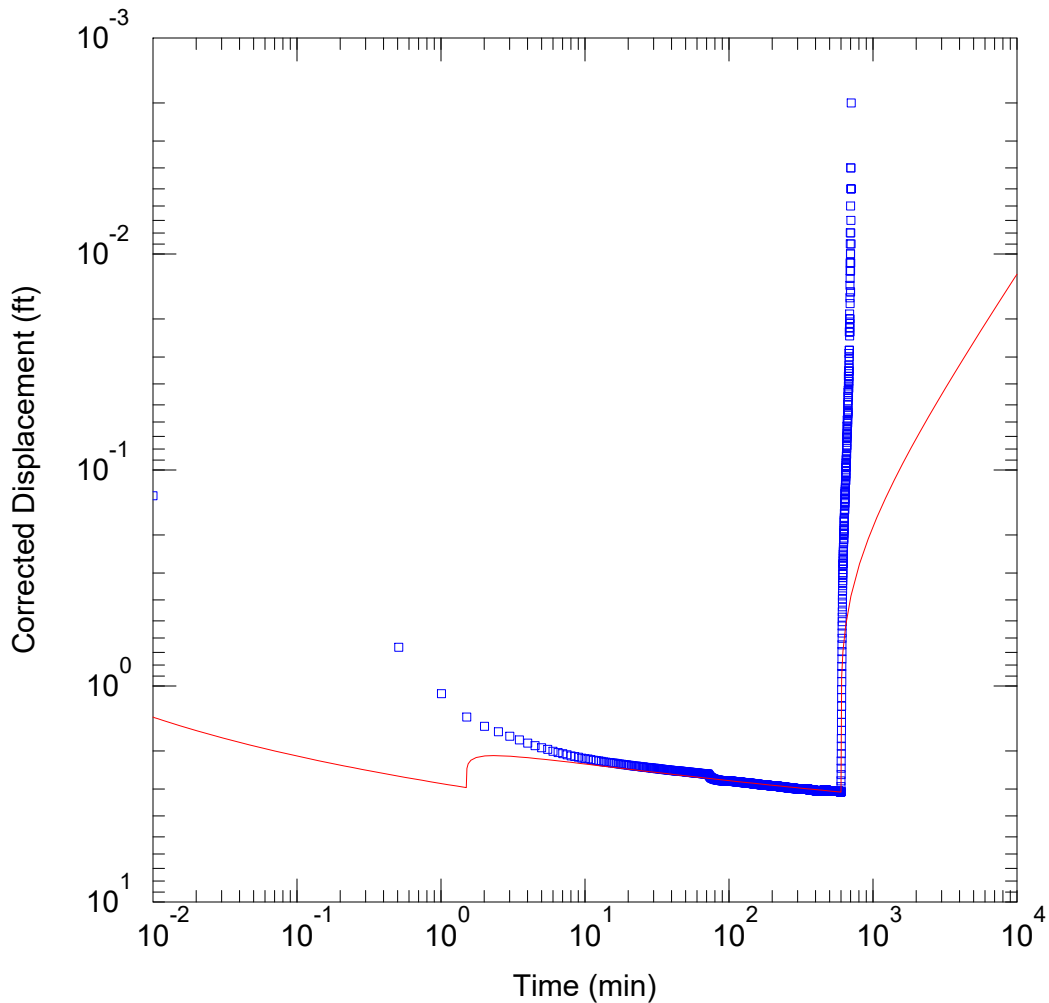
SOLUTION

Aquifer Model: Unconfined

Solution Method: Cooper-Jacob

T = 159.9 ft²/day

S = 0.0004089



CM-01 CONSTANT-RATE TEST

Data Set: G:\...\CM-01_CRT_Theis.aqt
 Date: 11/03/20

Time: 15:17:14

PROJECT INFORMATION

Company: Wood PLC
 Client: Arizona Public Service
 Project: 1420182068.0020.0005
 Location: Fruitland, NM
 Test Well: CM-01
 Test Date: 7/12/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
CM-01	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ CM-01	0	0

SOLUTION

Aquifer Model: Unconfined

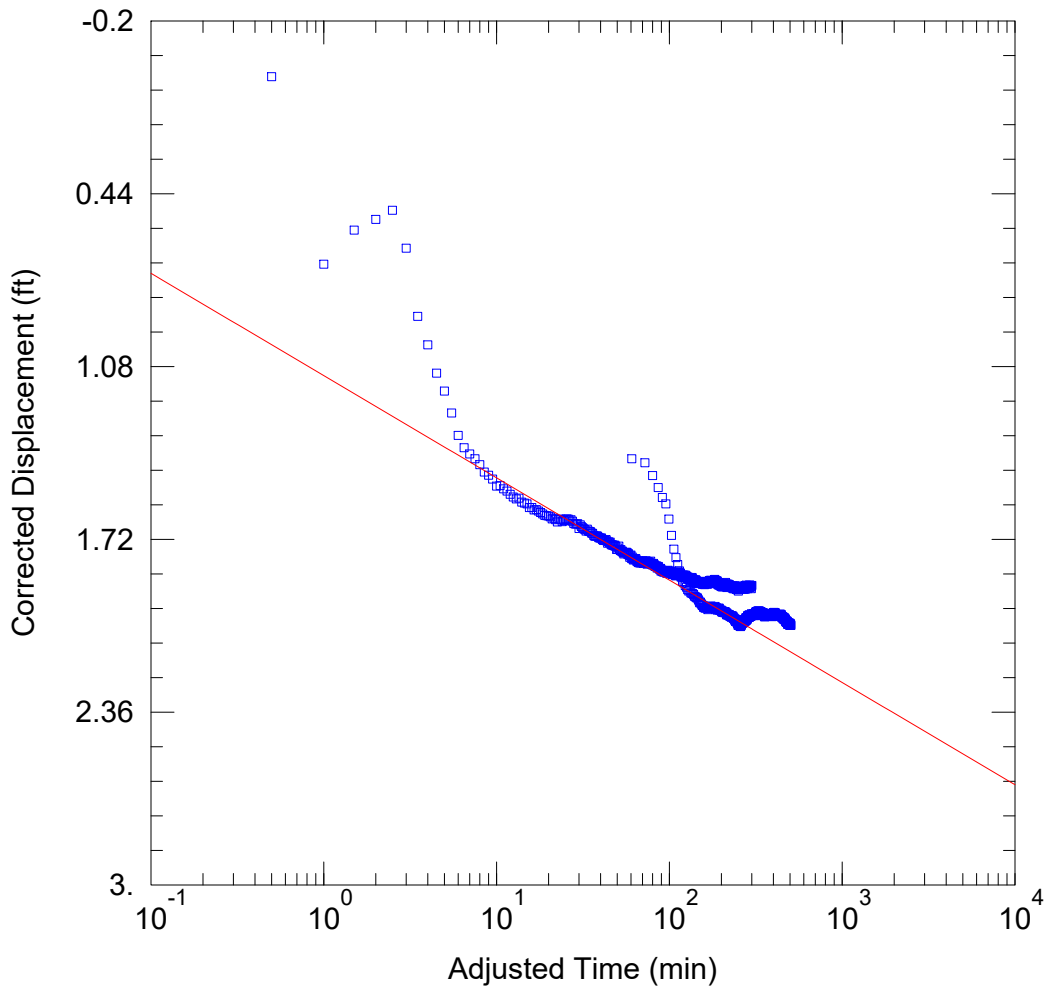
Solution Method: Theis

T = 171.9 ft²/day

S = 0.0001775

Kz/Kr = 0.1

b = 6.6 ft



CM-02 VARIABLE-RATE TEST

Data Set: G:\...\CM-02 CRT CJ.aqt
 Date: 11/03/20

Time: 15:26:46

PROJECT INFORMATION

Company: Wood PLC
 Client: Arizona Public Service
 Project: 1420182068.0020.0005
 Location: Fruitland, NM
 Test Well: CM-02
 Test Date: 7/11/2020

AQUIFER DATA

Saturated Thickness: 6.7 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
CM-02	0	0

Well Name	X (ft)	Y (ft)
□ CM-02	0	0

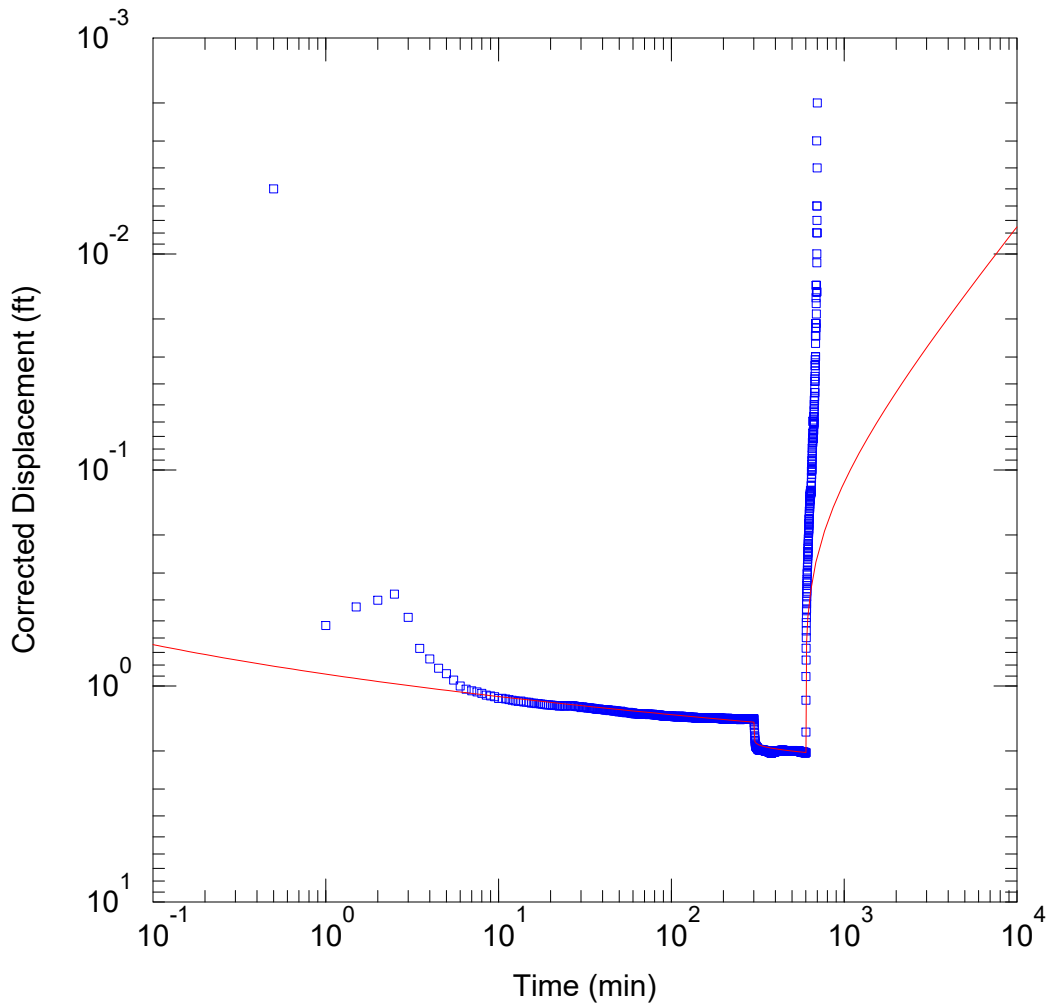
SOLUTION

Aquifer Model: Unconfined

Solution Method: Cooper-Jacob

T = 372.5 ft²/day

S = 0.003838



CM-02 VARIABLE-RATE TEST

Data Set: G:\...\CM-02_CRT_Theis.aqt
 Date: 11/03/20

Time: 15:12:36

PROJECT INFORMATION

Company: Wood PLC
 Client: Arizona Public Service
 Project: 1420182068.0020.0005
 Location: Fruitland, NM
 Test Well: CM-02
 Test Date: 7/11/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
CM-02	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ CM-02	0	0

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

T = 444.1 ft²/day

S = 0.0007939

Kz/Kr = 0.1

b = 6.7 ft

APPENDIX I

**WOOD TECHNICAL MEMORANDUM DEMONSTRATING AN EVALUATION OF
COBALT AND MOLYBDENUM EXCEEDANCES AT MW-87**



Technical Memorandum

To: Arizona Public Service Company

Project No: 14-2018-2068

By: Dane Andersen

Reviewed by: Julie Hamilton, PG

Date: January 31, 2021

**Re: EVALUATION OF ELEVATED COBALT & MOLYBDENUM CONCENTRATIONS AT MW-87
Coal Combustion Residuals Rule Compliance
Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico**

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) has been prepared by Wood Environment & Infrastructure Solutions, Inc. (Wood) to assess elevated cobalt and molybdenum concentrations in groundwater samples collected from monitoring well MW-87 at the Arizona Public Service Company (APS) Four Corners Power Plant (the Site) in Fruitland, New Mexico (Figure 1). This Tech Memo was prepared in support of ongoing groundwater characterization requirements specified in 40 Code of Federal Regulations Sections 257.90 through 257.98, herein referred to as the Coal Combustion Residual (CCR) Rule (Federal Register, 2018).

A description of the Site background, groundwater monitoring network, and historical operational information is presented in the Annual Groundwater Monitoring and Corrective Action Report for 2019 (Wood, 2020a). Cobalt and molybdenum (herein referred to as Constituents of Concern [COCs]), which are regulated under the CCR Rule's Appendix IV list, are present at elevated concentrations in groundwater downgradient of Multiunit 1, a site CCR unit which comprises the Lined Ash Impoundment and the Lined Decant Water Pond (Figure 1). Figures 2 and 3 present the inferred footprints of cobalt and molybdenum in groundwater downgradient of Multiunit 1 based on analytical data collected in June 2020. To address the elevated COCs, APS currently operates a groundwater intercept trench (known as the Southern Intercept Trench) downgradient of Multiunit 1 and upgradient of the Site's lease boundary.

At CCR compliance well MW-87, the COCs have been detected on one or more occasions in groundwater samples at concentrations exceeding the groundwater protection standards (GWPSs) for cobalt (0.010 milligrams per liter [mg/L]) and molybdenum (0.1 mg/L). The samples indicating GWPS exceedances were collected from MW-87 in March (cobalt and molybdenum), May (cobalt only), and June (cobalt and molybdenum) of 2019. There were no exceedances during the December 2019 and June 2020 monitoring rounds at this well. Figures 4 and 5 depict COC concentrations measured at MW-87 and several nearby monitoring wells from 2004 through June 2020. As illustrated, COC concentrations measured at the nearby wells have remained below respective GWPSs for the period of examination, indicating anomalous COC concentrations at MW-87 relative to the nearby wells.



General water quality at MW-87 is also distinct; Figure 6 depicts stiff diagrams representing major water quality ions measured in groundwater samples collected from MW-87 and several nearby wells in June 2020. As illustrated, water quality at MW-87 is of a higher sodium, potassium, magnesium, chloride, and sulfate character relative to nearby wells MW-08, MW-38R, MW-57, and DMX-06.

Given the inconsistent COC and general water quality data observed at MW-87 relative to concentrations of these parameters at surrounding wells, the purpose of this evaluation is to assess potential causes of the cobalt and molybdenum GWPS exceedances at MW-87. The following sections present two potential causes, which include:

- The presence of aquifer solids in groundwater samples due to unsuccessful well development of MW-87 (Section 2.0); and
- Potential interactions between surface water in Chaco Wash and groundwater at MW-87, which is located approximately 150 ft away (Section 3.0).

2.0 MW-87 DEVELOPMENT ACTIVITIES

MW-87 was installed in November 2018 to monitor groundwater at the Site facility boundary downgradient of Multiunit 1. Documentation of the MW-87 well installation is provided in the *Hydrogeologic Investigation of Multiunit 1 and the Upper Retention Sump* (Wood, 2020b). The lithologic log for MW-87 indicates the well is screened within silty sand, sand, and weathered Lewis Shale, and moisture was noted at 27.5 ft bgs (5046.79 ft above mean sea level [asml]). Groundwater was not encountered during the MW-87 borehole advancement and the well was dry after installation. Therefore, well development was not performed at MW-87 after its installation. Because proper well development is necessary to remove fines from the formation surrounding the well filter pack and promote collection of representative groundwater samples (EPA, 1992) and samples are not field- or laboratory-filtered in compliance with the CCR Rule, the COC concentrations measured at MW-87 to date may not accurately represent groundwater quality at this location.

Figure 7 depicts groundwater elevations, cobalt concentrations, and molybdenum concentrations measured at MW-87 from November 2018 to June 2020. Water levels at MW-87 have increased over time and have achieved relative stability at approximately 5046 ft amsl. Additionally, COC concentrations at MW-87 throughout the period of examination have generally decreased, suggesting a relationship between stabilizing water levels and reduced COC concentrations at MW-87.

In response to the rise and stabilization of water levels, Wood attempted to develop MW-87 in July 2020. On July 10, 2020, approximately 10 gallons of silty water were removed during swab and bail development before the well went dry, prohibiting further development. Wood returned to MW-87 the following day to continue well development; however, the well had only recovered 1 ft over a period of approximately 17 hours. The well was again bailed dry, and further well development was halted due to poor water production.

3.0 POTENTIAL IMPACTS FROM CHACO WASH SURFACE WATER

To the west of the Site, Chaco Wash (sometimes referred to as the Chaco River) is a northward-flowing tributary of the San Juan River that is located west and hydraulically downgradient of Multiunit 1 (Figure 1). Chaco Wash drains the Site as well as a 2.9-million-acre watershed that predominantly consists of shrubland, grasslands, evergreen forest, bare rock/sand/clay, and low intensity residential lands (United States Department of Agriculture [USDA], 2002). The watershed includes land that is farmed in association with the Navajo Agricultural Products Industry and both active and reclaimed portions of the Navajo Mine.

Based on elevation data obtained from an aerial topographic survey conducted by APS in April 2014, the land surface elevation of Chaco Wash directly west of MW-87 is estimated at approximately 5048 ft amsl. In comparison, the groundwater elevation measured at MW-87 in June 2020 was 5046.29 ft amsl, approximately 1.71 ft lower than the surveyed elevation of Chaco Wash. A hydrogeologic cross section depicting this relationship is presented as Figure 8.

Groundwater elevations measured at several wells near MW-87 in June 2020 are also below the Chaco Wash elevation, including DMX-06 (5046.89 ft amsl), MW-06 (5045.98 ft amsl), EW-14 (5044.24 ft amsl), and EW-15 (5044.26 ft amsl). The difference between the elevation of Chaco Wash and the presented groundwater elevations suggests these wells may intercept a zone of saturation caused by the infiltration of surface water from Chaco Wash. Chaco Wash streambank soils near the Site are classified by the USDA as a Hydrologic Group B soil; these soils have moderate infiltration rates and are well drained (USDA, 2002). The lower groundwater table elevation at MW-87 relative to the base of the channel and presence of permeable soils suggests that Chaco Wash is a losing stream along this reach.

There is currently no flow monitoring that occurs in Chaco Wash adjacent to the Site and limited water quality data for the COCs. Downgradient water quality data collected from former United States Geological Survey Station Number 09367950 in Chaco Wash (approximately eight miles downstream from the Site; see Attachment A) indicates variable concentrations of cobalt (0.010 and 1.6 mg/L) from 1969 and 1994 and only one reportable sample concentration for molybdenum (0.078 mg/L). Water quality sampling conducted in Chaco Wash upstream and downstream of the Site in 2008 and 2009 also reported highly variable concentrations of cobalt. Total cobalt concentrations ranged from less than 0.01 to 0.34 mg/L (upstream and downstream sample concentrations were essentially equivalent). Total molybdenum concentrations were less variable and ranged less than 0.01 to 0.03 mg/L.

To better understand why this variability exists and advance an assessment of potential interactions of groundwater monitored at MW-87 with surface water flowing in Chaco Wash, the frequency of likely contributions to surface water in the wash (i.e., from runoff and agricultural return flows) which may affect water quality in Chaco Wash were investigated.

3.1 Precipitation and Snowmelt Runoff

Average monthly precipitation data collected from a weather station located at the Site were reviewed to estimate when surface runoff to Chaco Wash resulting from precipitation is likely to peak throughout a given year. Figure 9 presents monthly precipitation averages from 2017 to 2019. Precipitation for the period

of record is highest in May, suggesting peak runoff to Chaco Wash occurs during this month, while runoff due to snowmelt within the San Juan River Basin peaks in mid-May through early June (SJRBP, 2018).

3.2 Return Flows from Farming Irrigation

Return flows from farming irrigation are considered a potential input to Chaco Wash that may affect surface water quality. To assess when the majority of return flows due to farming irrigation are likely to occur, Wood reviewed available documentation of regional farming practices in the area, which included an irrigation report prepared in 2011 (Keller-Bliesner Engineering, 2011). The irrigation report indicates that farming irrigation occurs within the Chaco Wash watershed upstream of the Site at Irrigation Block 3, which is located approximately 7 miles southeast of the Site. While the report does not include information on peak irrigation runoff times for Irrigation Block 3, it notes that irrigation runoff measured in sub-surface drains at a similar irrigation block (Irrigation Block 1, located approximately 22 miles east of the Site) peaks in November for the period of record (Figure 10). Based on regional farming practices, it is inferred that irrigation patterns at Irrigation Block 3 are similar to Irrigation Block 1, suggesting irrigation runoff to Chaco Wash upstream of the Site also peaks in November.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The presented data suggest that the cobalt and molybdenum GWPS exceedances identified in the March, May, and June 2019 groundwater samples collected from MW-87 could be attributable to sources other than Multiunit 1; however, additional investigation is warranted.

In October 2020, APS and Wood discussed the collection of groundwater samples from several supplementary site monitoring wells near MW-87 during the fourth quarter 2020 CCR groundwater monitoring event in November 2020. Supplementary groundwater samples were collected at MW-06, MW-15, MW-16, MW-17R, MW-61, MW-75, and DMX-04. The samples were analyzed for cobalt, molybdenum, boron, and major quality ions. The groundwater data will be assessed to better understand groundwater quality surrounding MW-87.

If analysis of additional data proves inconclusive, collection of surface water samples from Chaco Wash may be warranted to evaluate the potential for Chaco Wash surface water to affect groundwater quality at MW-87. Given the variability of water quality data collected in the past, the sampling and analysis plan for surface water sampling would need to consider the inconsistent flow in Chaco Wash that can be attributable to multiple sources and the impacts sediment load can have on total metals concentrations in surface water.

5.0 REFERENCES

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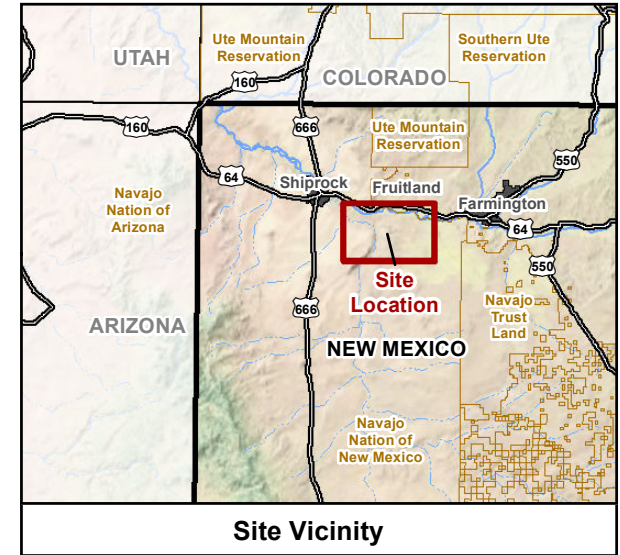
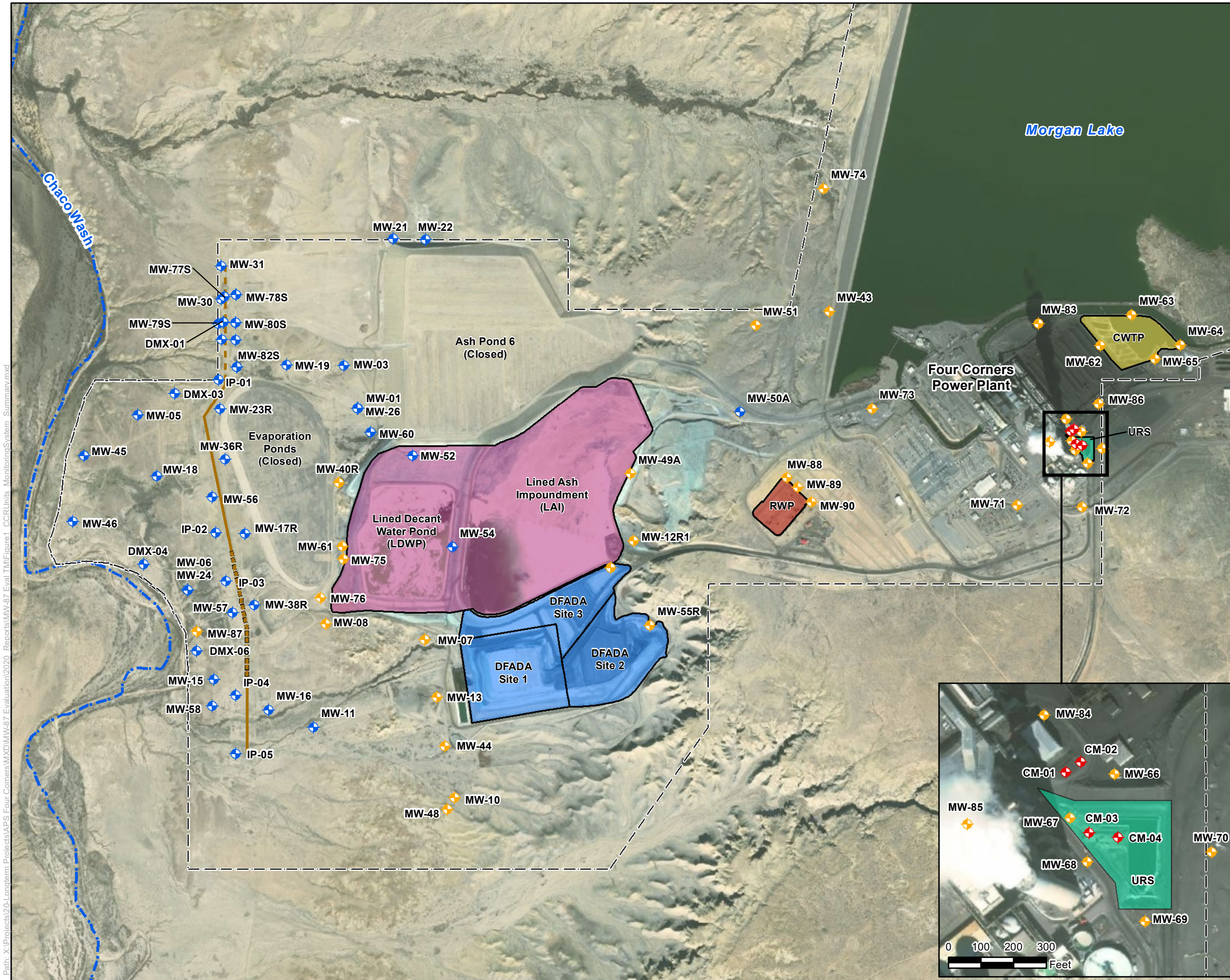
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Wood, 2020b. *Hydrogeologic Investigation of Multiunit 1 and the Upper Retention Sump*. Coal Combustion Residuals Rule Groundwater Monitoring System Compliance. Arizona Public Service Company Four Corners Power Plant, Fruitland, New Mexico. Report dated January 31, 2020.

FIGURES





Legend

- ◆ CCR Monitoring Well Location
- ◆ Supplementary Site Monitoring Well Location
- ◆ CM Pre-Design Wells
- - - FCPP Lease Boundary
- - - North Intercept Trench
- - - South Intercept Trench
- - - Approximate Extent of High Flow Zone
- - - Ephemeral Surface Water Feature

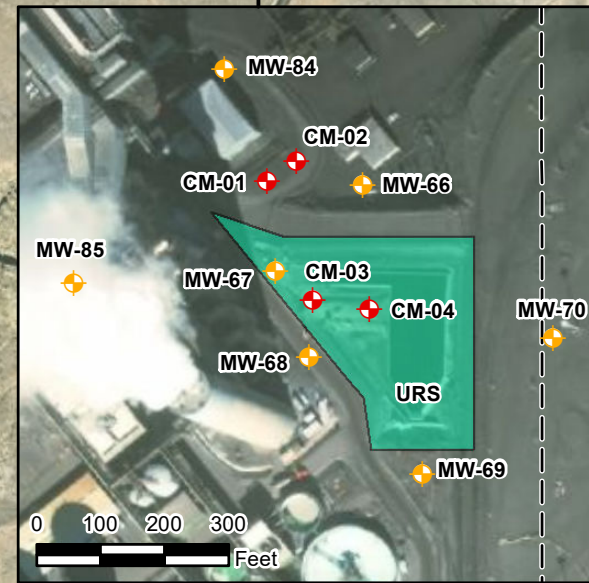
CCR Units

- Multiunit 1(LAI and LDWP)
- Dry Fly Ash Disposal Area (DFADA)
- Combined Waste Treatment Pond (CWTP)
- Upper Retention Sump (URS)
- Return Water Pond (RWP)

Notes:

- CCR Coal Combustion Residuals
- CM Corrective Measures
- CWTP Combined Waste Treatment Pond
- DFADA Dry Fly Ash Disposal Area
- FCPP Four Corners Power Plant
- LAI Lined Ash Impoundment
- LDWP Lined Decant Water Pond
- URS Upper Retention Sump
- RWP Return Water Pond

0 700 1,400 Feet



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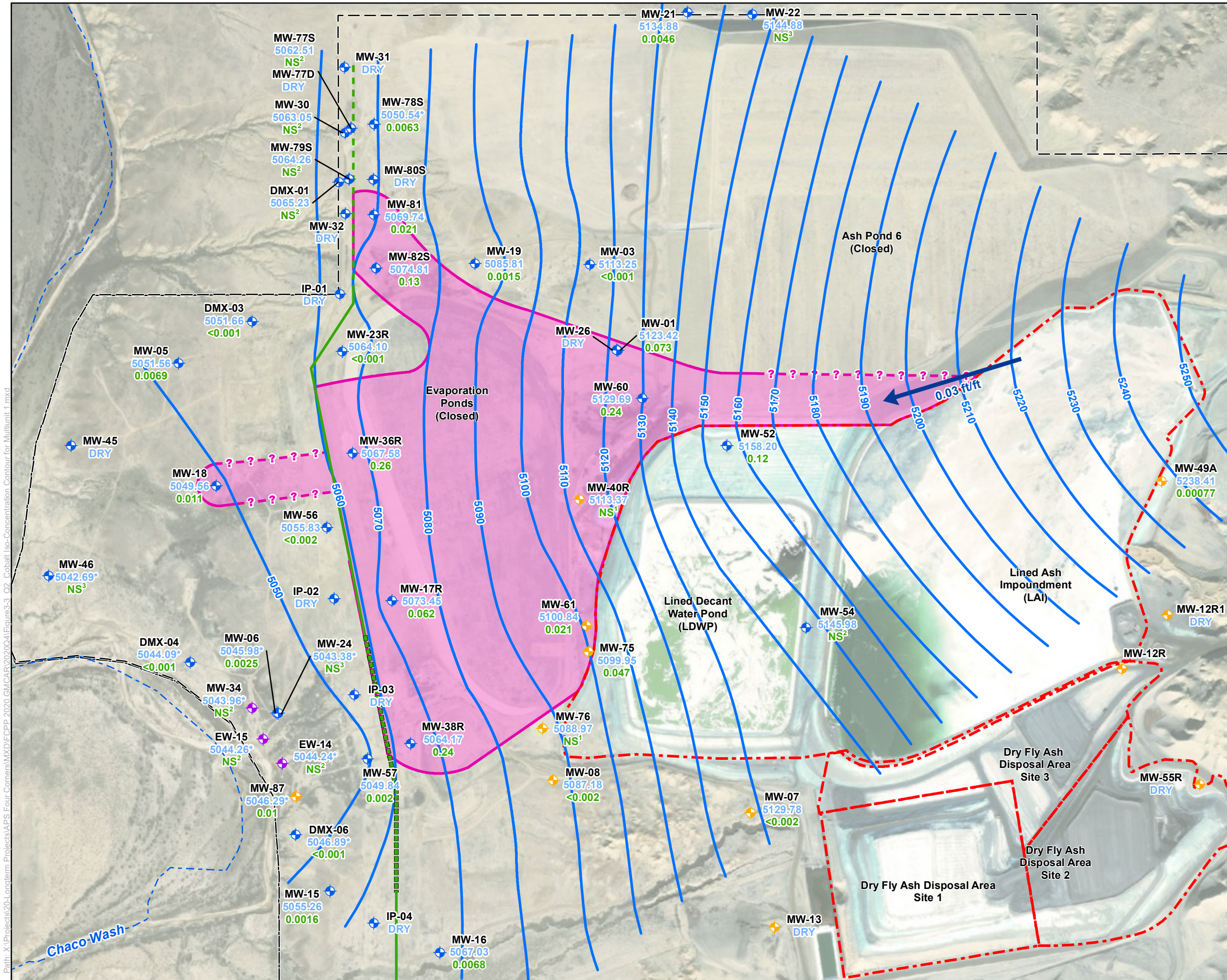
FIGURE 1 CCR Units and Monitoring System Summary

Job No.	14-2018-2068
PM:	MBH
Date:	10/23/2020
Scale:	1" = 1400'

wood.

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Path: X:\Projects\20-L\Longterm\Projects\APS\Four Corners\MXD\MW47 Eval\TM\Figure1_CCRUnits_MonitoringSystem_Summary.mxd



Legend

- ◆ CCR Monitoring Well Location
- ◆ Supplementary Site Monitoring Well Location
- ◆ Extraction Well
- Four Corners Power Plant Lease Boundary
- - - North Intercept Trench
- South Intercept Trench
- Approximate Extent of High Flow Zone
- - - Ephemeral Surface Water Feature
- ▭ CCR Unit Boundary

Potentiometric Surface

- (Dashed Where Inferred)
- ➔ Groundwater Flow Direction with Gradient (ft/ft)

Cobalt Concentration (June 2020)

- >0.01 mg/L
- GWPS (0.01 mg/L; Dashed Where Inferred)

Notes:

- MW-57** Well identification
- 5049.84** Groundwater Elevation (ft amsl) measured in June 2020
- ◆ Well not used in groundwater contouring
- 0.0020** Cobalt concentration (mg/L)
- NS** Not Sampled
- 1** Not enough water to sample
- 2** No pump in well
- 3** Well not selected for sampling
- GWPS Groundwater Protection Standard
- CCR Coal Combustion Residuals
- ft amsl Feet above mean sea level
- mg/L milligram per liter

0 350 700 1,400 Feet

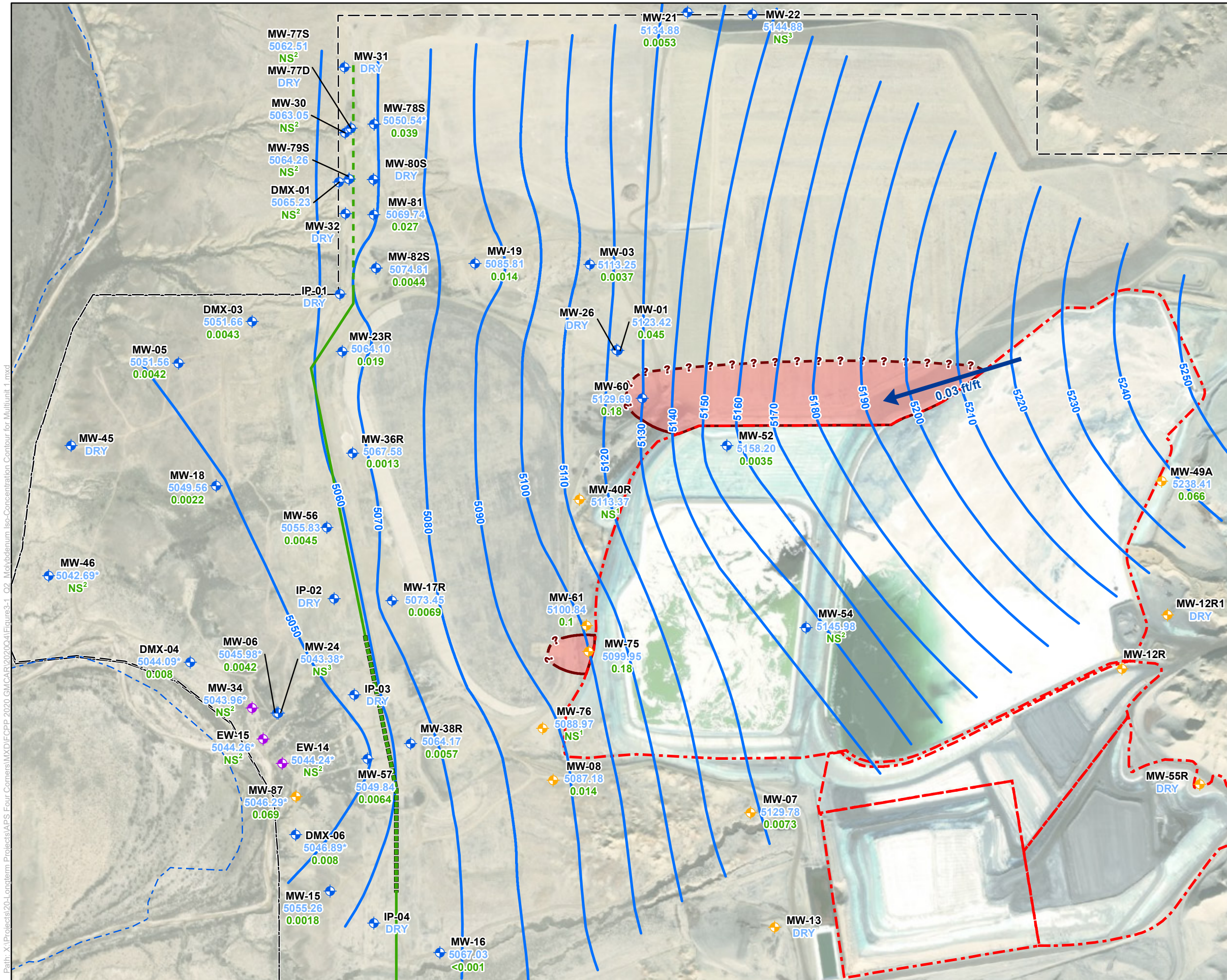
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FIGURE 2 Cobalt Iso-Concentration
Map for Multiunit 1 - June 2020

Job No. 14-2020-2015	
PM: MBH	
Date: 1/29/2021	
Scale: 1" = 700'	

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Path: X:\Projects\20-L\Longterm Projects\APS Four Corners\MXD\FECP 2020\GMCAR\202004\Figure3-3_02_Cobalt Iso-Concentration Contour for Multiunit 1.mxd



Legend

- CCR Monitoring Well Location
- Supplementary Site Monitoring Well Location
- Extraction Well
- Four Corners Power Plant Lease Boundary
- North Intercept Trench
- South Intercept Trench
- Approximate Extent of High Flow Zone
- Ephemeral Surface Water Feature
- CCR Unit Boundary

Potentiometric Surface

- (Dashed Where Inferred)
- Groundwater Flow Direction with Gradient (ft/ft)

Molybdenum Concentration (June 2020)

- >0.1 mg/L
- GWPS (0.01 mg/L; Dashed Where Inferred)

Notes:

- MW-57** Well identification
- 5049.84** Groundwater Elevation (ft amsl) measured in June 2020
- *** Well not used in groundwater contouring
- 0.0064** Molybdenum concentration (mg/L)
- NS** Not Sampled
- 1** Not enough water to sample
- 2** No pump in well
- 3** Well not selected for sampling
- GWPS** Groundwater Protection Standard
- CCR** Coal Combustion Residuals
- ft amsl** Feet above mean sea level
- mg/L** milligram per liter

0 350 700 1,400 Feet

Arizona Public Service
Four Corners Power Plant
Fruitland, New Mexico

FIGURE 3 Molybdenum Iso-Concentration Map for Multiunit 1 - June 2020

Job No. 14-2020-2015
PM: MBH
Date: 1/29/2021
Scale: 1" = 700'

wood.

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Path: X:\Projects\20-Longterm Projects\APS Four Corners\MXD\FECP-2020-GM\CAR\202004\Figure3-1_02_Molybdenum_Iso-Concentration_Contour_for_Multiunit_1.mxd

Figure 4 - Cobalt Concentrations at MW-87, MW-06, MW-15, DMX-04, DMX-06

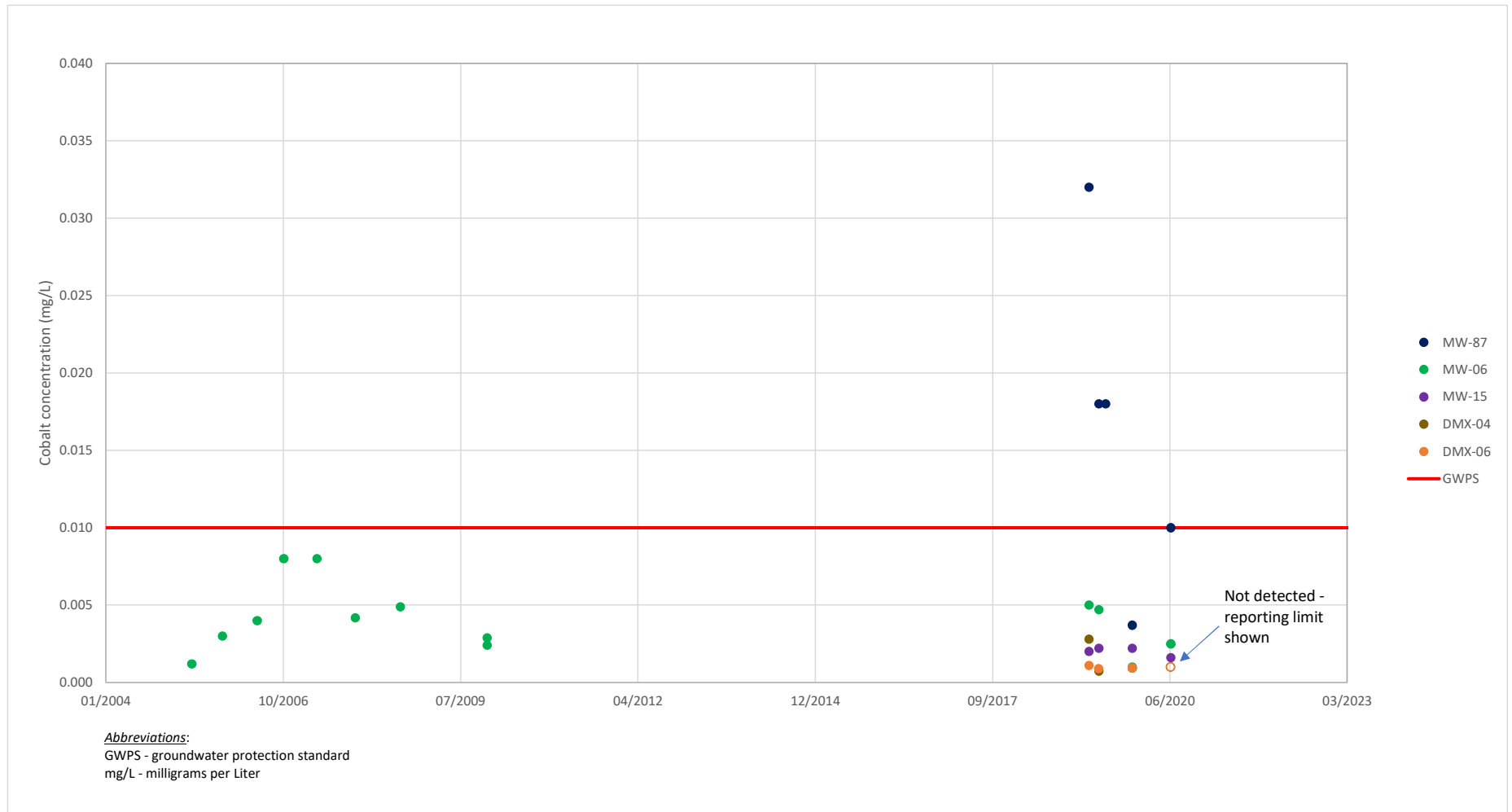
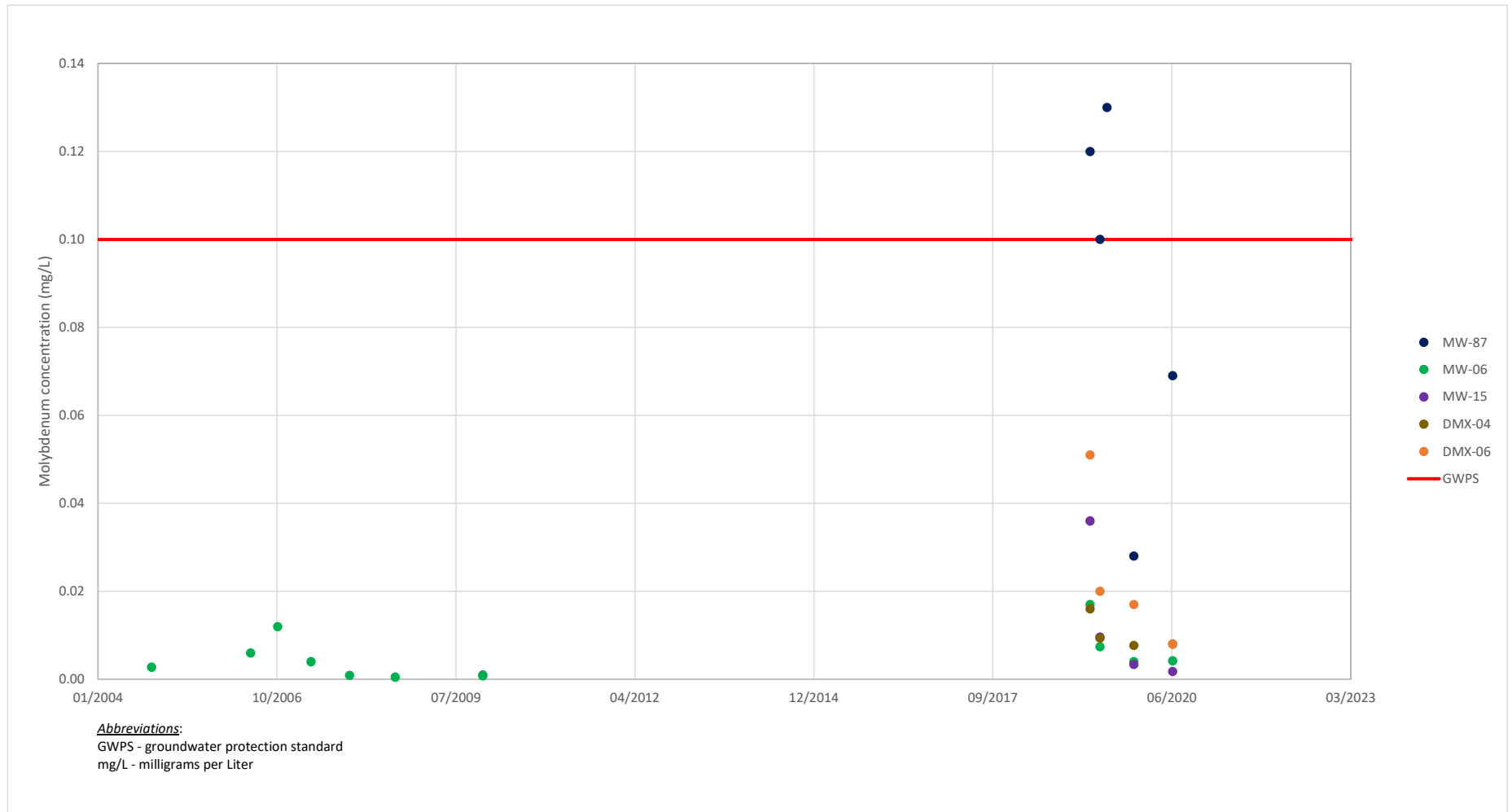
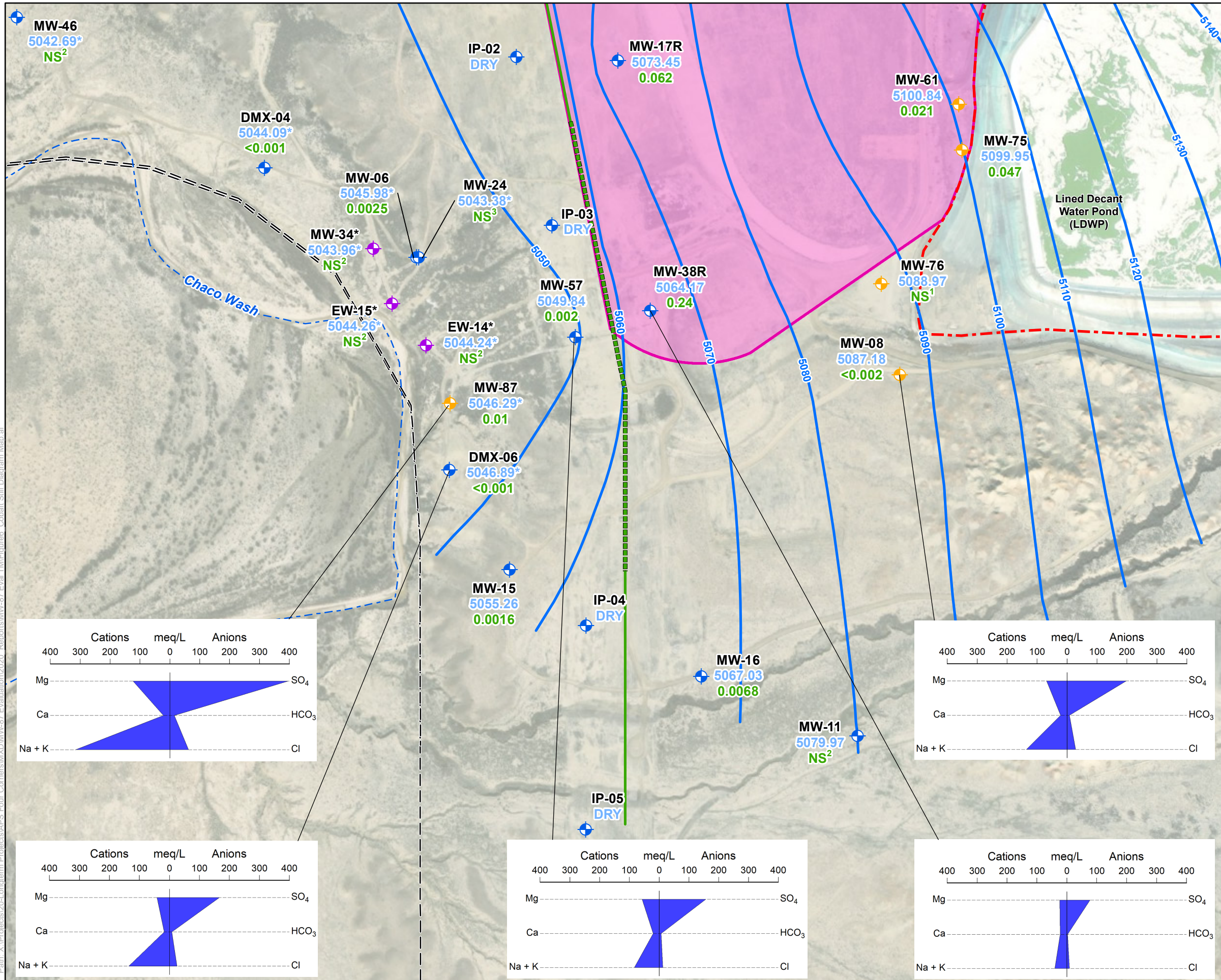


Figure 5 - Molybdenum Concentrations at MW-87, MW-06, MW-15, DMX-04, DMX-06





Legend

- CCR Monitoring Well Location
- Supplementary Site Monitoring Well Location
- Extraction Well
- Four Corners Power Plant Lease Boundary
- South Intercept Trench
- Approximate Extent of High Flow Zone
- Ephemeral Surface Water Feature
- CCR Unit Boundary

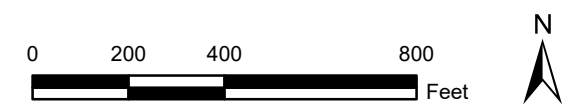
Potentiometric Surface

- (Dashed Where Inferred)

Cobalt Concentration (June 2020)

- >0.01 mg/L
- GWPS (0.01 mg/L; Dashed Where Inferred)

- #### Notes:
- MW-57** Well identification
 - 5049.84** Groundwater Elevation (ft amsl) measured in June 2020
 - 0.0020** Cobalt concentration (mg/L)
 - *** Well not used in groundwater contouring
 - NS** Not Sampled
 - 1** Not enough water to sample
 - 2** No pump in well
 - 3** Well not selected for sampling
 - GWPS Groundwater Protection Standard
 - CCR Coal Combustion Residuals
 - ft amsl Feet above mean sea level
 - mg/L milligram per liter

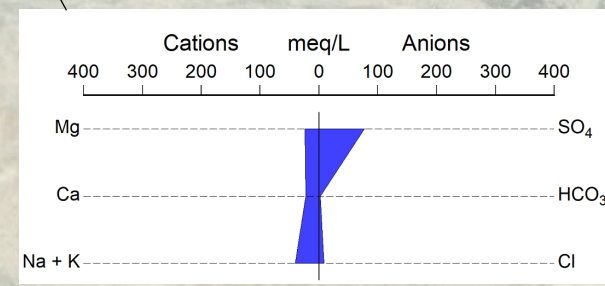
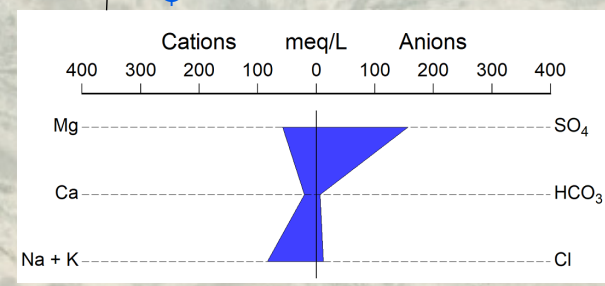
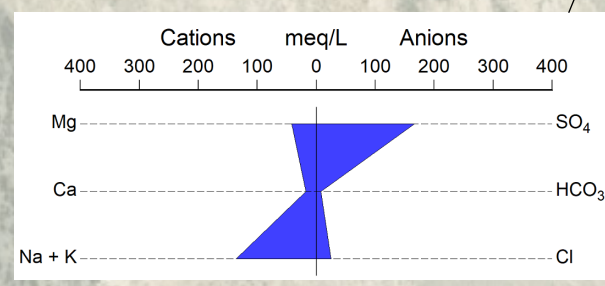
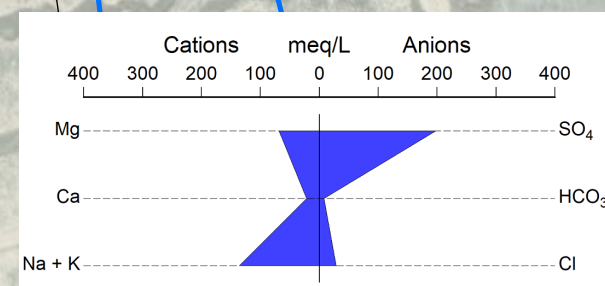
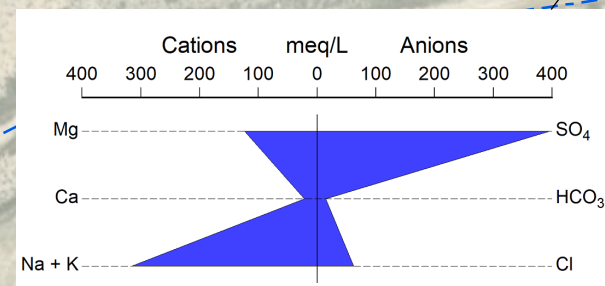


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FIGURE 6 Stiff Diagram Map (June 2020 Water Quality Data)

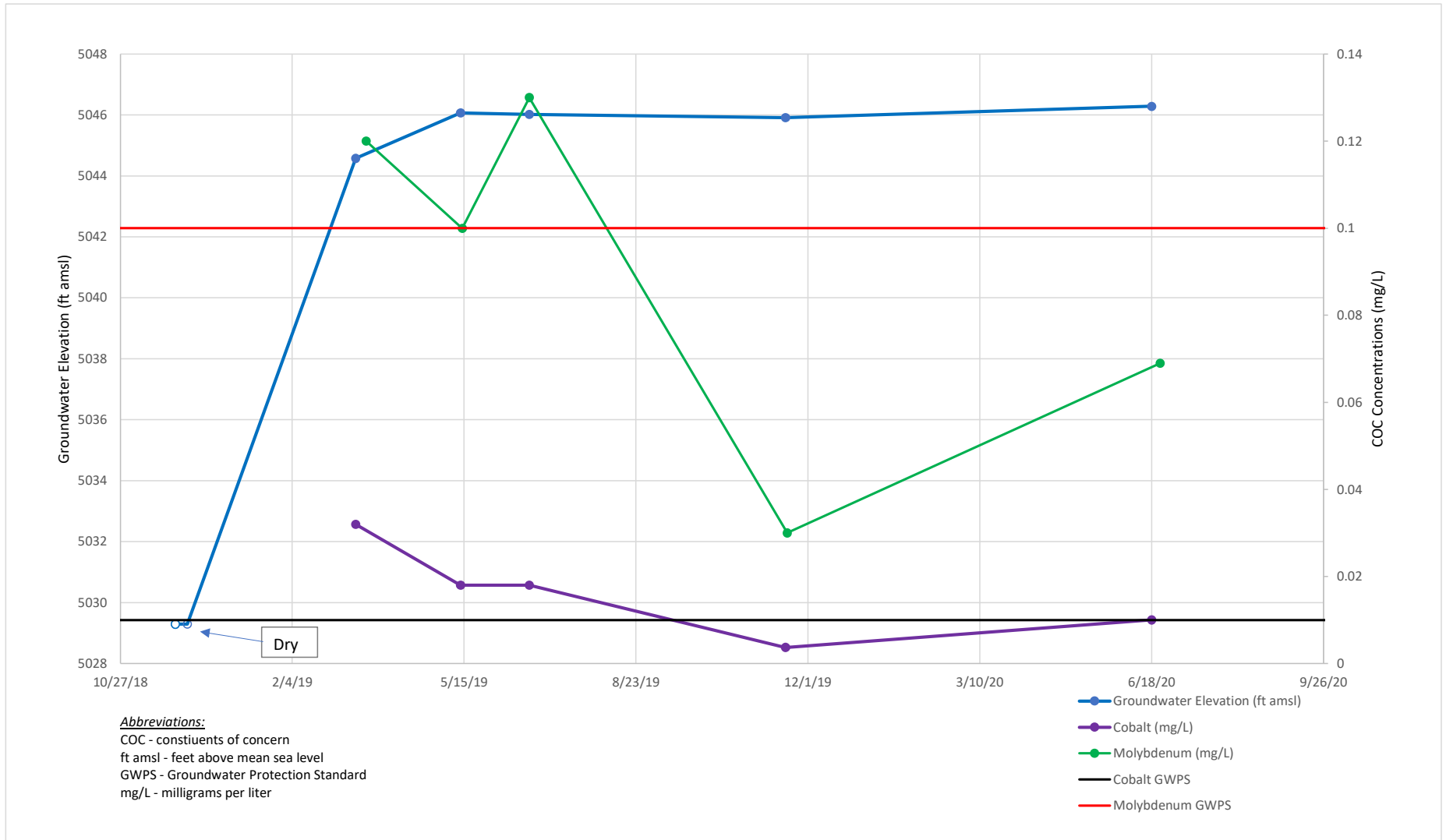
Job No.	14-2020-2015
PM:	MBH
Date:	11/10/2020
Scale:	1" = 400'

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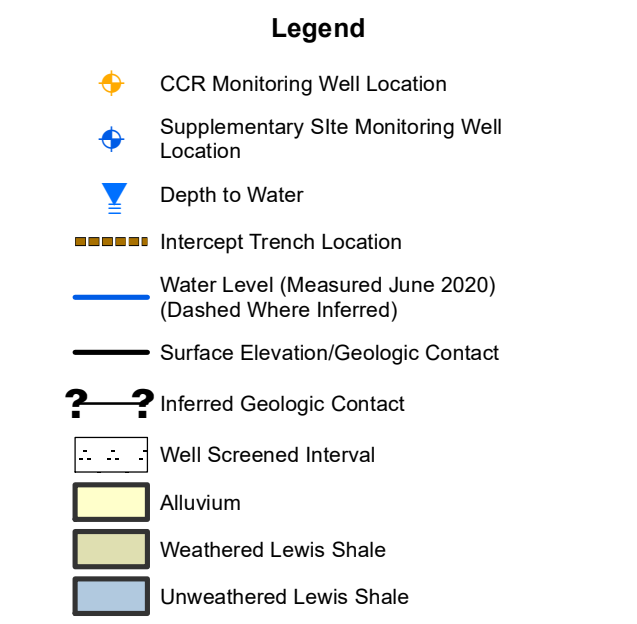
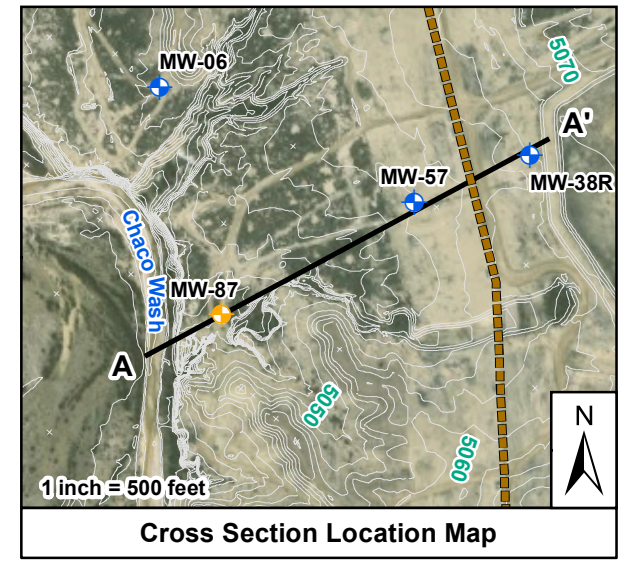
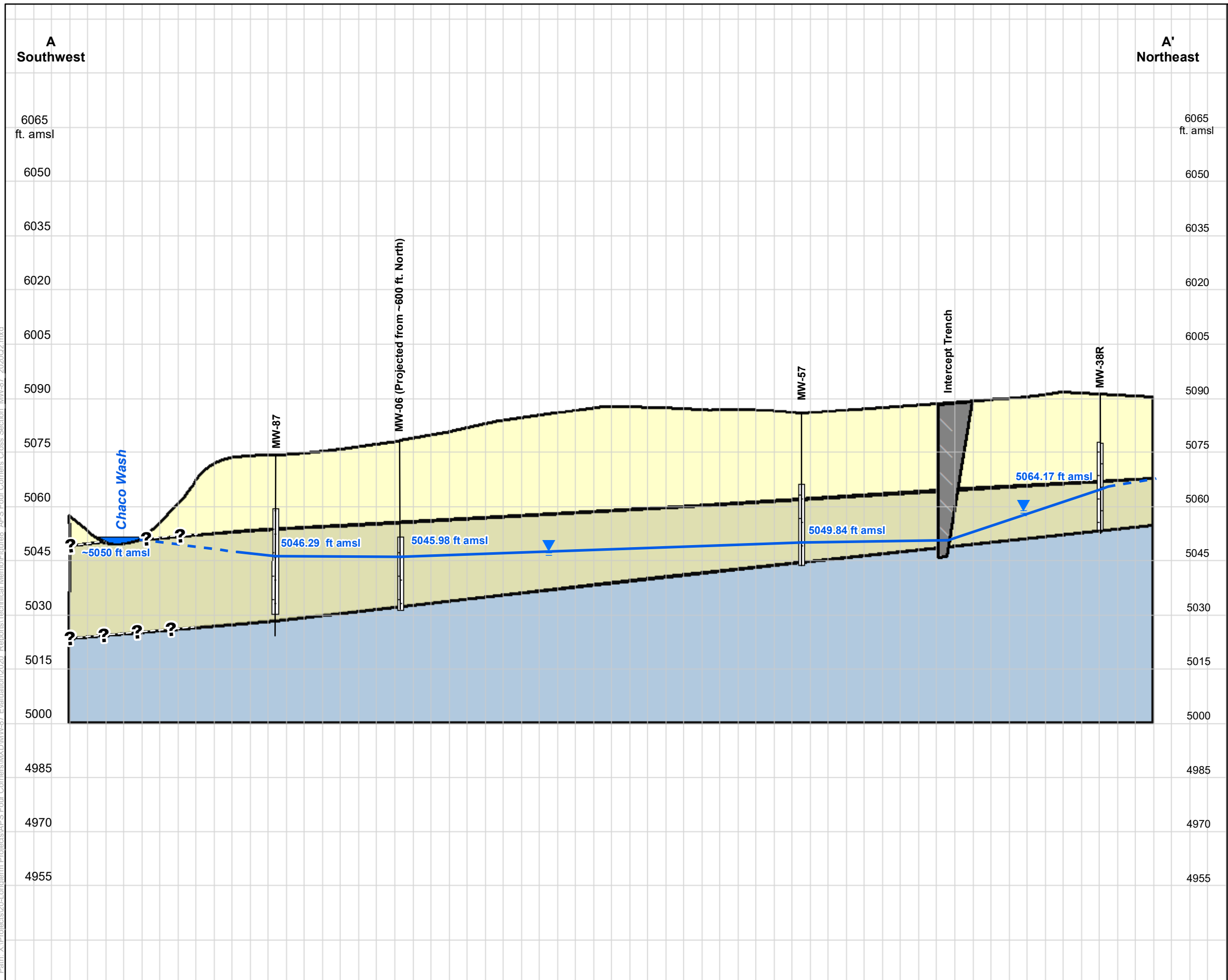


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Figure 7 - MW-87 Hydrograph and COC Concentrations



Path: X:\Projects\20-Longterm Projects\APS Four Corners\MD\MW-87 Evaluation\2020_Reports\Technical\Memo\Figure8_APS Four Corners Cross Section_MW-87_202002.mxd



Abbreviations:
 CCR Coal Combustion Residual
 ft amsl Feet above mean sea level
 Vertical exaggeration is 4x horizontal scale

Arizona Public Service Four Corners Power Plant Fruitland, New Mexico	
FIGURE 8	Hydrogeologic Cross Section
Job No. 14-2018-2068	
PM: MBH	
Date: 11/6/2020	
Scale: 1" = 110'	
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Figure 9 - Average Monthly Precipitation from APS Four Corners Plant Weather Station (2017 - 2019)

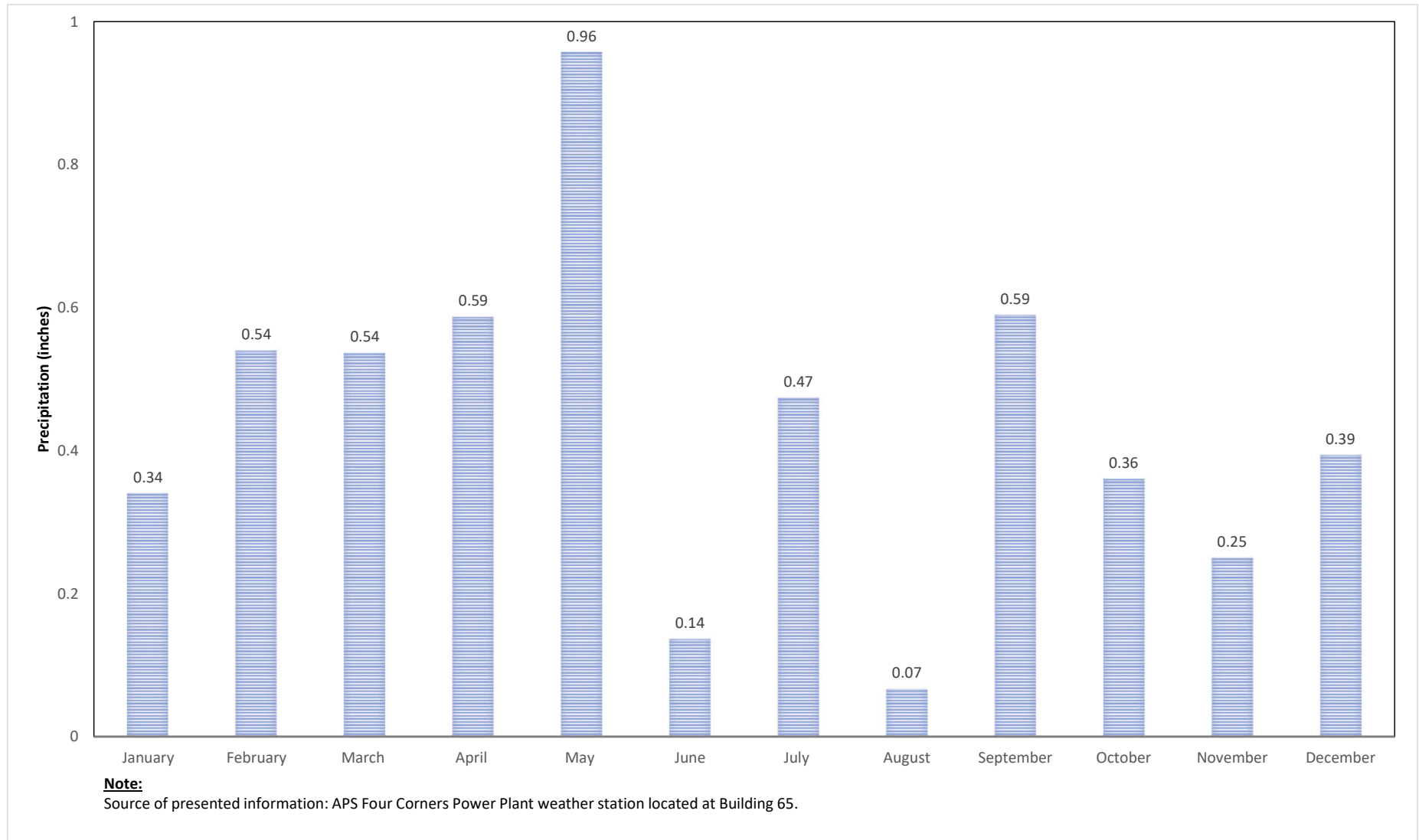
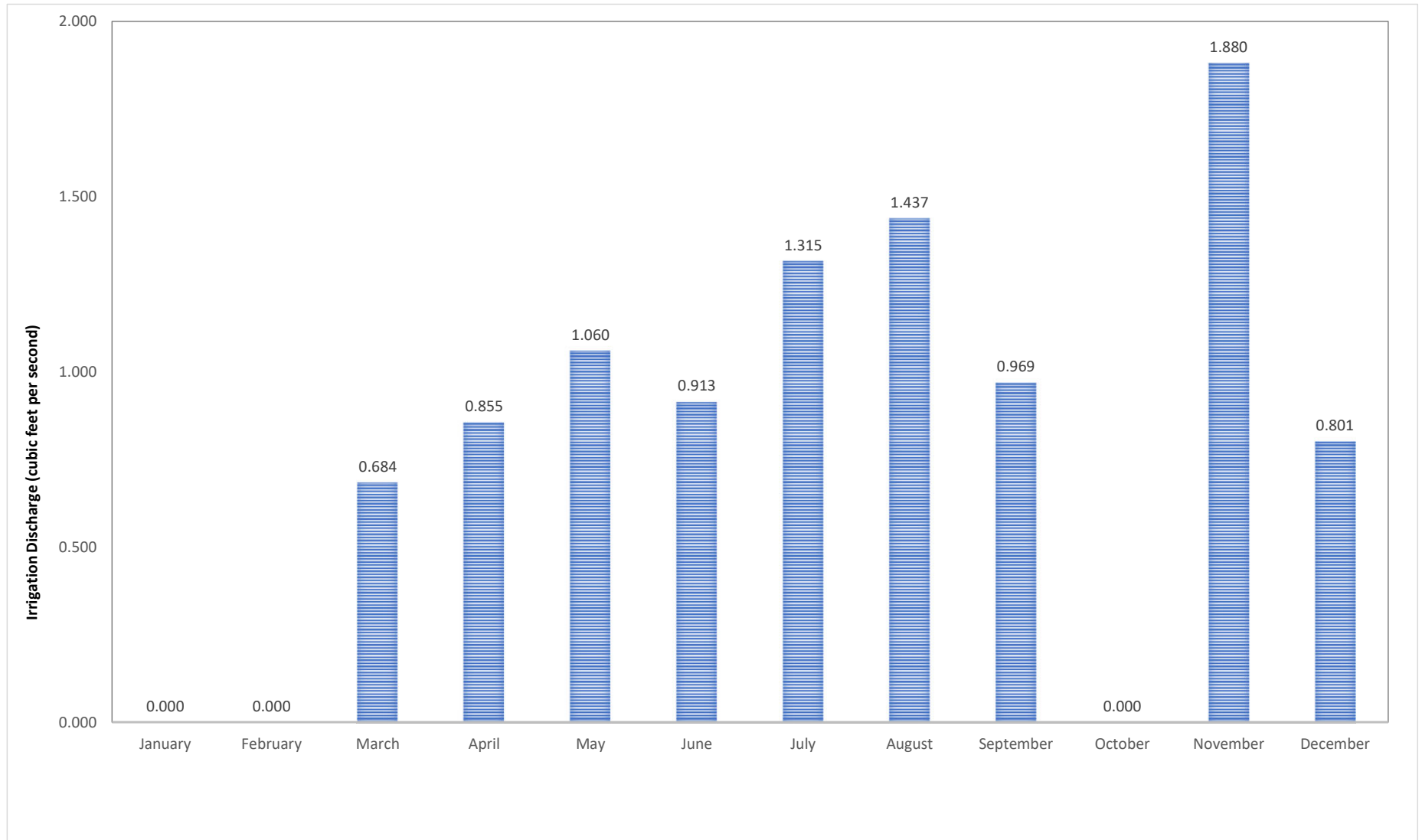


Figure 10 - Average Monthly Irrigation Discharges for Irrigation Block 1 (Mar 2002 through Dec 2010)



ATTACHMENT A – USGS STREAM GAUGE DATA



Chaco Wash Surface Water Quality Data
 United States Geological Survey Gaging Station 09367950
 (1969-1989)

Sample Date	Temp °C	DO mg/L	pH	HCO3 Filtr mg/L	TDS mg/L	NO3 Filtr mg/L	Ca Filtr mg/L	Mg Filtr mg/L	Na Filtr mg/L	Na+K Filtr mg/L	K Filtr mg/L	Cl Filtr mg/L	SO4 Filtr mg/L	Co Filtr mg/L	Co Unfiltr mg/L	Fe Filtr mg/L	Fe Unfiltr mg/L	Pb Filtr mg/L	Pb Unfiltr mg/L	Mn Filtr mg/L	Mn Unfiltr mg/L	Mo Filtr mg/L	Mo Unfiltr mg/L	
10/8/1969	18	7.4					180	39		350		68	964											
4/27/1970	19	8.9					260	124		480		168	1820											
11/13/1975	9	10	8.4			3.6	310	63	280		9.9	150	1300			<.010			<.200					
12/11/1975	6.5	10.6	8.2			4.1	260	77	290		9.4	130	1200	U	0.100	<.010	25	U	<.200	<.010	0.55			
1/27/1976	5.5		7.6			3	190	55	250		8.6	130	950			0.06			0.3					
2/28/1976	14	8.6	8.3			4.1	300	66	260		10	150	1200			0			0.2					
3/24/1976	10.5	11	8.2			5	320	82	310		11	160	1400			<.010			0.3					
4/21/1976	6	9.6	8.1			3.4	210	58	240		8.3	140	1000			<.010			<.200					
5/19/1976	10	9.5	8.6			2.9	190	54	250		8	130	870			0.04			<.200					
6/8/1976	25		7.5														270		0.4			6.6		
6/16/1976	17	8.5	8.3			3.7	320	66	270		9.5	170	1200			0.09			<.200					
7/28/1976	20	7.5	7.8			3.2	110	14	220		8.3	63	590			0.07			0.6					
8/5/1976	27		7.8														200		0.2			5.6		
8/20/1976	23		6.8											1.600			790		1			30	<.001	
8/25/1976	14	7.8	8.4								8.8	92	800			0.06			0.4					
8/27/1976	20.5		7.5														10		<.200			0.17		
9/22/1976	13	8.8	7.9			7.1	200	62	320		8.9	110	1000			0.02			0.8					
10/27/1976	8		8.3			3	210	55	240		7.8	120	980			0.04			0.2					
11/17/1976	2	11.9	7.9			3.5	260	62	250		8.4	130	1100			<.010			<.200					
12/7/1976	2.5	11.8	7.9			2.4	190	49	230		7.7	120	900			0.02			<.200					
1/6/1977	4	11	8.2			2.7	170	56	220		7	110	860			<.010			0.2					
2/2/1977	2	11.8	8.1			5.5	290	79	300		8.1	140	1300			<.010			<.200					
3/9/1977	3	14.2	8.3			4.1	290	67	270		8	140	1200	U	<.0100	0.23	21	M	<.200	0.02		0.26		
4/13/1977	12.5	8.9	8.2			7.2	280	110	370		9.9	160	1600			0.03			<.200					
4/28/1977	18.5		8.3			3.6	260	71	280		8.5	140	1200	U	<.0100	0.02	19	M	<.200		0.24	0.076	0.078	
5/11/1977	10.5	9.2	8			2.9	200	57	250		6.8	120	930			0.02			0.34					
6/14/1977	28		8.2			2.7	230	70	290		9.5	130	1100	U	0.010	0.02	0.56	M	M	0.03	0.4			
6/29/1977	13.5															0.02	11		<.010	0.18				
7/13/1977	23	8.5	8.2			1.4	170	47	230		7.3	120	840			<.010								
7/27/1977	25.5		7.5											0.010					M					
8/31/1977	19	8.5	8.1			3.6	210	70	290		8.3	170	1100			<.010								
9/28/1977	18	9	8.2			3.2	190	65	270		8	130	980	<.0002	<.0100	0.03	25	M	<.200	<.010		0.32		
10/19/1977	12	9.8	8.1			3.3	180	67	260		7.9	130	960			0.02								
11/29/1977	7	10.5	8.1		1700	4	170	64	270		7.7	130	940	U	M	0.06	8.3	M	M	<.010		0.14		
2/22/1978	4.5	11.4	8.1			2.5	190	46	230		7.4	110	820	U	0.010	0.02	52	M	M	<.010		0.088		
5/25/1978	20.5	8.5	8.2			14	420	210	710		16	300	2800	U	U	<.010	0.59	M	M	0.09		0.01		
8/17/1978	19	8.5	8.4			2	190	48	230		8	120	870	U	M	0.02	32	M	M	<.010		0.018		
9/12/1978	16		8.2													<.010	10	U	<.200	<.010		0.013		
9/24/1978	7.4																		310			17		
9/24/1978	7.4																		280			13		
9/24/1978	7.2																		400			28		
9/24/1978	7.2																		450			28		
10/24/1978	8		7.7													<.010	190	U	0.6	<.010		9.6		
11/3/1978	7.5																		380			17		
11/14/1978	7	7.4														<.010	120	U	0.2	<.010		3.4		
12/20/1978	0	11.6	8.1			2.5	26	2.3	140		4.3	14	240	U	0.040	0.07	250	<.002	0.2	<.010		2.6		
1/12/1979	0	7.5														0.02	14	U	U	<.010		0.28		
1/22/1979	1	7.4														<.010	130	U	0.4	<.010		3.6		
2/15/1979	3	7.5														0.02	200	U	0.6	<.010		11		
2/15/1979	7.7																190	U	0.7			11		
2/16/1979	7.4																160	U	0.5			8.6		
3/6/1979	7.8																53	U	0.5			1.1		
3/14/1979	5.5	10.8	8.3			1.9	130	19	190		5.7	59	550	U	0.060	<.010	100	U	0.1	<.010		3.3		
3/29/1979	8	7.9														<.010	25	M	<.200	<.010		0.37		
4/26/1979	7.5															<.010	91	U	0.3	<.010		2.4		
5/23/1979	26	7.2	8.3		1410		98	17	140	150	5.6	42	450											
5/25/1979	7.2																		530			17		
5/29/1979	27	8.2																0.02	18	U	U	<.010	0.27	
7/9/1979	7.8																	0.06	3.1			0.02	0.09	
7/9/1979	35	7.1																	6.8	U		0.14		
7/10/1979	8.1					220	40	240	250		7.7	120	940			0.03	6.4		<.010		0.12			
7/12/1979	17	7.8														<.010	3	U	U	<.001		0.08	0.06	
7/31/1979	8.1															<.010	6.4			<.001		0.23		
7/31/1979	8.4															<.010	4.8			<.001		0.08		
7/31/1979	8.3															0.1	4.8			0.02		0.1		
8/10/1979	7.1																		280		<.200	0.2		
8/17/1979	7.2																		160			3.8		
8/17/1979	7.1																		120			3.2		
8/20/1979	24	7.3															0.02	320	U	0.3	<.010	9		
9/11/1979	29	7.8															0.03	0.41	U	U	<.001	0.26		
9/11/1979	29	7.3																	22	U		0.36		
9/11/1979	29	7.3																	38	U		1.1		
9/26/1979	16.5	8.7	8.4			1.3	150	36	180	190	7.2	88	710	<.003	M	<.010	11	U	M	<.001	0.18			
10/21/1979	7																		370			15		
10/21/1979	7.1																		320			15		
11/7/1979	9	8																	0.02	3.3	0	0.07	0.11	
11/27/1979	6	7.8																	0.04	7.6	M	0.4	0.02	
11/28/1979	0	12.8	8.1			6.8	500	110	420	430	12	180	2100	0	M	0.06	1.9	M	M	0.08	0.09			
12/18/1979	2	8.5																	0.04	4.4	0	0.2	0.1	
1/9/1980	7	8.2																	0.02	0.23		0	0.04	
2/5/1980	4.5	10.7	8.5			2.2	110	23	200	210	5.5	64	540	0	0.05	0.01	98	0	M	0.01	1.7			
3/5/1980	8.2	</																						

APPENDIX J

**WOOD TECHNICAL MEMORANDUM DOCUMENTING AN EVALUATION OF
EXTRACTION WELLS IN THE DISPOSAL AREA**



Technical Memorandum

To: Arizona Public Service Company **Project No:** 14-2018-2068
From: Dane Andersen, PG **Reviewed by:** Doug Fisher, PE
Tel: (602) 733-6000 **CC:** File
Date: January 31, 2021
Re: **OPERATIONS INSPECTION OF ASH DISPOSAL AREA EXTRACTION WELL SYSTEM**
Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents the information gathered prior to and during an inspection of extraction well operations in the ash disposal area near Chaco Wash at the Arizona Public Service (APS) Four Corners Power Plant (FCPP) in Fruitland, New Mexico. The primary objective of this effort was to understand the configuration and operational capacity of the existing extraction well network and recommend a path forward for future operations.

The following sections present a summary of available background information for the extraction well system, documentation of data inspection findings, and recommendations for next steps.

2.0 BACKGROUND

There is limited documentation providing extraction well system construction and operational information as most of the wells were installed in the early 1990s. There are two separate extraction well networks; one is located near the southern end of the current Northern Intercept Trench (NIT) and is referred to herein as the Northern Extraction Well System and the second is located to the west of the former southern seepage area near Chaco Wash and is referred to herein as the Southern Extraction Well System (Figure 1). Key documentation for these systems includes:

- APS Drawing G-114465 (April 15, 1993) Sheets 1 and 2 – These drawings depict northern extraction wells EW-11 and EW-12 as well as southern extraction wells EW-1, EW-5, and EW-6 with the approximate location of associated discharge piping routing (the routing varies between Sheets 1 and 2). Discharge piping from the northern extraction wells (2-inch Driscopipe, 10-foot [ft] offset from road, 3 ft below grade) discharges to Ash Pond 6 Seepage Collection Sump 6. This sump appears to be connected to 8-inch diameter Driscopipe that discharges to the Ash Pond 3 Seepage Collection Pumphouse, but the sump connection is unclear. Discharge piping from the southern extraction wells (2-inch Driscopipe, 10-ft offset from road, 3 ft below grade) discharges directly to the Ash Pond 3 Seepage Collection Pumphouse wet well. Driscopipe is a trade name for Chevron Phillips Chemical Company high density polyethylene (HDPE) pipe.



- APS Drawing G-114466 (April 5, 1993) Sheets 1 and 2 – These drawings show details for the northern extraction network consisting of EW-9, EW-10, EW-11, EW-12, and EW-13 and the southern extraction network consisting of EW-1, EW-2, EW-3, EW-4, EW-5, EW-6, EW-7, EW-8 including a detail for typical extraction well construction, initially installed level control and pump depths, a well head detail, flow totalizer locations (FE 8, FE 9, and FE 10), and details for the northern and southern pipeline discharges into Ash Pond 6 Seepage Collection Sump 6 and the Ash Pond 3 Seepage Collection System Pumphouse. The drawings indicate that the only wells with pumps installed were EW-11 and EW-12 in the north and EW-1, EW-5, and EW-6 in the south.
- APS Chaco Wash Intercept System Monitoring Spreadsheet – This spreadsheet documents groundwater extraction system operations from 1994 through 2008. During this timeframe, it appears that the system was configured as constructed and documented in APS Drawings.
- APS Drawing FC-M—05-ADS-82114 Sheet 10F (Revised December 9, 2011) – This drawing is a process and instrumentation diagram (P&ID) for the Ash Pond 6/Chaco Wash Seepage Intercept System. EW-14, EW-15, and MW-34 appear to have been connected to the Southern Extraction Well System after these wells were drilled in 2010. Extraction well MW-34 is not included on the (P&ID) but various documentation developed by URS indicate that it was added to the system.
- URS Pump Controls Test Technical Memorandum (dated June 6, 2012) – This Tech Memo documents testing intended to calculate extraction well flow rates in the Southern Extraction Well System. Operation of EW-6, EW-14, and MW-34 was verified at this time. EW-1, EW-5, and EW-15 were determined to not be in working order.
- Miscellaneous Correspondence with NCC Electrical – NCC Electrical appears to have performed troubleshooting of EW-1, EW-11 and EX-12 in 2015 (no date on Statement of Repairs); new pumps were installed in EW-11 and EW-12 and the level control and pump depths were evaluated/repaired/adjusted. The pump motor starter was replaced at EW-1.

APS drawings G-114465, G-114466, and FC-M-05-ADS-82114 Sheet 10F are included as Appendix A.

3.0 INSPECTION FINDINGS

Mr. Patrick Collins, a senior remediation technician with Wood, conducted a site visit from October 21 to 22, 2019. During the site visit, Mr. Collins inspected each extraction well site, recorded which wells were equipped with pumps and set to operate, evaluated whether accessible wellhead control equipment was functional, collected depth-to-water-level measurements where possible, and gathered information regarding how to better monitor operations in the future.

Table 1 summarizes inspection findings and Appendix B presents a photograph log that shows the general condition of inspected equipment. Appendix B also documents equipment part numbers for the flow totalizers and the control relays used in the wellhead installations.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the inspection documented herein:

- The Northern Extraction Well System is no longer in operation. Although it was not possible to gauge EW-11, the water level at EW-12 was 40.48 ft below the wellhead and the last reported pump depth was 43 ft below ground surface (bgs). Based on this information, it is possible that the system

was shut down because water levels were too low. To better understand how this system is operating, the pumps and level controls would need to be removed from the wells to obtain installed depth information. At that time, it would also be advisable to video log the wells to obtain well construction information (no well log exists). If there is insufficient water in the wells to maintain extraction operations, the system may be considered for decommissioning. It may be possible to reuse components in nearby monitoring wells. Collected water level data suggests that water levels are two to four ft higher to the north, near DMX-1 and MW-30.

- There are only three wells in the Southern Extraction Well System set to operate: EW-1, EW-05, and EW-06. The relays at each of these locations were not illuminated at the time of inspection suggesting that the relays are not functioning. Based on the water level information collected from these wells and available pump and level control settings, there appears to be sufficient water at these wells to maintain operations. The relays at each of the Southern Extraction Well System installations should be inspected by an electrical/controls contractor and replaced as necessary. As most of these relays appear to be malfunctioning, troubleshooting the cause of relay malfunctions with the contractor/manufacturer is recommended.
- It is unclear why EW-14, EW-15, and MW-34 were shut off. If the pump and control settings compiled in Table 1 are correct, the systems should be configured to extract groundwater. It is recommended that if the pumps/level controls/well construction of the Northern Extraction Well System are investigated, the Southern Extraction Well System installations should also be evaluated at the same time.
- Groundwater elevations measured at EW-01, EW-05, EW-14, EW-15, and MW-34 range between 5042.03 and 5044.01 ft amsl. In comparison, the elevation of Chaco Wash obtained from an aerial topographic survey conducted by APS in April 2014 ranges between approximately 5048 and 5050 ft amsl near these extraction wells (Figure 2). The higher elevation of Chaco Wash compared to groundwater elevations in the extraction wells leave open the possibility that the extraction wells may be intercepting surface water infiltrating from Chaco Wash. To evaluate this possibility, groundwater samples should be collected from these wells and analyzed for constituents regulated under 40 Code of Federal Regulations Part 257 (i.e., the Coal Combustion Residuals Rule; Federal Register, 2018), major ions, and nitrate. A complete list of analytes, associated analytical methods, reporting limits, and holding times for the proposed groundwater samples is provided in Table 2. Analytical results from the proposed extraction well sampling should be compared to Chaco Wash surface water sample results. Based on the results of the comparison, the wells may be recommended for decommissioning.
- Totalizer data collected from the two systems should be compiled and reviewed to ascertain when the systems last extracted groundwater and if the totalizers are functioning properly.
- The design of the wellhead installations limits assessment of the operations. Ideally, each wellhead should be configured with a water level monitoring port (some installations do have a functioning port), an hour meter on the pump, a flow meter on the discharge piping, a sample port, and the ability to direct flow to a wellhead discharge location for testing.

5.0 REFERENCES

Federal Register, 2018. 40 Code of Federal Regulations Part 257 – *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities*; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.

Wood Environment & Infrastructure Solutions, Inc. (Wood), 2020. *Evaluation of Elevated Cobalt Concentrations at MW-87*. Arizona Public Service Four Corners Power Plant – Fruitland, New Mexico. Technical Memorandum dated May 15, 2020.

TABLES



**TABLE 1
Disposal Area Extraction Well System Inspection Summary**

Well	Date Installed	Borehole Depth [ft bgs]	APS Measuring Point Elevation [ft AMSL]	Ground Surface Elevation [ft AMSL]	Top of Screen [ft bgs]	Bottom of Screen [ft bgs]	Construction Information Source	Last Known Pump Elevation [ft bgs]	Last Known Level Control Setpoints [ft bgs]	Other Notes	Extraction System Information Source	Groundwater Extraction System Status on 10/21/19	DTW on 10/21/19 [ft bmp]	Water Level Elevation [ft AMSL]
Northern Extraction Well Network														
EW-11	---	53	---	5,093.20	---	---	APS Drawing G-114466 (depth noted as 40 ft bgs)	48	unknown to 47	Roots removed from pump intake, level controls repaired, and new Grundfos pump installed in 2015; pump/level controls adjusted in 2016	NCC Electrical Services (2015); NCC Electrical Services (2016)	Pump installed; system OFF	Blocked	---
EW-12	---	50	---	5,099.20	---	---	APS Drawing G-114466 (depth noted as 40 ft bgs)	43	unknown to 42.5	Roots removed from pump intake, level controls repaired, and new Grundfos pump installed in 2015; pump/level controls adjusted in 2016	NCC Electrical Services (2015); NCC Electrical Services (2016)	Pump installed; system OFF	40.48	5,058.72
Northern Intercept Trench Monitoring Wells														
DMX-01	4/15/1992	39	5,098.02	5,096.03	19	39	URS (2014)	---	---	Water level at 31.72 ft bgs in 2016	APS Water Levels	Not connected	33.44	5064.58
MW-30	6/7/2010	23	5091.67	5,084.38	13	23	URS (2014)	---	---	---	---	Not connected; well vault is a flush mount	28.68	5062.99
MW-77S	11/8/2018	80	5094.94	5092.35	24	44	Wood	---	---	---	---	Not connected	32.65	5062.29
MW-79S	11/20/2018	58	5,086.90	5,084.35	16	36	Wood	---	---	---	---	Not connected	22.63	5064.27
Southern Extraction Well Network														
EW-01	---	40	---	5,072.50	---	---	APS Drawing G-114466	38	25 to 35	Level controls and pump motor starter replaced in 2015	APS Drawing G-114466: NCC Electrical Services (2015)	Pump installed; system in AUTO; potential bad relay	30.36	5,042.14
EW-02	---	---	5076.88	5075.90	---	---	---	---	---	Water level at 21.95 ft bgs in 2013	APS Water Levels	Not connected	NM	---
EW-03	---	---	5081.60	5082.02	---	---	---	---	---	Water level at 27.8 ft bgs in 2013	APS Water Levels	Not connected	NM	---
EW-04	---	---	5081.45	5079.38	---	---	---	---	---	Water level at 25.3 ft bgs in 2013	APS Water Levels	Not connected	NM	---
EW-05	---	40	---	5,073.00	---	---	APS Drawing G-114466	38	25 to 35	Not functioning properly in 2012	APS Drawing G-114466; URS (2012)	Pump installed; system in AUTO; potential bad relay	30.97	5,042.03
EW-06	---	40	---	5,072.00	---	---	APS Drawing G-114466	38	25 to 35	Extraction verified in 2012	APS Drawing G-114466; URS (2012)	Pump installed; system in AUTO; potential bad relay	Blocked at 25.5	---
EW-07	---	---	5074.34	5073.74	---	---	---	---	---	Used as an EW in the past; water level at 30 ft bgs in 2013	APS Water Levels	Not connected	NM	---
EW-08	---	---	5078.41	5077.76	---	---	---	---	---	Water level at 29.1 ft bgs in 2013	APS Water Levels	Not connected	NM	---
EW-14	10/26/2010	48	5079.65	5,078.85	18	48	URS (2014)	43	28.34 to 40.34	Extraction verified in 2012	URS (2012)	Pump installed; system OFF	35.72	5043.93
EW-15	10/26/2010	49	5077.73	5,076.82	19	49	URS (2014)	44	28.6 to 41.2	Not functioning properly in 2012	URS (2012)	Pump installed; system OFF; potential bad relay	33.15	5044.58
MW-34	6/9/2010	49	5078.33	5,077.34	24	49	URS (2014)	44.5	28.8 to 41.7	Extraction verified in 2012	URS (2012)	Pump installed; system OFF	34.32	5044.01
DMX-05	4/15/1992	42	5083.23	5,081.42	22	42	URS (2014)	36.45	29 to 34	Water level at 24.1 ft bgs in 2013	APS (2012); APS Water Levels	Pump may be installed; no other infrastructure present	NM	---
DMX-06	4/16/1992	35	5077.40	5,076.42	15	35	URS (2014)	---	---	Water level at 29.78 ft bgs in 2017	APS Water Levels	Not connected	NM	---

Acronyms:

-- No information
 amsl above mean sea level
 bgs below ground surface
 bmp below measuring point
 ft feet

Table 2 - Southern Extraction Well Groundwater Sampling Analytes

Analyses and Sampling Locations	Analytes	Analytical Method	Holding Times	Detection Limits
CCR Appendix III Constituents (EW-01, EW-05, EW-14, EW-15, and MW-34)	Boron	200.8	180 days	0.05 mg/L
	Calcium	200.8	180 days	2 mg/L
	Chloride	200.8	180 days	2 mg/L
	pH	200.8	180 days	---
	Sulfate	200.8	180 days	2 mg/L
	TDS	200.8	180 days	20 mg/L
CCR Appendix IV Constituents (EW-01, EW-05, EW-14, EW-15, and MW-34)	Antimony	200.8 LL	180 days	0.04 mg/L
	Arsenic	200.8 LL	180 days	1 µg/L
	Barium	200.8 LL	180 days	0.5 µg/L
	Beryllium	200.7 Rev 4.4	180 days	0.001 mg/L
	Cadmium	200.8 LL	180 days	0.1 µg/L
	Chromium	200.8 LL	180 days	1 µg/L
	Cobalt	200.8 LL	180 days	0.5 µg/L
	Fluoride	300	48 hours	0.4 mg/L
	Lead	200.8 LL	180 days	0.5 µg/L
	Lithium	200.7 Rev 4.4	180 days	0.2 mg/L
	Mercury	245.1	28 days	0.0002 mg/L
	Molybdenum	200.8 LL	180 days	0.5 µg/L
	Selenium	200.8 LL	180 days	0.5 µg/L
	Thallium	200.8 LL	180 days	0.1 µg/L
Radium 226 and 228	903.1	180 days	0.1 pCi/L	
Water Quality Constituents (EW-01, EW-05, EW-14, EW-15, and MW-34)	Alkalinity	SM 2320B	14 days	6 mg/L
	Bicarbonate	SM 2320B	14 days	6 mg/L
	Calcium	200.8	180 days	2 mg/L
	Chloride	9056A	48 hours	2 mg/L
	Magnesium	200.8	180 days	2 mg/L
	Potassium	200.8	180 days	0.5 mg/L
	Sodium	200.8	180 days	0.5 mg/L
	Sulfate	9056A	48 hours	2 mg/L
	Nitrate	200.8	180 days	0.1 mg/L

Abbreviations:

CCR - Coal Combustion Residuals

mg/L - milligrams per liter

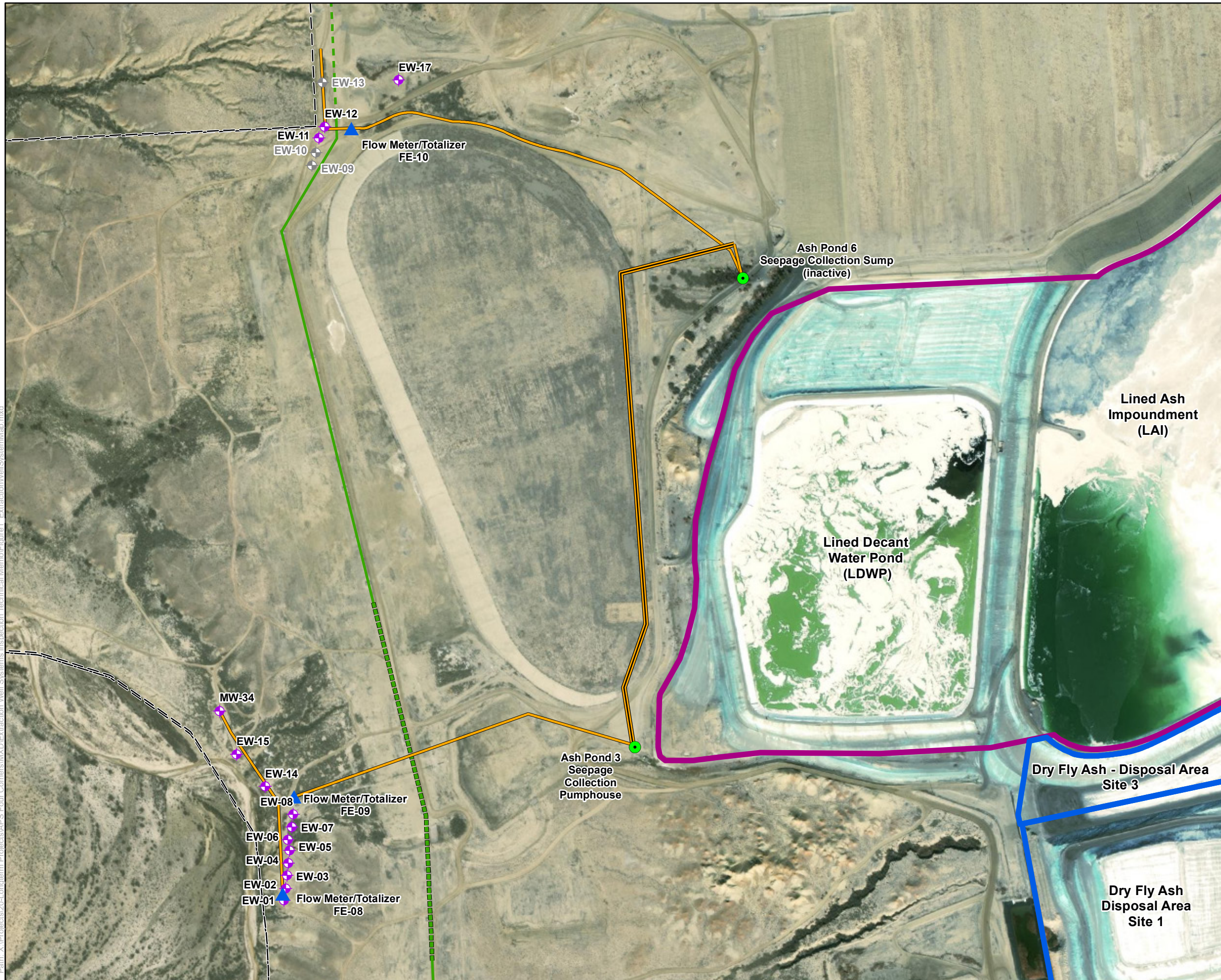
pCi/L - picocuries per liter

TDS - total dissolved solids

µg/L - micrograms per liter

FIGURES



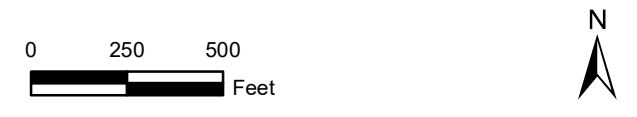


Vicinity Map

Legend

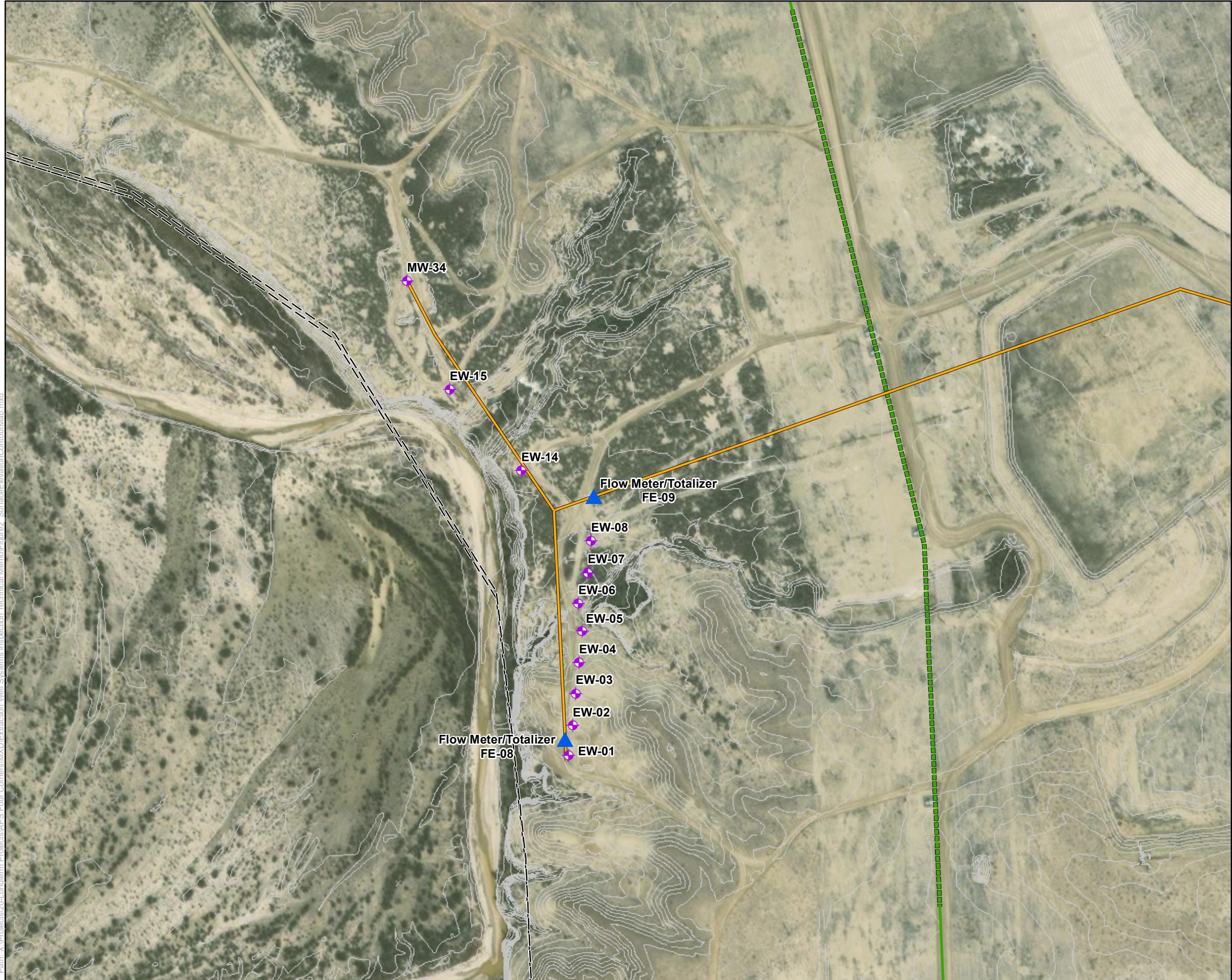
- ▲ Flow Meter/Totalizer
- Sump Location
- ◆ Extraction Well Location
- ◆ Abandoned Extraction Well Location
- 2 inch HDPE Discharge Pipe*
- 8 inch HDPE Discharge Pipe*
- North Intercept Trench
- South Intercept Trench
- Approximate Extent of High Flow Zone
- Four Corners Power Plant Lease Boundary
- CCR Units
- Dry Fly Ash Disposal Area (DFADA)

Notes:
 *Discharge pipe location based on APS Drawings G-114465, G-114466, and FC-M-05-ADS-82114 Sheet 10F



Arizona Public Service Four Corners Power Plant Fruitland, New Mexico	
Figure 1	Extraction Well System Map
Job No. 14-2018-2068	
PM: MBH	
Date: 1/26/2021	
Scale: 1" = 500'	
The map shown here has been created with all due and reasonable care and is strictly for use with Wood Project Number 14-2018-2068. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.	

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Legend

- ▲ Flow Meter/Totalizer
- ◆ Extraction Well Location
- 2 inch HDPE Discharge Pipe*
- South Intercept Trench
- Approximate Extent of High Flow Zone
- Four Corners Power Plant Lease Boundary
- 2 foot Elevation Contour**

Notes:

- * Discharge pipe location based on APS Drawings G-114465, G-114466, and FC-M-05-ADS-82114 Sheet 10F
- ** Elevation contours provided by APS and generated by Aerial Mapping Company, Inc. in April 2014



Arizona Public Service
Four Corners Power Plant
Fruitland, New Mexico

Figure 2 **Surface Elevation Contour Map**

Job No. 14-2018-2068
PM: MBH
Date: 1/26/2021
Scale: 1" = 200'

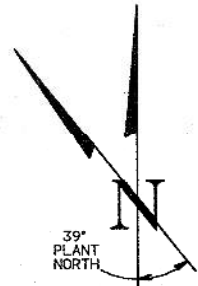


The map shown here has been created with all due and reasonable care and is strictly for use with Wood Project Number 14-2018-2068. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

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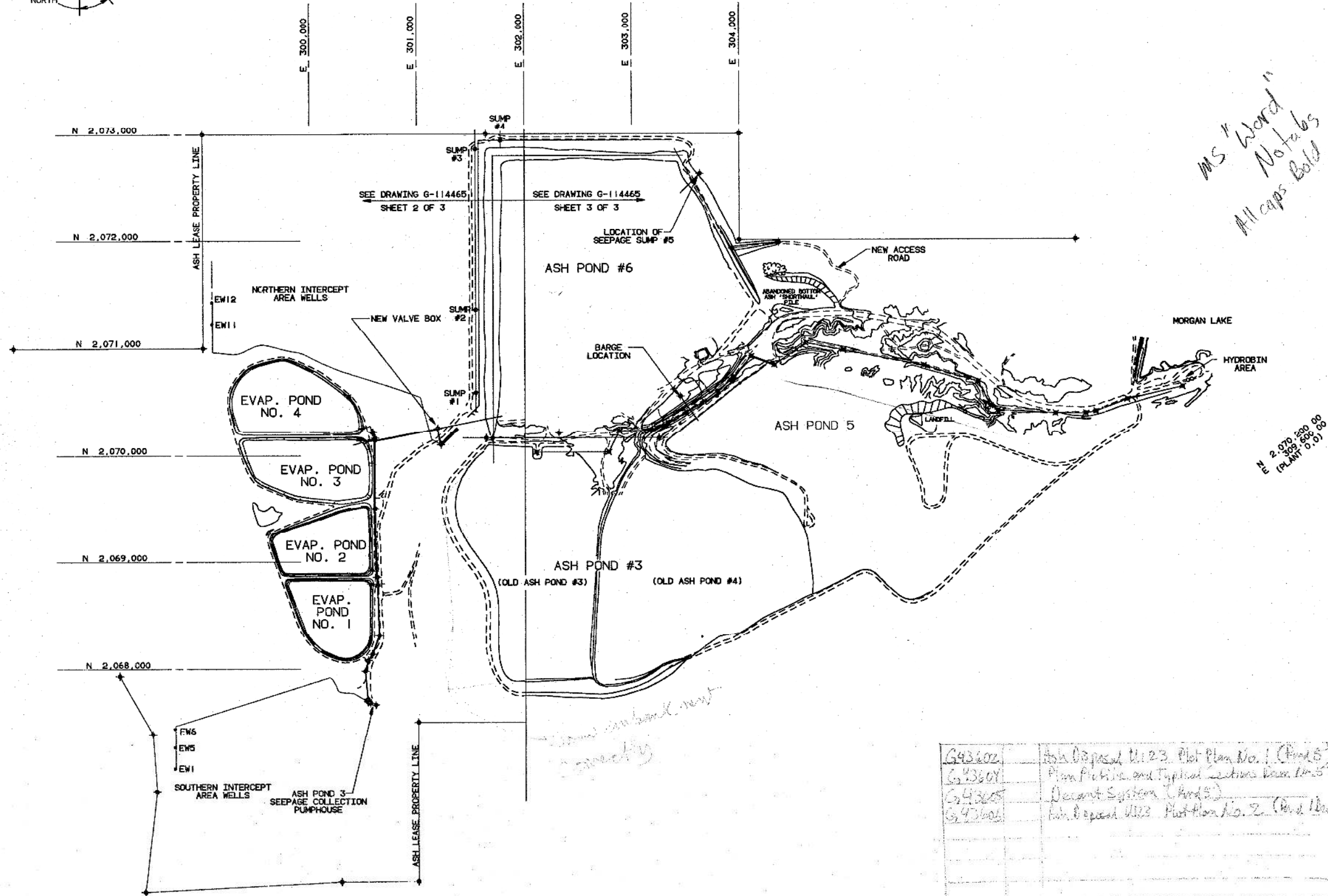
**APPENDIX A - APS DRAWINGS G-114465, G-114466, AND FC-M-05-
ADS-82114 SHEET 10F**





ADD THIS ORIGINAL DURING NEXT REV. CHACO WASH AREA SEEPAGE INTERCEPT

*MS Word
Not tabs
All caps Bold*



- G-114465 SH 2 - EVAP. PONDS AND CHACO WASH AREA FACILITIES LOCATION PLAN
- G-114465 SH 3 - ASH PONDS 3 & 6 FACILITIES LOCATION PLAN
- G-114446 SH 1 - ASH POND NO 6 DAM LIFT SEEPAGE INTERCEPT SYSTEM IMPROVEMENTS, PLAN & DETAILS
- G-114446 SH 2 - ASH POND NO 6 DAM LIFT SEEPAGE INTERCEPT SYSTEM IMPROVEMENTS, PLAN & DETAILS
- G-114446 SH 3 - ASH POND NO 6 DAM LIFT SEEPAGE INTERCEPT SYSTEM IMPROVEMENTS, PLAN & DETAILS
- G-114446 SH 4 - ASH POND NO 6 DAM LIFT SEEPAGE INTERCEPT SYSTEM IMPROVEMENTS, PLAN & DETAILS
- G-114446 SH 5 - ASH POND NO 6 DAM LIFT SEEPAGE INTERCEPT SYSTEM IMPROVEMENTS, PLAN & DETAILS
- G-114446 SH 6 - ASH POND NO 6 DAM LIFT SEEPAGE INTERCEPT SYSTEM IMPROVEMENTS, SECTIONS & DETAILS
- G-82114 SH 10F - ASH POND NO 6/CHACO WASH SEEPAGE INTERCEPT SYSTEM P & I D
- E-110559 SH 1 - FILING SHEET - ASH POND NO 3
- E-110559 SH 2 - SITE PLAN - ASH POND NO 3
- E-110559 SH 3 - EMBANKMENT CROSS SECTIONS - ASH POND NO 3
- E-110559 SH 4 - SOIL BORING LOGS - ASH POND NO 3
- E-110559 SH 5 - SOUTHERN CREST RESTORATION - ASH POND NO 3
- E-110560 SH 1 - FILING SHEET - ASH POND NO 6
- E-110560 SH 2 - SITE PLAN - ASH POND NO 6
- E-110560 SH 3 - EMBANKMENT CROSS SECTIONS - ASH POND NO 6
- E-110560 SH 4 - SOIL BORING LOGS - ASH POND NO 6
- E-110560 SH 5 - EMBANKMENT CROSS SECTIONS - ASH POND NO 6
- E-110560 SH 6 - PIEZOMETER LOCATIONS - ASH POND NO 6
- E-114034 SH 1 - DRAINAGE IMPROVEMENTS - ASH POND NO 3
- G-96695 SH 1 - DISCHARGE PIPING TO FLY ASH STORAGE POND NO 6
- E-97331 SH 1 - ASH POND NO 6 INTERCEPT DITCH DRAINS & SUMPS - PLANS & DETAILS
- E-97331 SH 2 - ASH POND NO 6 INTERCEPT DITCH SUMP DISCHARGE - PLANS & DETAILS
- E-97331 SH 3 - ASH POND NO 6 INTERCEPT DITCH DRAIN LINE EXTENSION
- E-97331 SH 4 - ASH POND NO 6 INTERCEPT DITCH SEEPAGE INTERCEPT MONITORING MANHOLE
- E-97331 SH 5 - ASH POND NO 6 INTERCEPT SUMPS ELECTRICAL DETAILS
- E-97331 SH 6 - COMMON ASH POND AREA 12 47KV OVERHEAD LINE DETAILS
- G-97290 SH 1 - ASH POND NO 6 INTERCEPT TRENCH PLANS SECTIONS AND DETAILS
- G-97289 SH 1 - INTERCEPT TRENCH PLAN & PROFILE
- E-82306 SH 1 - N P D E S BRINE CONCENTRATOR PROJECT BARGE & PIPING LAYOUT & DETAILS
- E-92143 SH 1 - FLYASH POND NO 6 RCC BARGE AND PIPING RELOCATION
- E-92143 SH 2 - FLYASH POND NO 6 RCC BARGE AND PIPING RELOCATION
- G-66809 SH 1 - N P D E S BRINE CONCENTRATOR PROJECT SUPPORT SYSTEM LAYOUT
- G-66809 SH 2 - N P D E S BRINE CONCENTRATOR PROJECT SUPPORT SYSTEM LAYOUT
- G-66809 SH 3 - N P D E S BRINE CONCENTRATOR PROJECT SUPPORT SYSTEM LAYOUT
- G-66809 SH 4 - N P D E S BRINE CONCENTRATOR PROJECT SECTIONS & DETAILS
- E-82638 SH 1 - FLYASH DAM STORAGE DAM NO 6 FINAL ELEVATIONS
- E-82639 SH 1 - FLYASH DAM STORAGE DAM NO 6 CROSS SECTIONS
- E-82639 SH 2 - FLYASH DAM STORAGE DAM NO 6 CROSS SECTIONS
- E-82640 SH 1 - FLYASH DAM STORAGE DAM NO 6 MISC DETAILS
- E-82640 SH 1A - FLYASH DAM STORAGE DAM NO 6 MISC DETAILS
- E-82640 SH 2 - FLYASH DAM STORAGE DAM NO 6 MISC DETAILS
- E-52774 SH 1 - NO 3 TAILING DAM CIVIL COVER SHEET
- E-52774 SH 2 - NO 3 TAILING DAM CIVIL COVER SHEET
- E-52774 SH 3 - NO 3 TAILING DAM CIVIL SITE PLAN
- E-52774 SH 4 - NO 3 TAILING DAM CIVIL PLOT PLAN
- E-52774 SH 5 - NO 3 TAILING DAM PROFILE THROUGH DAM CREST
- E-52774 SH 6 - NO 3 TAILING DAM DETAILS & SECTIONS
- E-52774 SH 7 - NO 3 TAILING DAM DETAILS & SECTIONS
- E-52774 SH 8 - NO 3 TAILING DAM PROFILE & CROSS SECTIONS OF SEEPAGE DITCH
- E-52774 SH 9 - NO 3 TAILING DAM CIVIL TEST HOLE INFO
- E-52774 SH 10 - NO 3 TAILING DAM DECANT SYSTEM DETAILS
- E-52774 SH 11 - NO 3 TAILING DAM CIVIL TYPICAL EMBANKMENT SECTION AND STABILITY ANALYSIS
- E-52774 SH 12 - NO 3 TAILING DAM CIVIL PROPOSED DAM EMBANKMENT
- E-56052 SH 1 - SOUTH SEEPAGE DITCH EXTENSION CIVIL PLAN & PROFILE
- E-56052 SH 2 - NORTH SEEPAGE DITCH EXTENSION CIVIL PLAN & PROFILE
- E-56052 SH 3 - DECANT FLUME CIVIL LAYOUT & DETAILS
- E-56052 SH 4 - DISCHARGE LINE & ACCESS ROAD CIVIL PLAN & DETAILS
- E-56052 SH 5 - PUMPING STATION PIPING & GENERAL ARRANGEMENT PLANS & ELEVATIONS
- E-56052 SH 6 - SUMP AREA CIVIL EXCAVATION
- E-56052 SH 7 - EVAPORATION PONDS CIVIL PLOT PLAN
- E-56052 SH 8 - EVAPORATION PONDS CIVIL SECTIONS & DETAILS
- E-56052 SH 9 - EVAPORATION PONDS CIVIL SECTIONS & DETAILS
- E-56052 SH 10 - PUMPING STATION FINAL GRADING CIVIL PLANS SECTIONS & DETAILS
- E-56052 SH 11 - EVAPORATION PONDS
- E-56053 SH 1 - PUMPING STATION AND SPILLWAY CONCRETE PLAN & SECTIONS
- E-56053 SH 2 - PUMPING STATION AND SPILLWAY CONCRETE SECTIONS & DETAILS
- E-56053 SH 3 - PUMPING STATION AND SPILLWAY CONCRETE SECTIONS & ELEVATION
- E-56053 SH 4 - PUMPHOUSE CONCRETE STAIRWAY AND MISC DETAILS
- E-56053 SH 5 - PUMPHOUSE CONCRETE BUILDING ROOF PLAN AND BLOCK DETAILS
- G-68763 SH 1 - N P D E S BRINE CONCENTRATOR PROJECT BARGE ELECTRICAL RACK LAYOUT

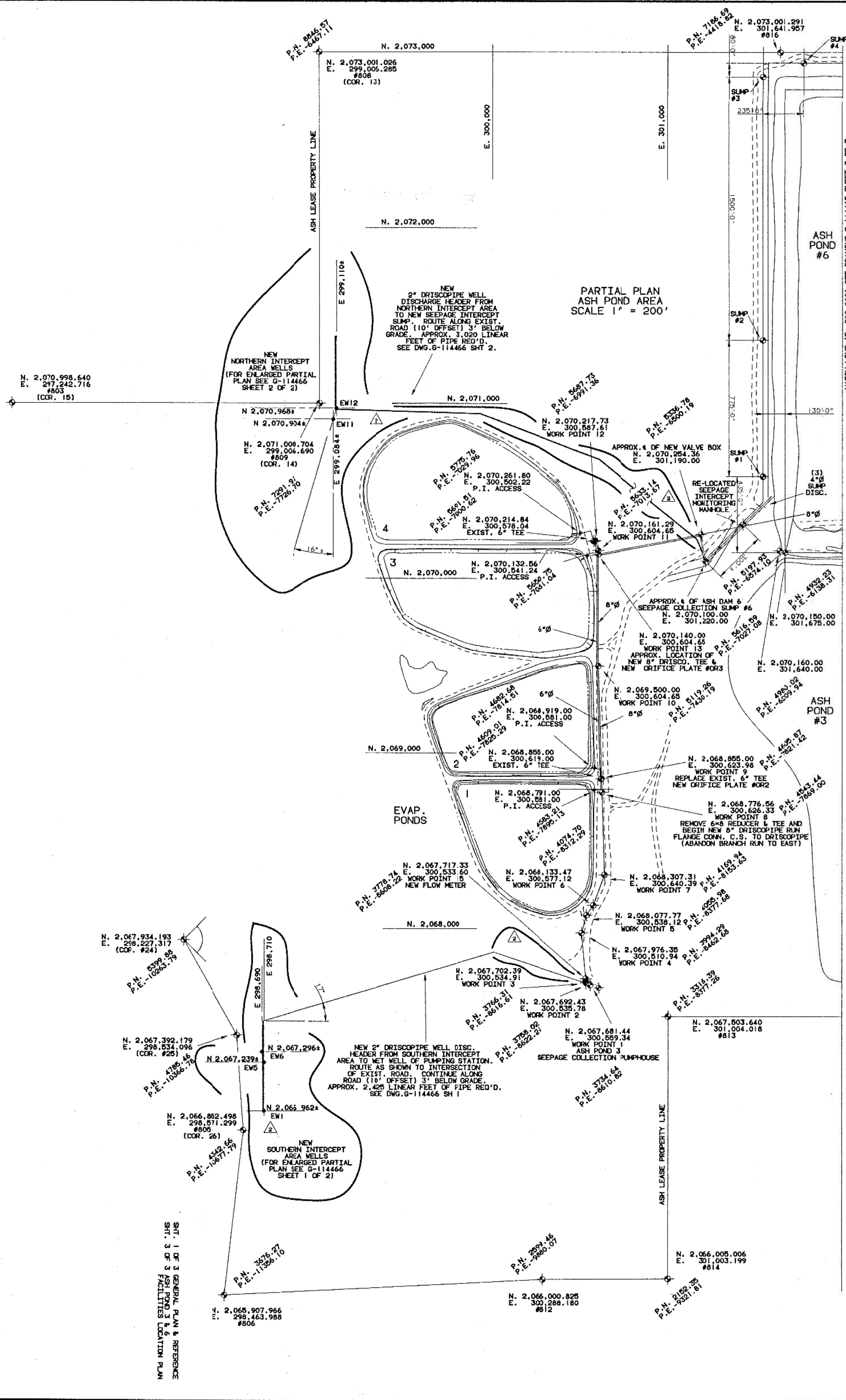
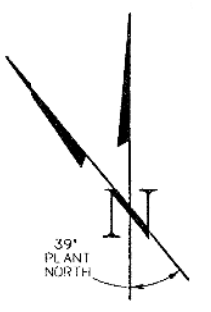
*As Proposed U.S. Plot Plan No. 1 (Pond 5)
Plan Profile and Typical Sections from U.S.
Decant System (Pond 5)
As Proposed U.S. Plot Plan No. 2 (Pond 1/2)*

P. GENIE -- SUBGROUP SHOTZ -- DWG ID 4F JOB 114465 3 0001 -- PLOT DATE 09/23/94

NO	DATE	REVISION	BY	CHKD	APPD	DATE
1	8-15-93	AD-BUILTS/GENERAL REV.	TRAYLOR, J.P.	C.C.	BYRD	8-15-93
2	9-2-93	ADD G-114465 SH. AS TO INDEX	TRAYLOR, J.P.			9-2-93
3	10-10-93	REVIEW WELL NO. 123 AS-BUILTS	TRAYLOR, J.P.			10-10-93
4	8-21-94	GENERAL REVISION				8-21-94

**FOUR CORNERS SES COMMON
ASH POND 3 & 6
GENERAL PLAN**
ARIZONA PUBLIC SERVICE COMPANY

SCALE: 1"=400'	DATE: 4-15-93
DESIGNED BY: [blank]	CHECKED BY: [blank]
APPROVED BY: [blank]	DATE: [blank]
PROJECT NO: [blank]	DRAWING NO: G-114465
DESIGNED BY: [blank]	DRAWING NO: [blank]
APPROVED BY: [blank]	DATE: [blank]
PROJECT NO: [blank]	DRAWING NO: [blank]



MATCH LINE (E. 302,000) SEE DRAWING G-114465 SHEET 3 OF 3

DATE	1-2-2001
BY	NICK SVOR
CHECKED	...
APPROVED	...
SCALE	AS SHOWN
PROJECT	...
DRAWING NO.	G-114465
SHEET NO.	...

FOUR COMMON SES COMMON
EVAP. PONDS AND CHACO WASH AREA
FACILITIES LOCATION PLAN
ARIZONA PUBLIC SERVICE COMPANY

SHT. 1 OF 3 GENERAL PLAN & REFERENCE
SHT. 3 OF 3 ASH POND 3 & 6
FACILITIES LOCATION PLAN

N 2,068,000

NOTE CO-ORDINATES COMPUTED FROM AUGUST, 1992 MAP

298.690
E 298.710
E 298.724
FLOW METER
FE 9
FOR DETAILS
SEE B-8203
SHT 73

2" DRISCOPIPE WELL
DISCHARGE HEADER
TO PUMPING STATION
FOR ROUTING SEE
OVERVIEW DWG.
#G-114465 SH 2

WELL No.	GRD. EL.	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"	START	STOP
EW1	5072.5'	40'±	-	-	9'	25'	35'
EW5	5073.0'	40'±	-	-	9'	25'	35'
EW6	5072.0'	40'±	-	-	9'	25'	35'
EW11	5093.2'	40'±	-	-	9'	25'	35'
EW12	5099.2'	40'±	-	-	9'	25'	35'

TYPICAL WELL INSTALLATION

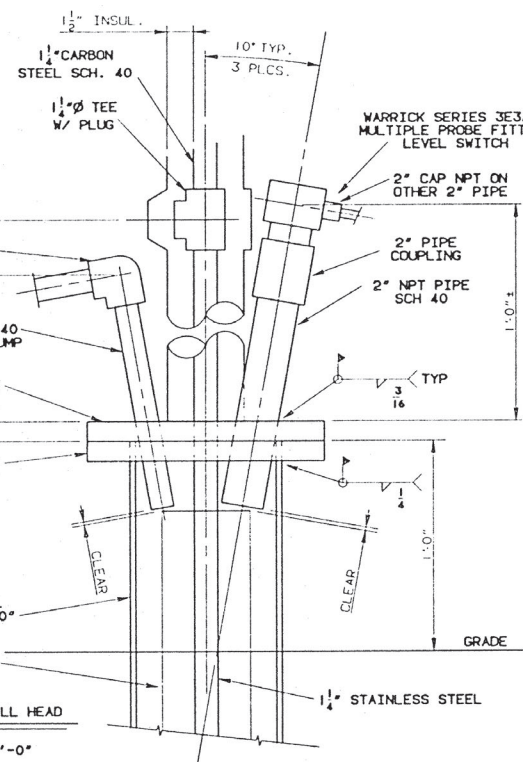
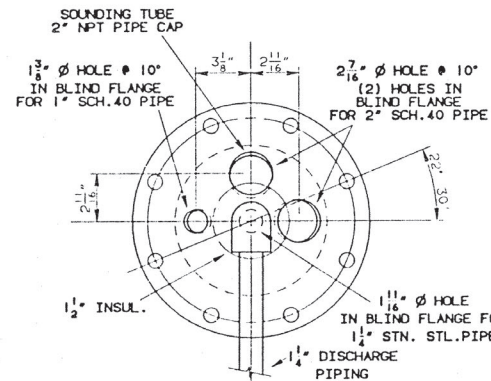
DETAIL 1 SCALE - 1/2"=1'-0"

NOTE DIM'S. B, C & D TO BE PROVIDED BY DRILLING CONTRACTOR

ORIFICE PLATE #07 ON WELL INSTALLATION EW6 ONLY

PIPE CROSSING SEE DETAIL 5

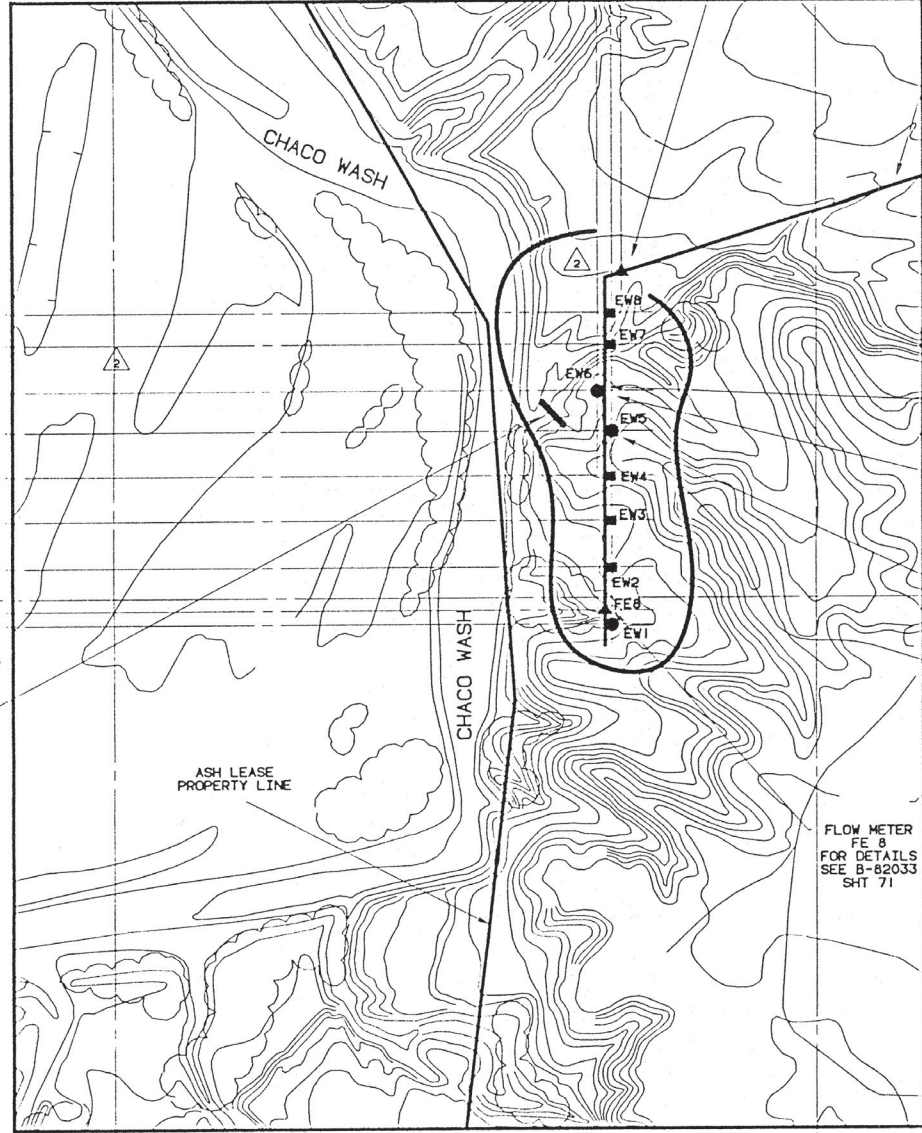
WELL INSTALLATION SEE DETAIL 1



DETAIL 2 WELL HEAD SCALE - 3"=1'-0"

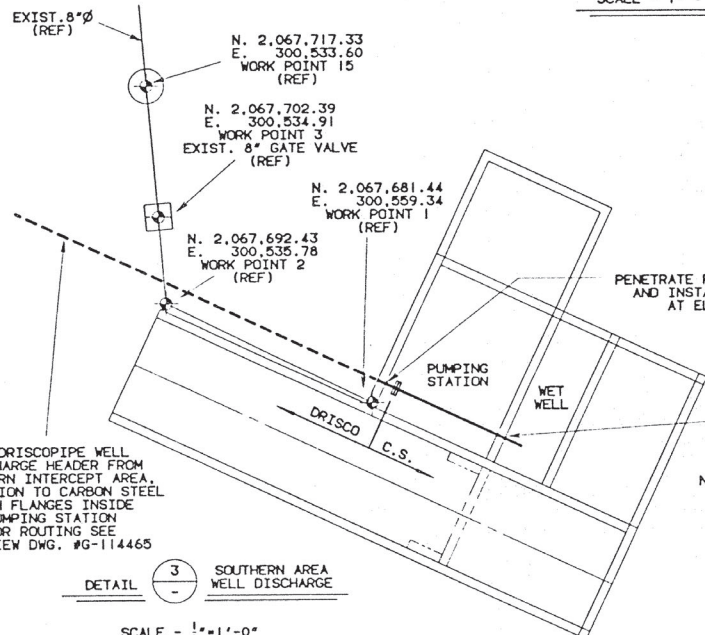
- N 2,067,407±
- N 2,067,362±
- N 2,067,296±
- N 2,067,239±
- N 2,067,175±
- N 2,067,111±
- N 2,067,044±
- N 2,067,000±
- N 2,066,982±
- N 2,066,962±

WEIR INSTALLATION SEE DETAIL 4

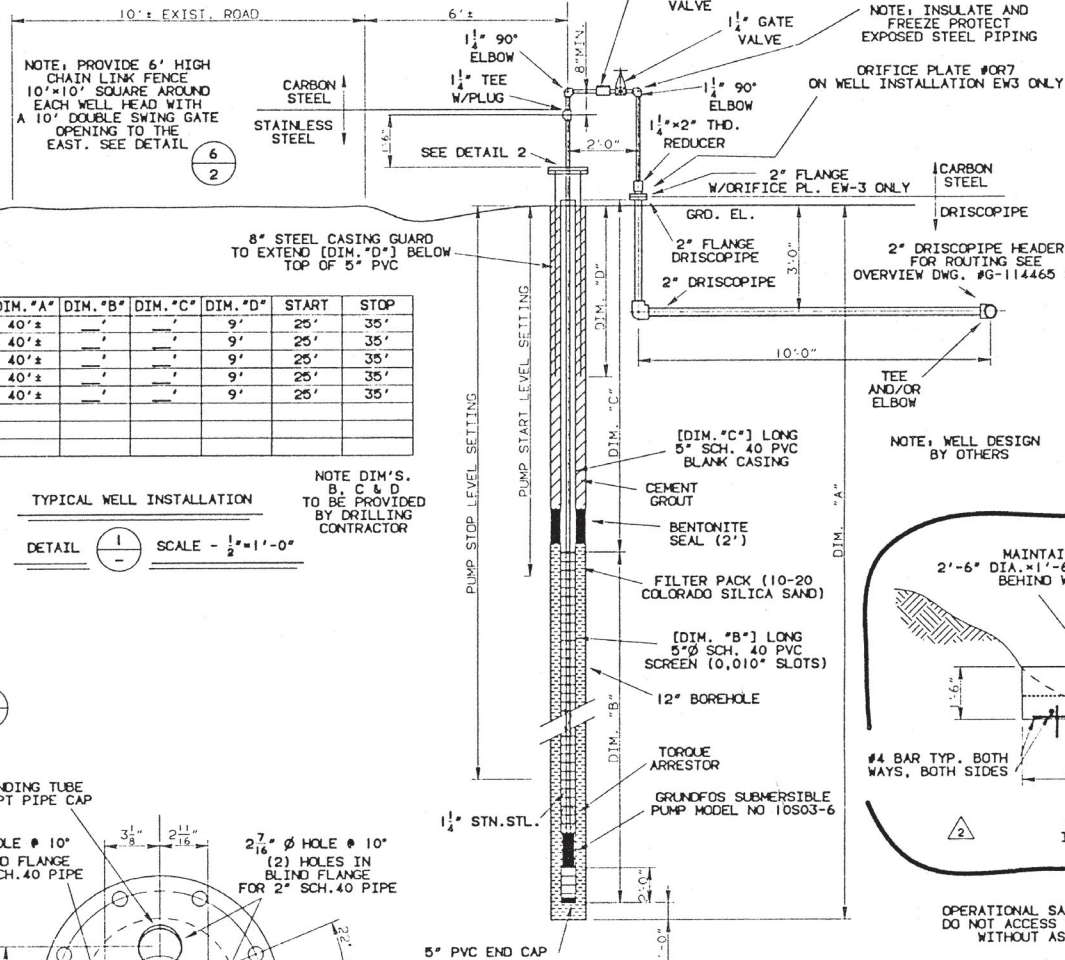


PARTIAL PLAN - SOUTHERN INTERCEPT AREA

SCALE - 1" = 100'

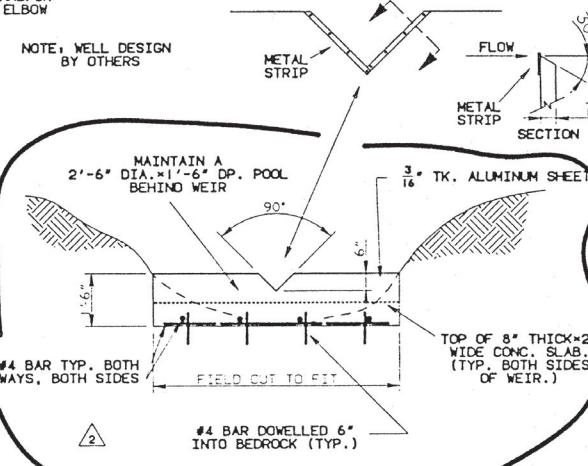


DETAIL 3 SOUTHERN AREA WELL DISCHARGE SCALE - 1/8"=1'-0"

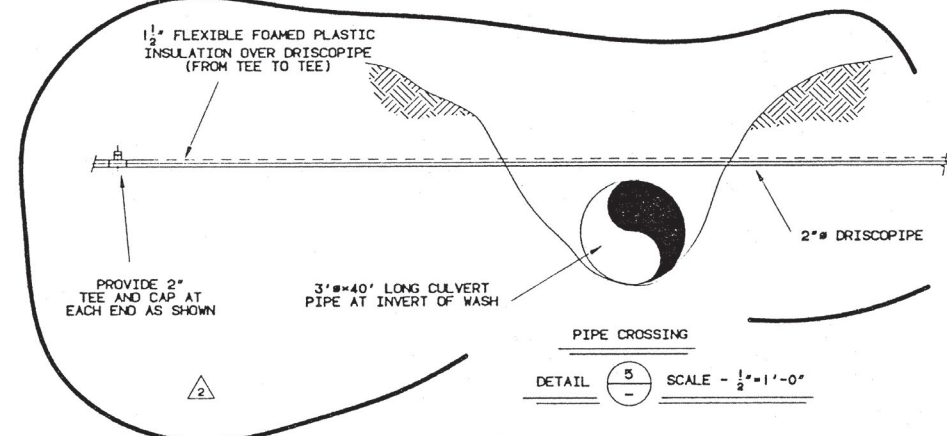


FLOW MEASUREMENT WEIR INSTALLATION

DETAIL 4 SCALE - 1/2"=1'-0"



OPERATIONAL SAFETY NOTE, DO NOT ACCESS WASH BOTTOM WITHOUT ASSISTANT



DETAIL 5 SCALE - 1/2"=1'-0"

- NOTES:
- INDICATES LOCATION OF DEWATERING WELL. (SUMP PUMP INSTALLED)
 - INDICATES LOCATION OF DEWATERING WELL. (SUMP PUMP NOT INSTALLED)
 - ▲ INDICATES LOCATION OF FLOW METER
 - ▲ WELL INSTALLATION BY DRILLING CONTRACTOR

NO.	DATE	REVISION	BY	CHKD.	APP'D.
1	04-05-92	REVISION PER AS-BUILTS			
2	04-05-92	CONSTRUCTION REVIEW			

SCALE: NOTED DATE: 04-05-92

FOUR CORNERS S.E.S. COMMON CHACO WASH AREA SEEPAGE INTERCEPT SYSTEM

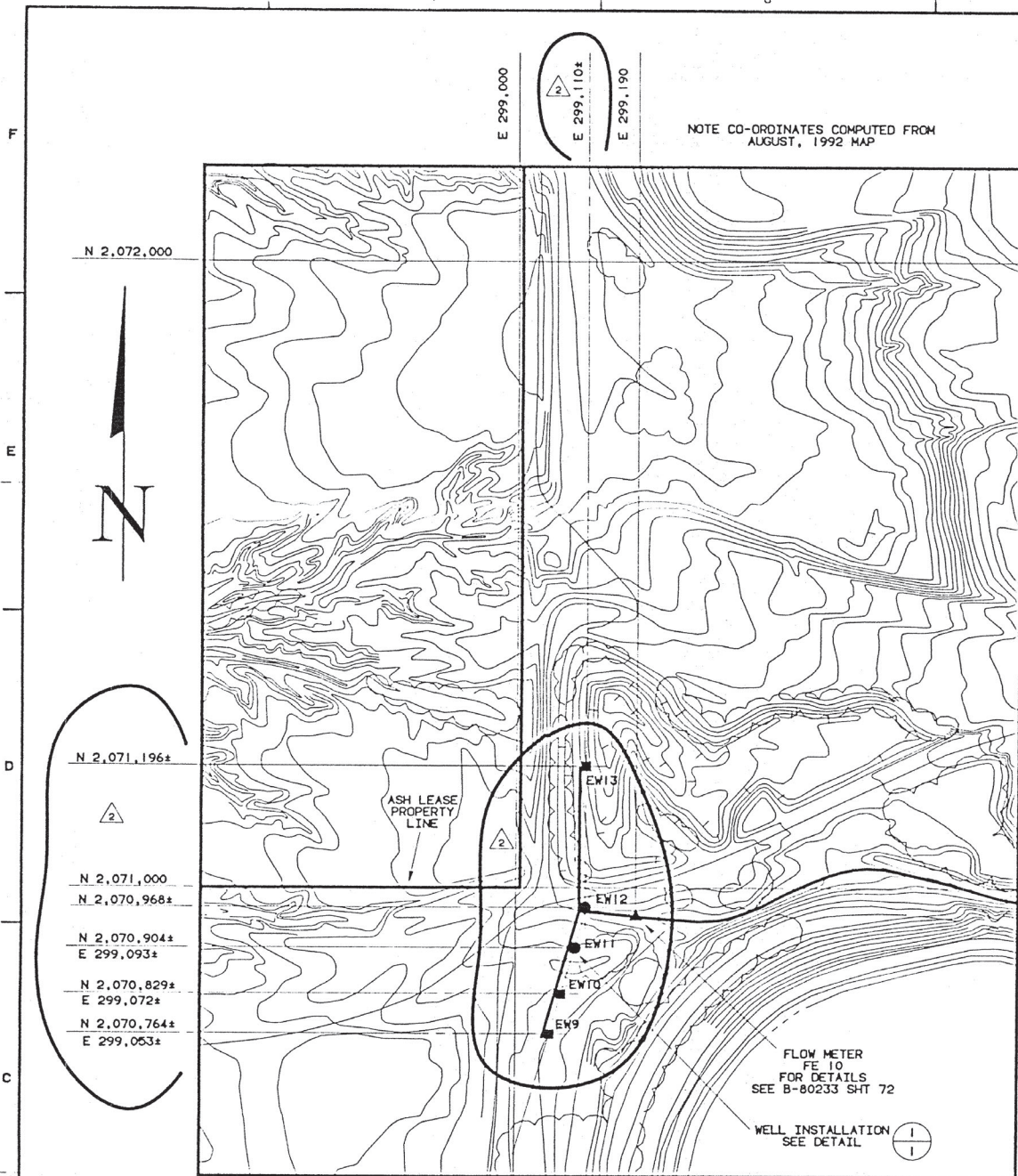
ARIZONA PUBLIC SERVICE COMPANY

DRAWING NO. G-114466

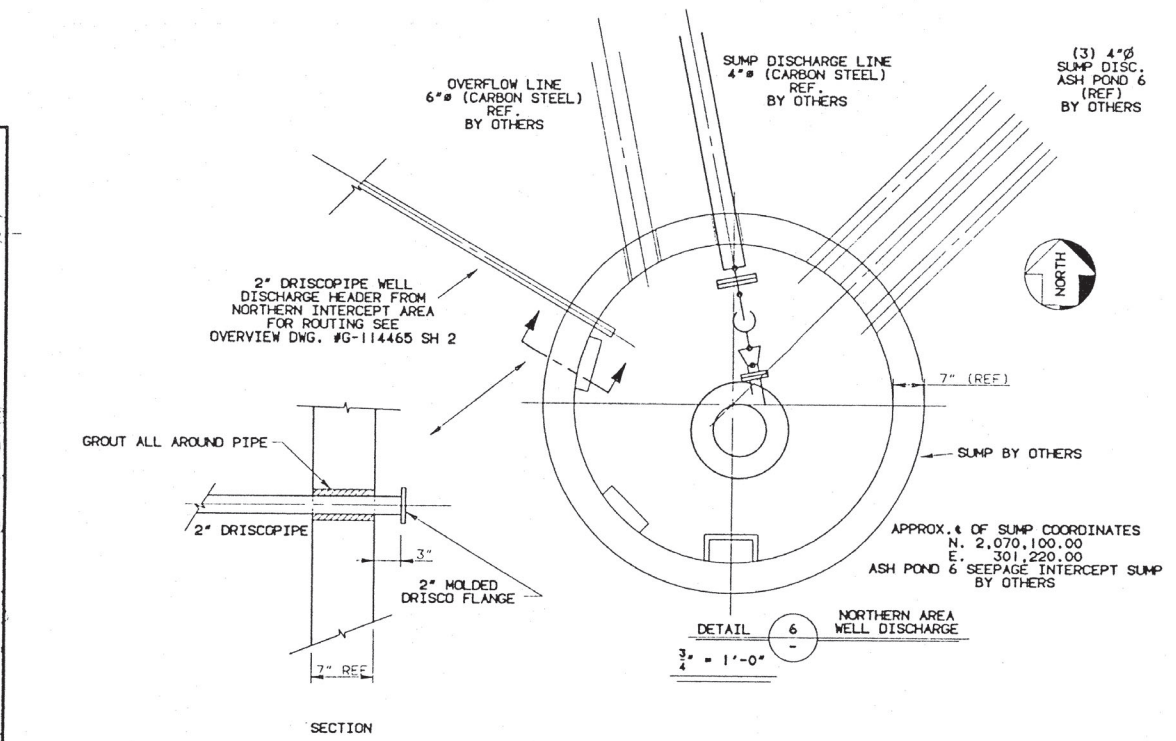
SHEET 1 OF 2

GROUP, CEASE -- SUBGROUP, PRATT -- DWG ID, 4F JG 114466 2 0001 -- PLOT DATE, 12/20/93

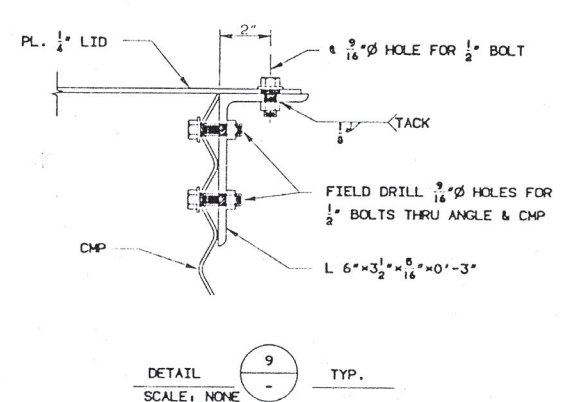
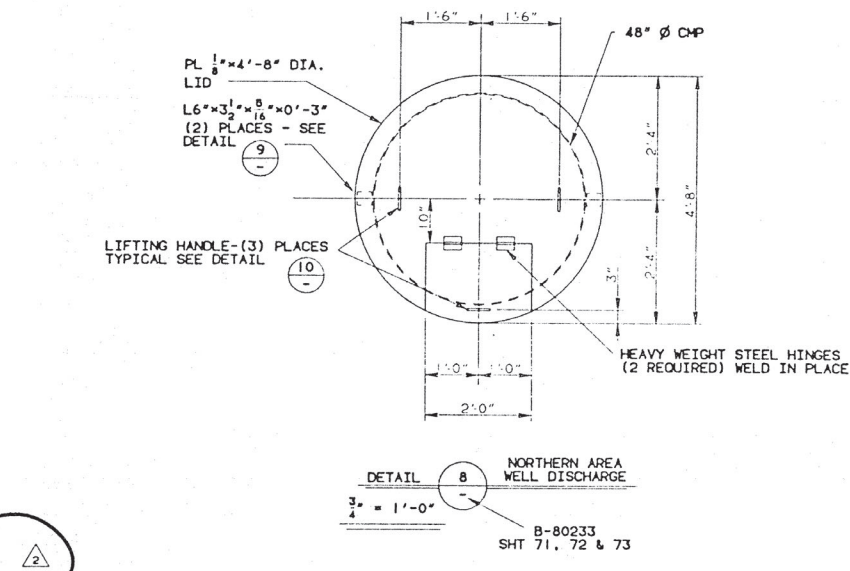
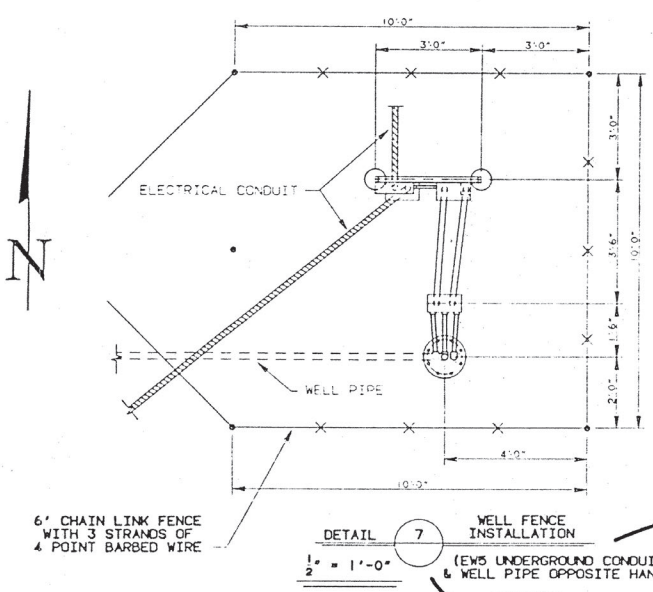
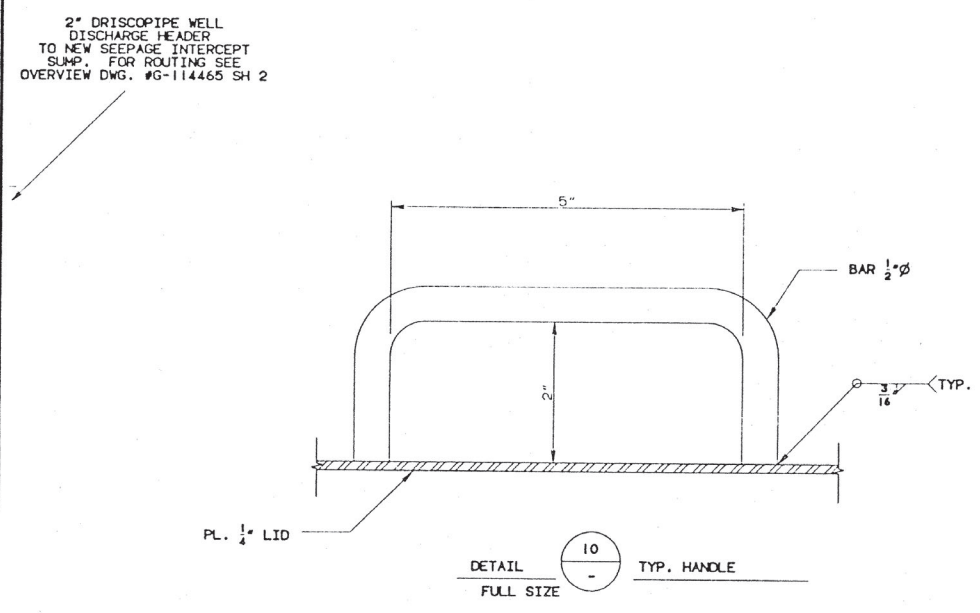
THIS IS A PDM DRAWING. DO NOT REVISION MANUALLY



PARTIAL PLAN - NORTHERN INTERCEPT AREA
SCALE - 1" = 100'



- NOTES:
- INDICATES LOCATION OF DEWATERING WELL. (SUMP PUMP INSTALLED)
 - INDICATES LOCATION OF DEWATERING WELL. (SUMP PUMP NOT INSTALLED)
 - THE NEW SEEPAGE INTERCEPT SUMP WILL BE INSTALLED UNDER A SEPARATE INSTALLATION CONTRACT.
 - IF 2" DRISCO PIPE WELL DISCHARGE HEADER PIPING IS INSTALLED PRIOR TO THE INSTALLATION OF THE SEEPAGE INTERCEPT SUMP, THE PIPING SHALL BE ROUTED TO THE AREA AND TERMINATED PER THE DIRECTION OF THE APS INSPECTOR.



NO.	DATE	REVISION	BY	CHKD.	APP'D.	DATE
1	12/10/93	REVISED PER AS BUILTS	WJ			12/10/93
2	4/29/94	CONSTRUCTION REVIEW	WJ			4/29/94

FOUR CORNERS S.E.S. COMMON CHACO WASH AREA SEEPAGE INTERCEPT SYSTEM

ARIZONA PUBLIC SERVICE COMPANY

SCALE: NONE

DATE: 08/20/93

DRAWING NO. G-114466

SHEET 2 OF 2

GROUP, GENL. --- SUBGROUP, PRAT --- DWG ID, #F US 114466 2 0002 --- PLOT DATE, 12/10/93

8

7

6

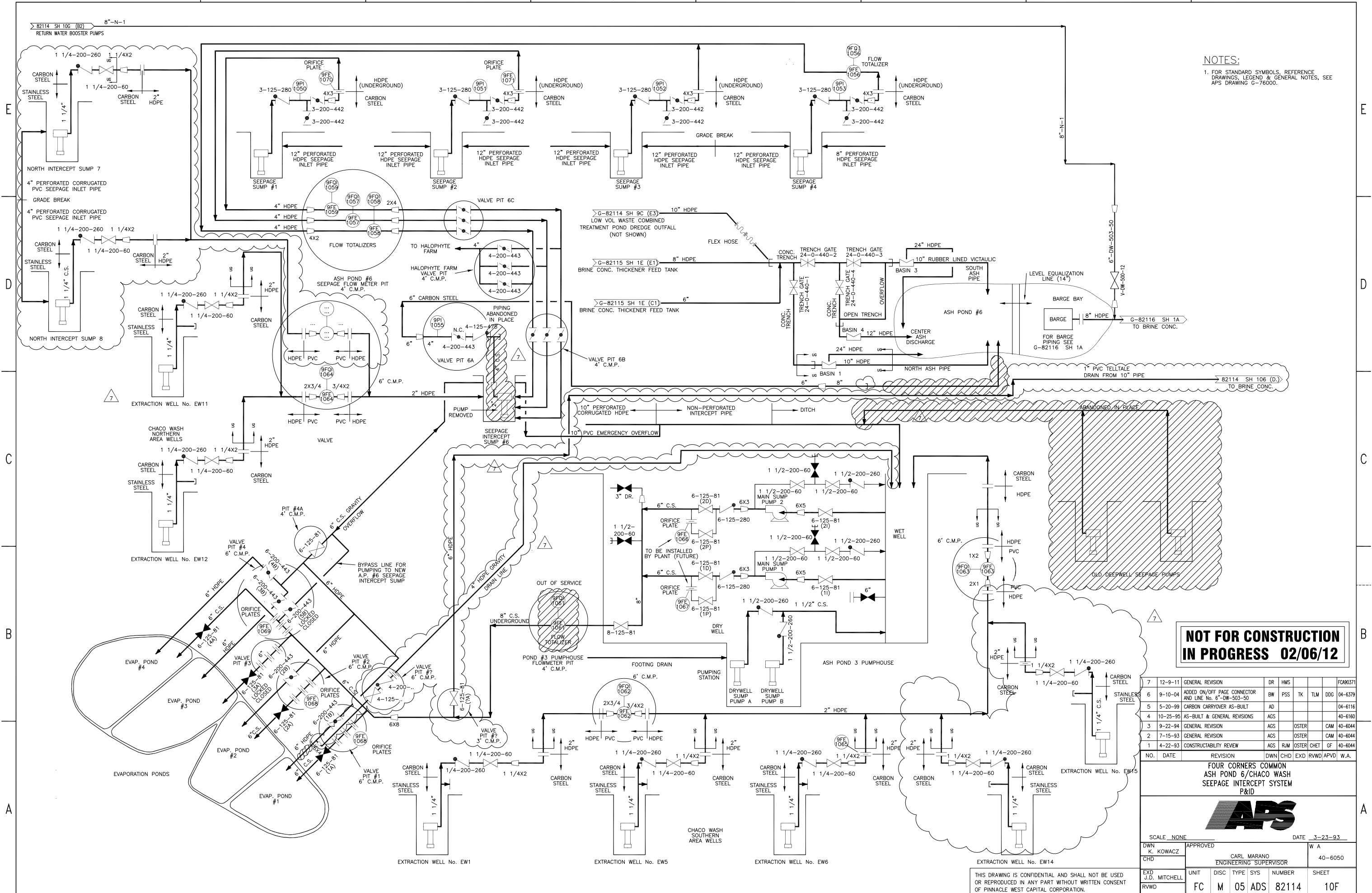
5

4

3

2

1



NOTES:
 1. FOR STANDARD SYMBOLS, REFERENCE DRAWINGS, LEGEND & GENERAL NOTES, SEE APS DRAWING G-76000.

NOT FOR CONSTRUCTION IN PROGRESS 02/06/12

NO.	DATE	REVISION	DRWN	CHKD	EXTD	RWD	APVD	W.A.
7	12-9-11	GENERAL REVISION	DR	HMS				FC490371
6	9-10-04	ADDED ON/OFF PAGE CONNECTOR AND LINE No. 6"-DW-503-50	BW	PSS	TK	TLM	DDG	04-6379
5	5-20-99	CARBON CARRYOVER AS-BUILT	AD					04-6116
4	10-25-95	AS-BUILT & GENERAL REVISIONS	AGS					40-6160
3	9-22-94	GENERAL REVISION	AGS		OSTER		CAM	40-6044
2	7-15-93	GENERAL REVISION	AGS		OSTER		CAM	40-6044
1	4-22-93	CONSTRUCTABILITY REVIEW	AGS	RJM	OSTER	CHET	GF	40-6044

FOUR CORNERS COMMON ASH POND 6/CHACO WASH SEEPAGE INTERCEPT SYSTEM P&ID



SCALE NONE DATE 3-23-93
 DWN K. KOWACZ APPROVED
 CHD CARL MARANO ENGINEERING SUPERVISOR 40-6050

EXTD	UNIT	DISC	TYPE	SYS	NUMBER	SHEET
J.D. MITCHELL	FC	M	05	ADS	82114	10F

THIS DRAWING IS CONFIDENTIAL AND SHALL NOT BE USED OR REPRODUCED IN ANY PART WITHOUT WRITTEN CONSENT OF PINNACLE WEST CAPITAL CORPORATION.

APPENDIX B - PHOTOGRAPH LOG



Photograph Log – Four Corners Power Plant Ash Disposal Area Extraction Well System



Photograph 1.

View of Northern Extraction Well EW-11 compound with general arrangement of wellhead infrastructure. System set to OFF at the time of inspection.



Photograph 2.

View of EW-11 wellhead piping covered by insulation. Gate valve present at top of discharge piping. Pump and level control conduit connected to wellhead. No port accessible for gauging water level. Inventory tags present.



**Photograph Log – Four Corners Power Plant
Ash Disposal Area Extraction Well System**

Photograph 3.

Level control box top at EW-11 is missing.



Photograph 4.

View inside of control box at EW-11 showing basic wiring. Warrick Controls relay (16M Series) located under fuse to the right in this picture.



**Photograph Log – Four Corners Power Plant
Ash Disposal Area Extraction Well System**



Photograph 5.

View of Northern Extraction Well EW-12. Same general arrangement as EW-11. System set to OFF at the time of inspection. Water level port accessible.



Photograph 6.

Alternative view of EW-12 compound with what appears to be North Intercept Trench Sump 7 and monitoring well DMX-02 in background.



**Photograph Log – Four Corners Power Plant
Ash Disposal Area Extraction Well System**



Photograph 7.

View of Flow Totalizer 3 vault (FE 10 in drawings) which monitors flow from the Northern Extraction Well Network.



Photograph 8.

View inside Flow Totalizer 3 vault. Two Omega totalizers present. Flow sensor installed on piping at the bottom of the vault. The part number for the new meter is FPM-5750 and the part number for the old meter is FPM-5740.



**Photograph Log – Four Corners Power Plant
Ash Disposal Area Extraction Well System**



Photograph 9.

View of Southern Extraction Well EW-1. Same general arrangement as Northern Extraction Well Systems with the exception of additional gate valve on discharge piping. System set in AUTO at the time of inspection – no lights on relay. Water level port accessible.



Photograph 10.

View of Southern Extraction Well EW-5. Same general arrangement as Northern Extraction Systems. System set in AUTO at the time of inspection – no lights on relay. Water level port accessible.



**Photograph Log – Four Corners Power Plant
Ash Disposal Area Extraction Well System**



Photograph 11.

View of Southern Extraction Well EW-6 panel. Same general arrangement as Northern Extraction Systems. System set in AUTO at the time of inspection – no lights on relay. Water level port accessible but monitoring is blocked at 25.5 ft below the wellhead.



Photograph 12.

View of insulated tee on discharge piping at EW-6 with gauge with Chaco Wash in background.

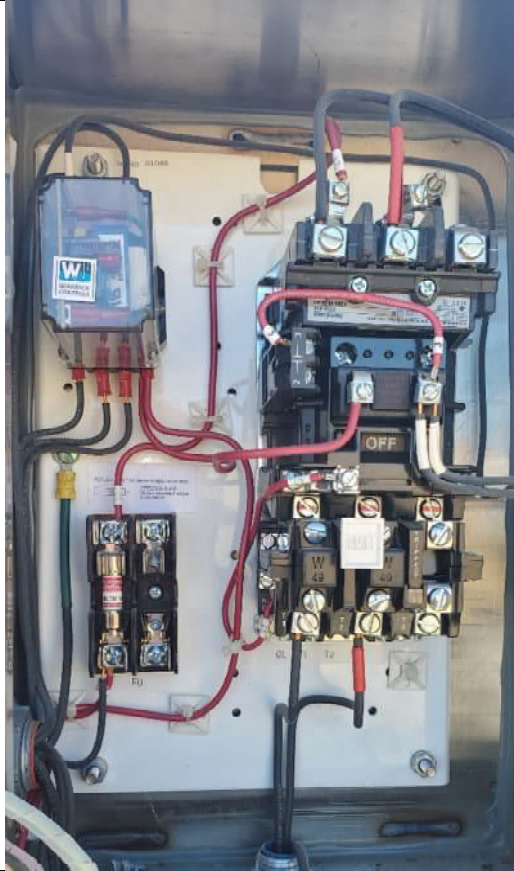


**Photograph Log – Four Corners Power Plant
Ash Disposal Area Extraction Well System**



Photograph 13.

View of Southern Extraction Well EW-14 panel. Newer system with slightly different component arrangement. System set to OFF at the time of inspection. Water level port accessible. Nelson temperature switch (part number TF4X40) noted on backside of panel.



Photograph 14.

View of Southern Extraction Well EW-15 general arrangement (similar to EW-14). System set to OFF at the time of inspection – no lights on relay. No gate valve noted on discharge piping. Water level port accessible.



**Photograph Log – Four Corners Power Plant
Ash Disposal Area Extraction Well System**



Photograph 15.

View of DMX-05 – appears to have been connected to operations at some time in the past.



Photograph 16.

View of Flow Totalizer 1 vault (FE 8 in drawings) which monitors flow from EW-1 on the Southern Extraction Well Network prior to the combination of flow with other extraction wells in this system.



**Photograph Log – Four Corners Power Plant
Ash Disposal Area Extraction Well System**



<p>Photograph 17.</p> <p>View inside of the Flow Totalizer 1 vault.</p>			
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<p>Photograph 18.</p> <p>View of Flow Totalizer 2 vault (FE 9 in drawings) which monitors flow from the Southern Extraction Well Network.</p>			
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Photograph 19.

View inside of Flow
Totalizer 2 Vault.



Photograph 20.

Close up of flow sensor
and bucket inside Flow
Totalizer 2 vault.



APPENDIX K

**WOOD SEMIANNUAL REPORT DOCUMENTING PROGRESS OF REMEDY SELECTION
FOR MULTIUNIT 1 AND THE URS**





Wood Environment & Infrastructure Solutions, Inc.
4600 E. Washington St, Suite 600
Phoenix, Arizona 85034
USA

T: 602-733-6000

www.woodplc.com

July 15, 2020

Wood Reference No: 1420182068

Arizona Public Service Company
400 N. 5th Street
Phoenix, Arizona 85004

**Re: SEMIANNUAL REPORT DOCUMENTING PROGRESS IN REMEDY SELECTION
FOR MULTIUNIT 1 AND THE UPPER RETENTION SUMP
Four Corners Power Plant - Fruitland, New Mexico**

In accordance with 40 Code of Federal Regulations (CFR) Section (§) 257.97(a) of the Coal Combustion Residuals (CCR) Rule, this Semiannual Remedy Selection Progress Report (Semiannual Report) has been prepared on behalf of Arizona Public Service Company (APS) to document progress in selection of remedies for CCR units which have been identified as potentially impacting groundwater at the APS Four Corners Power Plant, located in Fruitland, New Mexico (the Site). Applicable site CCR units include Multiunit 1 (comprised of the Lined Ash Impoundment and the Lined Decant Water Pond) and the Upper Retention Sump (URS). Previous updates documenting progress in remedy selection are provided in a Semiannual Report dated July 15, 2019 and in the *Annual Groundwater Monitoring and Corrective Action Report for 2019*, dated January 31, 2020. This Semiannual Report serves as the third update on remedy selection progress at the site and documents activities completed to date in 2020.

1. Summary of Activities Completed in 2020

Activities completed by APS in the first half of 2020 in support of remedy selection for Multiunit 1 and the URS include the following:

- *Expansion of Groundwater Monitoring in the Multiunit 1 Ash Disposal Area.* Up to twenty-five (25) additional supplementary site monitoring wells located in the vicinity of Multiunit 1 were gauged and/or sampled during the first semiannual CCR groundwater monitoring event of 2020 conducted in June 2020 to evaluate groundwater conditions in the Multiunit 1 ash disposal area and the effectiveness of the groundwater intercept trench system downgradient of Multiunit 1. Analytical data from the sampling event will be evaluated in the second half of 2020 and summarized in the Annual Groundwater Monitoring and Corrective Action Report for 2020 (2020 GMCAR).
- *Evaluation of Constituent of Concern Exceedances at MW-87.* Groundwater monitoring well MW-87 was installed at the downgradient (i.e., western) property boundary of the site in November 2018 to characterize the nature and extent of potential contaminant releases from Multiunit 1; however, the well was dry at the time of installation. In March 2019, groundwater was first detected in the well and samples were collected which indicated elevated concentrations of cobalt and molybdenum that exceeded the respective Groundwater Protection Standards. Since these constituents were not present at elevated concentrations in groundwater immediately upgradient of MW-87, an investigation was conducted by Wood Environment and Infrastructure Solutions, Inc. (Wood) in the first half of 2020 to evaluate potential causes of the exceedances. The results of the investigation, which are documented in a technical



memorandum to be included as an appendix to the 2020 GMCAR, indicate that the exceedances may be attributable to:

- The lack of well development performed at MW-87 after its installation due to dry conditions at the well; and/or
- Interactions between surface water in nearby Chaco Wash and groundwater at MW-87.

The rise of water levels at MW-87 since its installation allow for well development to be attempted in July 2020. The impact of well development activities and an assessment of the ongoing data collected from MW-87 will be evaluated in the second half of 2020 and summarized in the 2020 GMCAR. If necessary, additional characterization activities to address exceedances will also be summarized in the 2020 GMCAR.

- *Pumping Tests at URS Pre-Design Investigation Extraction Wells.* In 2019, APS installed four extraction test wells (CM-01, CM-02, CM-03, and CM-04) downgradient of the URS. An aquifer test program for the wells was developed during the first half of 2020 and testing at the wells will be performed in July 2020 to evaluate the effectiveness of a groundwater extraction system as a potential remedy for the URS. The results of the pumping tests will be assessed and summarized in a Pre-Design Well Installation and Testing Report for inclusion as an appendix to the 2020 GMCAR.

2. Future Planned Activities

APS plans to perform the following activities in support of remedy selection during the second half of 2020:

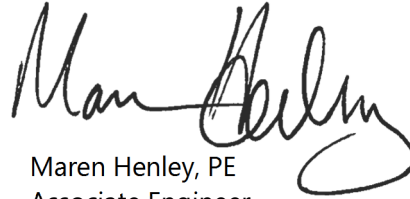
- *Preparation of a Pre-Design Well Installation and Testing Report supporting remedy evaluation at the URS.* Wood will prepare a Report documenting the installation and testing of the extraction wells at the URS. The Report will include an evaluation of the effectiveness of a containment well system as a potential remedy for the URS.
- *Public Meeting.* Pursuant to 40 CFR §257.96(e), APS will conduct a public meeting with interested and affected parties at least 30 days prior to selection of remedies for Multiunit 1 and the URS. At the time of this Semiannual Report, the Navajo Nation (where the site is located) has prohibited public gatherings of any kind until further notice due to the COVID-19 pandemic. If the COVID-19 pandemic continues to prevent an in-person public meeting prior to remedy selection indefinitely, APS will explore alternative methods for conducting the public meeting while considering the communications infrastructure available for full accessibility and transparency in the process.
- *Remedy Selection Reports for Multiunit 1 and the URS.* After a public meeting to discuss the results of the corrective measures assessment occurs, APS will prepare a remedy selection report for each unit which will document how the selected remedy will meet the requirements of 40 CFR §257.97(b).

Respectfully submitted,
Wood Environment & Infrastructure Solutions, Inc.



Dane Andersen, GIT
Hydrogeologist
dane.andersen@woodplc.com

Reviewed by:



Maren Henley, PE
Associate Engineer
maren.henley@woodplc.com

APPENDIX L

SITE CCR GROUNDWATER MONITORING SYSTEM NOTIFICATIONS





Arizona Public Service Company
CCR Program
Environmental Policy & Programs

PO Box 53999
Mail Station 9303
Phoenix, AZ 85072-3999

Telephone: 602-250-1000

November 23, 2020

**CCR Program Documentation
Closure – Notification of Intent to Close
FC_ClosNOI_012_20201123**

Subject: Closure – Notification of Intent to Close; Combined Waste Treatment Pond - Four Corners Power Plant

Pursuant to 40 C.F.R. §§ 257.101(a)(1), 257.101(a)(2), 257.101(b)(1), and 257.101(b)(3), APS is providing notice of its intent to close the Combined Waste Treatment Pond.

In accordance with 40 CFR 257.102(g), the unit will be closed in accordance with its Closure Plan and the provisions of 40 CFR 257.102(c).

If you have any questions about this or would like additional information, please consult the CCR information webpage located within APS.com or contact neal.brown@aps.com.

Per the September 8, 2015 letter to the Navajo Nation, this notification of intent to close should not be construed as a waiver of the covenant not to regulate contained in the site lease for the Four Corners Power Plant.