FOUR CORNERS POWER PLANT
Lined Ash Impoundment,
Lined Decant Water Pond,
Combined Waste Treatment Pond,
Dry Fly Ash Disposal Area,
and Return Water Pond

Annual
CCR Impoundment and
Landfill Inspection Report

2023

GENERATION ENGINEERING
Design Engineering
P.O. BOX 53999
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1.0 INTRODUCTION

Arizona Public Service Company (APS) prepared this report to comply with the Environmental Protection Agency's (EPA) Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities: Final Rule (2015) requiring "*...inspections by a qualified professional engineer at intervals not exceeding one year to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards*" (40 CFR 257.83(b)(1) for CCR surface impoundments and 40 CFR 257.84(b)(1) for CCR landfills). AECOM staff participated in the CCR unit inspection and provided technical support in the preparation of this document.

This report includes a review of relevant data in the operating record as well as visual inspections of the Lined Ash Impoundment, the Lined Decant Water Pond, the Combined Waste Treatment Pond, the Dry Fly Ash Disposal Area, and the Return Water Pond. The Lined Ash Impoundment and Lined Decant Water Pond are instrumented with piezometers, inclinometers, settlement monuments, and settlement rods.

Inspection Conducted by

Ray Markley, P.E.
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APS Generation, Fossil Projects Coal
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2.0 SITE BACKGROUND AND INSPECTION CONDITIONS

The Four Corners Power Plant (FCPP, the Plant) is located in Fruitland, New Mexico, approximately 20 miles west of Farmington, New Mexico and 13 miles southeast of Shiprock, New Mexico. The Plant is immediately south of Morgan Lake and primarily in Section 36, Township 29 North, Range 16 West on the Navajo Indian Reservation in San Juan County. Units 1, 2, and 3 ceased generation in 2013 and were then decommissioned. Units 4 and 5 burn low sulfur coal and have a total net generating capacity of 1,540 megawatts. The Plant was in a planned outage during the inspection.

The coal combustion process produces Coal Combustion Residuals (CCR) consisting of bottom ash (silty sand, Unified Soil Classification System SM), fly ash (low plasticity silt, Unified Soil Classification System ML), and flue gas desulfurization (FGD) sludge. The Plant is operated as a low volume water usage system. Five CCR units are the subjects of this report – the LAI, LDWP, CWTP, DFADA, and RWP. The Lined Ash Impoundment (LAI) was previously used for CCR disposal and the Lined Decant Water Pond (LDWP) is used to store water drained from the LAI. The Combined Waste Treatment Pond (CWTP) is a former settling pond for bottom ash sluice water and various storm water, process water, and Plant washdown streams. The Dry Fly Ash Disposal Area (DFADA) is a CCR landfill used to dispose of dry CCR from Units 4 and 5. The Return Water Pond (RWP) is an impoundment facility for temporary storage of Pond 3 pump house discharges and outage storage for the Plant; it consists of two cells – the Return Water Pond cell and the FGD Pond cell, collectively designated as the "RWP."

The field inspection was conducted on Wednesday, November 15, 2023, and Thursday, November 16, 2023. Conditions were cool (33-65 degrees Fahrenheit) with mostly cloudy skies. Winds were light, averaging 6 miles per hour (mph) with gusts up to 15 mph. Approximately 7.8 inches of precipitation had fallen since the start of the year based on data recorded at the Four Corners Regional Airport in Farmington, New Mexico (NOAA 2023).

Instrumentation at the LAI and LDWP consists of open standpipe PVC piezometers, vibrating wire piezometers, inclinometers, settlement monuments, and settlement rods. Water levels in the open standpipe piezometers are measured with an electronic water level indicator attached to a cable stamped with increments of 0.01 feet. Water level data for the vibrating wire piezometers are downloaded at a central readout box and processed by Plant personnel. Data for the inclinometers are manually gathered and processed by Plant personnel. The settlement monuments and settlement rods are measured using a Global Positioning System (GPS) survey. Data for the settlement monuments and settlement rods are gathered and processed by a third-party Professional Surveyor under contract with APS. APS personnel review the third-party survey data.

The benchmarks for the elevations reported for GPS surveys of the settlement monuments at the Four Corners Power Plant are based on three survey monuments: EMMA, an aluminum cap, and two Southern California Edison (SCE) brass caps – HV-53, and HV-61. The latitude and longitude of the monuments are based on the NAD83 datum. The elevations of EMMA, HV-53, and HV-61 are 5382.251, 5331.214, and 5085.898 feet, respectively.

3.0 UNIT DESCRIPTIONS

3.1 LINED ASH IMPOUNDMENT (LAI)

The LAI is represented on Figure 1 – Lined Ash Impoundment (LAI) (attached).

The LAI (listed by the New Mexico Office of the State Engineer (NMOSE) Dam Safety Bureau as dam number D-634) was constructed between 2003 and 2014, has a reservoir storage capacity of 5,346 acre-feet, and is approximately 107 feet high. The embankment is approximately 6,600 feet long and is classified under the New Mexico Administrative Code (NMAC) as "intermediate" size and "significant" hazard potential. The impoundment is lined with a single HDPE geomembrane. The nominal (lowest) design crest elevation (EL) is 5280.0 feet. The maximum operating water level is EL 5275.2 feet. APS stopped discharging to the LAI on April 2, 2021. The reservoir pool has since been drained, leaving only interstitial water within the impounded ash to drain into the LDWP via the Drop Inlet Structure and the Deadpool Sump.

3.2 LINED DECANT WATER POND (LDWP)

The LDWP is represented on Figure 2 – Lined Decant Water Pond (LDWP) (attached).

The LDWP (NMOSE dam number D-635) was constructed in 2003, has a maximum storage capacity of 435 acre-feet, and has a statutory height of approximately 16 feet (the LDWP was constructed on top of Ash Pond 3 and is 90 feet above the original ground surface along the South and West Embankments). The embankment is approximately 5,488 feet long and is classified under the NMAC as "intermediate" size and "significant" hazard. The impoundment is lined with two HDPE geomembranes and a leak detection layer. The maximum surcharge reservoir level is EL 5213.2 feet. The reservoir level was observed to be at approximate EL 5205.20 feet during the inspection.

3.3 COMBINED WASTE TREATMENT POND (CWTP)

The CWTP is represented on Figure 3 – Combined Waste Treatment Pond (CWTP) (attached).

The CWTP is an approximately 13.4-acre unlined detention pond located adjacent to Morgan Lake. The CWTP is not regulated by NMOSE. It was constructed in 1978 and has a maximum storage capacity of 137 acre-feet. The embankment is approximately 32 feet high (maximum) and approximately 1,800 feet long. The embankment is classified under the NMAC as "small" size and "low" hazard. Until 2020, the CWTP was used as a settling basin for ash-transport wastewater prior to discharge to Morgan Lake through a monitored National Pollutant Discharge Elimination System (NPDES) permitted discharge point. Ash and other sediment settled in separate earthen settling basins within the CWTP footprint prior to the water overflowing into the main CWTP.

APS constructed the Bottom Ash Sluice Water Recycle (BASWR) Tank to replace the CWTP in 2020. The BASWR Tank is a concrete sedimentation tank constructed above grade that provides water quality treatment of bottom ash sluice water and low volume waste flows from the Plant before discharge through a dedicated NPDES outfall to the cooling water canal. The BASWR Tank is not a CCR unit under 40 CFR § 257.53 and is not a part of this inspection.

APS ceased discharging to the CWTP by November 23, 2020. To maintain the current phreatic regime in the embankment between the reservoir and the canal, and to continue providing water to the Navajo Mine, APS added a dual-walled 18-inch pressure pipe to pump water from the discharge canal into the CWTP reservoir. The pump system has level controls to keep the reservoir consistent. Based on the 2021 IDF update (AECOM 2021), the normal operating level is now at EL 5329.5 feet (NAVD88; EL 5326.488 feet NGVD29). The water in the CWTP was observed to be at EL 5326.35 feet (NGVD29) during the inspection.

3.4 DRY FLY ASH DISPOSAL AREA (DFADA)

The DFADA is represented on Figure 4 – Dry Fly Ash Disposal Area (DFADA) (attached).

The DFADA is a lined landfill and dry fly ash disposal facility. The DFADA currently consists of four conjoined cells: Cells 1, 2, 3, and 4. Construction at the four Cells has been ongoing since 2007. The four DFADA cells have a maximum capacity of 10,153 acre-feet and an ultimate maximum height of approximately 105 feet. Cell 1 is constructed with an HDPE geomembrane overlying a compacted clay subgrade. Cells 2 and 3 are constructed with a geosynthetic clay liner (GCL) overlain by an HDPE geomembrane selected for general compliance with the EPA's *Guide for Industrial Waste Management* (EPA 2003). A drainage layer was installed over the HDPE geomembrane in all three cells as recommended in the EPA guidance. Cell 4 is underlain with an alternative composite liner that meets the requirements of 40 CFR § 257.70(c) and a leachate collection and removal system that meets the requirements of 40 CFR § 257.70(d). Each cell is connected to a leachate collection system designed to remove water from the storage area. The leachate collection system generally consists of a drainage layer, collection piping, a removal system, and a protective filter layer. Cell 4 is currently the primary ash disposal location.

3.5 RETURN WATER POND (RWP)

The RWP is represented on Figure 5 – Return Water Pond (RWP) (attached).

The RWP is an approximately 5.13-acre lined impoundment facility for the temporary storage of LAI/LDWP and Pond 3 pump house discharges. The RWP was constructed in 2019 and was placed into service as a CCR unit on October 20, 2020. It has a maximum storage capacity of 38.6 acre-feet (at EL 5379 feet). The CCR unit consists of two cells – the RWP cell and the FGD cell. The RWP piping allows the function of the two cells to be reversed based on operational requirements. The two cells are connected by an overflow weir in the Internal Embankment.

The pond is incised on the southwest and part of the southeast sides, while the remaining portion consists of a dike. The maximum free-standing embankment height is approximately 12 feet (in the north corner). The crest width is 20 feet and the crest length is approximately 2,067 feet. The embankment does not meet the criteria of a "jurisdictional dam" under 19.25.12.7D.(1) of the NMAC and is not regulated by NMOSE, but is classified as a "Low Hazard Potential CCR Surface Impoundment" under 40 CFR § 257.53. Inflow to the RWP is managed by four distinct pumping stations, which are manually operated by Plant personnel. Outflow from the RWP is managed by a dedicated pumping station, which is manually operated by Plant personnel. Water in the RWP is pumped back to the Plant and used as process make up water.

4.0 FIELD INSPECTIONS

This section contains the 2023 annual field inspections conducted by APS and accompanied by a representative from AECOM at the LAI (Section 4.1), the LDWP (Section 4.2), the CWTP (Section 4.3), the DFADA (Section 4.4), and the RWP (Section 4.5).

4.1 APS FIELD INSPECTION – LINED ASH IMPOUNDMENT (LAI)

<table>
<tr><td colspan="2">Lined Ash Impoundment (LAI)</td><td colspan="3">State Identification Number (SID): D-634</td><td rowspan="15">Not Applicable</td><td rowspan="15">No</td><td rowspan="15">Yes</td><td rowspan="15">Monitor</td><td rowspan="15">Repair</td><td rowspan="15">Investigate</td></tr>
<tr><td>SID: D-634</td><td>Dam Name: Lined Ash Impoundment (LAI)</td><td>Type: Zoned earth and ash fill with geomembrane</td><td>Purpose: Fly ash and FGD sludge disposal</td></tr>
<tr><td colspan="2">Contact(s): Ray Markley, P.E. (APS)</td><td colspan="2">Report Date: January 19, 2024</td></tr>
<tr><td colspan="2">Inspected by: Ray Markley, P.E. (APS), Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: November 15, 2023</td></tr>
<tr><td colspan="2">Reviewed by: Ray Markley, P.E. (APS)</td><td colspan="2">Review Date: January 18, 2024</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5,280 (West Embankment)</td><td colspan="2">Design Spillway Crest Elevation (ft): 5,277.84 (rim of 8-foot-diameter riser; no spillway)</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 4.8 (West Embankment)</td><td colspan="2">Measured Total Freeboard (ft): 17 (in the Southwest Corner)
0 (along parts of the Northwest and East Embankments)</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 107 (South Embankment)</td><td colspan="2">Structural Height (ft): 107 (South Embankment)</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Length (ft): 6,600</td><td>Upstream Slope:
3:1 (West Embankment)
2:1 (South Embankment)</td><td>Downstream Slope:
3:1 (West Embankment)
2:1 (South Embankment)</td></tr>
<tr><td colspan="2">Lat: 36° 41' 05" (per NMOSE permit)</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): 30 (West Embankment)
20 (South Embankment)</td><td colspan="2">Long: 108° 30' 26" (per NMOSE permit)</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td colspan="2">Reservoir Area (acres): 126.8 (high water line)</td><td colspan="2">Reservoir Storage (ac-ft): 5,346 (high water line)
5,986 (maximum)</td></tr>
<tr><td colspan="5">Inflow Design Flood/Safe Flood-Passing Capacity: PMF – fully contained</td></tr>
<tr><td colspan="2">Reservoir Level During Inspection (ft): No water impounded</td><td rowspan="2">Photos: Yes. See Appendix A.</td><td rowspan="2">Pages: 7</td></tr>
<tr><td colspan="2">Estimated Solids Level (ft): EL 5263 (Southwest Corner)
EL 5288 (north V-ditch)
EL 5295 (old V-ditch)</td></tr>
</table>

Lined Ash Impoundment (LAI)		SID: **D-634**	N/A	No	Yes	Mon	Rep	Inv
COMPLIANCE CHECKLIST								
1	***CONDITION SUMMARY, LICENSE, EAP, NEXT INSPECTION***							
a	Recorded downstream hazard: **Significant**	Should hazard be revised?		**X**				
b	If high hazard, estimate downstream persons-at-risk (PAR): **N/A**	Is there a significant increase since the last inspection?		**X**				
c	Recorded size: **Intermediate**	Should size be revised?		**X**				
d	Any safety deficiencies? **No**	Describe:		**X**				
e	Any statute or rule violations? **No**	Describe and list required action: **See comment i.**		**X**		**X**		
f	Safe storage level on License: **5,275.2 feet**	Should level be revised:		**X**				
g	Any License violations? **No**	Describe and list required action: **See comment i.**		**X**		**X**		
h	Date of current License: **October 27, 2015**	Should new License be issued?		**X**				
i	Date of last Emergency Action Plan revision: **1/2020**	Should EAP be revised? **See comment ii.**		**X**				
j	Any Agency actions? **No**	Describe and list required action:		**X**				
k	Normal inspection frequency: **Weekly, Annually**	Should inspection frequency be revised?		**X**				
l	Recommended date for next inspection: **November 2024**							

MONITORING CHECKLIST								
2	***INSTRUMENTATION AND MONITORING***							
a	Describe: **West Embankment** **1) Six clusters of three vibrating wire piezometers each (varying elevations),** **2) Four buried settlement rods to measure settlement at depth,** **3) Two inclinometers, and** **4) Two crest survey/settlement monuments.** **North Toe Buttress** **1) Eleven clusters of three vibrating wire piezometers and one cluster of two vibrating wire piezometers (varying elevations),** **2) Eight buried settlement rods to measure settlement at depth, and** **3) Three inclinometers.** **Other** **1) Permanent water elevation markers on the geomembrane liner at three locations within the impoundment.** **2) No inflow or outflow measurement devices.**							
b	Any repair or replacement required? **No.**	Describe: **See comment iii.**		**X**				
c	Date of last monitoring report: **January 2023 (for 2022)**	Should new readings be taken and new report provided? **Monthly measurement and annual reporting are required.**			**X**			

DAM EMBANKMENT CHECKLIST								
3	***DAM CREST***							
a	Settlements, slides, depressions? **See comment iv.**				**X**		**X**	
b	Misalignment?			**X**				
c	Longitudinal/Transverse cracking? **Shallow holes were observed along the downstream shoulder and the anchor trench on the East Embankment crest (Photos IMG_2451, IMG_2482, and IMG_2490). The holes in the anchor trench appeared to be nearly filled in compared to the 2022 inspection.**				**X**	**X**		
d	Animal burrows?			**X**				
e	Adverse vegetation?			**X**				
f	Erosion?			**X**				

Lined Ash Impoundment (LAI)	SID: **D-634**	N/A	No	Yes	Mon	Rep	Inv
4	***UPSTREAM SLOPE***						
a	Erosion?		**X**				
b	Inadequate ground cover?		**X**				
c	Adverse vegetation?		**X**				
d	Longitudinal/Transverse cracking? **Could not observe due to the presence of the geomembrane liner.**	**X**					
e	Inadequate riprap? **The upstream slope is covered with a geomembrane liner.**	**X**					
f	Liner damage? **See comment v.**			**X**		**X**	
g	Settlements, slides, depressions, bulges? **There are bulges and depressions along the upstream slope in the Southwest Corner of the LAI. Record the presence and identified causes of the bulges and depressions and consult the APS geotechnical engineer for repair recommendations.**			**X**		**X**	
h	Animal burrows?		**X**				
5	***DOWNSTREAM SLOPE***						
a	Erosion? **See comment vi.**			**X**		**X**	
b	Inadequate ground cover? **The LAI embankment slopes are faced with bottom ash that supports only sporadic and uneven vegetation. A lime-based, white- and turquoise-colored dust suppression agent is applied in accordance with the Plant's Dust Control Plan.**		**X**				
c	Adverse vegetation?		**X**				
d	Longitudinal/Transverse cracking?		**X**				
e	Inadequate riprap?	**X**					
f	Stone deterioration?	**X**					
g	Settlements, slides, depressions, bulges? **See comment xi.**			**X**		**X**	
h	Soft spots or boggy areas?		**X**				
i	Movement at or beyond toe? **The DFADA Cell 3 lateral expansion has reached the same elevation as the South Embankment crest (See IMG_2283).**		**X**				
j	Animal burrows?		**X**				
6	***ABUTMENT CONTACTS***						
a	Erosion? **Historic erosion may be covered by windblown CCR. Remove the fugitive CCR and Continue to monitor.**				**X**		
b	Differential movement?		**X**				
c	Cracks?		**X**				
d	Settlements, slides, depressions, bulges?		**X**				
e	Seepage?		**X**				
f	Animal burrows?		**X**				

7	***SEEPAGE/PIPING CONTROL DESIGN FEATURE(S)***						
a	Describe: **See comment vii (Photos IMG_2591 and IMG_2592).**						
b	Internal drains flowing? **See comment x.**			**X**			
c	Seepage at or beyond toe? **See comment vii.**			**X**			
d	If so, does seepage contain fines?		**X**				
e	Evidence of sand boils at or beyond toe?		**X**				

	RESERVOIR CHECKLIST						
8	***RESERVOIR***						
a	High water marks?		**X**				
b	Erosion/slides into pool area?		**X**				
c	Sediment accumulation? **Suspended FGD solids and fly ash settle in the impoundment.**			**X**			
d	Floating debris present? **There is some debris from previous geotechnical investigations in the reservoir (Photo IMG_2303). The debris should be removed.**			**X**		**X**	
e	Depressions, sinkholes, or vortices?		**X**				
f	Low ridges/saddles allowing overflow?		**X**				
g	Structures below dam crest elevation? **Yes. See comment x.**			**X**			

Additional comments and recommendations for the LAI:

i. APS reinstated the West Embankment crest to the design crest elevation (EL 5280 feet) in 2022 using bottom ash to ensure the LAI has sufficient capacity to retain the 72-hour PMP with 2.8 feet of residual freeboard as designed. Survey data from 2021 had indicated that the West Embankment crest settled and was approximately one foot lower than the design value of EL 5280 feet. Continue to monitor the embankments for settlement.

   CCR is impounded nearly up to the crest along some portions of the Northwest Embankment. APS previously constructed a diversion channel along the northern half of the Northwest Embankment (the Northwest Embankment crest elevation increases from southwest to northeast) to keep stormwater away from the crest; however, the diversion channel was filled with sediment during this inspection. The LAI is sloped from the northeast to the southwest such that surface water should flow to the Southwest Corner where there is available capacity. The diversion channel should be re-excavated or replaced with a permanent solution and the design surface flow regime should be maintained at all times.

ii. The EAP shall be reviewed annually as required under Section 19.25.12.18 of the New Mexico Administrative Code (NMAC). The EAP must be amended whenever there is a change in conditions that would substantially affect the EAP as required by 40 CFR § 257.73(a)(3)(ii)(A). APS typically conducts a face-to-face EAP meeting with local emergency response agencies each year. The annual EAP meeting was held on August 3, 2023.

iii. In mid-September 2022, the vibrating wire piezometer data collection electronics began failing intermittently. As a result, few data were recorded during September, October, and November 2022. APS identified the failed component in the datalogger system and replaced it. Uninterrupted data collection resumed on November 30, 2022.

   In June 2023, the data for vibrating wire piezometers connected to MUX board #2 began sporadically recording repeated or erroneous data. The data repeats were recorded four different times prior to September 30, 2023. As erroneous data typically proceeds equipment failures, APS should inspect the data acquisition system and make necessary repairs to continue recording data from the associated piezometers.

   Several inclinometer surveys in early 2023 have varying depths compared to 2022 surveys. Inconsistencies between surveys, as well as erroneous data, should be reviewed with field staff to ensure consistency between operators and data sets. In May 2023, APS transitioned the inclinometer data collection system from the Durham Geo Slope Indicator (DGSI) Digitilt Classic Inclinometer System to the DGSI Digitilt AT Inclinometer System. APS proceeded with this change after experiencing hardware problems with the Digitilt Classic Inclinometer System. Additional information is provided in Section 5.1.2.

iv. Ruts and a depression were observed along the West Embankment (Photos IMG_2361 and IMG_2376). The rut in the middle of the West Embankment in IMG_2376 was caused by haul trucks that are taking ash to the impoundment to construct access roads. This rut is in the area of the crest that was reinstated as described in comment i. The depression on the downstream shoulder of the West Embankment near the southern access ramp may be the result of erosion at the ramp/crest interface or the result of trucks driving into a less-compacted zone of ash. Regrade the West Embankment crest and instruct haul truck

operators to vary their travel paths to prevent creating ruts. Rrepair the depression near the southern access ramp.

v. There are several tears, cuts, and torn seams in the liner along the upstream slope. Two tears and all of the torn seams are on the South Embankment near the Southwest Corner (Photos IMG_2306, IMG_2311, IMG_2325, IMG_2327) appear to be due to tension in the liner as they occur along the horizontal seams associated with the final embankment raise. Unlike the 2022 inspection, the torn seams were not leaking water; however, the liner on the South Embankment is very tight. The tension could be released by excavating the anchor trench, pulling extra liner out to provide slack, and backfilling the trench. Repair the tears to prevent water from infiltrating underneath the line.

   One puncture in the liner has remained on the West Embankment since the 2022 inspection and tears were observed on the Northwest Embankment along the crest where temporary ash berms were placed to divert flow from the V-ditch (Photo IMG_2441). Repair documentation should be maintained with the operating record.

   There are tears in the exposed liner at the former cenosphere mining area. The working area for the cenosphere mining operation is built into the reservoir area and the mechanical damage is not affecting the integrity of the embankment (Photo IMG_2350). The area should be monitored.

vi. Erosion was observed on the East Embankment (Photos IMG_2491 and IMG_2492). The erosion should be repaired.

   Erosion is present along the downstream toe and the lower portion of the downstream slope of the West Embankment (Photos IMG_2391, IMG_2648, IMG_2655, IMG_2691, and IMG_2693) as evidenced by the erosion rills on the slope and ash deposits on the LDWP crest (Appendix B – IMG_2685). Some of the erosion is forming tunnels beneath the dust suppression agent applied on the slope (IMG_2693). Repair all erosion that extends deeper than 1 foot.

vii. APS FCPP personnel observed water exiting the South Embankment toe drain in April 2023. The toe drain was constructed as part of the 5270 Lift of the LAI and had been dry since installation. The toe drain alignment passes directly beneath the toe of the 5270 and 5280 Lifts, as well as DFADA Cell 3, which was constructed to the same elevation as the LAI South Embankment crest. APS has been stockpiling wet, lightweight aggregate fill on the central section of DFADA Cell 3 since 2022. APS believes the water in the toe drain is coming from the lightweight aggregate fill stockpile and as such, APS does not consider the seepage to be an adverse condition at this time. APS will continue to monitor the toe drain seepage for signs of increased turbidity and/or flowrate. During this inspection, the flowrate in the northern conduit was 0.83 gpm and the flowrate in the southern conduit was 0.033 gpm. Measure the flowrate on a weekly basis as part of the 7-day CCR inspections and provide the measurements to the APS geotechnical engineer.

viii. The North Toe Buttress (NTB) was constructed as part of the 5280 Lift of the LAI to provide additional stability in the northern portion of the West Embankment (Photo IMG_2401). The NTB did not have erosion rills deeper than 1 foot, a multitude of erosion rills or gullies, and no evidence of sloughs or slides were observed during the inspection. The NTB foundation instruments are discussed in Section 5.1.

ix. FGD, process water, and other CCR waste had been deposited into the LAI via a V-ditch on the north side of the CCR unit. APS ceased deposition to the LAI on April 12, 2021, and has since been draining the LAI by gravity within the impounded ash. The Drop Inlet Structure (Photo IMG_2382), which discharges the water into the LDWP, and the Deadpool Sump were both operational at the time of the inspection.

During the final years of operation at the LAI, the properties of the FGD slurry being discharged caused the solids to drop out of suspension faster, creating a steeper beach slope than earlier fly ash/FGD mixtures. As a result, the northern portion of the reservoir filled faster than the southern portion. The ash level along the East Embankment near the old V-ditch (Photo IMG_2459) is higher than the East Embankment and APS constructed a bottom ash berm to keep the CCR waste inside the impoundment (Photos IMG_2456). The ash level along the Northwest Embankment is at the crest elevation (Photos IMG_2404, IMG_2406, IMG_2423, IMG_2424, IMG_2436, IMG_2443, IMG_2445, and IMG_2448).

APS is currently in the process of constructing access roads throughout the reservoir to be used for pre-closure construction activities. The roads are several feet thick and connect the East, West, and South Embankments across the reservoir.

x. The primary outlet from the LAI is an 8-foot diameter vertical, perforated HDPE riser, referred to as the Drop Inlet Structure (Photo IMG_2382), connected at the bottom to 16-inch and 8-inch diameter HDPE gravity pipe outlets that drain into the LDWP. The Deadpool Sump, an 8-inch diameter HDPE perforated drain pipe, penetrates the Southwest Corner of the LAI embankment and discharges into the southeast corner of the LDWP.

Water was observed discharging into the LDWP from the LAI via the 8-inch pipe and the 16-inch pipe (Appendix B – LDWP Photo IMG_2666). The inspectors estimated approximately 5.26 gpm was flowing through the 8-inch pipe and approximately 32.3 gpm was flowing through the 16-inch pipe at the time of the inspection. The invert elevation of the 16-inch pipe in the Drop Inlet Structure at the LAI is approximately EL 5220 feet. The invert elevation of the 8-inch pipe in the Drop Inlet Structure is approximately EL 5213.5 feet. The top of the Drop Inlet Structure is EL 5277.84 feet. APS should check to see if the 8-inch pipe is clogged or if sediment has filled the Drop Inlet Structure to the point that water can flow through both pipes. The Deadpool Sump was discharging intermittently during the inspection.

xi. There are vertical scarps at the top of the downstream slope at the southern end of the East Embankment (Photo IMG_2494). Monitor the embankment and repair the slope if the scarps expand or cracks begin to form near the scarps.

xii. The West Embankment crest south of the Drop Inlet Structure contained a higher proportion of finer ash particles compared to previous years (Photos IMG_2370 and IMG_2376). It is possible that haul trucks are breaking down the bottom ash across the crest. Investigate the origin of the finer particles and install an aggregate surface course to prevent damage.

xiii. There is fugitive CCR on the northwest, north, and east sides of the LAI, including the crest, downstream slopes, and downstream toe (Photos IMG_2407, IMG_2409, IMG_2418, IMG_2426, IMG_2428, IMG_2450, IMG_2456, IMG_2459, and IMG_2472). The CCR ranges from sparse to more than 2 inches thick. The fugitive CCR should be

removed and control measures described in the FCPP Dust Control Plan should be implemented to the extent necessary to prevent fugitive CCR from leaving the LAI.

xiv. The weekly inspection reports for the period between October 1, 2022, and September 30, 2023, were reviewed and indicate the following:

a. An APS operator noted that there were signs of erosion on the upstream slope that required monitoring for the May 12, 2023, inspection. The upstream slope is covered with a geomembrane liner and May 12 was the only inspection this operator performed during the year. Previous and subsequent inspections performed by other operators do not have notations about erosion on the upstream slope. During the annual inspection in November 2023, there was only erosion on the downstream slope.

4.2 APS FIELD INSPECTION – LINED DECANT WATER POND (LDWP)

<table>
<tr><td colspan="4">Lined Decant Water Pond (LDWP)</td><td colspan="4">State Identification Number (SID): D-635</td></tr>
<tr><td colspan="2">SID: D-635</td><td>Dam Name: Lined Decant Water Pond (LDWP)</td><td>Type: Zoned earth and ash fill with double-liner geomembrane and leak detection</td><td>Purpose: Store recycled LAI decant water and collected groundwater</td><td rowspan="15">Not Applicable</td><td rowspan="15">No</td><td rowspan="15">Yes</td><td rowspan="15">Monitor</td><td rowspan="15">Repair</td><td rowspan="15">Investigate</td></tr>
<tr><td colspan="3">Contact(s): Ray Markley, P.E. (APS)</td><td colspan="2">Report Date: January 19, 2024</td></tr>
<tr><td colspan="3">Inspected by: Ray Markley, P.E. (APS), Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: November 15, 2023</td></tr>
<tr><td colspan="3">Reviewed by: Ray Markley, P.E. (APS)</td><td colspan="2">Review Date: January 18, 2024</td></tr>
<tr><td colspan="3">Design Dam Crest Elevation (ft): 5,216</td><td colspan="2">Design Spillway Crest Elevation: No spillway</td></tr>
<tr><td colspan="3">Design Total Freeboard (ft): 2.8 (above the maximum surcharge level, EL 5213.2)</td><td colspan="2">Measured Total Freeboard (ft): 10.8</td></tr>
<tr><td colspan="3">Statutory Dam Height (ft): 16</td><td colspan="2">Structural Height (ft): 16</td></tr>
<tr><td colspan="3">Dam Crest Length (ft): 5,488</td><td>Upstream Slope: 3:1</td><td>Downstream Slope: 2:1</td></tr>
<tr><td colspan="3" rowspan="2">Dam Crest Width (ft): 30 feet (North, East Embankments)
20 feet (West, South Embankments)</td><td>Lat: 36° 41’ 00” (per NMOSE permit)</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 108° 30’ 45” (per NMOSE permit)</td></tr>
<tr><td colspan="3">Reservoir Area (acres): 45.4 (at EL 5213.2 ft) per APS drawing 150793.2.1</td><td colspan="2">Reservoir Storage (ac-ft): 435 (normal operating capacity)</td></tr>
<tr><td colspan="5">Inflow Design Flood/Safe Flood-Passing Capacity: PMF – fully contained</td></tr>
<tr><td colspan="3">Reservoir Level During Inspection (ft): EL 5205.2</td><td rowspan="2">Photos: Yes. See Appendix B.</td><td rowspan="2">Pages: 4</td></tr>
<tr><td colspan="3">Estimated Solids Level (ft): N/A (the LDWP does not impound a significant volume of solids)</td></tr>
</table>

Lined Decant Water Pond (LDWP)			SID: **D-635**	N/A	No	Yes	Mon	Rep	Inv
COMPLIANCE CHECKLIST									
1	***CONDITION SUMMARY, LICENSE, EAP, NEXT INSPECTION***								
a	Recorded downstream hazard:	**Significant**	Should hazard be revised?		**X**				
b	If high hazard, estimate downstream persons-at-risk (PAR): **N/A**		Is there a significant increase since the last inspection?		**X**				
c	Recorded size:	**Intermediate**	Should size be revised?		**X**				
d	Any safety deficiencies?	**No**	Describe:		**X**				
e	Any statute or rule violations?	**No**	Describe and list required action:		**X**				
f	Safe storage level on License:	**5,213.2 feet**	Should level be revised:		**X**				
g	Any License violations?	**No.**	Describe and list required action:		**X**				
h	Date of current License:	**February 7, 2008**	Should new License be issued?		**X**				
i	Date of last Emergency Action Plan revision: **1/2020**		Should EAP be revised? **See comment i.**		**X**				
j	Any Agency actions?	**No**	Describe and list required action:		**X**				
k	Normal inspection frequency:	**Weekly, Annually**	Should inspection frequency be revised?		**X**				
l	Recommended date for next inspection: **November 2024**								

MONITORING CHECKLIST									
2	***INSTRUMENTATION AND MONITORING***								
a	Describe:	**Instrumentation:** **1) Eight standpipe piezometers.** **2) Two crest survey/settlement monuments.** **Other** **1) Interstitial geomembrane leak detection and evacuation pump.** **2) Surveyed level markings on geomembrane liner.** **3) No inflow measurement devices.** **4) Outflow estimation by LDWP pump rating/hours of operation, if needed.**						
B	Any repair or replacement required?	**No.**	Describe:		**X**				
c	Date of last monitoring report:	**January 2023 (for 2022)**	Should new readings be taken and new report provided? **Monthly measurement and annual reporting are required.**			**X**			

DAM EMBANKMENT CHECKLIST								
3	***DAM CREST***							
a	Settlements, slides, depressions?	**See comment ii.**			**X**		**X**	
b	Misalignment?			**X**				
c	Longitudinal/Transverse cracking?			**X**				
d	Animal burrows?	**Ant hills were observed on the downstream shoulders of the South and West Embankments (Photos IMG_2716 and IMG_2739).**			**X**		**X**	
e	Adverse vegetation?			**X**				
f	Erosion?	**There is an erosion hole on the downstream shoulder of the West Embankment crest (Photo IMG_2737). Repair erosion holes when they exceed 1 foot in depth.**			**X**	**X**		
4	***UPSTREAM SLOPE***							
a	Erosion?	**The upstream slope is covered with geomembrane.**		**X**				
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?			**X**				
d	Longitudinal/Transverse cracking?	**Could not observe due to the presence of the geomembrane liner.**	**X**					
e	Inadequate riprap?		**X**					
f	Liner damage?	**See comment iii.**			**X**		**X**	
g	Settlements, slides, depressions, bulges?			**X**				
h	Animal burrows?			**X**				

Lined Decant Water Pond (LDWP)		SID: **D-635**	N/A	No	Yes	Mon	Rep	Inv
5	***DOWNSTREAM SLOPE***							
a	Erosion?	**Erosion rills not exceeding 11 inches deep were observed on the downstream slopes of the South and West Embankments (Photos IMG_2713, IMG_2721, and IMG_2732). The erosion shown in IMG_2713 where the Deadpool Pump pipe runs along the South Embankment slope should be repaired to prevent damage to the pipe. These should be repaired when they exceed 1 foot in depth.**			**X**	**X**		
b	Inadequate ground cover?	**The downstream embankment slopes are faced with bottom ash that supports only sporadic and uneven vegetation. A lime-based, white- and turquoise-colored dust suppression agent is applied in accordance with the Plant's Dust Control Plan.**		**X**				
c	Adverse vegetation?			**X**				
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?		**X**					
f	Stone deterioration?		**X**					
g	Settlements, slides, depressions, bulges?			**X**				
h	Soft spots or boggy areas?			**X**				
i	Movement at or beyond toe?			**X**				
j	Animal burrows?			**X**				
6	***ABUTMENT CONTACTS***							
a	Erosion?			**X**				
b	Differential movement?			**X**				
c	Cracks?			**X**				
d	Settlements, slides, depressions, bulges?			**X**				
e	Seepage?			**X**				
f	Animal burrows?			**X**				
7	***SEEPAGE/PIPING CONTROL DESIGN FEATURE(S)***							
a	Describe:	**The 8-inch and 16-inch inflow pipes through the East Embankment were conveying water from the LAI to the LDWP at the time of the inspection. The Deadpool Sump was flowing intermittently at the time of the inspection.**			**X**	**X**		
b	Internal drains flowing?	**The leakage collection and evacuation system Interstitial Evacuation Pump was powered, but not pumping during the inspection (Photo IMG_2727). The pump is susceptible to corrosion due to the chemical makeup of the impounded water; the auxiliary operators monitor this pump as part of their daily inspection and replace it when necessary.**			**X**	**X**		
c	Seepage at or beyond toe?			**X**				
d	If so, does seepage contain fines?		**X**					
e	Evidence of sand boils at or beyond toe?			**X**				

RESERVOIR CHECKLIST								
8	***RESERVOIR***							
a	High water marks?			**X**				
b	Erosion/slides into pool area?			**X**				
c	Sediment accumulation?	**Minor amounts of suspended FGD solids and fly ash settle in the impoundment. These have become more prominent as the reservoir level has declined.**			**X**			
d	Floating debris present?	**Two whalebacks observed on the north side of the reservoir during the 2021 inspection were present during this inspection, but were deflated similar to the 2022 inspection (Photos IMG_2630 and IMG_2633).**			**X**			
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?			**X**				
g	Structures below dam crest elevation?	**The interstitial geomembrane leak detection and evacuation pump system includes a pump situated between the two geomembrane liners. See comment iv.**			**X**			

Additional comments and recommendations for the LDWP:

i. The EAP shall be reviewed annually as required under Section 19.25.12.18 of the New Mexico Administrative Code (NMAC). The EAP must be amended whenever there is a change in conditions that would substantially affect the EAP as required by 40 CFR § 257.73(a)(3)(ii)(A). APS typically conducts a face-to-face EAP meeting with local emergency response agencies each year. The annual EAP meeting was held on August 3, 2023.

ii. Ruts were observed on the upstream half of the South Embankment crest (Photo IMG_2715) and the East Embankment crest (Photo IMG_2694). The area should be repaired before the liner is damaged or the rut extends further.

iii. The two sheets of liner observed to be separated along the North Embankment since the 2020 inspection (2020 Photo IMG_3619) were present during this inspection. In addition, holes in the liner observed during previous inspections are still present (Photos IMG_2623 and IMG_2684).

iv. The LDWP interstitial geomembrane leak detection and evacuation pump was powered, but not observed to be pumping water at the time of the inspection. Commercially available submersible pumps break down on a regular basis due to the water chemistry in the LDWP. APS has determined that regularly replacing the pumps is more economical and feasible than temporarily decommissioning the entire pond and constructing a different access port configuration. Since the pump is replaced on a regular basis, the Plant should maintain an inventory of spares, monitor the system, and replace the pump when it is degraded.

v. The liner was observed to be pulling out of the anchor trench in isolated areas along the West and East Embankments (Photo IMG_2749). The magnitude of pullout does not appear to have changed compared to the 2017, 2018, 2019, 2020, 2021, and 2022 inspections. Continue to monitor.

vi. Portions of the outer pipes for the siphon lines are exposed along the East Embankment crest (Photo IMG_2678). Additional fill should be placed and compacted in these areas to prevent damage to the pipes.

The exposed liner at the edge of the anchor trench near the midpoint of the East Embankment observed during the 2021 inspection was observed during this inspection (Photo IMG_2694). The liner should be covered with additional bottom ash.

vii. Since the RWP was completed, APS has only used the LDWP to store and evaporate water decanted from the LAI. Since the LAI no longer receives inflow from the Plant and only drains interstitial water by gravity, the flow into the LDWP is low and it is nearly empty.

viii. The sign identifying the CCR unit fell down (Photo IMG_2619). The sign should be re-erected.

ix. The weekly inspection reports for the period between October 1, 2022, and September 30, 2023, do not indicate that there were any appearances of actual or potential structural weakness or other conditions that have the potential to disrupt the operation or safety of the CCR unit.

4.3 APS FIELD INSPECTION – COMBINED WASTE TREATMENT POND (CWTP)

<table>
<tr><td colspan="3">Combined Waste Treatment Pond (CWTP)</td><td colspan="2">State Identification Number (SID): N/A</td><td rowspan="15">Not Applicable</td><td rowspan="15">No</td><td rowspan="15">Yes</td><td rowspan="15">Monitor</td><td rowspan="15">Repair</td><td rowspan="15">Investigate</td></tr>
<tr><td>SID: N/A</td><td>Dam Name: Combined Waste Treatment Pond (CWTP)</td><td>Type: Earth</td><td>Purpose: CCR-transport surface water collection</td></tr>
<tr><td colspan="2">Contact(s): Ray Markley, P.E. (APS)</td><td colspan="2">Report Date: January 19, 2024</td></tr>
<tr><td colspan="2">Inspected by: Ray Markley, P.E. (APS), Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: November 15, 2023</td></tr>
<tr><td colspan="2">Reviewed by: Ray Markley, P.E. (APS)</td><td colspan="2">Review Date: January 18, 2024</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5,335</td><td colspan="2">Design Spillway Crest Elevation (ft): 5,328.77</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 7</td><td colspan="2">Measured Total Freeboard (ft): 8.65</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 32 (max), 22.81 (avg)</td><td colspan="2">Structural Height (ft): 32 (max), 22.81 (avg)</td></tr>
<tr><td colspan="2">Dam Crest Length (ft): 1,800</td><td>Upstream Slope: 2:1</td><td>Downstream Slope: 1.5:1</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): 24-30</td><td>Lat: 34° 41′ 29.19″N</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 108° 28′ 28.73″W</td></tr>
<tr><td colspan="2">Reservoir Area (acres): 13.4</td><td colspan="2">Reservoir Storage (ac-ft): 137 (27 additional ac-ft for stormwater storage)</td></tr>
<tr><td colspan="4">Inflow Design Flood/Safe Flood-Passing Capacity: Not Calculated</td></tr>
<tr><td colspan="2">Reservoir Level During Inspection (ft): EL 5326.35 (NGVD29) (currently level-controlled)</td><td rowspan="2">Photos: Yes. See Appendix C.</td><td rowspan="2">Pages: 5</td></tr>
<tr><td colspan="2">Estimated Solids Level (ft): Variable (below EL 5325.22)</td></tr>
</table>

Combined Waste Treatment Pond (CWTP)		SID: N/A		N/A	No	Yes	Mon	Rep	Inv
COMPLIANCE CHECKLIST									
1	***CONDITION SUMMARY, LICENSE, EAP, NEXT INSPECTION***								
a	Recorded downstream hazard: **Low**	Should hazard be revised?			**X**				
b	If high hazard, estimate downstream persons-at-risk (PAR): **N/A**	Is there a significant increase since the last inspection?			**X**				
c	Recorded size: **Small**	Should size be revised?			**X**				
d	Any safety deficiencies? **No**	Describe:			**X**				
e	Any statute or rule violations? **No**	Describe and list required action: **See comment i.**			**X**				
f	Safe storage level on License: **N/A**	Should level be revised:			**X**				
g	Any License violations? **No**	Describe and list required action:			**X**				
h	Date of current License: **N/A**	Should new License be issued?			**X**				
i	Date of last Emergency Action Plan revision: **N/A**	Should EAP be revised?			**X**				
j	Any Agency actions? **No**	Describe and list required action:			**X**				
k	Normal inspection frequency: **Weekly, Annually**	Should inspection frequency be revised?			**X**				
l	Recommended date for next inspection: **November 2024**								

MONITORING CHECKLIST									
2	***INSTRUMENTATION AND MONITORING***								
a	Describe: **There are four monitoring wells for this structure to comply with groundwater monitoring requirements.**								
B	Any repair or replacement required? **N/A**	Describe: **N/A**	**X**						
c	Date of last monitoring report: **January 2023 (for 2022)**	Should new readings be taken and new report provided? **Annual reporting is required.**			**X**				

DAM EMBANKMENT CHECKLIST									
3	***DAM CREST***								
a	Settlements, slides, depressions? **See comment ii.**				**X**		**X**	**X**	
b	Misalignment?			**X**					
c	Longitudinal/Transverse cracking? **See comment ii.**			**X**		**X**			
d	Animal burrows? **Ant hills were observed (example Photos IMG_2806 and IMG_2823).**				**X**	**X**			
e	Adverse vegetation?			**X**					
f	Erosion? **See comment ii.**				**X**	**X**			
4	***UPSTREAM SLOPE***								
a	Erosion? **See comment iii.**				**X**	**X**	**X**		
b	Inadequate ground cover?			**X**					
c	Adverse vegetation? **See comment iv.**				**X**		**X**		
d	Longitudinal/Transverse cracking?			**X**					
e	Inadequate riprap? **No riprap was observed above the water line on the upstream slope.**				**X**				
f	Stone deterioration?		**X**						
g	Settlements, slides, depressions, bulges? **Portions of the slope are steeper than others.**				**X**	**X**			
h	Animal burrows? **None observed. Continue to monitor.**			**X**		**X**			

Combined Waste Treatment Pond (CWTP)		SID: N/A	N/A	No	Yes	Mon	Rep	Inv
5	***DOWNSTREAM SLOPE***							
a	Erosion?	**See comment v.**			**X**	**X**	**X**	
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?	**See comment iv.**			**X**		**X**	
d	Longitudinal/Transverse cracking?	**None observed. Continue to monitor.**		**X**		**X**		
e	Inadequate riprap?	**See comment vi.**		**X**				
f	Stone deterioration?			**X**				
g	Settlements, slides, depressions, bulges?	**Portions of the downstream slope are uneven (Photo IMG_2829).**			**X**	**X**		
h	Soft spots or boggy areas?	**There is water on both sides of the embankment.**	**X**					
i	Movement at or beyond toe?	**Cannot observe.**	**X**					
j	Animal burrows?	**None observed. Continue to monitor.**		**X**		**X**		
6	***ABUTMENT CONTACTS***							
a	Erosion?			**X**				
b	Differential movement?			**X**				
c	Cracks?			**X**				
d	Settlements, slides, depressions, bulges?			**X**				
e	Seepage?			**X**				
f	Animal burrows?	**None observed. Continue to monitor.**		**X**		**X**		
7	***SEEPAGE/PIPING CONTROL DESIGN FEATURE(S)***							
a	Describe:	**None.**						
B	Internal drains flowing?		**X**					
c	Seepage at or beyond toe?	**Cannot observe.**	**X**					
d	If so, does seepage contain fines?		**X**					
e	Evidence of sand boils at or beyond toe?		**X**					

RESERVOIR CHECKLIST								
8	***RESERVOIR***							
a	High water marks?			**X**				
b	Erosion/slides into pool area?			**X**				
c	Sediment accumulation?	**See comment vii.**			**X**			
d	Floating debris present?			**X**				
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?	**A weir previously allowed overflow into the NPDES outlet.**			**X**			
g	Structures below dam crest elevation?	**Twin 30-inch reinforced concrete pipe outlets are located at the eastern side of the CWTP.**			**X**			

Additional comments and recommendations for the CWTP:

i. As part of the 2021 IDF update (AECOM 2021), the normal operating level was revised and is now at EL 5329.5 feet (EL 5326.488 feet NGVD29). The water in the CWTP was observed to be at EL 5326.35 feet (NGVD29) during the inspection, approximately 0.138 feet below the new normal operating level. The purpose of reducing the normal operating level was to prevent discharge from the CWTP through the NPDES discharge point without the stop logs in place. APS has installed blockages (e.g., "pigs") in each conduit to prevent flow into the canal in the event the stop logs are overtopped. At the time of this inspection, the dredging contractor was performing maintenance on the CWTP spillway.

ii. The upstream edge of the crest near where the tension crack was observed during the 2020 inspection appeared to be loose over a distance of approximately 10 feet (Photos IMG_2863 and IMG_2867); however, no crack was observed during this inspection. Investigate the cause of the weak soil on the crest and repair this section of the crest.

A set of shallow holes was observed on the downstream shoulder of the North Embankment near the 18-inch pipe that transfers water from the canal to the CWTP (Photos IMG_2806 and IMG_2813) in the vicinity of a set of shallow depressions observed during the 2021 inspection (2021 Photo IMG_8448). This area should be regraded and repaired.

The two erosion holes up to 9 inches deep observed on the crest along the curved section of the embankment during the 2022 inspection (2022 Photo IMG_4016) were not observed during this inspection; however, there was a series of holes up to 1.5 feet deep and a separate hole approximately 1 foot deep on the downstream shoulder of the East Embankment. These should be monitored and repaired if they are observed to expand.

iii. Erosion rills were observed at various locations along the upstream slope (Photos IMG_2800, IMG_2810, and IMG_2898). Repair erosion when it exceeds 1 foot in depth.

There is a wide, shallow hole on the upstream slope of the North Embankment (Photo IMG_2818). The hole's geometry has the potential to progressively erode backward into the crest. The hole should be repaired. This new observation indicates slow, but progressive erosion on the embankment.

iv. Vegetation (grass, small trees, and shrubs) was observed on the upstream (Photos IMG_2801, IMG_2826, IMG_2827, IMG_2831, and IMG_2888) and downstream (Photos IMG_2829, IMG_2842, and IMG_2872) slopes during this inspection. These grasses have grown substantially over the last few years and the upstream slope is obscured in these areas. The grasses should be cut. The woody vegetation on the upstream slope should be removed using the NMOSE vegetation management guidelines (NMOSE 2011); roots should be removed in their entirety and the area should be backfilled with compacted structural fill under the supervision of a geotechnical engineer.

Although most of the downstream slope is vegetated, the areas with loose soil or a series of holes along the downstream shoulder generally have less vegetation. Operators should track the presence of holes in the crest and possible erosion or sloughs on the downstream slope as part of their weekly inspections.

v. Instances of erosion were observed on the downstream slope (Photos IMG_2820, IMG_2837, IMG_2842, IMG_2843, and IMG_2870). Some of the erosion is undermining riprap boulders, which could accelerate the erosion process if the boulders fall off the slope.

Continue to monitor the shallow erosion and repair erosion rills if they exceed 1 foot in depth. This condition indicates slow, but progressive erosion on the embankment. Erosion under the riprap boulders should be repaired.

vi. APS installed additional riprap on the downstream slope of the embankment in August 2017 to prevent wave erosion along the slope. The additional riprap was placed from approximately 5 feet below the canal water surface to approximately 2 feet above the canal water surface. Additional riprap should be added to the downstream slope considering the future maintenance needs (e.g., continued erosion, sloughing, vegetative growth) along the part of the embankment above the canal and APS's future use for the embankment structure.

vii. The facility formerly included seven decant cells and one forebay cell in the western half of the CWTP. When the CWTP was in use, flow from the collection distribution vault was directed to the selected cells. Settled solids were periodically removed and decanted water flowed to the CWTP free water pond. Suspended sediment and CCR settled in the decant cells in the western half of the impoundment. APS began preparing the CWTP for closure in 2022. This process includes removing most of the decant cells (Photos IMG_2787, IMG_2911, and IMG_2924) and dredging the ash from the bottom of the reservoir. APS began dredging CCR from the CWTP in January 2023 and expects to continue dredging into 2024.

viii. In 2020, APS installed a new 18-inch dual-wall pressure pipe to pump water from the discharge canal to the CWTP. The pipe allows APS to maintain the phreatic level in the embankment and reservoir as the CWTP no longer receives inflow from the Plant, but some water from the reservoir is provided to the nearby Navajo Mine. The pipe is located on the downstream edge of the embankment and is buried where it crosses the crest and enters the reservoir (Photos IMG_2792, IMG_2896, and IMG_2800). The pipe is surrounded with controlled low strength material (CLSM) flowable fill where it is buried in the embankment.

ix. The weekly inspection reports for the period between October 1, 2022, and September 30, 2023, do not indicate that there were any appearances of actual or potential structural weakness or other conditions that have the potential to disrupt the operation or safety of the CCR unit.

4.4 APS FIELD INSPECTION – DRY FLY ASH DISPOSAL AREA (DFADA)

<table>
<tr><td colspan="3">Dry Fly Ash Disposal Area (DFADA)</td><td colspan="3">State Identification Number (SID): N/A</td><td rowspan="14">Not Applicable</td><td rowspan="14">No</td><td rowspan="14">Yes</td><td rowspan="14">Monitor</td><td rowspan="14">Repair</td><td rowspan="14">Investigate</td></tr>
<tr><td>SID: N/A</td><td>Landfill Name: Dry Fly Ash Disposal Area (Cells 1, 2, 3, and 4)</td><td>Type: Lined Landfill</td><td colspan="2">Purpose: Permanent storage of dry CCR (fly ash, bottom ash, dry FGD solids) and select construction debris (e.g. concrete and wood)</td></tr>
<tr><td colspan="2">Contact(s): Ray Markley, P.E. (APS)</td><td colspan="3">Report Date: January 19, 2024</td></tr>
<tr><td colspan="2">Inspected by: Ray Markley, P.E. (APS),
Lee Wright, P.E. (AECOM)</td><td colspan="3">Inspection Date: November 15, 2023</td></tr>
<tr><td colspan="2">Reviewed by: Ray Markley, P.E. (APS)</td><td colspan="3">Review Date: January 18, 2024</td></tr>
<tr><td colspan="2">Design Maximum Ash Elevation (ft): 5,295</td><td colspan="3">Current Maximum Ash Elevation (ft):
Based on survey data from FHI:
Cell 1 is EL 5291 feet (November 2023)
Cell 2 is EL 5282 feet (November 2023)
Cell 3 is EL 5283 feet (November 2023)
Cell 4 is EL 5242 feet (November 2023)</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Length (ft): Not applicable</td><td>Design Side Slope: Varies. 4:1 on final outside slopes, 2:1 on internal slopes.</td><td colspan="2">Observed Side Slope: Varies. 4:1 on final outside slopes, 2:1 on internal slopes.</td></tr>
<tr><td rowspan="2">Lat: 36° 40′ 43.27"N
Long: 108° 3' 12.2"W</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): Not applicable</td></tr>
<tr><td colspan="3">Landfill Capacity (ac-ft): 10,153
for Cells 1, 2, 3, and 4</td></tr>
<tr><td colspan="2">Landfill Area (acres): 135 (Current, Cells 1, 2, 3, and 4)</td></tr>
<tr><td colspan="5">Inflow Design Flood/Safe Flood-Passing Capacity: Diversion of 100-year, 24-hour run-on storm. Storage of impacted run-off from 25-year, 24-hour storm, spillway passage of impacted run-off from 100-year, 24-hour storm.</td></tr>
<tr><td colspan="2">Photos: Yes. See Appendix D.</td><td colspan="3">Pages: 3</td></tr>
</table>

Dry Fly Ash Disposal Area (DFADA)			SID: N/A	N/A	No	Yes	Mon	Rep	Inv
MONITORING CHECKLIST									
1	***INSTRUMENTATION AND MONITORING***								
a	Describe:	**There are no instruments or other monitoring devices for this structure.**							
b	Any repair or replacement required?	**N/A**	Describe: **N/A**		**X**				
c	Date of last monitoring report:	**January 2023 (for 2022)**	Should new readings be taken and new report provided? **Annual reporting is required.**			**X**			
2	***CONDITION SUMMARY***								
a	Waste placed in good practices?					**X**			
3	***LANDFILL CONFIGURATION***								
a	Settlements, slides, slope instability?				**X**				
b	Cracking?				**X**				
c	Run on control?	**See comment i.**				**X**	**X**	**X**	
d	Run off control?					**X**			
e	Erosion?	**See comment i.**				**X**	**X**		
f	Dust control issues?	**None observed. Continue to monitor in accordance with APS's CCR Dust Control Plan.**			**X**				

Additional comments and recommendations for the DFADA:

i. There is erosion in the Stormwater Diversion Channel extension constructed as part of the Cell 4 expansion where the previous alignment terminated (Photo IMG_2772). This area should be monitored and repaired as needed before sediment builds up in the new stilling basin (Photos IMG_2767 and IMG_2769) and along the Stormwater Diversion Channel (Photo IMG_2776). Additional erosion (headcutting) in the Stormwater Diversion Channel was observed at the entrance near the ash haul road (Photo IMG_2785) and the new outlet (Photos IMG_2781 and IMG_2782). Repair erosion gullies when they exceed 1 foot in depth. Clean out the stilling basin and Stormwater Diversion Channel when sediment begins to accumulate.

ii. APS has brought the height of Cell 3 to approximately the same elevation as the South Embankment of the LAI and Cell 1 (Photos IMG_2287, IMG_2316, IMG_2318, IMG_2340, and IMG_2717). Currently, the ash placement location is in Cell 4. APS places CCR in the cell, spreads it into thin lifts, and compacts it using a smooth-drum roller pulled behind a tractor.

iii. There are no external runoff collection ditches. Internal drain systems report to one of three separate lined leachate collection ponds for Cells 1, 2, and 4 (Photo IMG_2340). Cell 3 drains to the Cell 1 collection pond. The water levels in these three ponds are maintained by the ash haul contractor by use of a mobile suction pump. This water is used for dust control on site.

iv. Reeds and grasses have colonized the DFADA Cell 1 leachate collection pond (Photos IMG_2560, IMG_2575, and IMG_2577) and the western toe of Cells 1 and 3 (Photos IMG_2553, IMG_2581, and IMG_2584). The drainage channel to the Cell 1 leachate collection pond has become clogged with sediment and vegetation to the point that leachate drains into the pond from Cell 1 in other locations (Photo IMG_2561). The leachate collection ponds are designed to contain the 25-year, 24-hour design storm event (URS

2015). The reeds should be removed to ensure the pond has sufficient capacity to accommodate the design volume.

v. The junction of Cells 1 and 4 is susceptible to erosion and there is a potential that ash in Cell 4 could be carried down the slope and away from the DFADA during high velocity flow events (Photo IMG_2554). Construct a diversion berm or dedicated flow channel to prevent ash from being carried offsite.

   The junction of the LAI and Cell 3 has been subject to historic erosion (Photo IMG_2587). Currently there are reeds and sediment in the drainage ditch along the Cell 3 toe that would impede stormwater routing (Photo IMG_2581). The reeds should be removed. The area should be inspected after storm events and sediment should be removed as necessary. Undertake sediment removal activities in such a manner so as to avoid damaging the liner (i.e., use hand shovels). Large, powered equipment should not be allowed for sediment removal.

vi. The Cell 4 leachate collection pond contained water at the time of the inspection in contrast to the 2022 inspection. Continue to monitor the presence or absence of water and the water level in the pond as part of the weekly inspections. Any unusual occurrences (i.e., a sudden increase in flow) should be reported to the APS geotechnical engineer immediately.

vii. There was saturation on the slope just above the Cell 4 toe, near the Cell 4 leachate collection pond, at the time of the inspection. In addition, the presence of white salt deposits throughout the saturated area indicated this portion of the slope has been saturated for an extended period of time. Investigate the apparent buildup of water along the toe of the Cell 4 western slope in relation to the flowrate into the leachate collection pond.

viii. The weekly inspection reports for the period between October 1, 2022, and September 30, 2023, do not indicate that there were any appearances of actual or potential structural weakness or other conditions that have the potential to disrupt the operation or safety of the CCR unit.

4.5 APS FIELD INSPECTION – RETURN WATER POND (RWP)

<table>
<tr><td colspan="4">Return Water Pond (RWP)</td><td colspan="4">State Identification Number (SID): N/A</td></tr>
<tr><td colspan="2">SID: N/A</td><td>Dam Name: Return Water Pond (RWP)</td><td>Type: Earth</td><td>Purpose: Temporary water storage</td><td rowspan="15">Not Applicable</td><td rowspan="15">No</td><td rowspan="15">Yes</td><td rowspan="15">Monitor</td><td rowspan="15">Repair</td><td rowspan="15">Investigate</td></tr>
<tr><td colspan="3">Contact(s): Ray Markley, P.E. (APS)</td><td colspan="2">Report Date: January 19, 2024</td></tr>
<tr><td colspan="3">Inspected by: Ray Markley, P.E. (APS),
Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: November 16, 2023</td></tr>
<tr><td colspan="3">Reviewed by: Ray Markley, P.E. (APS)</td><td colspan="2">Review Date: January 18, 2024</td></tr>
<tr><td colspan="3">Design Dam Crest Elevation (ft): 5,381.1</td><td colspan="2">Design Spillway Crest Elevation (ft): None</td></tr>
<tr><td colspan="3">Design Total Freeboard (ft): 2.1</td><td colspan="2">Measured Total Freeboard (ft):
6.59 feet (RWP cell);
7.01feet (FGD cell is empty)</td></tr>
<tr><td colspan="3">Statutory Dam Height (ft): 12 (max)</td><td colspan="2">Structural Height (ft): 12 (max, north side)</td></tr>
<tr><td colspan="3">Dam Crest Length (ft): 2,067</td><td>Upstream Slope: 3:1</td><td>Downstream Slope: 3:1</td></tr>
<tr><td colspan="3" rowspan="2">Dam Crest Width (ft): 20</td><td>Lat: 36° 41′ 04.35″N</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 108° 29′ 30.09″W</td></tr>
<tr><td colspan="3">Reservoir Area (acres): 5.13</td><td colspan="2">Reservoir Storage (ac-ft): 38.6 (maximum storage capacity at EL 5379 feet)</td></tr>
<tr><td colspan="5">Inflow Design Flood/Safe Flood-Passing Capacity: Not Calculated</td></tr>
<tr><td colspan="3">Reservoir Level During Inspection (ft):
EL 5374.51 (RWP cell)
(no water in the FGD cell)</td><td rowspan="2">Photos: Yes. See Appendix E.</td><td rowspan="2">Pages: 4</td></tr>
<tr><td colspan="3">Estimated Solids Level (ft): The RWP is designed to impound water and does not specifically receive solid waste streams.</td></tr>
</table>

Return Water Pond (RWP)			SID: N/A	N/A	No	Yes	Mon	Rep	Inv
COMPLIANCE CHECKLIST									
1	***CONDITION SUMMARY, LICENSE, EAP, NEXT INSPECTION***								
a	Recorded downstream hazard:	**Low**	Should hazard be revised?		**X**				
b	If high hazard, estimate downstream persons-at-risk (PAR): **N/A**		Is there a significant increase since the last inspection?		**X**				
c	Recorded size:	**Non-Jurisdictional**	Should size be revised?		**X**				
d	Any safety deficiencies?	**No**	Describe:		**X**				
e	Any statute or rule violations?	**No**	Describe and list required action:		**X**				
f	Safe storage level on License:	**N/A**	Should level be revised:		**X**				
g	Any License violations?	**No**	Describe and list required action:		**X**				
h	Date of current License:	**N/A**	Should new License be issued?		**X**				
i	Date of last Emergency Action Plan revision: **N/A**		Should EAP be revised?		**X**				
j	Any Agency actions?	**No**	Describe and list required action:		**X**				
k	Normal inspection frequency:	**Weekly, Annually**	Should inspection frequency be revised?		**X**				
l	Recommended date for next inspection: **November 2024**								

MONITORING CHECKLIST									
2	***INSTRUMENTATION AND MONITORING***								
a	Describe: **There are three monitoring wells on the northern side of this structure to comply with groundwater monitoring requirements.**								
b	Any repair or replacement required? **N/A**		Describe: **N/A**	**X**					
c	Date of last monitoring report:	**January 2023 (for 2022)**	Should new readings be taken and new report provided? **Annual reporting is required.**			**X**			

DAM EMBANKMENT CHECKLIST								
3	***DAM CREST***							
a	Settlements, slides, depressions?			**X**				
b	Misalignment?			**X**				
c	Longitudinal/Transverse cracking?			**X**				
d	Animal burrows?			**X**				
e	Adverse vegetation?	**Some vegetation is beginning to grow on the crest. Continue to monitor.**		**X**		**X**		
f	Erosion?	**See comment i.**			**X**	**X**		
4	***UPSTREAM SLOPE***							
a	Erosion?	**The upstream slope is covered with geomembrane.**		**X**				
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?			**X**				
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?			**X**				
f	Liner damage?	**See comment vi.**			**X**			
g	Settlements, slides, depressions, bulges?	**The liner anchor trench appeared to be disturbed in the north corner (Photo IMG_3205) and along the Northeast Embankment (Photo IMG_3218). The liner also appeared to be looser in the western side of the Internal Embankment where construction activity had taken place (Photos IMG_3178 and IMG_3193). Continue to monitor these areas and repair the liner/trench if the disturbance begins to affect the embankment.**			**X**	**X**		
h	Animal burrows?			**X**				

Return Water Pond (RWP)		SID: N/A	N/A	No	Yes	Mon	Rep	Inv
5	***DOWNSTREAM SLOPE***							
a	Erosion?			**X**				
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?	**Some vegetation is beginning to grow on the slope. Continue to monitor.**		**X**		**X**		
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?			**X**				
f	Stone deterioration?			**X**				
g	Settlements, slides, depressions, bulges?			**X**				
h	Soft spots or boggy areas?			**X**				
i	Movement at or beyond toe?			**X**				
j	Animal burrows?			**X**				
6	***ABUTMENT CONTACTS***							
a	Erosion?			**X**				
b	Differential movement?			**X**				
c	Cracks?	**See comment iii.**			**X**	**X**		
d	Settlements, slides, depressions, bulges?			**X**				
e	Seepage?			**X**				
f	Animal burrows?			**X**				
7	***SEEPAGE/PIPING CONTROL DESIGN FEATURE(S)***							
a	Describe:	**The RWP features a leachate collection and recovery system (LCRS) between the primary and secondary 60 mil HDPE liners designed to collect impounded water that leaks through the primary HDPE liner before it leaks through the secondary HDPE liner and into the ground. The LCRS riser pipes are positioned at the lowest points of the RWP and FGD cells. The Plant was in an outage during this inspection and only a small volume of water was being pumped into the RWP cell.**						
b	Internal drains flowing?			**X**				
c	Seepage at or beyond toe?			**X**				
d	If so, does seepage contain fines?		**X**					
e	Evidence of sand boils at or beyond toe?			**X**				

RESERVOIR CHECKLIST								
8	***RESERVOIR***							
a	High water marks?				**X**			
b	Erosion/slides into pool area?			**X**				
c	Sediment accumulation?	**The majority of sediment in the RWP cell appears to consist of organic debris blown into the cells by the wind. The FGD cell contained dry FGD remaining from the recent cleanout activities.**			**X**			
d	Floating debris present?			**X**				
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?	**An overflow weir at EL 5379 feet along the crest of the Internal Embankment connects the RWP cell to the FGD cell.**			**X**			
g	Structures below dam crest elevation?			**X**				

Additional comments and recommendations for the RWP:

i. The shallow erosion feature observed during the 2022 inspection was not apparent during this inspection (2022 Photo IMG_4323). Continue to monitor and repair erosion if it exceeds 1 foot in depth.

ii. APS's subcontractor cleaned the FGD cell prior to this inspection and in doing so, spilled FGD on the crest, downstream slopes, and the outer berm around the FGD cell (Photos IMG_3124, IMG_3128, IMG_3145, IMG_3146, IMG_3149, IMG_3153, IMG_3156, IMG_3157, IMG_3161, IMG_3162, IMG_3163, IMG_3177, and IMG_3181). When periodically cleaning the pond, subcontractors should remove spilled CCR in accordance with the APS Four Corners CCR Dust Control Plan prior to demobilizing from the site.

iii. Tension cracks were observed on the slope of the incised drainage ditch along the western corner of the pond downstream of the FGD cell during the 2021 inspection and smaller cracks were observed in the same general area during the 2022 inspection. This area was covered with spilled FGD from the recent cell cleanout activities and any small cracks, if present, were not visible during this inspection (Photo IMG_3155).

iv. The downstream drainage ditch on the western corner of the RWP is filled with sediment to the extent that the drain pipe under the entrance road is almost completely blocked (Photos IMG_3155 and IMG_3165). The drainage characteristics of the RWP are designed such that all runoff from upstream tributary basins is diverted around the surface impoundment (APS 2020b). The drainage ditch should be cleared so that the design run-on cannot overtop the ditch and enter the RWP.

v. The bottom of the RWP and FGD cells is below the original ground surface. The RWP consists of a homogenous, rectangular, diked embankment constructed using weathered shale and sandstone excavated from the site's footprint and broken down into sand and clay.

vi. The RWP liner system consists of a primary 60-mil HDPE geomembrane liner, a drainage geonet, a secondary 60-mil HDPE geomembrane liner, a geosynthetic clay liner (GCL), and a prepared subgrade that was scarified, proof-rolled, and compacted prior to construction (AECOM 2020). The subcontractor who cleaned the FGD cell (comment ii) also damaged various portions of the liner system in six locations; the damage ranged from minor cuts in the upper 60-mil liner to damage throughout the upper 60-mil liner, geogrid, and the lower 60-mil liner system. A different subcontractor completed the repairs on November 8, 2023 (Example Photo IMG_3148). When periodically cleaning the pond, subcontractors should use handheld excavation equipment as the excavation gets closer to the liner.

vii. The RWP is sized to contain the 100-year, 24-hour rain event. It has 4.6 acre-feet of deadpool storage to EL 5370.55 feet and 28.1 acre-feet of operational and outage storage to EL 5379.00 feet. The remaining 2.1 feet (to the crest at EL 5381.10 feet) is reserved for storage of the 100-year, 24-hour rainfall event. There are no water bodies directly downstream of the RWP (AECOM 2020).

viii. The weekly inspection reports for the period between October 1, 2022, and September 30, 2023, do not indicate that there were any appearances of actual or potential structural weakness or other conditions that have the potential to disrupt the operation or safety of the CCR unit.

5.0 DATA REVIEW

5.1 LINED ASH IMPOUNDMENT

5.1.1 Geometry Changes Since Last Inspection

APS is currently in the process of constructing access roads throughout the reservoir to be used for pre-closure construction activities. The roads are several feet thick and connect the East, West, and South Embankments across the reservoir. The configuration of the LAI embankment is unchanged.

5.1.2 Instrumentation

The locations of geotechnical and other related instrumentation in the vicinity of the LAI are shown on Figure 6 – Lined Ash Impoundment (LAI) Instrumentation Map. The minimum and maximum recorded readings for each instrument over the October 1, 2022 – September 30, 2023 (current) review period are reported in the following table:

Instrument Name	Minimum	Maximum	Unit
LAI Piezometers (10/1/22 to 9/30/23)			
P-7.1	5196.87[1]	5196.87[1]	Water Elevation (ft)
P-7.2	5191.35[1]	5191.35[1]	Water Elevation (ft)
P-7.3	5184.75[1]	5184.75[1]	Water Elevation (ft)
P-8.1	5196.60[1]	5196.60[1]	Water Elevation (ft)
P-8.2	5182.10[1]	5182.10[1]	Water Elevation (ft)
P-8.3	5174.10[1]	5174.10[1]	Water Elevation (ft)
P-9.1	5196.87[1]	5196.87[1]	Water Elevation (ft)
P-9.2	5183.97[1]	5183.97[1]	Water Elevation (ft)
P-9.3	5170.87[1]	5170.87[1]	Water Elevation (ft)
P-10.1	5198.22[1]	5198.22[1]	Water Elevation (ft)
P-10.2	5184.22[1]	5184.22[1]	Water Elevation (ft)
P-10.3	5173.72[1]	5173.72[1]	Water Elevation (ft)
P-11.1	5200.73	5201.85	Water Elevation (ft)
P-11.2	5189.65[1]	5189.65[1]	Water Elevation (ft)
P-11.3	5174.65[1]	5174.65[1]	Water Elevation (ft)
P-12.1	5202.54[1]	5202.54[1]	Water Elevation (ft)
P-12.2	5186.54[1]	5186.54[1]	Water Elevation (ft)
P-12.3	5176.54[1]	5176.54[1]	Water Elevation (ft)
[1] Porewater pressure measurements are negative (draining condition). The reported elevation is for the tip of the instrument.			

Instrument Name	Minimum	Maximum	Unit
NTB Piezometers (10/1/22 to 9/30/23)			
P-100.1	5202.06[1]	5202.06[1]	Water Elevation (ft)
P-100.2	5190.06[1]	5190.06[1]	Water Elevation (ft)
P-100.3	5183.23[1]	5183.23[1]	Water Elevation (ft)
P-101.1	5185.93[1]	5186.07	Water Elevation (ft)
P-101.2	5177.85[1]	5178.28	Water Elevation (ft)
P-101.3	5165.54	5166.81	Water Elevation (ft)
P-102.1	5188.85[1]	5188.85[1]	Water Elevation (ft)
P-102.2	5174.60[1]	5174.60[1]	Water Elevation (ft)
P-102.3	5169.59	5169.80	Water Elevation (ft)
P-103.1	5185.91[1]	5185.91[1]	Water Elevation (ft)
P-103.2	5170.91[1]	5170.91[1]	Water Elevation (ft)
P-103.3	5160.24[1]	5160.24[1]	Water Elevation (ft)
P-104.1	5198.72[1]	5198.72[1]	Water Elevation (ft)
P-104.2	5185.47[1]	5185.47[1]	Water Elevation (ft)
P-104.3	5178.47[1]	5178.47[1]	Water Elevation (ft)
P-105.1	5184.82[1]	5184.82[1]	Water Elevation (ft)
P-105.2	5174.16[1]	5174.16[1]	Water Elevation (ft)
P-105.3	5162.16[1]	5162.16[1]	Water Elevation (ft)
P-106.1	5186.09[1]	5186.09[1]	Water Elevation (ft)
P-106.2	5165.51[1]	5165.51[1]	Water Elevation (ft)
P-106.3	5159.01[1]	5159.01[1]	Water Elevation (ft)
P-107.1	5197.27[1]	5197.27[1]	Water Elevation (ft)
P-107.3	5173.44[1]	5173.44[1]	Water Elevation (ft)
P-108.1	5184.26[1]	5184.26[1]	Water Elevation (ft)
P-108.2	5173.59[1]	5173.59[1]	Water Elevation (ft)
P-108.3	5170.88	5171.90	Water Elevation (ft)
P-109.1	5188.76[1]	5188.76[1]	Water Elevation (ft)
P-109.2	5172.51[1]	5172.51[1]	Water Elevation (ft)
P-109.3	5164.93[1]	5164.93[1]	Water Elevation (ft)
P-110.1	5184.28[1]	5184.66	Water Elevation (ft)
P-110.2	5171.86[1]	5171.86[1]	Water Elevation (ft)
P-110.3	5163.44[1]	5163.44[1]	Water Elevation (ft)
P-111.1	5187.29[1]	5187.29[1]	Water Elevation (ft)
P-111.2	5172.33[1]	5173.31	Water Elevation (ft)
P-111.3	5160.04[1]	5160.04[1]	Water Elevation (ft)

[1] Porewater pressure measurements are negative (draining condition). The reported elevation is for the tip of the instrument.

Instrument Name	Minimum	Maximum	Unit
Survey Monuments (10/1/22 to 9/30/23)			
SM7[2]	5215.656	5215.768	Monument Elevation (ft)
SM9[2]	5216.892	5217.071	Monument Elevation (ft)
Settlement Rods (10/1/22 to 9/30/23)			
SR-7[2]	5250.545	5250.659	Monument Elevation (ft)
SR-8[2]	5256.023	5256.128	Monument Elevation (ft)
SR-9[2]	5248.462	5248.524	Monument Elevation (ft)
SR-10[2]	5248.757	5248.837	Monument Elevation (ft)
SR-100[2]	5222.07	5222.111	Monument Elevation (ft)
SR-101[2]	5205.302	5205.379	Monument Elevation (ft)
SR-102[2]	5205.026	5205.166	Monument Elevation (ft)
SR-104[2]	5219.101	5219.228	Monument Elevation (ft)
SR-105[2]	5204.836	5204.935	Monument Elevation (ft)
SR-106[2]	5205.218	5205.321	Monument Elevation (ft)
SR-109[2]	5206.314	5206.452	Monument Elevation (ft)
SR-110[2]	5205.679	5205.836	Monument Elevation (ft)
Inclinometers (10/1/22 to 9/30/23)			
I-1	0	0.1506	Inches
I-2	0	0.1200	Inches
I-103	0	0.1422	Inches
I-107	0	0.1396	Inches
I-111	0	0.0888	Inches
Open Standpipe Piezometers (10/1/22 to 9/30/23)			
P-23	5156.46	5156.48	Water Elevation (ft)
P-24	Dry	Dry	Water Elevation (ft)
P-25	Dry	Dry	Water Elevation (ft)

2) Starting in March 2019, a third-party surveyor began collecting the monthly survey monument and settlement rod data instead of APS personnel. The third-party surveyor uses a different post-processing technique than APS personnel.

The data for the piezometers over the current review period indicate no significant elevation changes or adverse trends related to the performance of the dam. The data for the majority of vibrating wire piezometers indicates the phreatic level at these instruments is either declining, stabilizing, or is negative (a draining condition). Exceptions are described below.

After several years of consistent, declining phreatic level readings, piezometer P-102.3 began increasing at a rate of 0.08 feet of head per month starting in mid-2019. The trend continued throughout 2021-2022 review period, reaching approximately 1 foot of pressure head by September 30, 2020, approximately 1.8 feet of pressure head by September 30, 2021, and slowing to approximately 2.25 feet of pressure head by September 29, 2022. The pressure head reached 2.35 feet in March 2023, where it has since remained. Piezometer P-102.3 is the deepest instrument

in the P-102 cluster. Continue to monitor the piezometers and inform the APS geotechnical engineer of any increasing pressure head or sudden changes in the pressure head.

Following several years of consistent, negative phreatic level readings, piezometer P-111.2 began increasing at a rate of 0.028 feet of head per month starting in May 2020 after displaying approximately 10 months of barometric variability. The increase at P-111.2 did not coincide with a similar increase at P-111.3, located approximately 12.29 feet deeper at the same location, nor did it coincide with a discernable change in tilt at inclinometer I-111. The variability of the P-111.2 data indicate the instrument is responding to changes in barometric pressure and is not submerged below the phreatic surface. P-111.2 may be partially saturated in combination with salt buildup in the instrument that could be affecting its accuracy. The piezometric head indicated by this instrument has remained near 0.5 feet in late 2020 and remained relatively constant until May 2023 while following fluctuations in barometric pressure After May 2023, the average pressure head increased slightly, but this may be due to smaller fluctuations in barometric pressure during the summer months resulting in fewer readings below 0.5 feet of pressure head. APS will continue to monitor this instrument and the nearby instruments for changes in the phreatic level.

The data for the survey monuments and settlement rods during the current review period were recorded by a third-party Professional Surveyor. The survey data do not suggest a significant change or a negative trend related to the performance of the dam.

In May 2023, APS transitioned the inclinometer data collection system from the Durham Geo Slope Indicator (DGSI) Digitilt Classic Inclinometer System to the DGSI Digitilt AT Inclinometer System. APS proceeded with this change after experiencing hardware problems with the Digitilt Classic Inclinometer System in the months prior to May 2023. To check continuity between the two systems, APS performed two surveys in each inclinometer in May 2023 – one survey with the Digitilt Classic Inclinometer immediately followed by one survey with the Digitilt AT Inclinometer. The comparisons between the surveys generally match the known casing features. Consequently, this change required APS to select a new baseline for the surveys performed with the Digitilt AT Inclinometer System. For this review period, there are two baseline datasets – September 2022 and May 2023. Data obtained using the Digitilt AT Inclinometer System are compared to the May 2023 baseline while the historic data are compared to the September 2022 baseline. The shorter timeframes used for the data between baselines during the current review period could result in lower maximum profile change values reported in the above table. The changes to the reference baseline can potentially obscure new or developing trends; however, the known, major trends, including displacement between depths of 8 and 16 feet in I-103 and the variability in the tilt change plots, remain present. The data for the inclinometers over the current review period indicate no significant changes or trends related to the performance of the dam.

5.1.3 CCR and Water Elevations

The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection is presented in the following table:

Water in LAI	Depth of Water (ft) (calculated)	Water Elevation (ft) (estimated)	Measurement Location
Minimum	(No water)	(No water)	Southwest Corner (STA 36+00)
Maximum	(No water)	(No water)	Southwest Corner (STA 36+00)
Present (this inspection)	(No water)	(No water)	Southwest Corner (STA 36+00)
CCR	**Depth of CCR (ft) (calculated)**	**CCR Elevation (ft) (measured)**	**Measurement Location**
Minimum (North Corner)	14	5288[1]	V-ditch inlet on the north end of the LAI (STA 87+04)
Maximum (West Embankment)	73	5278	The West Embankment near the Drop Inlet Structure (STA 57+00)
Present (this inspection)	73	5278	The West Embankment near the Drop Inlet Structure (STA 57+00)

1) At the time of the inspection, the CCR elevation along the Northwest Embankment was at the crest elevation. This elevation does not include the dry-stacked CCR pushed into berms to contain the inflow.

APS completed removing impounded water in February 2022, leaving only CCR and interstitial water below the CCR surface in the reservoir. The CCR impounded in the LAI continues to drain to the LDWP via the Drop Inlet Structure and the Deadpool Sump.

As the LAI began to reach capacity, CCR deposition moved from the old V-ditch on the north end of the East Embankment to the northeast corner of the LAI. Deposited material slopes from northeast (at the north V-ditch) to southwest (at the Southwest Corner). The elevation of the CCR is estimated during the inspection by recording where it is impounded against the slope at the emergency ladders and the distance from the crest to the ash. The depth (thickness) of the CCR at the time of the inspection is estimated by subtracting the bottom of the LAI (EL 5205 feet) from the estimated average ash elevation (the average ash elevation is assumed to be near the Drop Inlet Structure at STA 57+00).

The CCR depths and elevations presented in the above table are assumed to be to the same as the 2021 and 2022 CCR depths and elevations since the LAI no longer receives inflow from the Plant.

5.1.4 Storage Capacity

The maximum storage capacity of the LAI is 5,986 acre-feet (ac-ft) based on the 2012 elevation-area-capacity curve (EAC) (URS 2012). The 2012 EAC is based on a maximum reservoir elevation at 5280 feet, therefore the EAC is unchanged after APS completed the 2022 crest elevation remediation work.

5.1.5 Approximate Impounded Volume at Time of Inspection

The approximate volume of impounded CCR in the LAI at the time of the inspection was 5,732 ac-ft based on the average impounded volume at EL 5278 feet from the 2012 EAC (URS 2012).

5.1.6 Structural Weakness or Operational Change/Disruption

No conditions associated with structural weakness were identified during the field inspection.

As discussed in Section 5.1.1, APS is currently in the process of constructing access roads throughout the reservoir to be used for pre-closure construction activities. This operational change will allow APS to advance the CCR unit's closure in the future.

5.2 LINED DECANT WATER POND

5.2.1 Geometry Changes Since Last Inspection

There have not been any significant changes to the geometry of the unit since the last inspection in 2022.

5.2.2 Instrumentation

The locations of geotechnical and other related instrumentation in the vicinity of the LDWP are shown on Figure 7 – Lined Decant Water Pond (LDWP) Instrumentation Map.

The minimum and maximum recorded readings for each instrument over the October 1, 2022 – September 30, 2023 (current) review period are reported in the following table:

Instrument Name	Minimum	Maximum	Unit
Survey Monuments (10/1/22 to 9/30/23)			
SM7[1]	5215.656	5215.768	Monument Elevation (ft)
SM9[1]	5216.892	5217.071	Monument Elevation (ft)
Open Standpipe Piezometers (10/1/22 to 9/30/23)			
P-18	Dry	Dry	Water Elevation (ft)
P-19	Dry	Dry	Water Elevation (ft)
P-20	Dry	Dry	Water Elevation (ft)
P-21	Dry	Dry	Water Elevation (ft)
P-22	Dry	Dry	Water Elevation (ft)
P-23	5156.46	5156.48	Water Elevation (ft)
P-24	Dry	Dry	Water Elevation (ft)
P-25	Dry	Dry	Water Elevation (ft)

1) Starting in March 2019, a third-party surveyor began collecting the monthly survey monument and settlement rod data instead of APS personnel. The third-party surveyor uses a different post-processing technique than APS personnel, resulting in relatively more variability between measurements than in previous years.

The data for the survey monuments and settlement rods during the current review period were recorded by a third-party Professional Surveyor. The survey data do not suggest a significant change or a negative trend related to the performance of the dam.

The data for the piezometers over the current review period indicate no significant elevation changes or trends related to the performance of the dam. The bottoms of piezometers P-19, P-21, and P-22 were recorded as being wet, but there was no measurable water level throughout the review period. APS believes these values represent run-on that has infiltrated the piezometer from the surface and has not drained, rather than water at the bottom of the Pond 3/native soil interface. APS intends to continue monitoring these piezometers.

5.2.3 CCR and Water Elevations

The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection is presented in the following table:

Water in LDWP	Depth of Water (ft) (observed)	Water Elevation (ft) (measured)	Measurement Location
Minimum	0.6	5205.0	Staff gauge near the East Embankment
Maximum	0.8	5205.2	Staff gauge near the East Embankment
Present (this inspection)	0.8	5205.2	Staff gauge near the East Embankment
CCR	**Depth of CCR (ft)**	**CCR Elevation (ft)**	**Measurement Location**
Minimum	Not applicable	Not applicable	Not applicable
Maximum	Not applicable	Not applicable	Not applicable
Present (this inspection)	Not applicable	Not applicable	Not applicable

The LDWP does not impound a significant quantity of solids. It is used to impound CCR transport water decanted from the LAI. Therefore, the CCR depth (thickness) is minimal and not normally measured.

With the end of deposition in the LAI, the water elevation in the LDWP has fallen below the elevation of the staff gauge along the East Embankment (Appendix B Photo IMG_2689). The water elevation during the inspection is approximated using the original Ash Pond 3 surface topography and the current water area. The minimum elevation of the LDWP (top of Ash Pond 3) is EL 5202 feet (in the southwest corner) based on Sections D and E in APS Drawing FC-C-17-ADS-150793-4 (APS 2004).

5.2.4 Storage Capacity

The storage capacity of the LDWP is 435 ac-ft at EL 5213.2 feet. The maximum storage capacity of the LDWP is 517 ac-ft at EL 5216 feet based on the 2012 EAC (URS 2012).

5.2.5 Approximate Impounded Volume at Time of Inspection

The approximate volume of impounded water in the LDWP at the time of the inspection was approximately 6.08 ac-ft. This value is based on approximately 7.6 acres of water 0.8 feet deep.

5.2.6 Structural Weakness or Operational Change/Disruption

No conditions associated with structural weakness were identified during the field inspection.

APS has been drawing down the reservoir level in the LDWP since 2019. A review of the operating record indicated the LDWP was operated as intended over the previous year.

There are no significant changes to the structural integrity of the dam since the 2022 inspection.

5.3 COMBINED WASTE TREATMENT POND

5.3.1 Geometry Changes Since Last Inspection

APS retained a dredging subcontractor to remove CCR from the bottom of the CWTP reservoir in late 2022. Dredging began in early January 2023 and was in progress during this inspection. As part of this scope, the decant cells on the west side of the reservoir will be removed (at the time of the inspection, one decant cell remained and another was substantially reduced in size).

APS designated an offset from the toe of the CWTP embankment to prevent the dredge from undermining the embankment. Based on observations along the crest and the portion of the upstream slope above the water surface, the dredging activity does not appear to have impacted the CWTP embankment. APS does not intend to make changes to the geometry of the CWTP embankment as part of the dredging activities.

5.3.2 Instrumentation

There are no instruments associated with the CWTP embankment.

5.3.3 CCR and Water Elevations

The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection is presented in the following table:

Water in CWTP	Depth of Water (ft) (calculated)	Water Elevation (ft) (measured)	Measurement Location
Minimum	Not available	Not available	APS does not regularly record the water elevation.
Maximum	Not available	Not available	
Present (this inspection)	7.35	5326.35 (NGVD29)	Spillway Crest
CCR	**Depth of CCR (ft) (estimated)**	**CCR Elevation (ft) (estimated)**	**Measurement Location**
Minimum	7	5328	-
Maximum	17	5332	Remaining decant cell. *Based on 2022 bathymetry.
Present (this inspection)	7-17	5328 to 5332	Remaining decant cell. *Based on 2022 bathymetry.

*The majority of the solids are caught in the decant cells on the west side of the CWTP.

CCR solids in the CWTP reservoir are typically submerged; the CCR elevations in the table above are based on a bathymetric survey conducted approximately one month after the 2022 annual inspection in advance of dredging for Closure by Removal activities in conjunction with the most recent estimates of the dredging progress. The maximum, minimum, and present CCR depth (thickness) in the table above reflect the variable subsurface at the CWTP. The maximum CCR thickness is on the berm of the remaining decant cell in the southwest quarter of the CWTP (Photos IMG_2911 and IMG_2924). The minimum CCR thickness is estimated to be approximately 7 feet based on the dredging progress.

APS does not regularly record or track the water elevation in the CWTP. With the construction of the BASWR Tank, the CWTP no longer receives inflow from the Plant. A water level transducer

installed in the reservoir adjacent to the pipe that conveys inflow from the discharge canal to the CWTP is intended to keep the reservoir level relatively constant (Photo IMG_2800).

5.3.4 Storage Capacity

The estimated storage capacity of the CWTP reservoir is 164 ac-ft.

5.3.5 Approximate Impounded Volume at Time of Inspection

The volume of impounded water and solids in the CWTP reservoir at the time of the inspection was estimated to be 138.46 ac-ft based on the impounded water elevation.

5.3.6 Structural Weakness or Operational Change/Disruption

In addition to areas on the shoulder of the crest with loose soil, there is a wide, shallow hole on the upstream slope of the North Embankment (Photo IMG_2818) and several riprap boulders have erosion underneath them. These conditions indicate slow, but progressive erosion on the embankment.

APS ceased discharging to the CWTP by November 23, 2020. The current water level is maintained by pumping water from the discharge canal into the reservoir as the Navajo Mine continues to use the CWTP as a water source for its ongoing operations. The CWTP reservoir elevation is currently level-controlled via automated sensors. At the time of the inspection, APS was in the process of dredging the CWTP to remove the impounded CCR.

5.4 DRY FLY ASH DISPOSAL AREA

5.4.1 Geometry Changes Since Last Inspection

Cell 3 has reached approximately the same elevation as the South Embankment of the LAI. APS currently uses a portion of the Cell 3 surface to stockpile wet lightweight aggregate fill designated to be used for access road construction. The lightweight aggregate fill is stockpiled, allowed to drain, and then removed. Some CCR and CCR-impacted material has been placed in Cell 2; however, APS began placing CCR in Cell 4 after the 2021 inspection and has primarily placed CCR in Cell 4 since 2022.

5.4.2 Instrumentation

There are no instruments associated with the DFADA.

5.4.3 CCR Volume

The approximate volume of CCR in the DFADA at the time of the inspection was estimated to be 7,390.9 ac-ft in the four DFADA cells based on the November 2023 survey performed by the ash placement contractor (FHI).

5.4.4 Structural Weakness or Operational Change/Disruption

The water on the slope just above the Cell 4 toe indicates there is an area of reduced drainage within the DFADA. It was not clear at the time of the inspection whether this was due to a partial blockage in the pipe leading to the leachate collection pond, the presence of one or more lower-permeability lifts of ash, or another condition. Water continually present on a slope has the potential to lead to a destabilizing condition and its presence should be investigated.

There have been no operational changes or disruptions to the CCR unit in the previous year.

5.5 RETURN WATER POND

5.5.1 Geometry Changes Since Last Inspection

There have not been any significant changes to the geometry of the unit since the last inspection in 2022. APS's contractor recently cleaned the FGD cell; however, the pond geometry is unchanged.

5.5.2 Instrumentation

There are no instruments associated with the RWP.

5.5.3 CCR and Water Elevations

The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection is presented in the following table:

Water in RWP	Depth of Water (ft) (observed)	Water Elevation (ft) (measured)	Measurement Location
Minimum (RWP Cell)	4.63	5372.68	Southwest corner of the cell.
Minimum (FGD Cell)	0	(Not applicable)	South corner of the cell.
Maximum (RWP Cell)	6.46	5374.51	Southwest corner of the cell.
Maximum (FGD Cell)	7.83	5375.56	Northwest corner of the cell.
Present (this inspection, RWP Cell)	6.46	5374.51	Southwest corner of the cell.
Present (this inspection, FGD Cell)	0	(no water)	South corner of the cell.
CCR	**Depth of CCR (ft)**	**CCR Elevation (ft)**	**Measurement Location**
Minimum	Not applicable	Not applicable	Not applicable
Maximum	Not applicable	Not applicable	Not applicable
Present (this inspection)	Not applicable	Not applicable	Not applicable

Based on as-built drawing FC45CM-C-65-WP-AP-200485-13 (APS 2019), the bottom of the RWP is at EL 5368.05 feet. Water depths are estimated relative to this value. The maximum and minimum water values are based on the water depths observed during the 2022 inspection and this inspection. The RWP was assumed to be at its maximum impounded volume within the last year during the 2022 inspection and reduced to the current (minimum) impounded volume during this inspection. APS does not regularly record the water level of the RWP.

The RWP was designed to provide temporary storage of LAI/LDWP and Pond 3 pumphouse (liquid) discharges, thus, it does not impound a significant quantity of solids. Therefore, the CCR depth is minimal and not normally measured. With no water in the FGD cell during this inspection due to the recent cleaning activities, the impounded volume consisted of unexcavated FGD.

5.5.4 Storage Capacity

The estimated storage capacity of the RWP is 38.6 ac-ft at EL 5379 feet.

5.5.5 Approximate Impounded Volume at Time of Inspection

The approximate impounded volume in the RWP cell at the time of the inspection was 17.27 ac-ft. The approximate impounded volume in the FGD cell at the time of the inspection was 0.12 ac-ft.

5.5.6 Structural Weakness or Operational Change/Disruption

APS installed a new pipe connecting the RWP and FGD Pond cells. The new pipe allows APS to switch the functions of the two cells, if desired.

No conditions associated with structural weakness were identified during the field inspection.

No conditions that are or could be disruptive to the operation and safety of the CCR unit and appurtenant structures were identified during the field inspection. The FGD cell is operated independently of the RWP cell and APS may elect to remove FGD from time to time.

6.0 OPERATION AND MAINTENANCE RECOMMENDATIONS

6.1 LINED ASH IMPOUNDMENT

6.1.1 Current Lined Ash Impoundment Action Items

The following items were noted during inspections as requiring attention.

Action Item	Action Status
1) Ruts and a depression were observed along the West Embankment.	Regrade the West Embankment crest and instruct haul truck operators to vary their travel paths to prevent creating ruts. Repair the depression near the southern access ramp.
2) Shallow holes along the East Embankment crest were observed along the anchor trench.	Monitor the holes. Repair any cracks in the embankment that extend deeper than 1 foot. Repair any cracks in the anchor trench that extend below the anchor trench excavation or begin to manifest in other parts of the crest.
3) There are vertical scarps at the top of the downstream slope at the southern end of the East Embankment.	Monitor the embankment and repair the slope if the scarps expand or cracks begin to form near the scarps.
4) There are bulges and depressions along the upstream slope in the Southwest Corner of the LAI.	The presence and identified causes of the bulges and depression should be recorded and the APS geotechnical engineer should be consulted. Repair documentation should be recorded.
5) The liner along the South Embankment is very tight.	The tension could be released by excavating the anchor trench, pulling extra liner out to provide slack, and backfilling the trench.
6) There is a new erosion gully on the downstream slope of the East Embankment north of the laydown yard area.	Repair the slope.
7) Erosion rills and gullies on the downstream embankment slopes.	Continue ongoing repair program for repairing rills if the erosion depth exceeds 1 foot. NOTE: This will always be an ongoing maintenance activity.
8) There are several tears in the liner along the upstream slope on the South, West, and Northwest Embankments.	Repair the tears under the direction of the APS geotechnical engineer.

Action Item	Action Status
9) There are several cuts and torn horizontal seams in the liner along the upstream slope on the South Embankment, primarily near the Southwest Corner.	Repair the cuts and torn seams under the direction of the APS geotechnical engineer.
10) There are tears in the exposed liner at the cenosphere mining area in the Southwest Corner.	The working area for the cenosphere mining operation is built into the reservoir area and the liner damage is not affecting the integrity of the embankment. The area should be monitored.
11) There is some debris in the reservoir from previous geotechnical investigations.	Remove the debris.
12) There is fugitive CCR on the northwest, north, and east sides of the LAI, including the crest, downstream slopes, and downstream toe.	The fugitive CCR should be removed and control measures described in the FCPP Dust Control Plan should be implemented to the extent necessary to prevent fugitive CCR from leaving the LAI.
13) There is water flowing out of the South Embankment toe drain.	Measure the flowrate on a weekly basis as part of the 7-day CCR inspections and provide the measurements to the APS geotechnical engineer.
14) The diversion channel in the reservoir along the Northwest Embankment was filled with sediment during this inspection.	The diversion channel should be re-excavated or replaced with a permanent solution and the design surface flow regime should be maintained at all times.
15) The West Embankment crest south of the Drop Inlet Structure contains a high proportion of finer ash particles.	Investigate the origin of the finer particles and install an aggregate surface course.
16) MUX board #2 sporadically records repeated or erroneous data.	Inspect the data acquisition system and make necessary repairs.
17) Some inclinometer surveys are inconsistent between months.	Ensure staff are properly trained on correct data collection techniques.
18) The 8-inch and 16-inch pipes at the bottom of the Drop Inlet Structure are both flowing into the LDWP.	Check to see if the 8-inch pipe is clogged or if sediment has filled the Drop Inlet Structure to the point that water can flow through both pipes.

6.1.2 Previous Lined Ash Impoundment Action Items

The following items were noted during the three previous annual inspections and have been addressed.

Action Item and First Instance of Observation	Resolution
1) Ruts were observed on the Northwest Embankment crest (2022 inspection).	Regrade the crest to repair the ruts. Drivers should be instructed to avoid traversing through muddy areas.
2) The torn seams are leaking water (2022 inspection).	The seams were not leaking water during the 2023 inspection. The water source may have been depleted by the time the inspection was conducted.
3) In mid-September 2022, the vibrating wire piezometer data collection electronics began failing intermittently (2022 inspection).	The datalogger was repaired and uninterrupted data collection resumed on November 30, 2022.
4) There is an erosion gully on the downstream slope of the East Embankment (2022 inspection).	The area is covered with fugitive CCR, obscuring the erosion and filling in the gully.
5) The phreatic level indicated by piezometer P-102.3 is increasing, but more slowly than in previous years (since late 2019). The phreatic level indicated by piezometer P-111.2 has leveled and is no longer increasing at the same rate it was during most of 2020.	The phreatic level has been constant for the past year. Continue to monitor these and all the piezometers, reviewing the data for signs of increased phreatic levels. The APS geotechnical engineer should be consulted during these reviews.
6) The LAI does not have sufficient capacity to retain the 72-hour PMP with 2.8 feet of residual freeboard as designed. The West Embankment crest is at approximate EL 5279 feet instead of the design value at EL 5280 feet. There is approximately 1.33 feet of freeboard at the West Embankment. In addition, the freeboard designated along the Northwest and East Embankments is not available due to the presence of ash up to the embankment crest (2021 inspection).	Raise the West Embankment crest to its design elevation and excavate a ditch around the perimeter of the embankment to divert stormwater to the Southwest Corner. Pump the free-standing water in the Southwest Corner of the pond down to allow sufficient capacity to retain the 72-hour PMP.
7) Ruts were observed on the downstream side of the South Embankment crest and the downstream side of the East Embankment crest (2021 inspection).	The ruts were not observed during the 2022 inspection.

Action Item and First Instance of Observation	Resolution
8) Two protrusions were observed beneath the liner on the upstream slope near the midpoint of the South Embankment (2021 inspection).	The protrusions in the liner observed during the 2021 inspection were not observed during the 2022 inspection. It was not clear if these had been repaired, covered with ash, or if the protrusions had sunk into the clay core. Continue to monitor the liner for abnormalities and repair them under the direction of the APS geotechnical engineer.
9) Inflow from the northernmost leg of the V-ditch has nearly spilled onto the crest, resulting in the addition of temporary berms to control the flow path (2020 inspection).	APS constructed temporary diversion berms to keep inflows to the LAI from reaching the crest. APS ultimately closed the V-ditch and stopped depositing CCR into the LAI in 2021.
10) There is a small hole in the crest of the LDWP along the toe of the LAI West Embankment (2019, 2020 inspections).	The hole appeared to be partially filled during the 2020 inspection and was not observed during the 2021 inspection.
11) Minor erosion rills on the downstream slope of the West Embankment (various locations observed during the 2015, 2017, 2018, and 2020 inspections).	The erosion rills were repaired.

6.2 LINED DECANT WATER POND

6.2.1 Current Lined Decant Water Pond Action Items

The following items were noted during inspections as requiring attention.

Action Item	Action Status
1) The liner in the anchor trench in the central portion of the West Embankment appeared to be pulling out of the trench.	Continue to monitor the liner in the anchor trench. Re-anchor the liner if the liner continues to pull out of the trench.
2) The liner is exposed at the edge of the anchor trench near the midpoint of the East Embankment.	Cover the liner with additional bottom ash.
3) Minor erosion holes, rills, and depressions were observed on the West and South downstream slopes of the LDWP at the time of the inspection.	Continue the ongoing repair program for repairing rills when the erosion depth exceeds 1 foot. NOTE: This will always be an ongoing maintenance activity.
4) There is erosion on the embankment where the Deadpool Pump pipe runs up the slope.	The erosion should be repaired to prevent damage to the pipe.
5) There is a small hole in the liner at the crest elevation along the North Embankment.	Repair the hole.
6) The seam connecting two adjacent sheets of liner has failed along approximately 10 inches at the North Embankment.	Repair the liner.
7) Ruts were observed along the upstream half of the South Embankment crest. Ponded rainwater was observed in the southwest corner near the Interstitial Evacuation Pump during the 2019 inspection and it appears there is still a low spot in this area.	Repair the ruts. Regrade the low spot.
8) Portions of the outer pipes for the siphon lines are exposed along the East Embankment crest.	Place and compact additional fill in these areas to prevent damage to the pipes.
9) The sign identifying the CCR unit fell down.	Re-erect the sign.
10) Ant hills were observed in the crest.	Mark ant hills and animal burrows identified during weekly inspections. NOTE: This will always be an ongoing maintenance activity.

6.2.2 Previous Lined Decant Water Pond Action Items

The following items were noted during the three previous annual inspections and have been addressed.

Action Item and First Instance of Observation	Resolution
1) Minor erosion rilling was observed on the North, West, and South downstream slopes of the LDWP at the time of the inspection (2015, 2016, 2017, 2018, 2019, and 2020 inspections).	The erosion rills observed during the previous inspections were repaired after the inspection concluded and additional rainfall at the site created new rills. This is an ongoing maintenance requirement.
2) There is a small hole in the crest of the LDWP along the toe of the LAI West Embankment (2019 and 2020 inspections).	The hole was not observed during the 2021 inspection and may have been filled with ash via erosion.
3) An ant hill was observed in the crest (2020 inspection).	The ant hill was removed.

6.3 COMBINED WASTE TREATMENT POND

6.3.1 Current Combined Waste Treatment Pond Action Items

The following items were noted during inspections as requiring attention.

Action Item	Action Status
1) Vegetation (grass, small trees, and shrubs) was observed on the upstream and downstream slopes during this inspection.	The grasses should be cut and vegetation removal along the upstream and downstream slopes should be performed in accordance with the NMOSE vegetation maintenance guidelines "*Vegetation Management on Dams*" (2011) reference. NOTE: This will always be an ongoing maintenance activity.
2) Instances of erosion were observed along the upstream and downstream slopes.	Continue to monitor these areas and repair erosion if it exceeds 1 foot in depth.
3) Erosion on the slopes is beginning to undermine riprap boulders.	Erosion under the riprap boulders should be repaired.
4) Erosion along the slopes resulting in an irregular face.	Continue to monitor the area repair the area if required to bring it to the design slope (2H:1V).
5) Ant hills were observed along the embankment crest and animals have been known to burrow in the area.	Repair ant hills and animal burrows as needed. NOTE: This will always be an ongoing maintenance activity.
6) A set of shallow holes was observed on the downstream shoulder of the North Embankment near the 18-inch pipe that transfers water from the canal to the CWTP in the vicinity of a set of shallow depressions observed during the 2021 inspection.	Regrade this area and repair the holes.
7) A stretch of loose material was observed on the upstream half of the crest near the historic location of an 11.5-foot-long tension crack.	This area should be regraded and repaired.
8) There was a series of holes up to 1.5 feet deep and a separate hole approximately 1 foot deep on the downstream shoulder of the East Embankment.	Monitor the erosion holes and repair them if they are observed to expand.
9) Areas with loose soil or a series of holes along the downstream shoulder generally have less vegetation.	Operators should track the presence of holes in the crest and possible erosion or sloughs on the downstream slope as part of their weekly inspections.

Action Item	Action Status
10) There is a wide, shallow hole on the upstream slope of the North Embankment.	The hole should be repaired.
11) The upstream edge of the crest near where the tension crack observed during the 2020 inspection appeared to be loose over a distance of approximately 10 feet.	Investigate the cause of the weak soil on the crest and repair this section of the crest.

6.3.2 Previous Combined Waste Treatment Pond Action Items

The following items were noted during the three previous annual inspections and have been addressed.

Action Item and First Instance of Observation	Resolution
1) A set of shallow holes was observed on the downstream shoulder of the North Embankment near the 18-inch pipe that transfers water from the canal to the CWTP (2022 inspection).	The holes were not present during the 2023 inspection.
2) Two erosion holes up to 9 inches deep were observed on the crest along the curved section of the embankment (2022 inspection).	The holes were not present during the 2023 inspection.
3) The soil along the upstream edge of the crest was observed to be loose and weak over a distance of approximately 6 feet near the longitudinal crack observed in 2020 (2021 inspection).	Investigate the cause of the weak soil and repair the crest.
4) Two small erosion holes were observed on the downstream shoulder of the East Embankment crest (2021 inspection).	The holes were not present during the 2022 inspection.
5) A 6-foot-long longitudinal crack was observed on the downstream slope where a piece of riprap is separating from the soil (2020 and 2021 inspections).	The crack was not observed during the 2022 inspection. It is possible that the riprap boulder has been dislodged.
6) A 7-inch-deep erosion hole was observed on the downstream shoulder of the East Embankment crest (2021 inspection).	The erosion hole was not observed during the 2022 inspection.
7) An 11.5-foot-long longitudinal crack was observed on the downstream slope near the weak crest soil (2018 and 2020 inspections).	The crack was not observed during the 2021 inspection.

6.4 DRY FLY ASH DISPOSAL AREA

6.4.1 Current Dry Fly Ash Disposal Area Action Items

The following items were noted during inspections as requiring attention.

Action Item	Action Status
1) There is erosion at the Stormwater Diversion Channel inlet and outlet, as well as along the extension constructed as part of the Cell 4 expansion where the previous alignment terminated.	Monitor erosion and repair the area. Alternately, place additional sandstone riprap in the eroded area.
2) The stilling basin constructed as part of the Cell 4 Stormwater Diversion Channel extension is filled with sediment on the upstream side of the weir wall.	Remove the sediment.
3) Several plants are growing through the Pyramat geosynthetic along the western toe of Cell 1.	Remove the vegetation.
4) A colony of reeds is growing in the Cell 1 leachate collection pond.	The reeds should be removed.
5) There was saturation on the slope just above the Cell 4 toe, near the Cell 4 leachate collection pond. The presence of white salt deposits throughout the saturated area indicated this portion of the slope has been saturated for an extended period of time.	Investigate the apparent buildup of water along the toe of the Cell 4 western slope in relation to the flowrate into the leachate collection pond.
6) The junction of Cells 1 and 4 is susceptible to erosion and there is a potential that ash in Cell 4 could be carried down the slope and away from the DFADA during high velocity flow events.	Construct a diversion berm or dedicated flow channel to prevent ash from being carried offsite.
7) The junction of the LAI and Cell 3 has been subject to historic erosion. Currently there are reeds and sediment in the drainage ditch along the Cell 3 toe that would impede stormwater routing.	The reeds should be removed. The area should be inspected after storm events and sediment should be removed as necessary.

6.4.1 Previous Dry Fly Ash Disposal Area Action Items

The following items were noted during the three previous annual inspections and have been addressed.

Action Item and First Instance of Observation	Resolution
1) The Cell 4 leachate collection pond was empty at the time of the inspection (2022 inspection).	The water level in the leachate collection pond should be monitored as part of the weekly inspections and the leachate collection system components (e.g., pipes, drains) should be investigated for clogs, leaks, and other impediments.

6.5 RETURN WATER POND

6.5.1 Current Return Water Pond Action Items

The following items were noted during inspections as requiring attention.

Action Item	Action Status
1) Some vegetation is beginning to grow in the anchor trenches on the crest and along the downstream slopes.	Vegetation removal should be performed in accordance with the NMOSE vegetation maintenance guidelines "*Vegetation Management on Dams*" (2011) reference.
2) FGD was spilled on the crest, downstream slopes, and the outer berm around the FGD cell due to the recent FGD cell cleaning activities.	When periodically cleaning the pond, subcontractors should remove spilled CCR in accordance with the APS Four Corners CCR Dust Control Plan prior to demobilizing from the site.
3) The liner appeared to be disturbed in the north corner and along the Northeast Embankment.	Monitor this area and repair the liner/trench if the disturbance begins to affect the embankment or the structural integrity of the CCR unit.
4) The downstream drainage ditch on the western corner of the RWP is filled with sediment to the extent that the drain pipe under the entrance road is almost completely blocked.	The drainage ditch should be cleared so that the design run-on cannot overtop the ditch and enter the RWP.

6.5.2 Previous Return Water Pond Action Items

The following items were noted during the two previous annual inspections and have been addressed. The RWP was placed into service in October 2020.

Action Item	Action Status
1) Shallow holes observed along the Northeast Embankment during the 2021 inspection appear to have developed into a shallow erosion feature (2022 inspection).	The shallow erosion feature was not apparent during the 2023 inspection.
2) Tension cracks were observed on the slope of the incised drainage ditch along the western corner of the pond, downstream of the FGD cell.	This area should be monitored for sloughs that could impede the drainage characteristics in the western corner.
3) The two Flowserve horizontal base-mounted pumps at the downstream toe of the Northwest Embankment were both subject to work requests at the time of the inspection (2021 inspection).	The pumps were repaired.
4) The hinge for the access gate at the southern entrance to the RWP is broken (2021 inspection).	The gate was repaired.
5) The FGD Pond was observed to be at "full capacity" during a series of weekly inspections in December 2020 and January 2021. In addition, the RWP and FGD cells were near full capacity during the 2021 inspection.	Both cells were several feet lower during the 2022 inspection.

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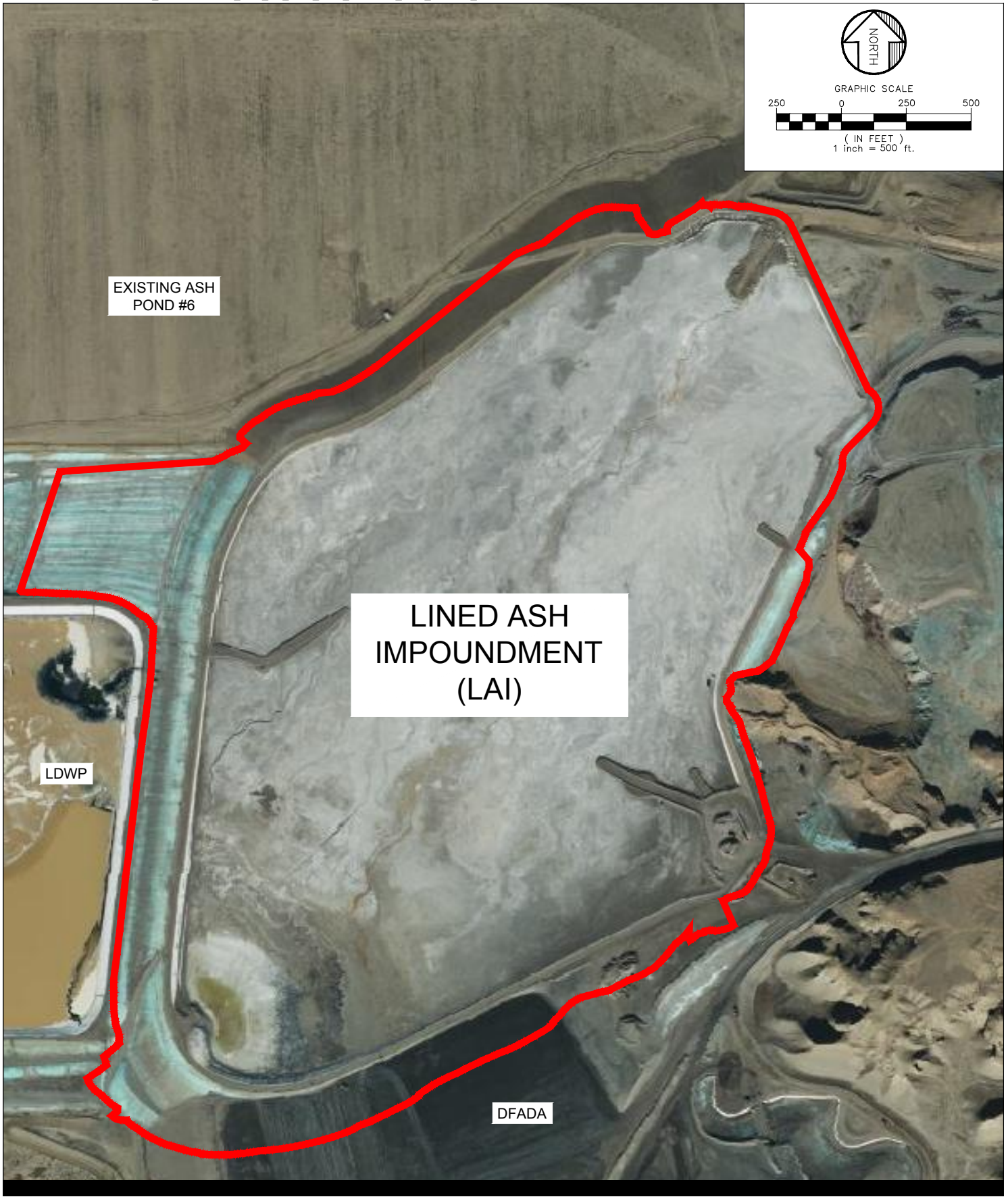
FIGURES

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 1 - LAI.DWG
ANSI A 8.5" x 11"



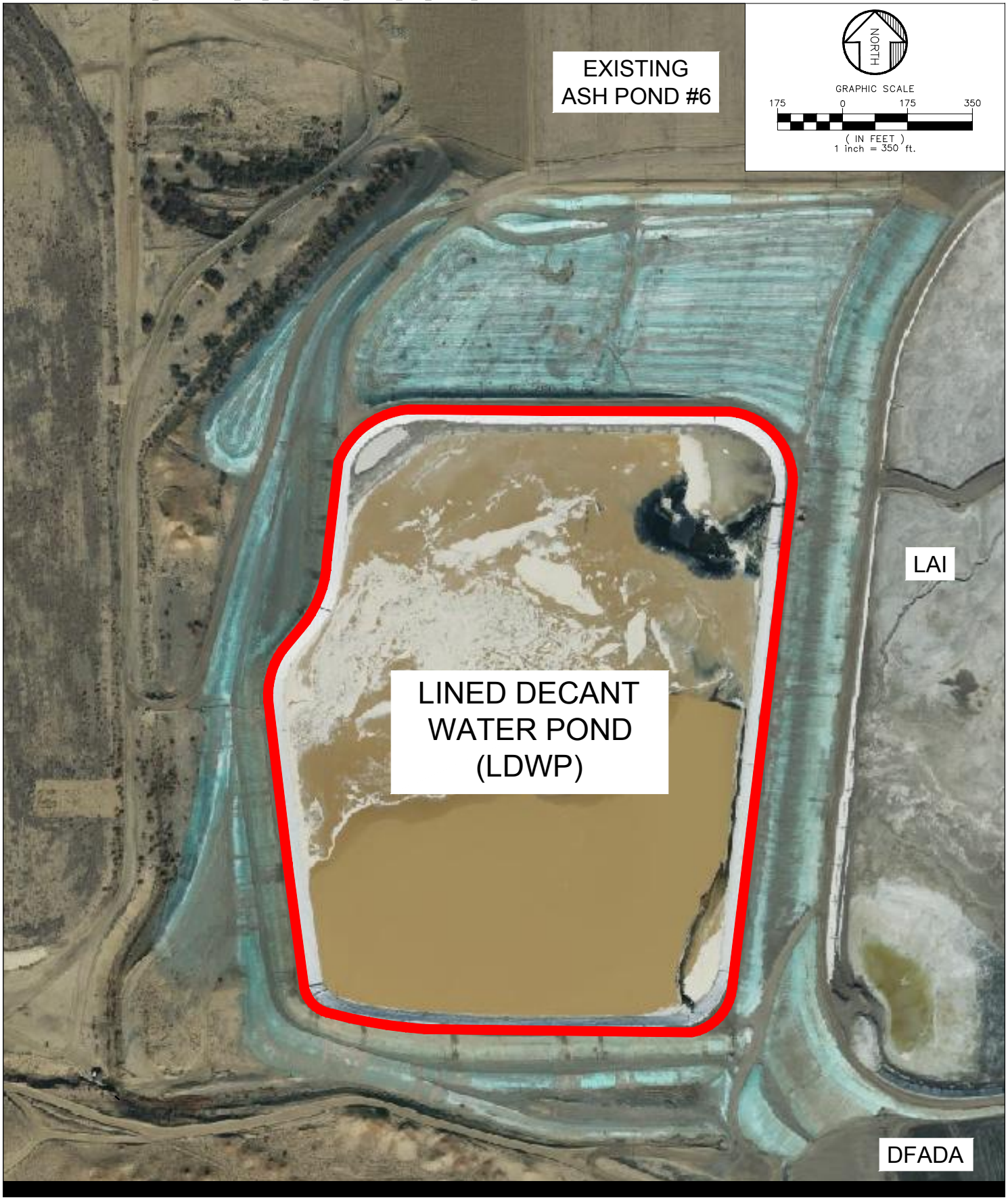
FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

LINED ASH IMPOUNDMENT (LAI)

AECOM

FIGURE 1

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 2 - LDWP.DWG
ANSI A 8.5" x 11"



FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

LINED DECANT WATER POND (LDWP)

AECOM

FIGURE 2

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 3 - CWTP.DWG

ANSI A 8.5" x 11"

FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

COMBINED WASTE TREATMENT POND (CWTP)

AECOM

FIGURE 3

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 4 - DFADA.DWG
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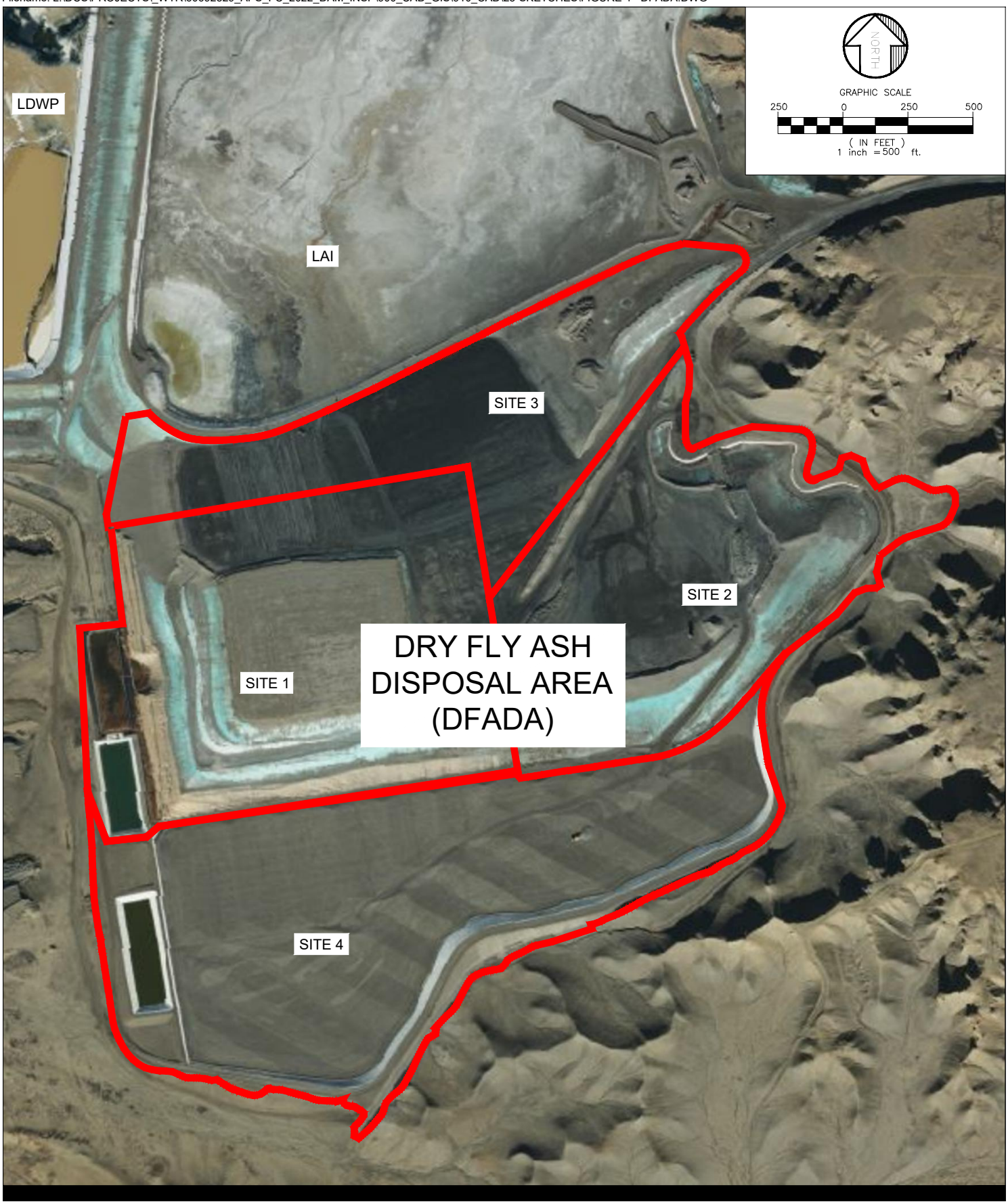


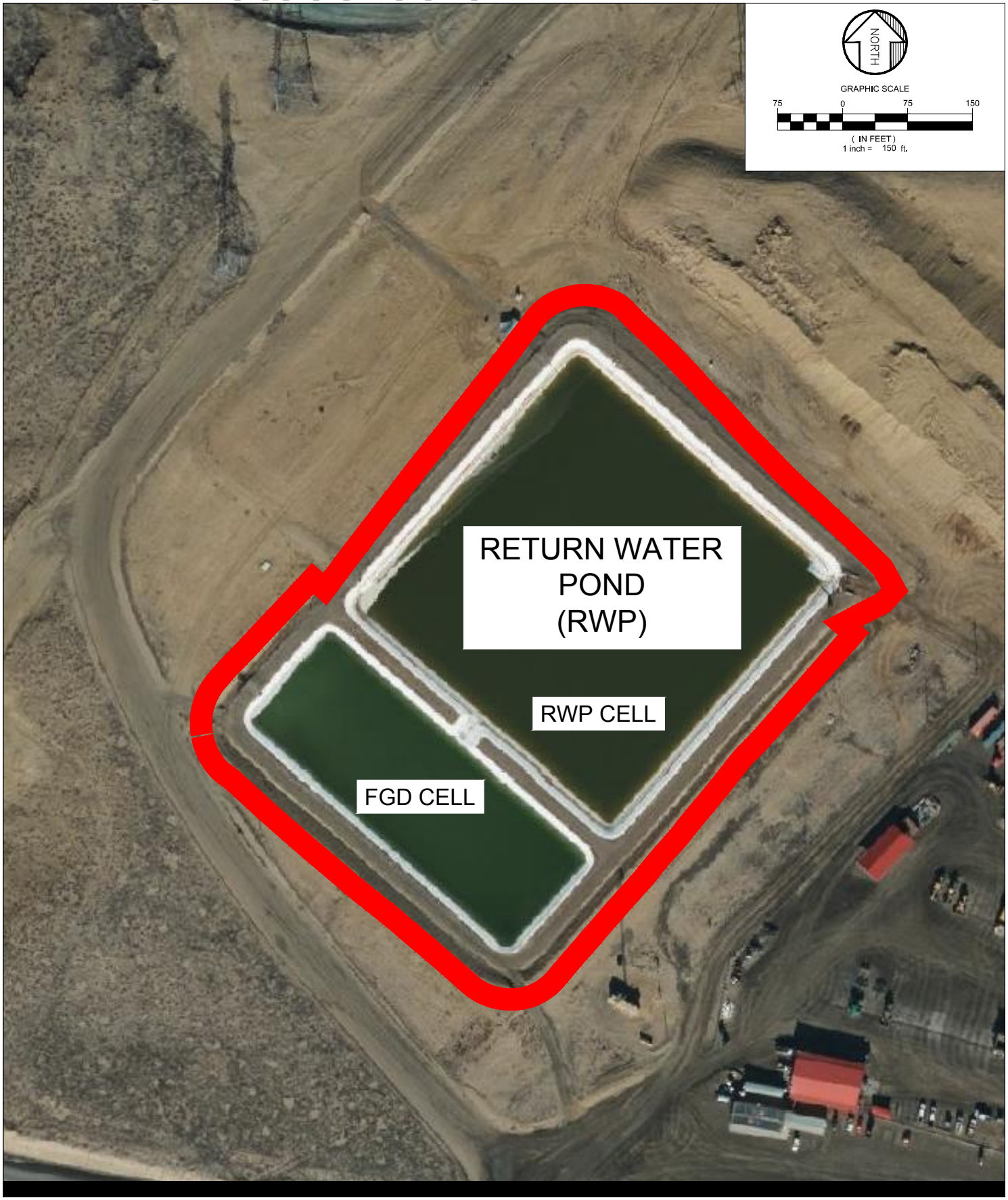
FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

DRY FLY ASH
DISPOSAL AREA
(DFADA)

AECOM

FIGURE 4

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 5 - RWP.DWG
ANSI A 8.5" x 11"



FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

RETURN WATER POND (RWP)

AECOM

FIGURE 5

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60670439_APS_FCPP_2021_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 6 - LAI INSTRUMENTATION MAP.DWG
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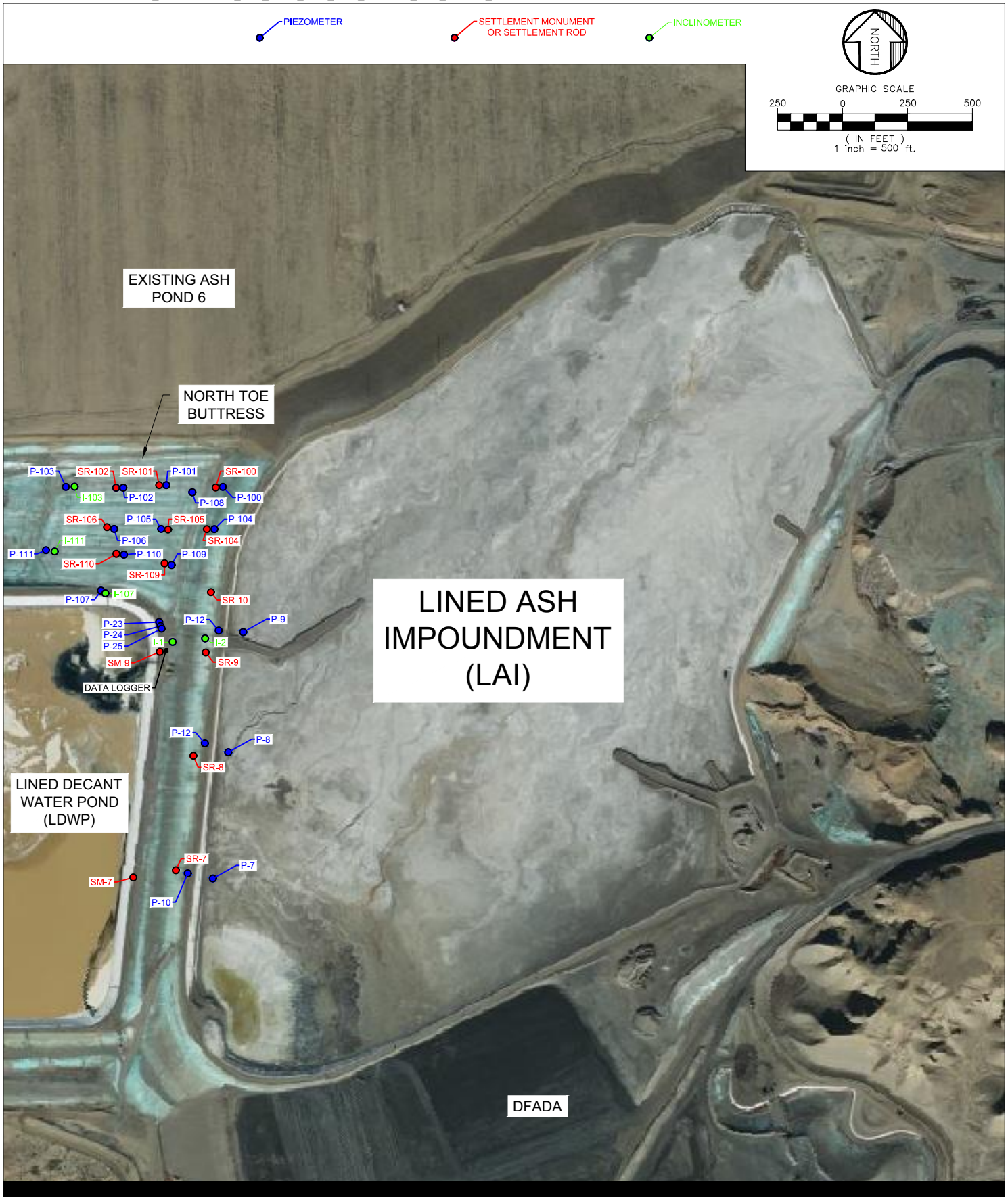

FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

LINED ASH IMPOUNDMENT (LAI) INSTRUMENTATION MAP

AECOM

FIGURE 6

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 7 - LDWP INSTRUMENTATION MAP.DWG
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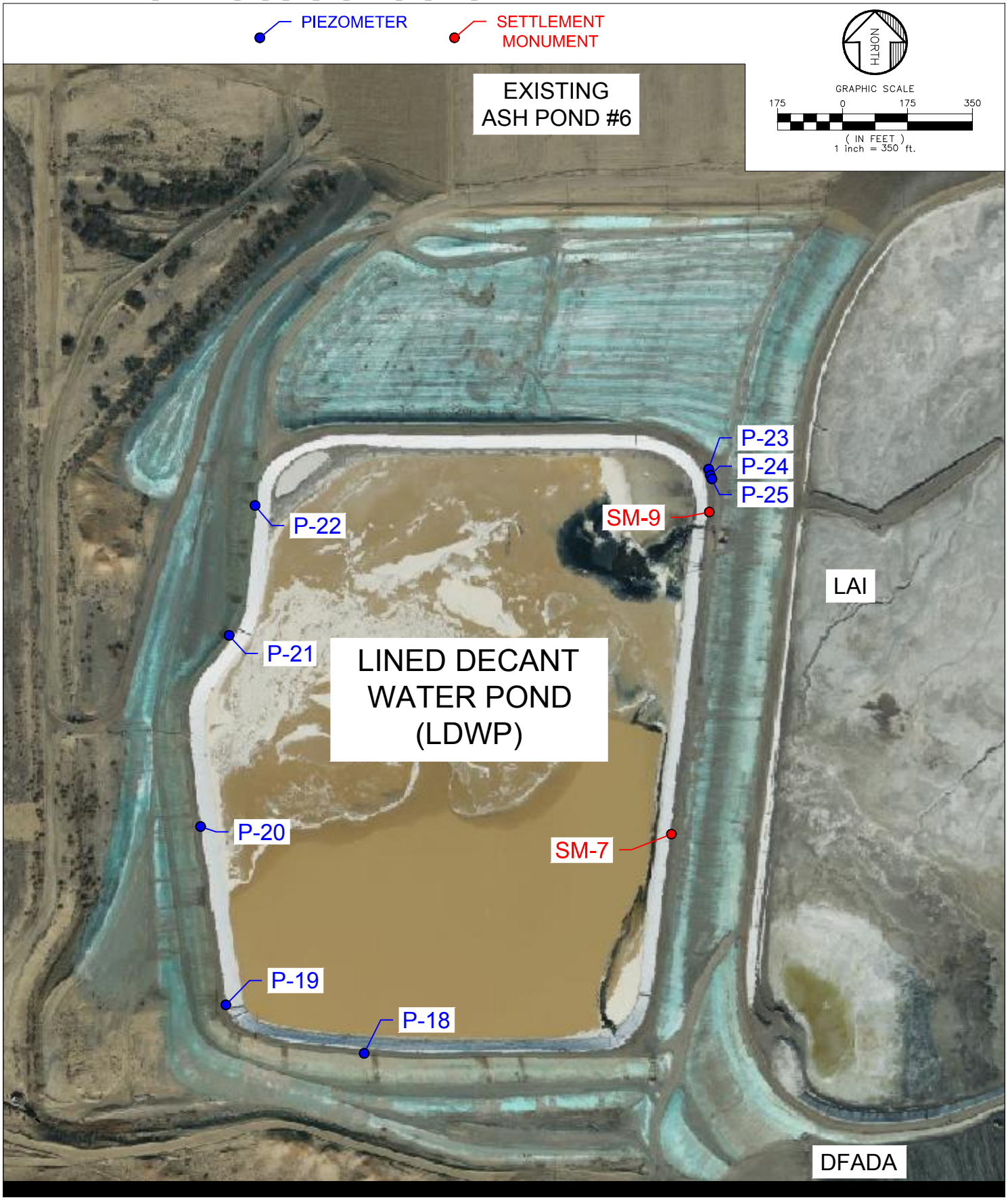


FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

LINED DECANT WATER POND (LDWP) INSTRUMENTATION MAP

AECOM

FIGURE 7

APPENDIX A

LINED ASH IMPOUNDMENT (LAI) PHOTO LOG

20231115 – IMG_2283

The South Embankment crest and upstream slope, facing southwest from the eastern end.

20231115 – IMG_2292

The South Embankment upstream slope, facing southwest from the middle of the embankment.

20231115 – IMG_2293

The South Embankment upstream slope, facing northeast from the middle of the embankment.

20231115 – IMG_2296

The South Embankment upstream slope with a very tight liner and irregular, steeper areas.

20231115 – IMG_2303
A piece of plywood along the liner, separated by a thin layer of ash.

20231115 – IMG_2306
Liner tears at an access ramp into the reservoir.

20231115 – IMG_2311

Two tears in the liner in the Southwest Corner, near the staff gauge. Also observed during the 2022 inspection.

20231115 – IMG_2313

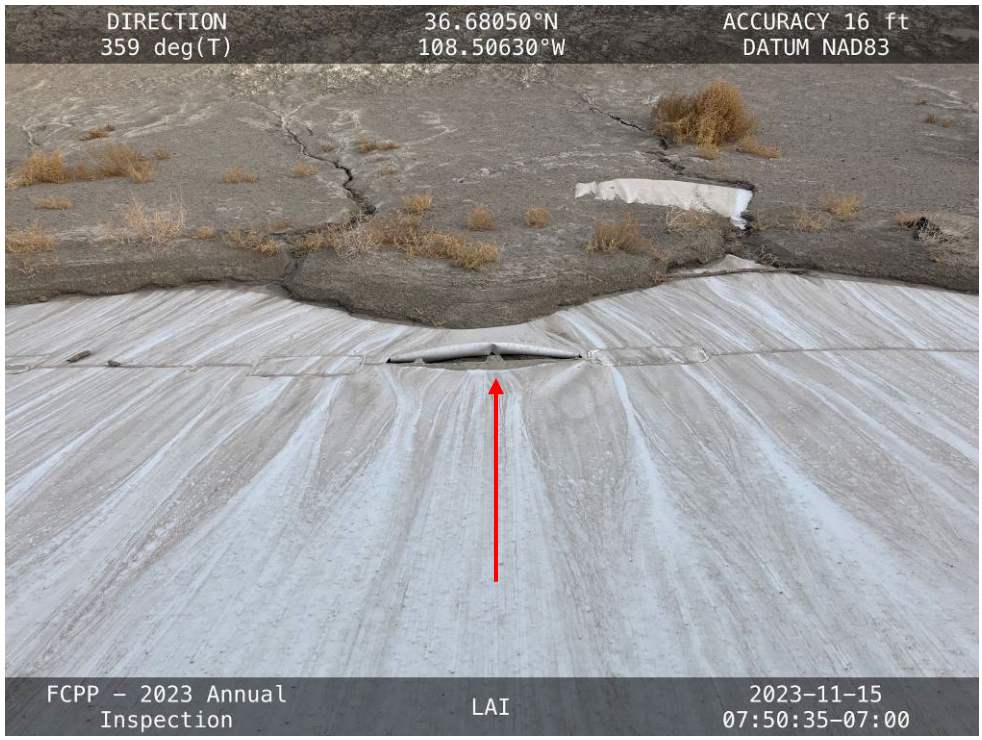
The LAI staff gage at STA 36+00 at the time of the inspection.

20231115 – IMG_2314
The upstream slope of the South Embankment, facing west toward the Southwest Corner.

20231115 – IMG_2320
Exposed liner within the reservoir, indicating bulges below the ash.

20231115 – IMG_2325

Undulations in the liner and tears along the horizontal seam. Also observed during the 2022 inspection.



20231115 – IMG_2327

A tear along the horizontal seam in the Southwest Corner. Also observed during the 2022 inspection.

20231115 – IMG_2334

The upstream slope of the South Embankment, facing east from the Southwest Corner.

20231115 – IMG_2335

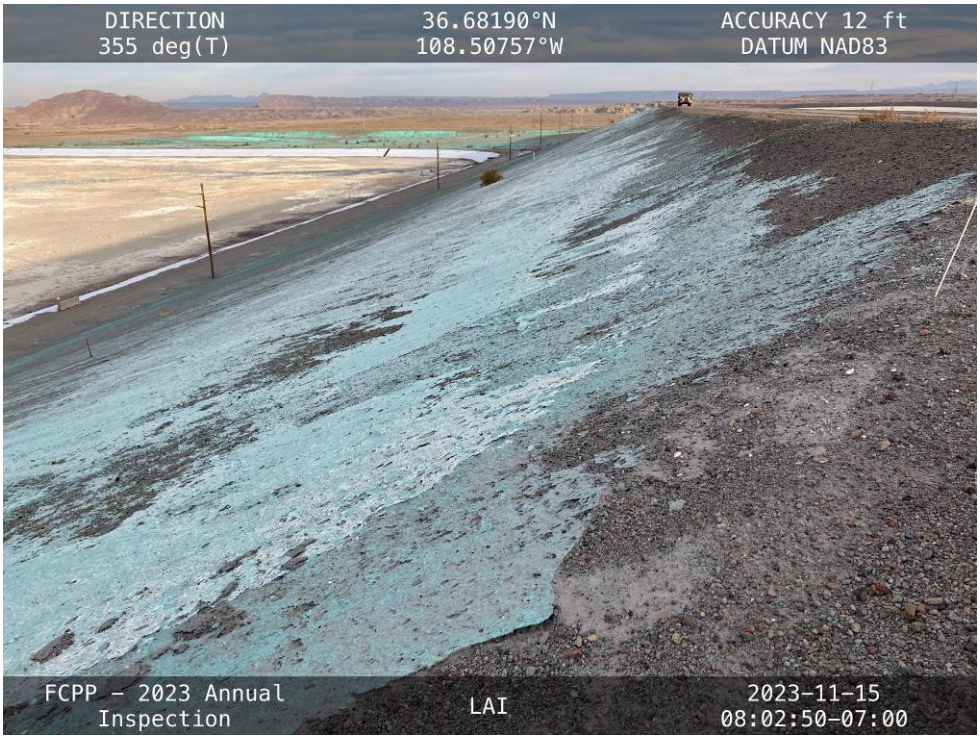
The Southwest Corner of the LAI with no water impounded in the reservoir.

20231115 – IMG_2336
Access roads being constructed in advance of closure, facing north from the Southwest Corner.

20231115 – IMG_2350
The cenosphere mining area in the Southwest Corner, facing north.

20231115 – IMG_2351
The upstream slope of the West Embankment, facing north from the Southwest Corner.

20231115 – IMG_2358
The crest of the West Embankment, facing north from the Southwest Corner.



20231115 – IMG_2360
The downstream slope of the West Embankment, facing north from the crest.

20231115 – IMG_2361
A depression on the downstream shoulder of the West Embankment near the southern access ramp.

20231115 – IMG_2370

The West Embankment crest on the haul truck travel route. The surficial ash is breaking down.

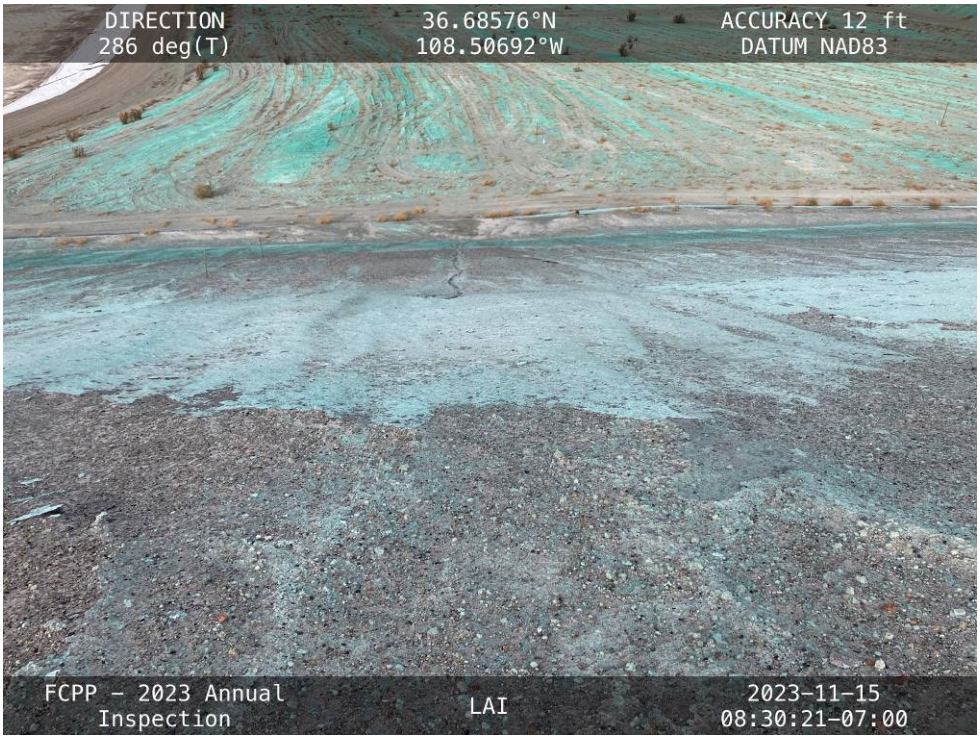
20231115 – IMG_2376

A rut in the West Embankment crest on the haul truck travel route, approximately 6 inches deep.

20231115 – IMG_2379
The upstream slope of the West Embankment, facing north from the Drop Inlet Structure ramp.

20231115 – IMG_2381
The upstream slope of the West Embankment, facing south from the Drop Inlet Structure ramp.

20231115 – IMG_2382
The Drop Inlet Structure, facing west from inside the LAI reservoir.



20231115 – IMG_2391
The downstream slope of the West Embankment at the North Toe Buttress with shallow rills.

20231115 – IMG_2401
The North Toe Buttress, facing west from the crest of the West Embankment.

20231115 – IMG_2404
The impounded ash level at the crest of the Northwest Embankment covered with FGD, facing northeast.

20231115 – IMG_2406
The impounded ash level along the north side of the West Embankment, facing south.

20231115 – IMG_2407
The downstream slope of the Northwest Embankment, covered with FGD.

20231115 – IMG_2409
The downstream slope of the Northwest Embankment covered with FGD, facing northeast.

20231115 – IMG_2418
The crest of the Northwest Embankment with some FGD, facing southwest.

20231115 – IMG_2423

The impounded ash along the Northwest Embankment covered with FGD, facing southwest.

20231115 – IMG_2424

A diversion channel along the Northwest Embankment to keep stormwater away from the crest, facing northeast.

20231115 – IMG_2426
The downstream slope of the Northwest Embankment, facing west.

20231115 – IMG_2428
The downstream slope of the Northwest Embankment, facing northeast.

20231115 – IMG_2429
Shallow rutting and tire tracks at the Northwest Embankment access ramp.

20231115 – IMG_2436
The upstream slope of the Northwest Embankment near the north V-ditch, facing northeast.

20231115 – IMG_2441
Tears in the liner near the north V-ditch where the ash berm was constructed.

20231115 – IMG_2443
The CCR berm constructed to keep stormwater off the crest at the north V-ditch, facing south.

20231115 – IMG_2445
The CCR berm constructed to keep stormwater off the crest at the north V-ditch, facing west.

20231115 – IMG_2448
The upstream slope of the East Embankment, facing south near the north V-ditch.

20231115 – IMG_2449
The crest of the East Embankment, facing south near the north V-ditch.

20231115 – IMG_2450
The downstream slope of the East Embankment where erosion was observed during the 2022 inspection, facing south.

20231115 – IMG_2451
An erosion hole on the downstream shoulder of the East Embankment crest near where erosion was observed during the 2022 inspection.

20231115 – IMG_2456
The East Embankment covered with FGD, regraded north of the old V-ditch, facing south.

20231115 – IMG_2459

The old V-ditch and containment berm covered in FGD, facing southwest toward the reservoir.

20231115 – IMG_2472

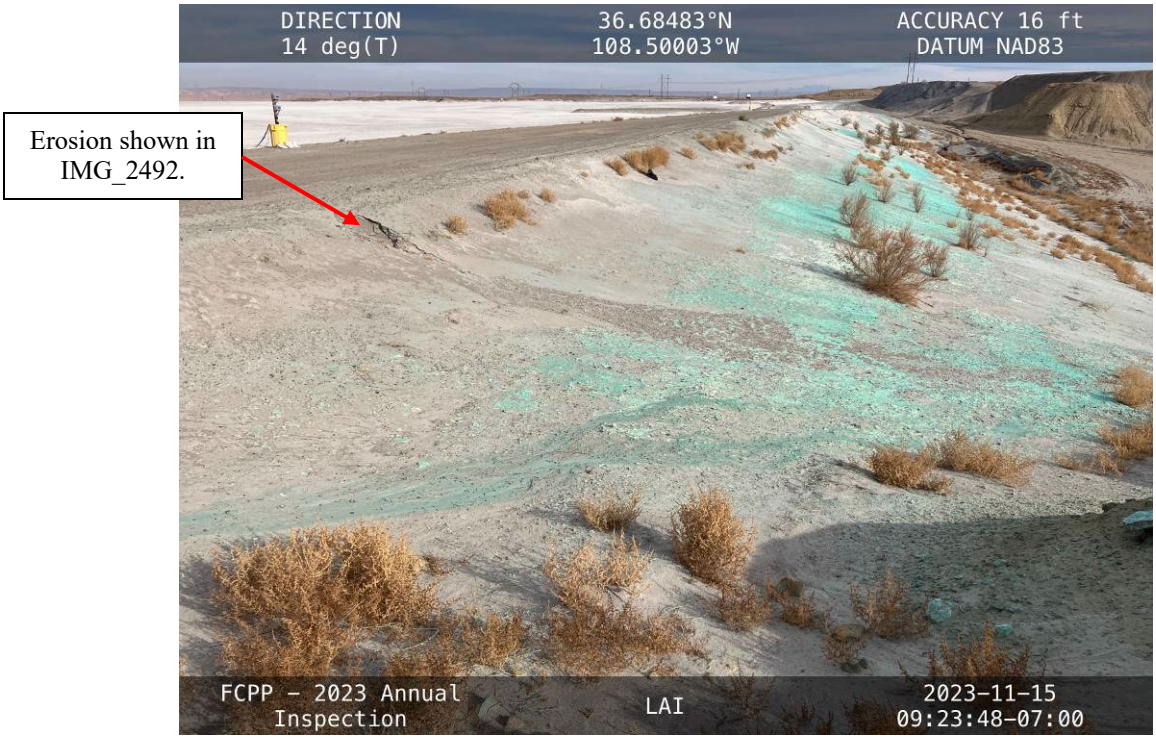
The downstream slope of the East Embankment, facing south from the middle section.

20231115 – IMG_2482
The upstream shoulder of the East Embankment where a series of shallow holes was observed in the anchor trench during the 2022 inspection, facing south.

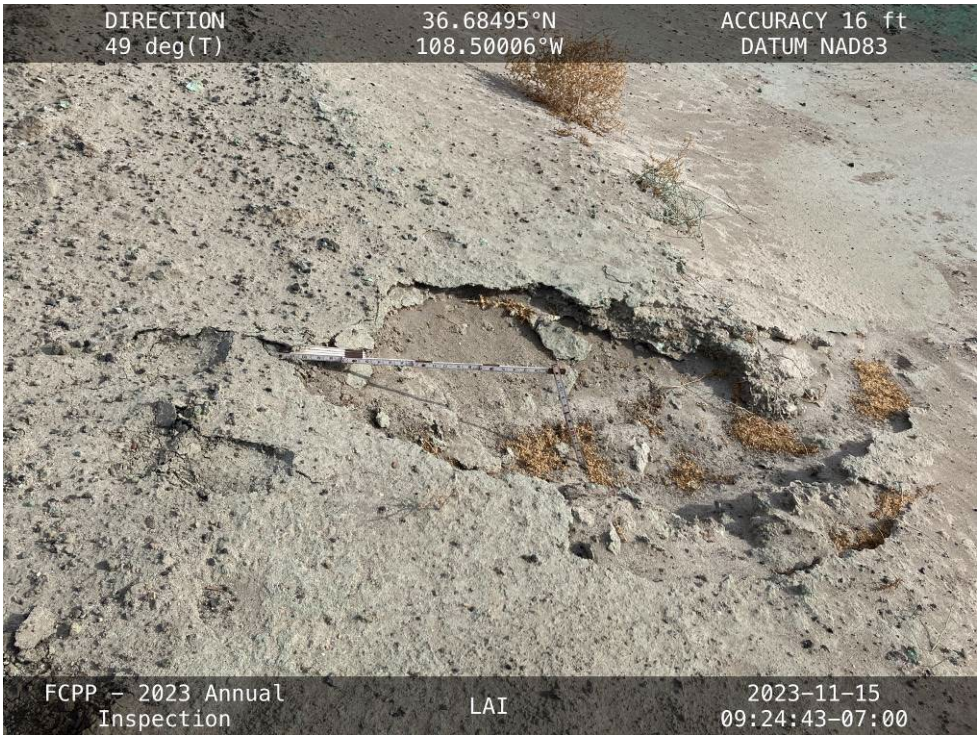
20231115 – IMG_2487
The upstream slope of the East Embankment facing northeast.

20231115 – IMG_2488
The upstream slope of the East Embankment facing southeast.

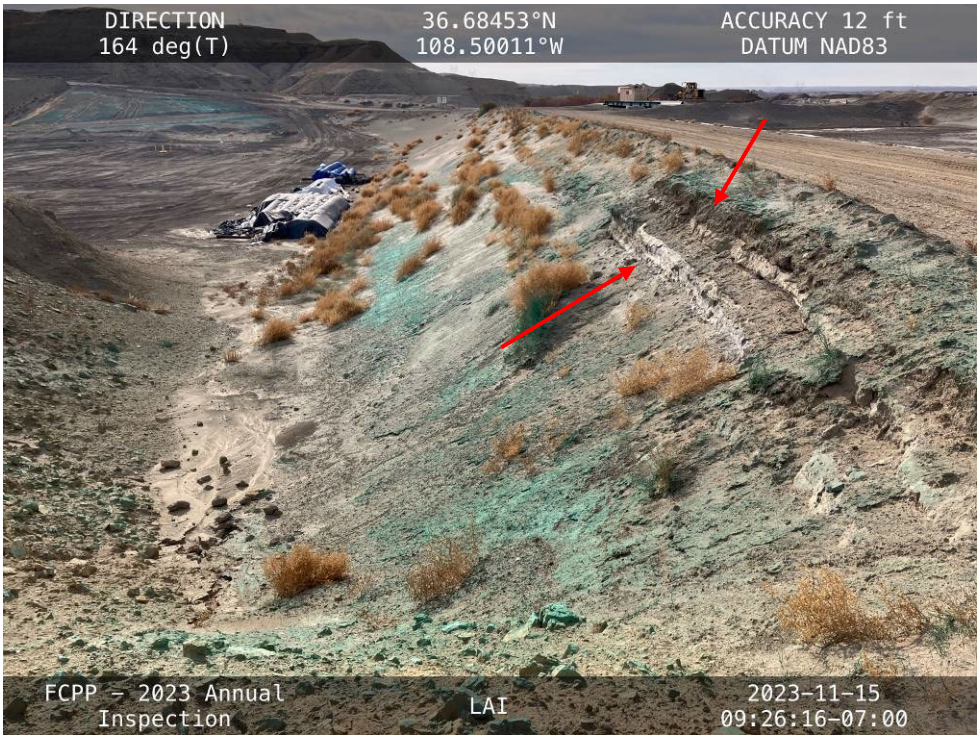
20231115 – IMG_2490
The upstream shoulder of the East Embankment where a series of shallow holes was observed in the anchor trench during the 2022 inspection, facing south.



20231115 – IMG_2491
The downstream slope of the East Embankment facing north.



20231115 – IMG_2492
Approximately 1 foot of erosion on the downstream slope of the East Embankment shown in IMG_2491.



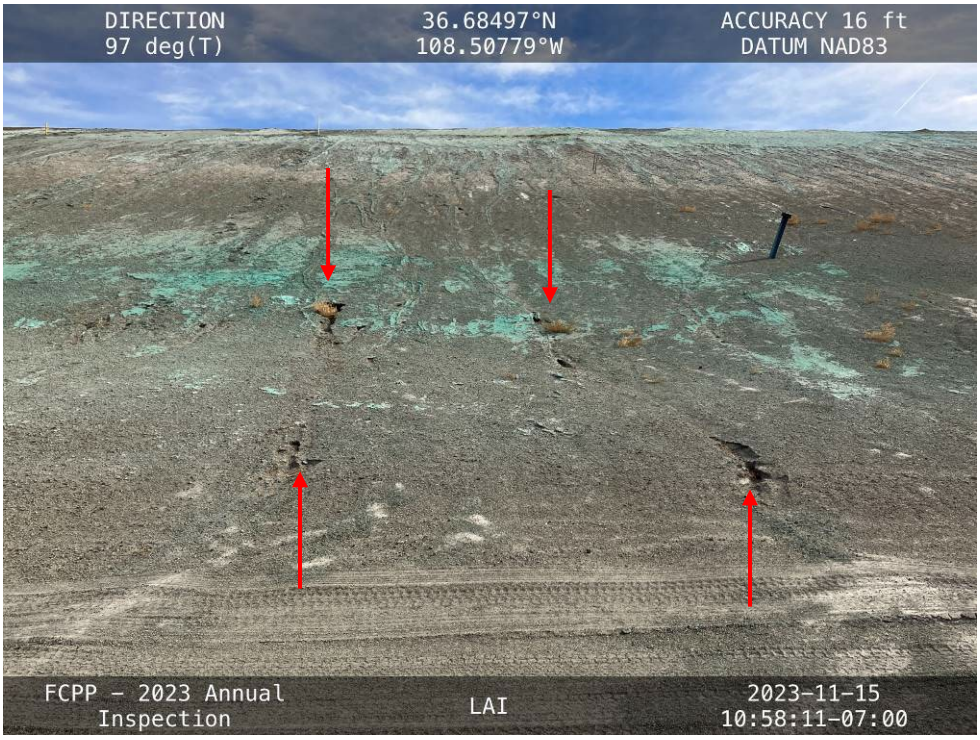
20231115 – IMG_2494
The downstream slope at the southern end of the East Embankment, with vertical scarps.

20231115 – IMG_2501
The downstream slope at the southern end of the East Embankment, facing northwest.

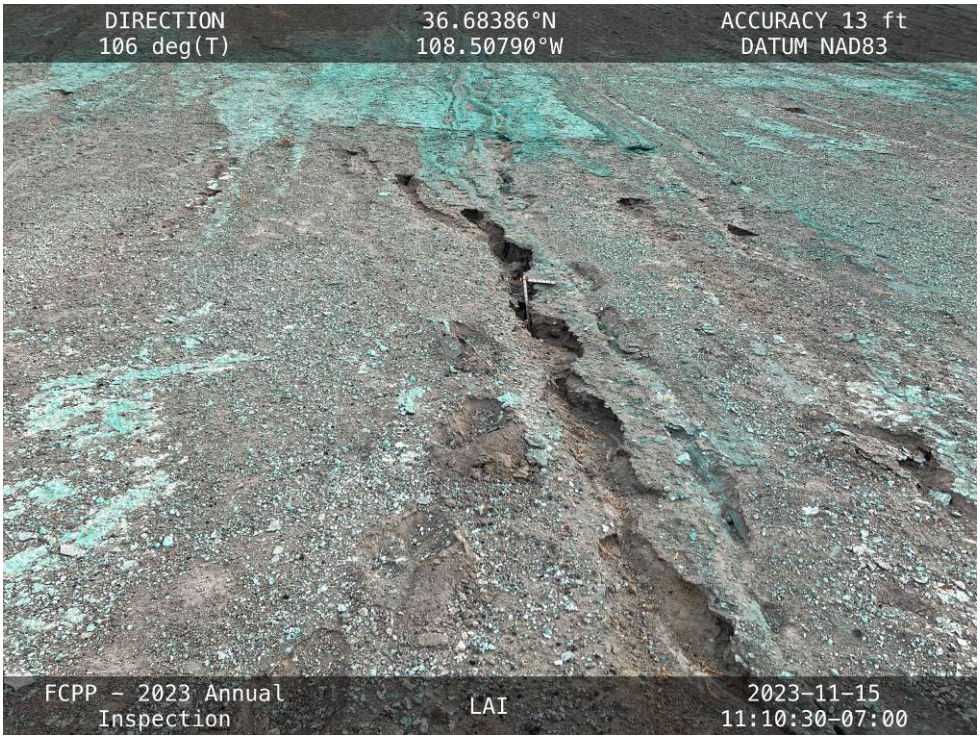
20231115 – IMG_2591
The South Embankment toe drain with water flowing out of the conduits.

20231115 – IMG_2592
The South Embankment toe drain with water present since April 2023.

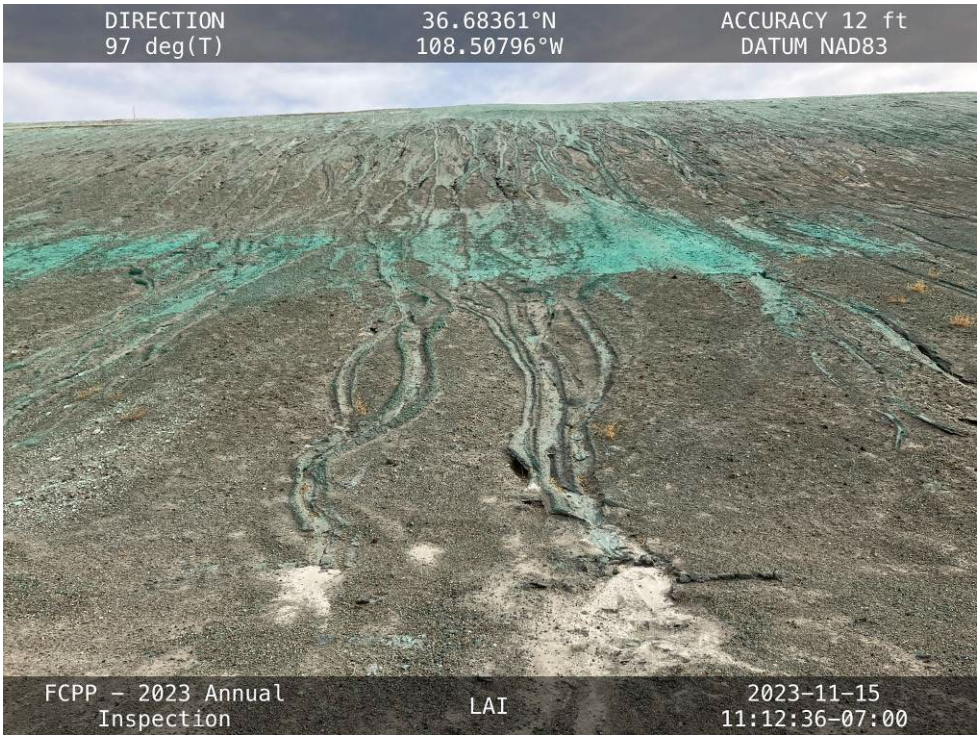
20231115 – IMG_2648
Erosion gullies at the toe of the West Embankment near the south end of the North Toe Buttress.



20231115 – IMG_2655
Erosion forming on the West Embankment.



20231115 – IMG_2691
A 10-inch-deep erosion rill along the toe of the West Embankment.



20231115 – IMG_2693
Erosion rills on the West Embankment covered with dust suppressant.

20231115 – IMG_2696
The downstream slope of the West Embankment, facing north from the toe.

20231115 – IMG_2699
The downstream slope of the West Embankment, facing south from the toe.

20231115 – IMG_2755
The downstream slope of the West Embankment, facing east from the LDWP.

20231115 – IMG_2756
The downstream slope of the West Embankment, facing east from the LDWP.

20231115 – IMG_2757
The downstream slope of the West Embankment, facing east from the LDWP.

20231115 – IMG_2758
The downstream slope of the West Embankment, facing east from the LDWP.

APPENDIX B

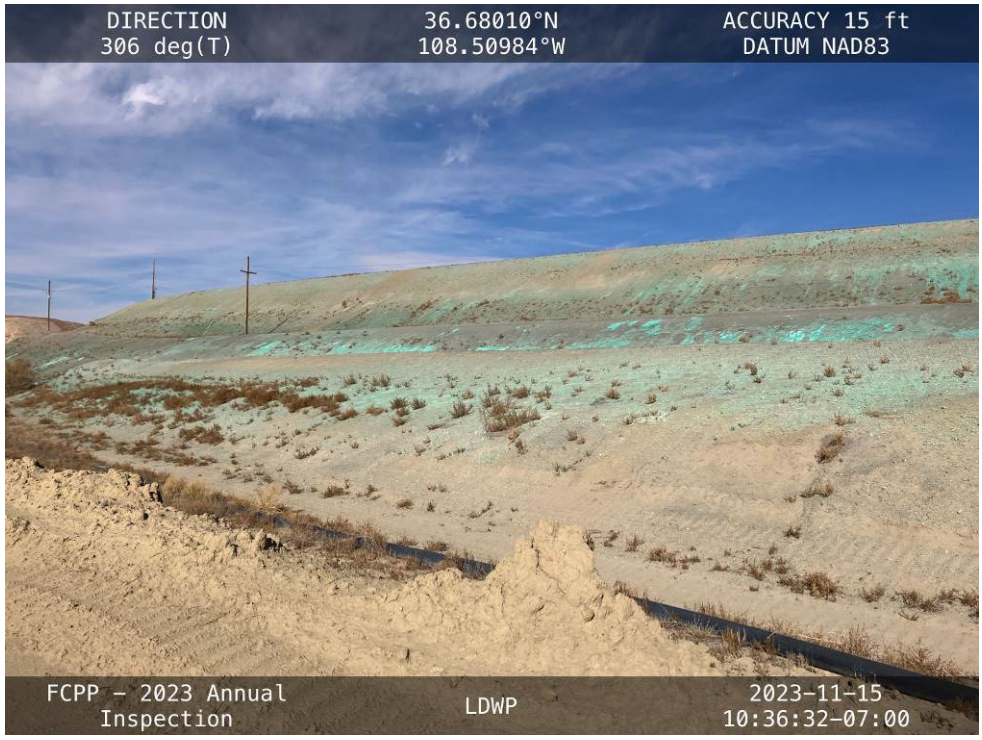
LINED DECANT WATER POND (LDWP) PHOTO LOG

20231115 – IMG_2348
The downstream slope of the South Embankment, facing west from the LAI crest.

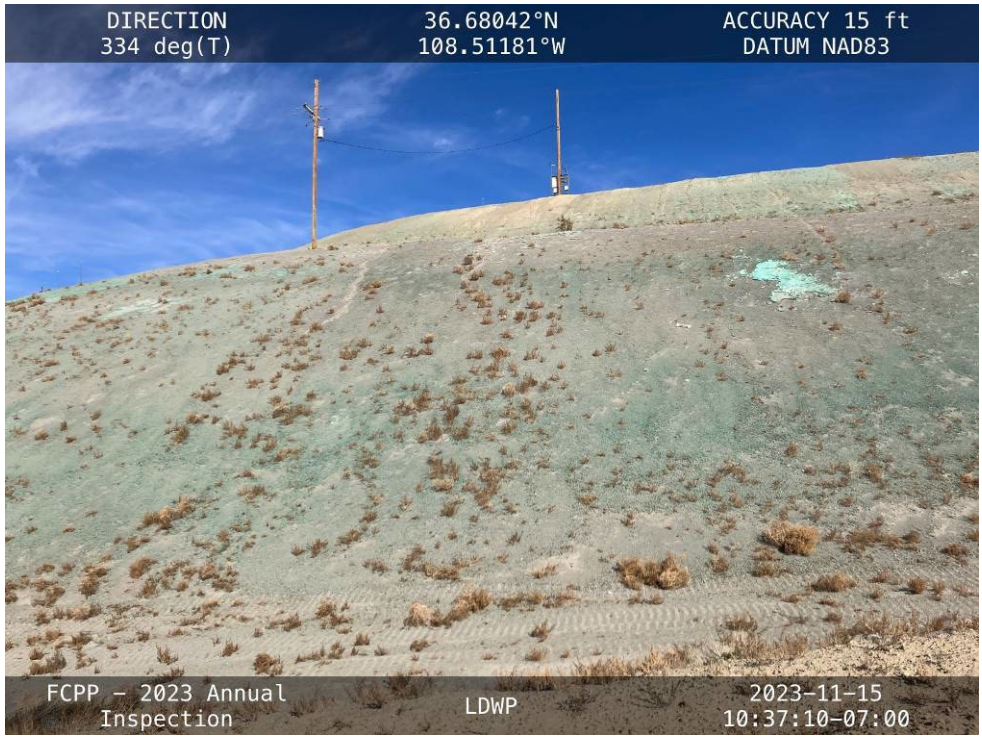
20231115 – IMG_2349
The south end of the LDWP reservoir, facing west from the LAI crest.

20231115 – IMG_2390
The north end of the LDWP reservoir, facing west from the LAI crest.

20231115 – IMG_2596
The downstream slope of the South Embankment, facing north from the toe.



20231115 – IMG_2597
The downstream slope of the South Embankment, facing north from the toe.



20231115 – IMG_2600
The western half of the South Embankment downstream slope, facing north from the toe.

20231115 – IMG_2602
The West Embankment slope, facing northeast from the toe road near the Pond 3 Pump House.

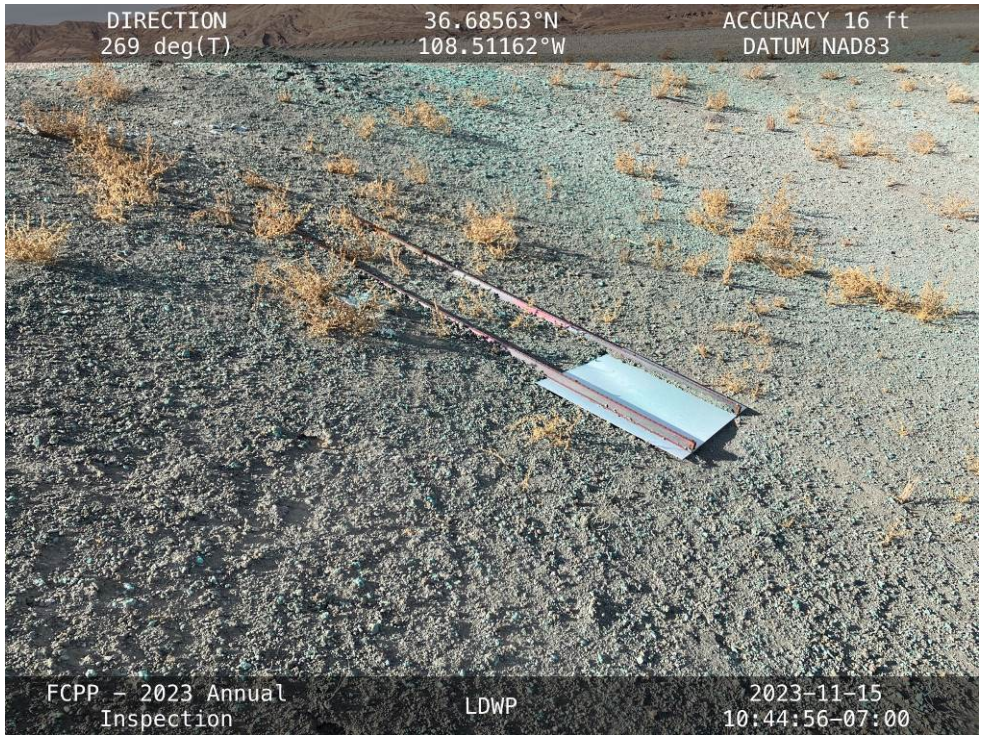
20231115 – IMG_2605
The West Embankment slope, facing east from the toe road north of the Pond 3 Pump House.

20231115 – IMG_2607
The West Embankment slope, facing east from the toe road north of the Pond 3 Pump House.

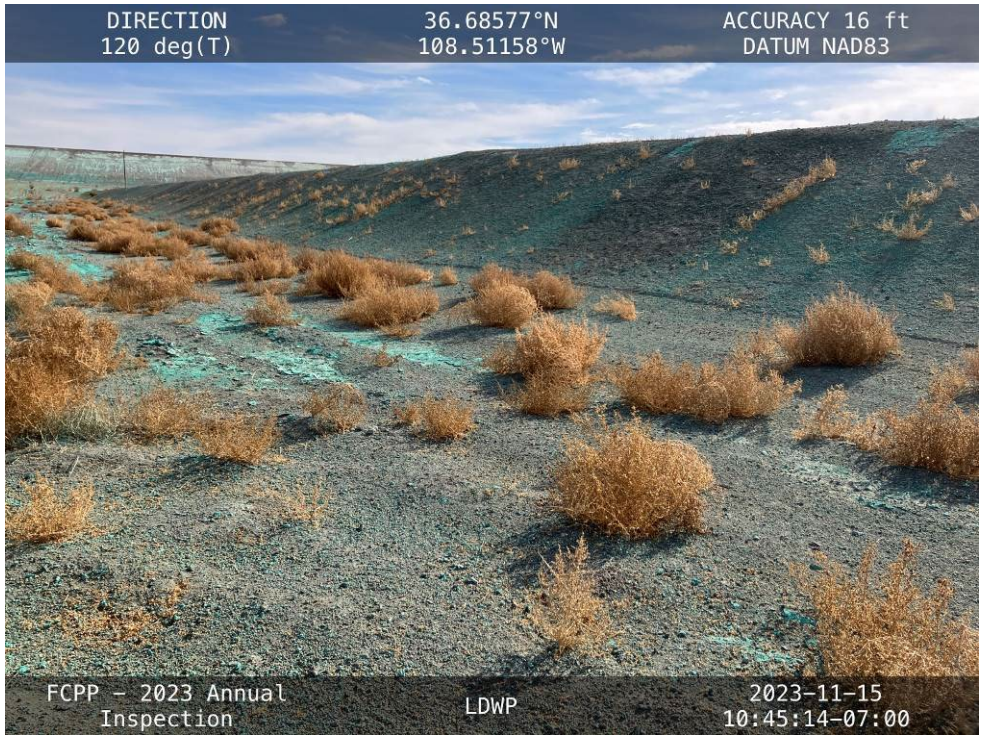
20231115 – IMG_2614
The upstream slope of the West Embankment, facing south.

20231115 – IMG_2617
The upstream slope of the North Embankment, facing east.

20231115 – IMG_2618
The crest of the North Embankment, facing east from the West Embankment.



20231115 – IMG_2619
The sign for the CCR unit, to be re-erected.



20231115 – IMG_2620
The downstream slope of the North Embankment, facing east from the northwest corner.

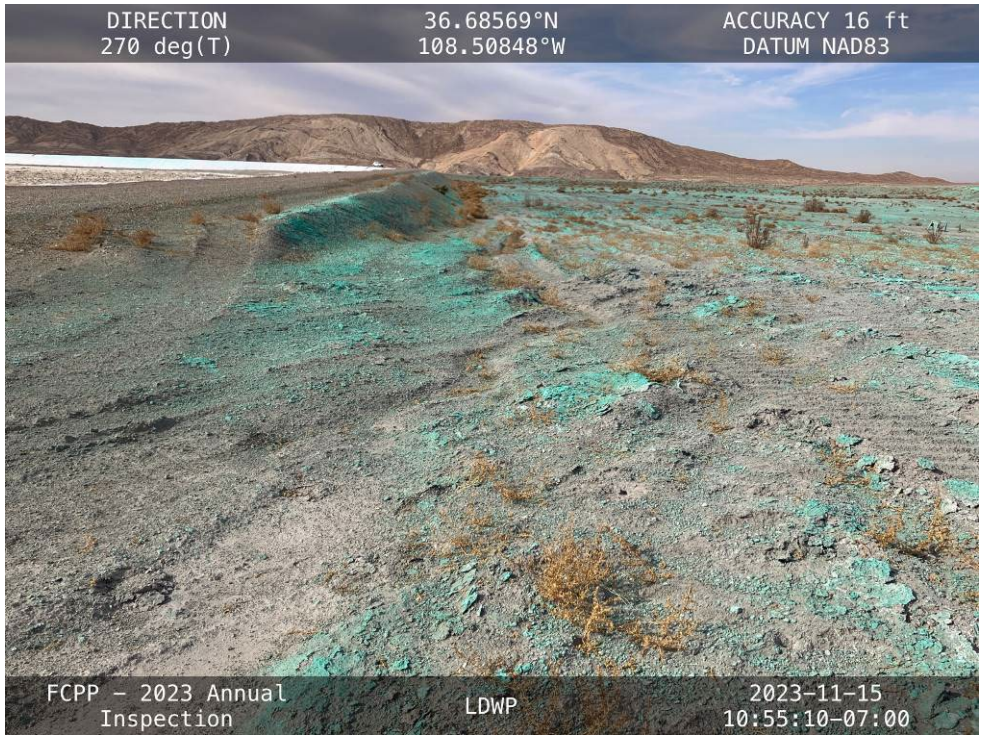
20231115 – IMG_2623
A hole in the liner along the North Embankment marked with a pin flag.

20231115 – IMG_2630
The north side of the reservoir, facing east from the North Embankment crest.

20231115 – IMG_2633
The north side of the reservoir, facing south from the North Embankment crest.

20231115 – IMG_2644
The upstream slope of the North Embankment, facing west from the northeast corner.

20231115 – IMG_2645
The crest of the North Embankment, facing west from the northeast corner.



20231115 – IMG_2646
The downstream slope of the North Embankment, facing west from the northeast corner.

20231115 – IMG_2647
The surface monuments for piezometers P-23, P-24, and P-25.

20231115 – IMG_2651
The crest of the East Embankment, facing south from the northeast corner.

20231115 – IMG_2652
The upstream slope of the East Embankment, facing south from the northeast corner.

20231115 – IMG_2657
The LAI/LDWP pump station.

20231115 – IMG_2658
The LAI/LDWP pump station.

20231115 – IMG_2665
The suction intake lines in the northeast corner of the LDWP.

20231115 – IMG_2666
The 8-inch and 16-inch HDPE outlet pipes conveying decant water from the LAI.

20231115 – IMG_2678
Portions of the outer pipes for the suction intake lines exposed across the East Embankment crest.

20231115 – IMG_2680
The upstream slope of the East Embankment, facing south from the northern half of the LDWP.

20231115 – IMG_2684
A 2-inch notch in the liner on the upstream shoulder of the East Embankment.

20231115 – IMG_2685

The crest of the East Embankment with ash from erosion off the LAI West Embankment, facing south.

20231115 – IMG_2689

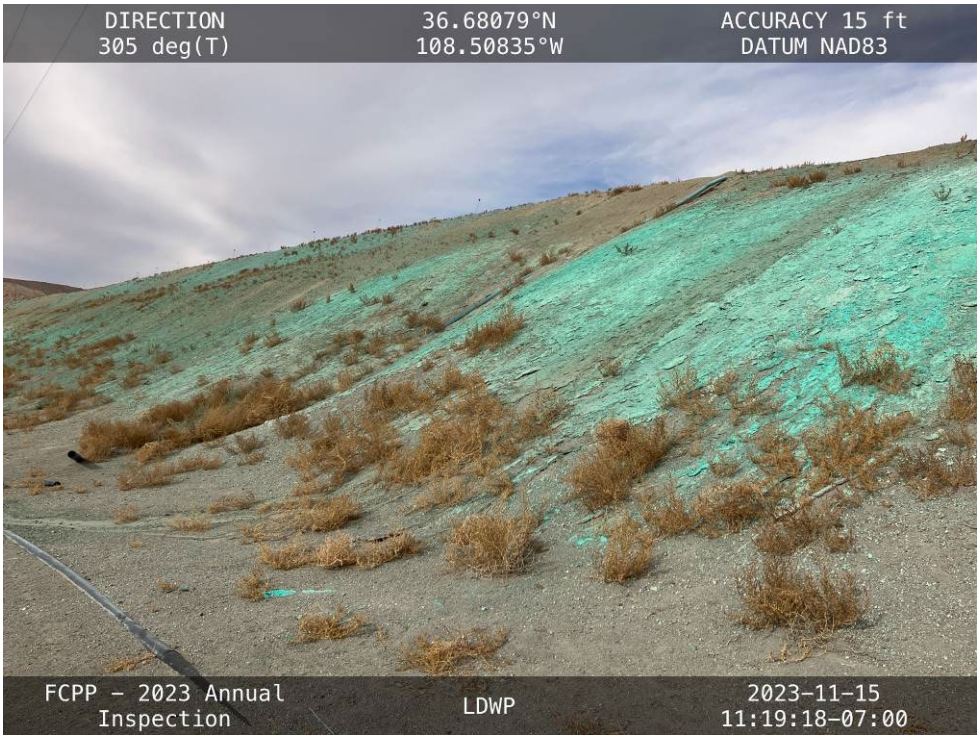
The reservoir staff gage and the elevation gage marked on the liner along the East Embankment.

20231115 – IMG_2694
Portions of the liner exposed in the anchor trench along the East Embankment crest adjacent to a rut.

20231115 – IMG_2700
The upstream slope of the South Embankment, facing west from the southeast corner.

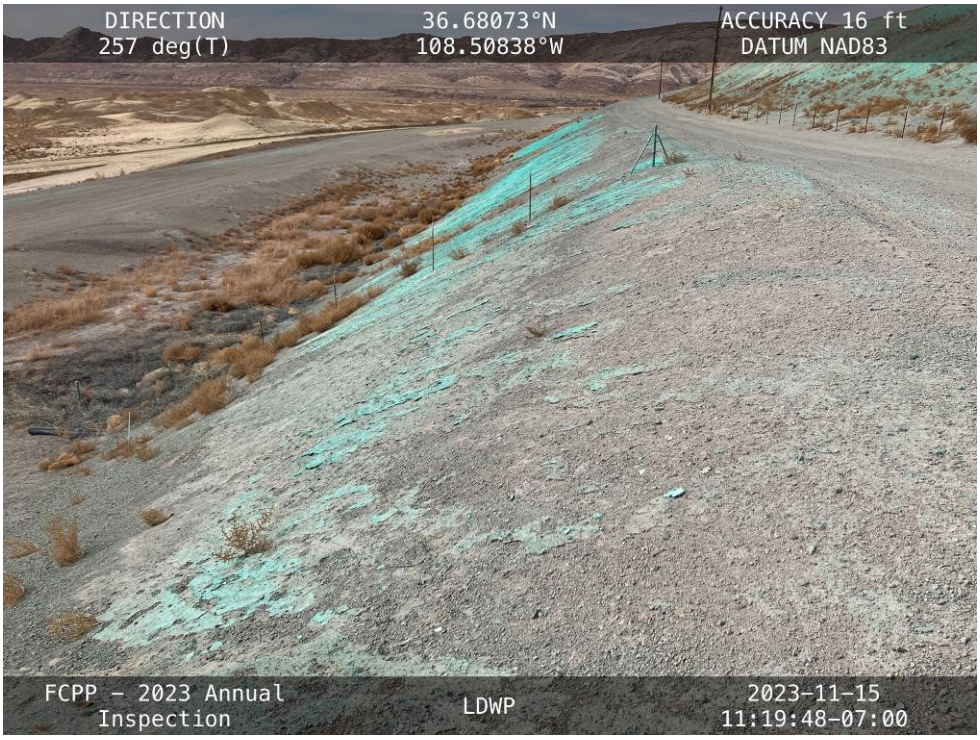
20231115 – IMG_2704
The upstream slope of the East Embankment, facing north from the south end.

20231115 – IMG_2705
The crest of the East Embankment, facing north from the south end.



20231115 – IMG_2707
The downstream slope of the South Embankment, facing west along the upper half.

20231115 – IMG_2708
The Deadpool Pump on the South Embankment, set to "Auto."



20231115 – IMG_2709
The downstream slope of the South Embankment, facing west along the lower half.

20231115 – IMG_2712
The crest of the South Embankment, facing west from the southeast corner.

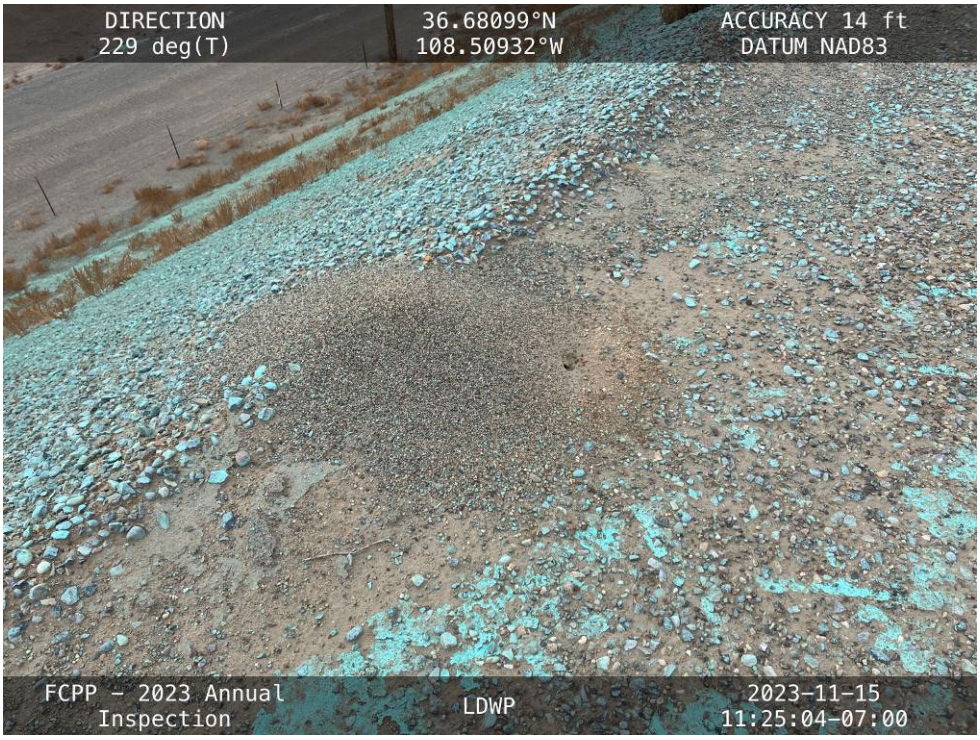
20231115 – IMG_2713

A depression in the slope where the Deadpool Pump pipe runs along the LDWP South Embankment.

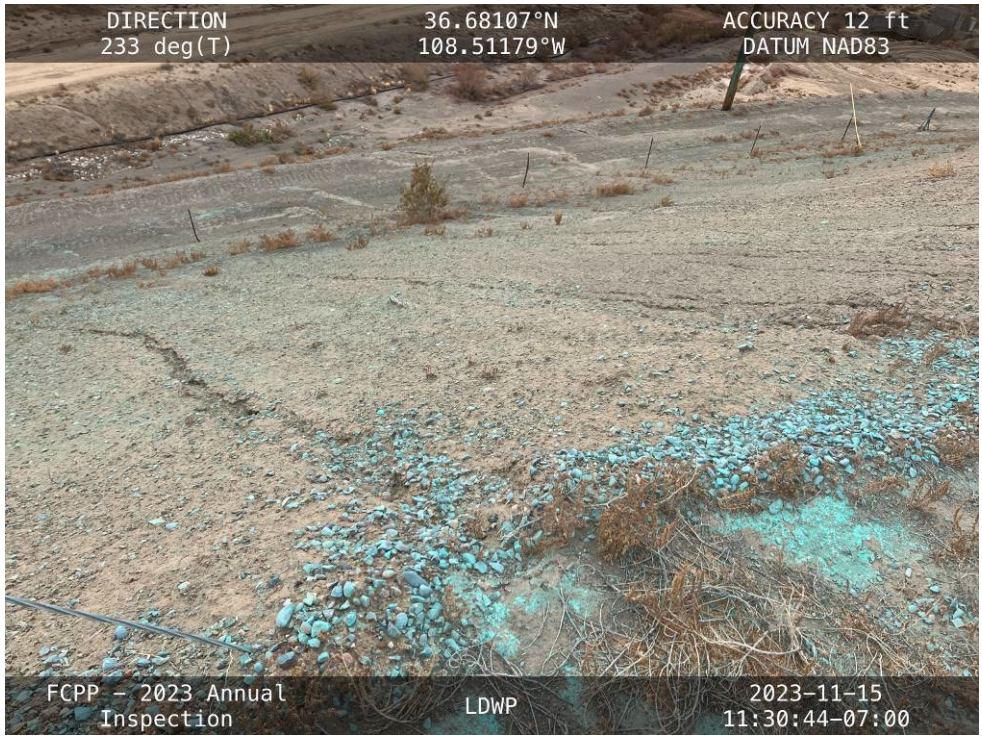
20231115 – IMG_2714

The downstream slope of the South Embankment, facing west from the southeast corner.

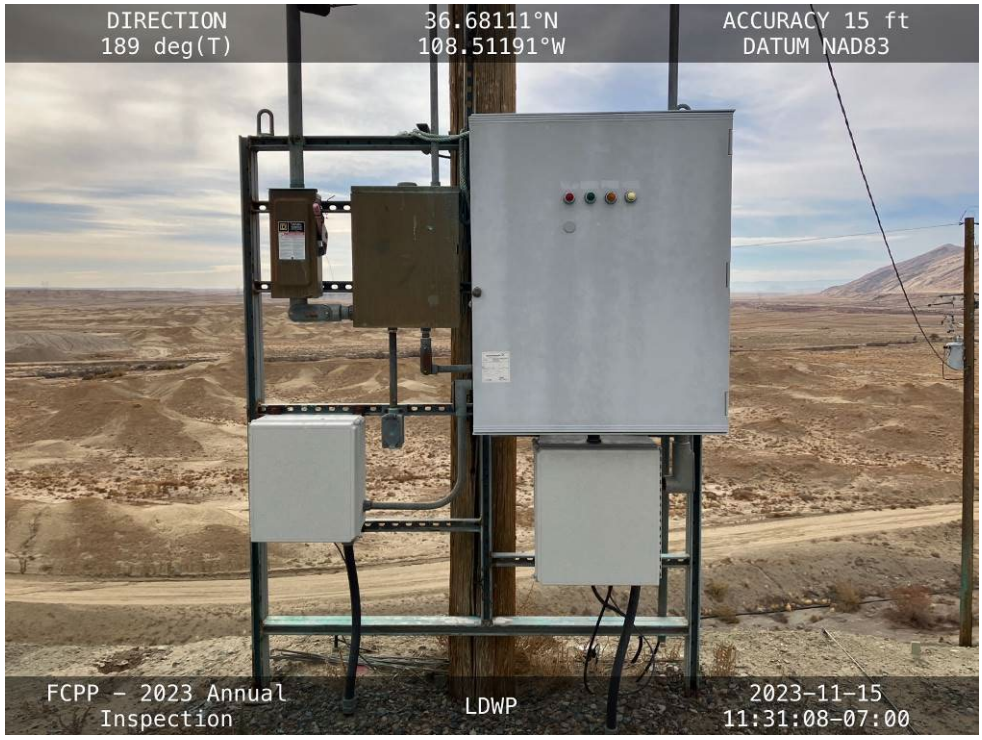
20231115 – IMG_2715
A rut in the crest of the South Embankment.



20231115 – IMG_2716
An ant hill on the downstream shoulder of the South Embankment.



20231115 – IMG_2721
Shallow erosion rills on the downstream slope of the South Embankment.



20231115 – IMG_2723
The Interstitial Evacuation Pump controls on the South Embankment.

20231115 – IMG_2724
The upstream slope of the South Embankment, facing east from the West Embankment.

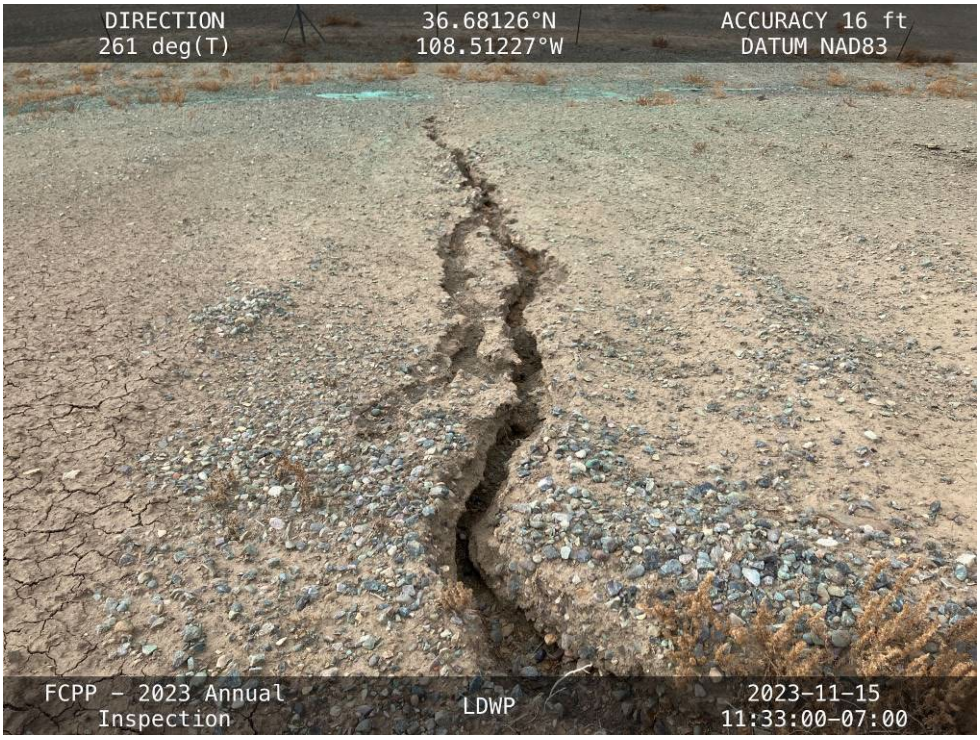
20231115 – IMG_2725
The crest of the South Embankment, facing east from the southwest corner.

20231115 – IMG_2726
The upstream slope of the West Embankment, facing north from the southwest corner.

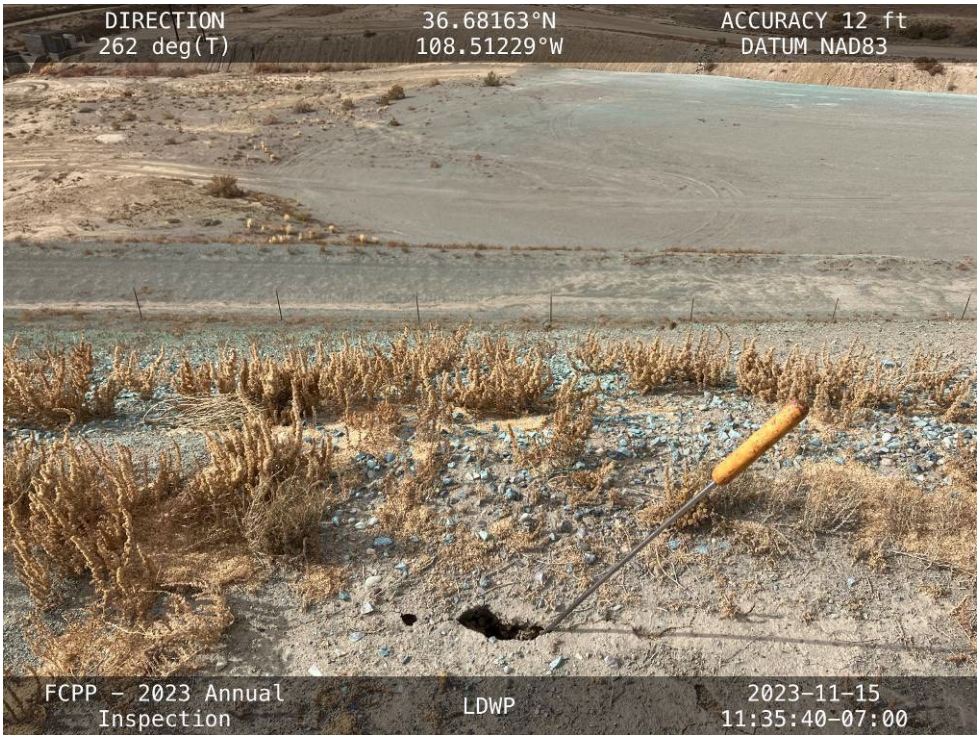
20231115 – IMG_2727
The Interstitial Evacuation Pump access pipes in the southwest corner of the LDWP.

20231115 – IMG_2729
The crest of the West Embankment, facing north from the south end.

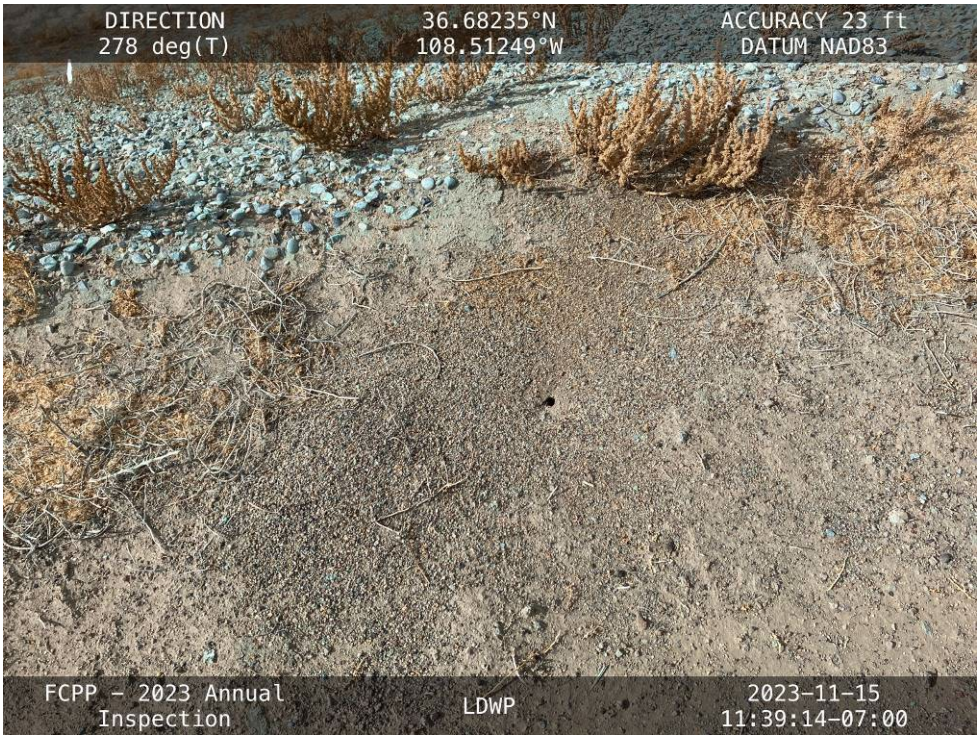
20231115 – IMG_2730
The downstream slope of the West Embankment, facing north from the south end.



20231115 – IMG_2732
An 11-inch-deep erosion rill on downstream slope of the West Embankment.



20231115 – IMG_2737
An erosion hole on the downstream shoulder of the West Embankment crest, facing west.



20231115 – IMG_2739
An ant hill on the downstream shoulder of the West Embankment.

20231115 – IMG_2744
The upstream slope along the southern half of the West Embankment, facing south.

20231115 – IMG_2745
The crest along the southern half of the West Embankment, facing south.

20231115 – IMG_2746
The downstream slope along the southern half of the West Embankment, facing south.

20231115 – IMG_2747
The upstream slope along the middle of the West Embankment, facing north.

20231115 – IMG_2748
The northern half of the West Embankment downstream slope, facing north.

20231115 – IMG_2749
The liner pulling out of the anchor trench in the northern portion of the West Embankment.

20231115 – IMG_2761
The northwest corner of the LDWP, facing northeast from the West Embankment.

20231115 – IMG_2763
The crest of the West Embankment, facing south from the northwest corner.

APPENDIX C

COMBINED WASTE TREATMENT POND (CWTP) PHOTO LOG

20231115 – IMG_2787
The former location of the decant cells, facing south from the Left Abutment.

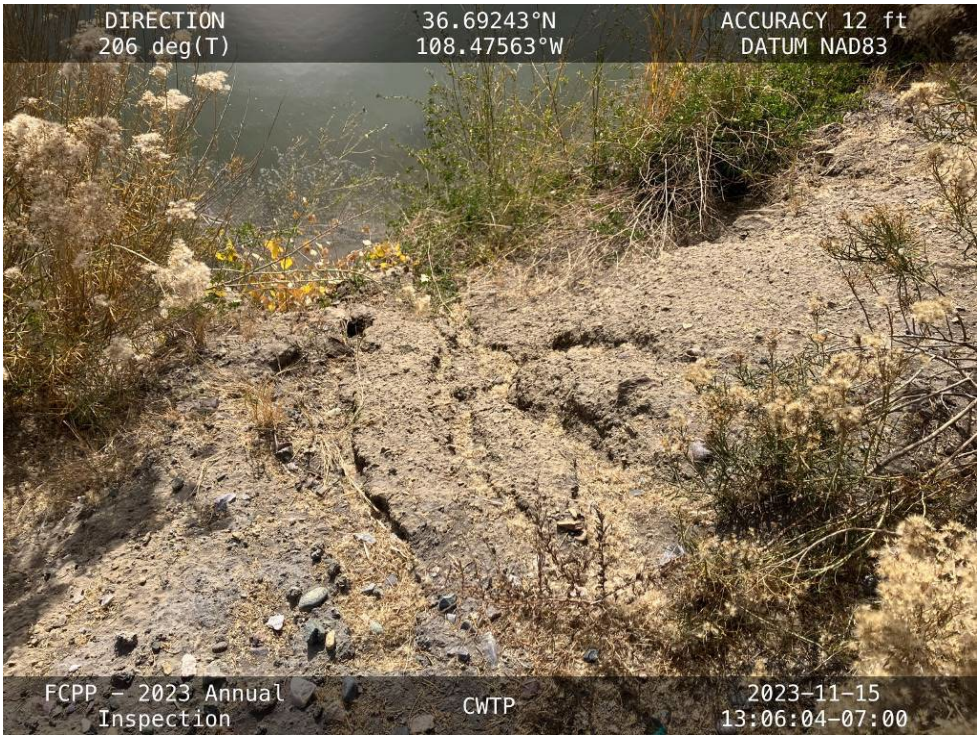
20231115 – IMG_2792
The crest of the North Embankment, facing east from the Left Abutment with the 18-inch pipe installed to transfer water from the canal to the CWTP.

20231115 – IMG_2896
The 18-inch pipe installed to transfer water from the canal to the CWTP.

20231115 – IMG_2800
Erosion around the water level transducer and the 18-inch pipe that transfers water from the canal to the CWTP.

20231115 – IMG_2801
Vegetation to be removed from the upstream slope.

20231115 – IMG_2806
Shallow holes and an ant hill on the downstream shoulder of the North Embankment where there were depressions in 2021 and 2022 (2021 IMG_8448, 2022 IMG_3998).



20231115 – IMG_2810
Erosion rills forming on the upstream slope.

20231115 – IMG_2812
The crest of the CWTP, facing east near the middle of the North Embankment.

20231115 – IMG_2813
A series of shallow holes on the downstream shoulder of the North Embankment.

20231115 – IMG_2818
A wide, but shallow hole on the upstream slope of the North Embankment.

20231115 – IMG_2820
Erosion around an old concrete post and undermining a riprap boulder on the downstream slope of the North Embankment.

20231115 – IMG_2823
An ant hill on the downstream shoulder of the embankment.

20231115 – IMG_2826
Vegetation to be removed from the East Embankment upstream slope.

20231115 – IMG_2827
The crest of the North Embankment, facing east at Monitoring Well MW-63.

20231115 – IMG_2828
The crest of the North Embankment, facing west at Monitoring Well MW-63.

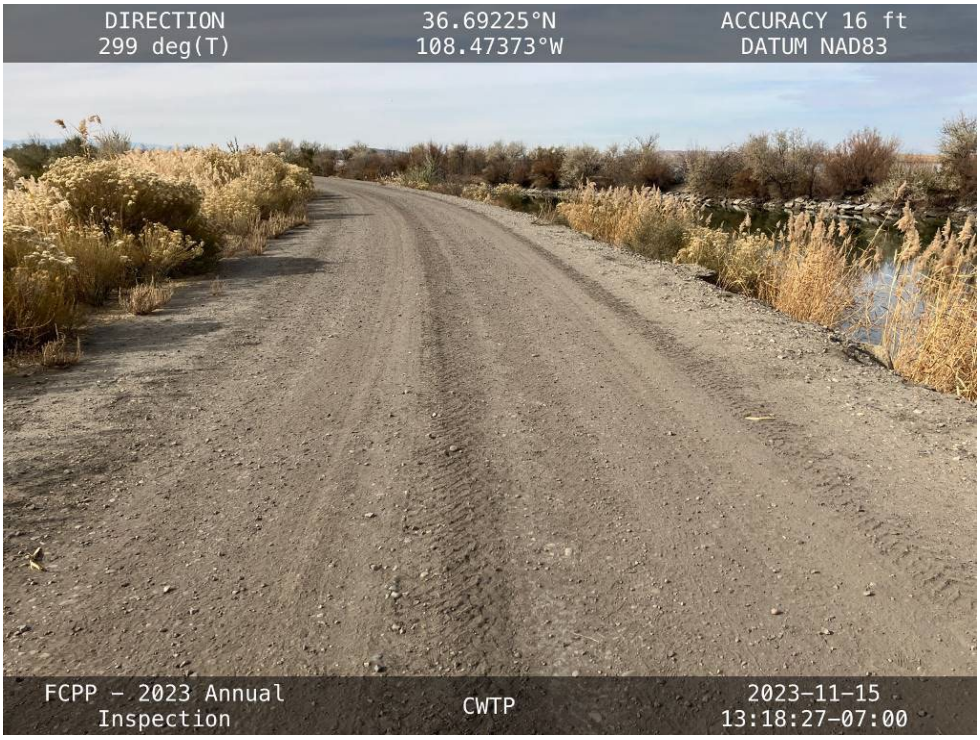
20231115 – IMG_2829
The downstream slope along the North Embankment, facing west.

20231115 – IMG_2831
The upstream slope along the North Embankment, facing west.

20231115 – IMG_2837
Erosion undermining a riprap boulder on the downstream slope of the North Embankment.

20231115 – IMG_2842
Erosion undermining a riprap boulder on the downstream slope of the North Embankment.

20231115 – IMG_2843
Shallow holes and incipient erosion on the downstream slope of the North Embankment.



20231115 – IMG_2846
The crest of the North Embankment, facing northwest toward the curve.

20231115 – IMG_2854
A 1-foot-deep erosion hole on the downstream shoulder of the East Embankment crest. Similar erosion holes were also observed during the 2021 and 2022 inspections.

20231115 – IMG_2858
A series of holes up to 1.5 feet deep on the downstream shoulder of the East Embankment crest accompanied by erosion on the downstream slope.

20231115 – IMG_2863
A stretch of loose soil near the 7-inch-deep erosion hole observed in 2021 (2021 IMG_8359) and a previous 11.5-foot-long crack observed in 2018 and 2020.

20231115 – IMG_2867
A stretch of loose soil near the 7-inch-deep erosion hole observed in 2021 (2021 IMG_8359) and a previous 11.5-foot-long crack observed in 2018 and 2020.

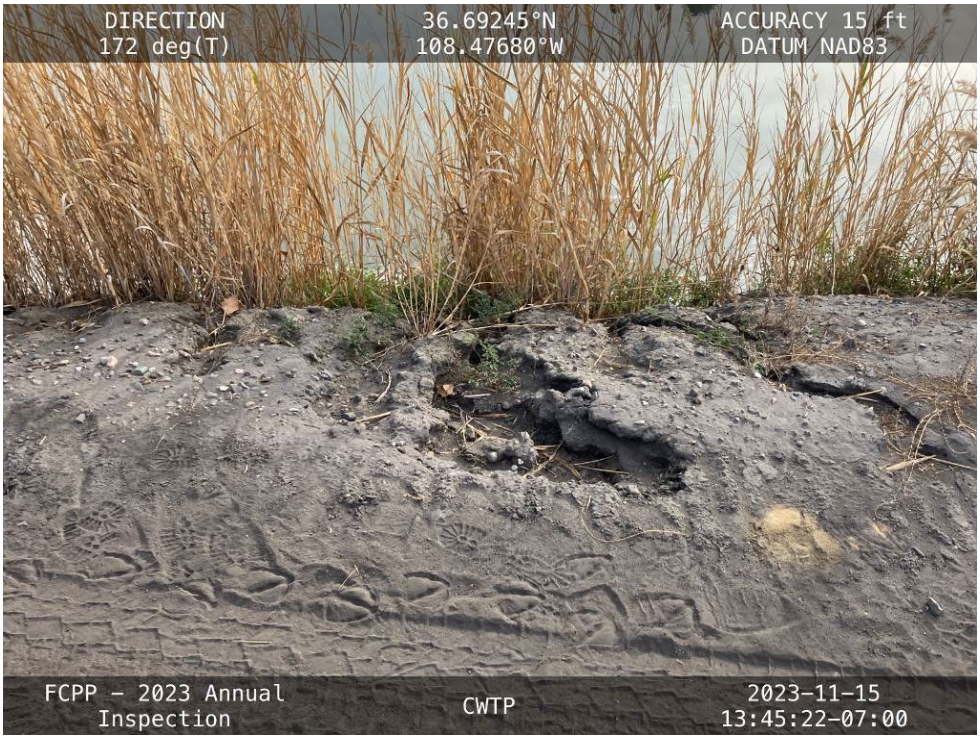
20231115 – IMG_2870
Erosion around reeds growing on the downstream slope of the East Embankment.

20231115 – IMG_2872

Vegetation to be removed from the East Embankment downstream slope, with a hole adjacent to the tree.

20231115 – IMG_2888

The reservoir and vegetation along the upstream slope of the embankment, facing northwest.



20231115 – IMG_2898
Erosion along the upstream slope of the North Embankment.

20231115 – IMG_2900
The upstream slope of the North Embankment, facing east from the Left Abutment.

20231115 – IMG_2906
The south side of the CWTP, with the dredging subcontractor's equipment.

20231115 – IMG_2911
The remaining decant cell, facing west from the east side.

20231115 – IMG_2924

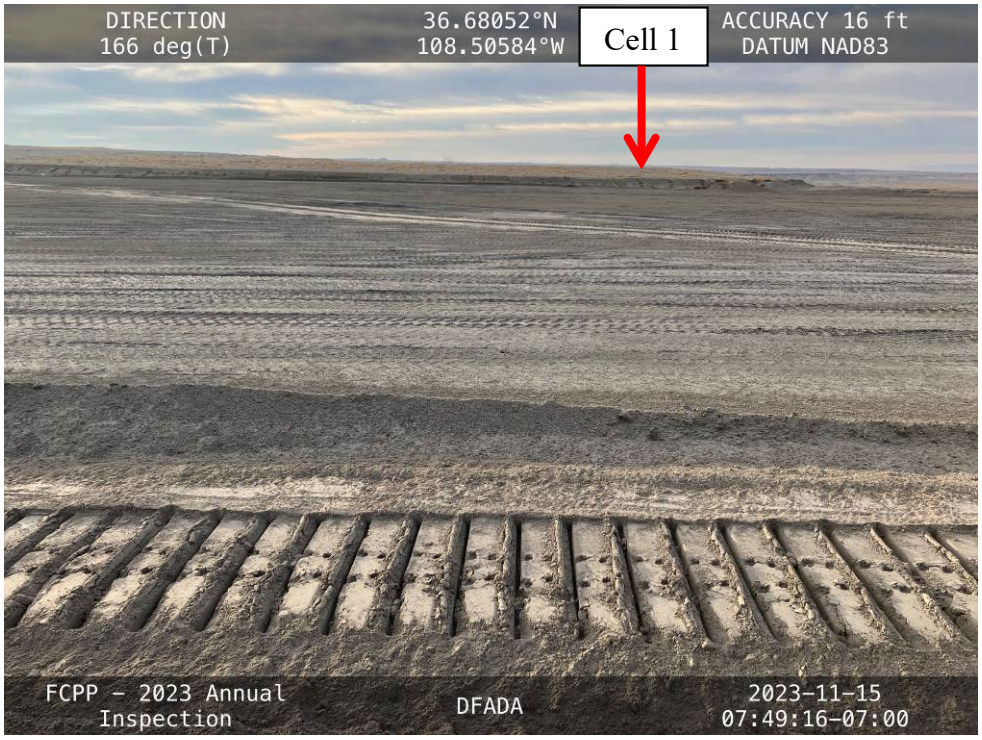
The west side of the CWTP reservoir with the decant cells removed, facing north from the south end.

APPENDIX D

DRY FLY ASH DISPOSAL AREA (DFADA) PHOTO LOG

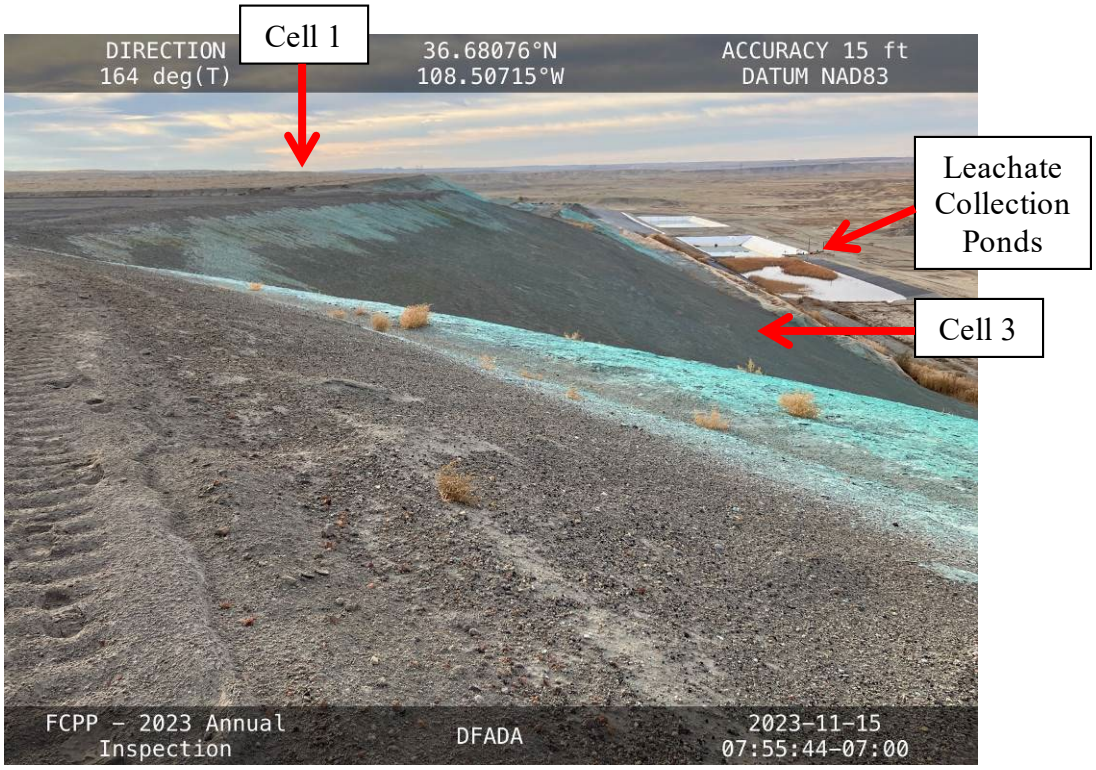
20231115 – IMG_2287
Cell 3, facing southwest from the South Embankment of the LAI.

20231115 – IMG_2316
The top of Cell 3, facing east from the LAI crest.



20231115 – IMG_2318

The top of the western portion of Cell 3 (foreground) and Cell 1 (background), facing south from the LAI.



20231115 – IMG_2340

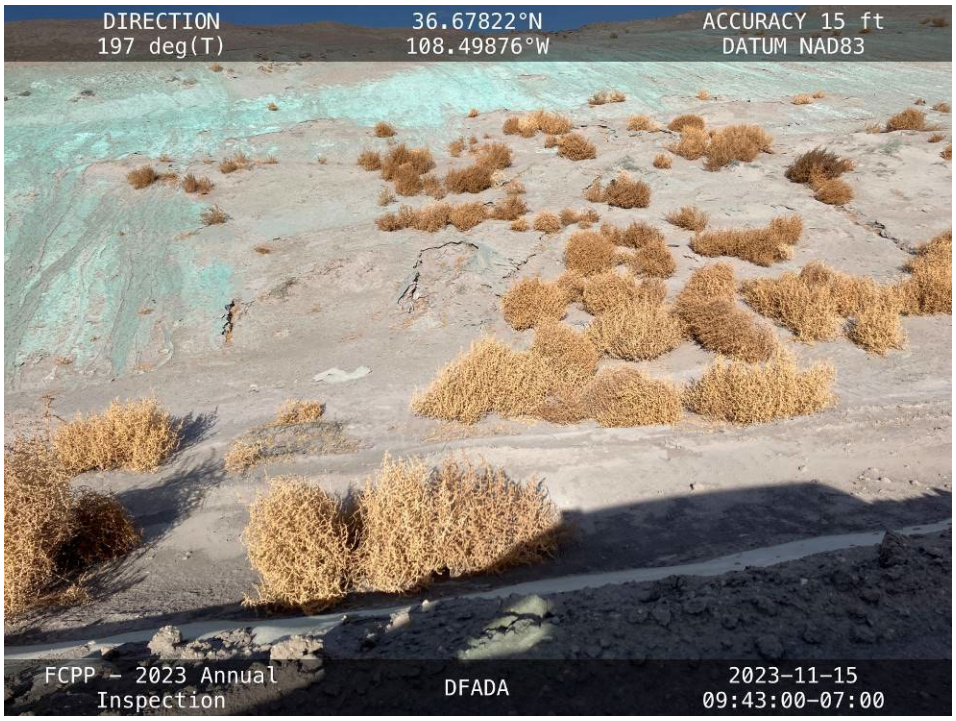
The leachate collection ponds and the western portion of Cells 1 and 3, facing south from the LAI crest.

20231115 – IMG_2503
Haul trucks and a loader on top of Cell 3 moving bottom ash stockpiled for access road construction at the LAI.

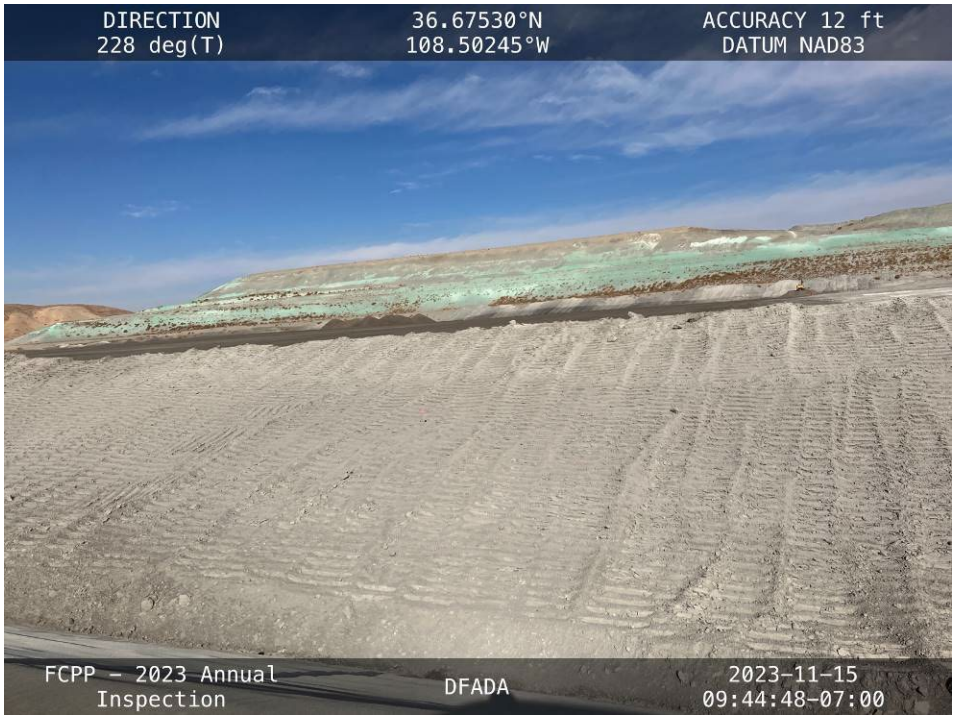
20231115 – IMG_2508
The top of Cell 2 (foreground) and Cell 1 (background), facing south from Cell 3.

20231115 – IMG_2516
MW-55R and the east side of Cell 2, facing south from the northeast side.

20231115 – IMG_2519
The slope on the east side of Cell 2, viewed from the east side.



20231115 – IMG_2522
Shallow erosion features on the southeast slope of Cell 2.



20231115 – IMG_2529
The surface of Cell 4 with the downstream slope of Cell 1 in the background, facing northwest from the south side of Cell 4.

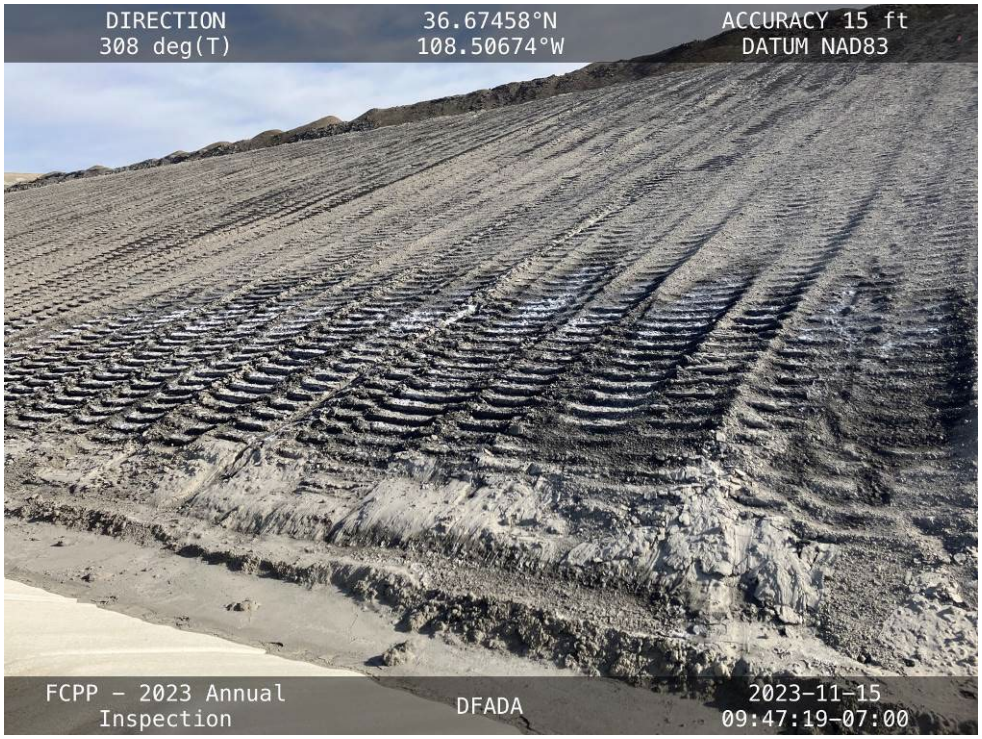
20231115 – IMG_2530
The surface of Cell 4 with the downstream slope of Cell 2 in the background, facing northwest from the south side of Cell 4.

20231115 – IMG_2531
Ash placed in Cell 4, facing north.

20231115 – IMG_2534
The downstream slope of Cell 4, facing southwest.

20231115 – IMG_2535
The western toe of Cell 4, facing north from the south end.

20231115 – IMG_2536
The southern toe of Cell 4, facing east from the south end.



20231115 – IMG_2539
Moisture along the lower portion of the Cell 4 western slope.

20231115 – IMG_2543
The western slope of Cell 1, facing east.

20231115 – IMG_2545
The Cell 4 leachate collection pond, as seen from its northwest corner.

20231115 – IMG_2553
Reeds along the western toe of Cell 1, facing north from the southwest corner of Cell 1.

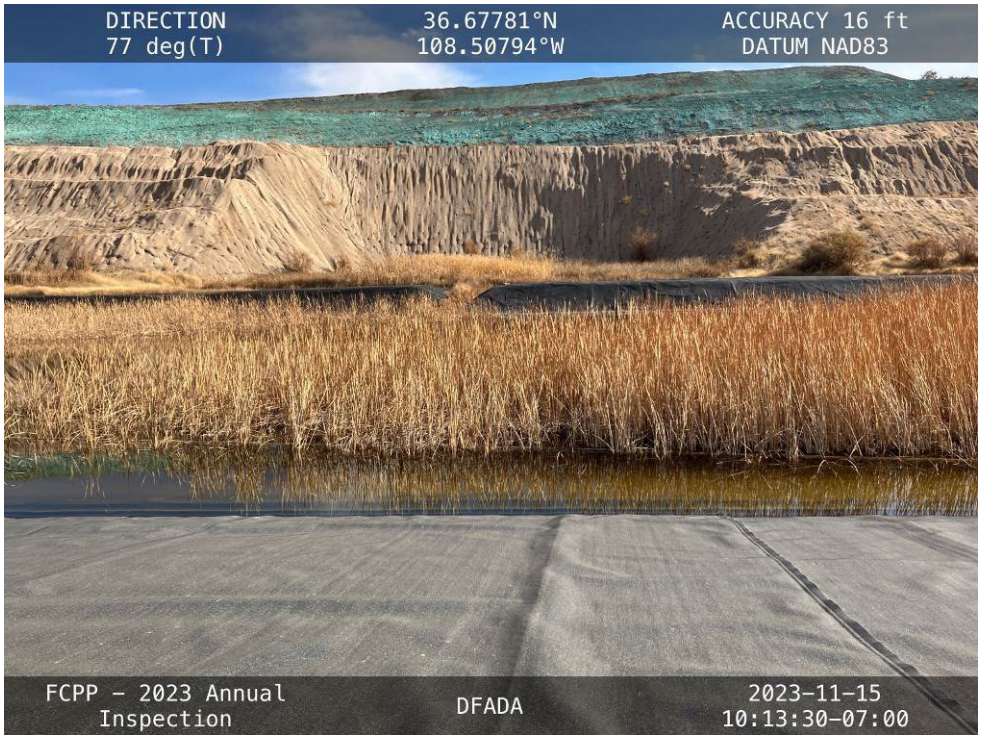
20231115 – IMG_2554
The junction of Cell 1 and Cell 4, facing northeast from the western toe.

20231115 – IMG_2555
The DFADA Cell 2 leachate collection pond, facing north from its southeast corner.

20231115 – IMG_2560
The DFADA Cell 1 leachate collection pond, facing north from the western toe of Cell 1.

20231115 – IMG_2561
Vegetation to be removed and water draining from Cell 1, seeping directly over the liner into the leachate collection pond.

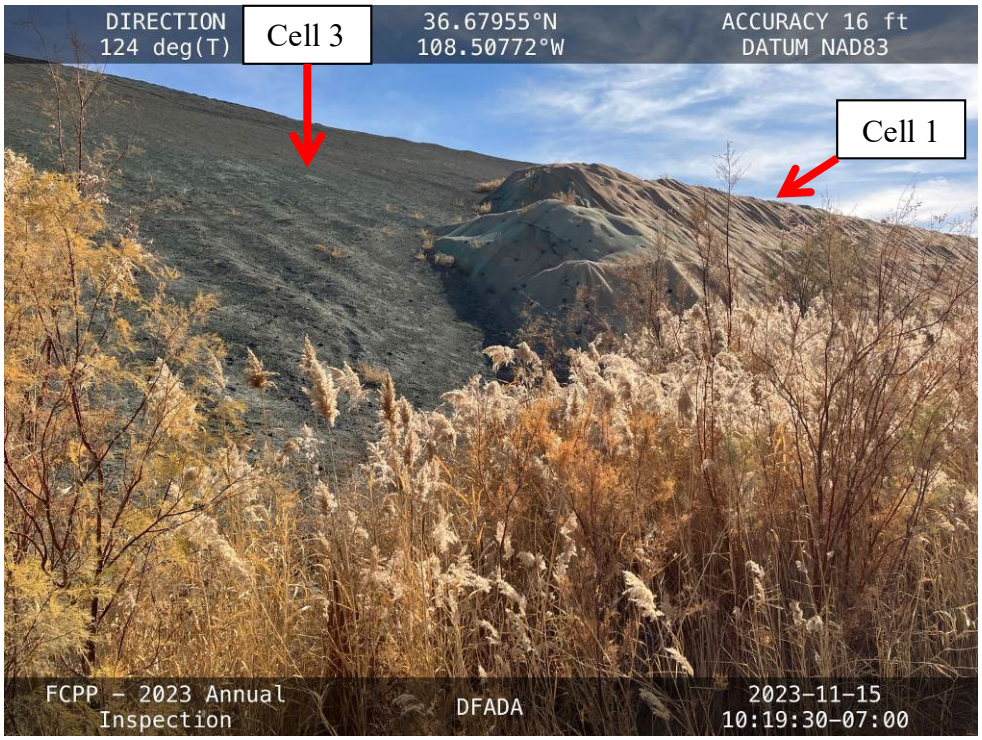
20231115 – IMG_2575
The Cell 1 leachate collection pond and northern portion of the western slope.



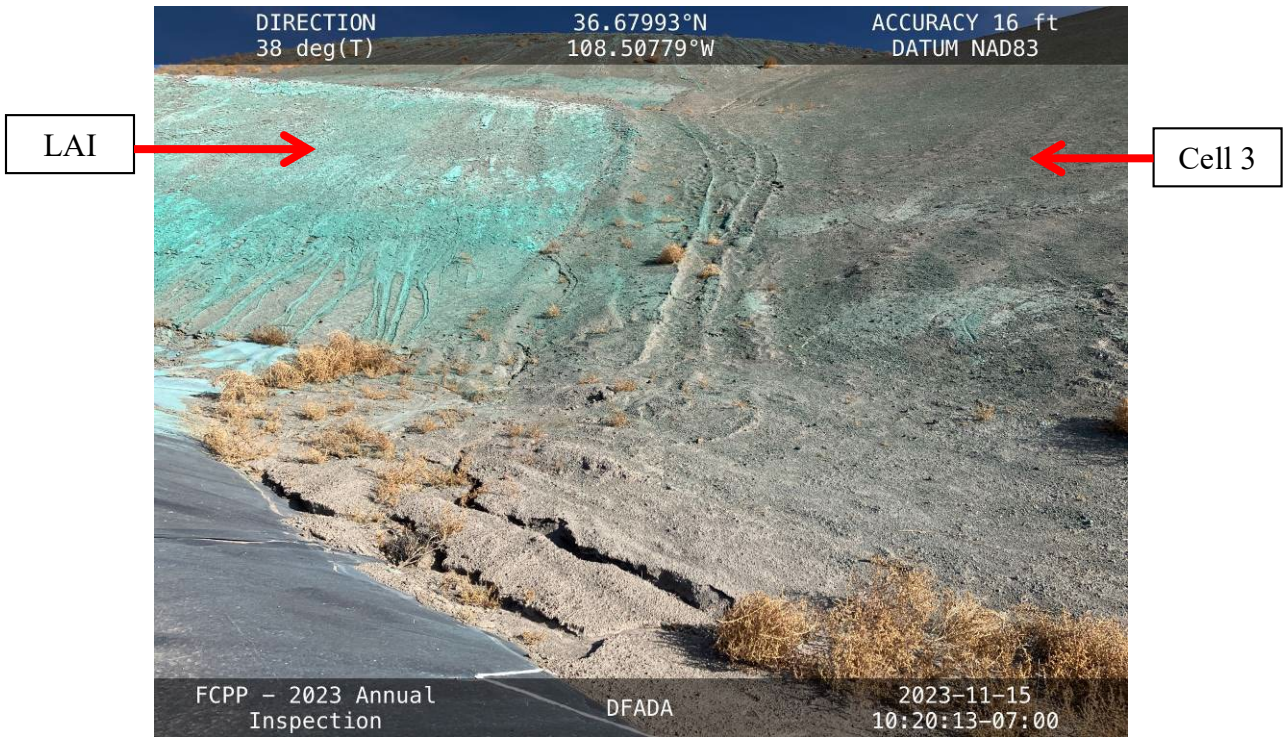
20231115 – IMG_2577
The Cell 1 leachate collection pond and middle of the western slope.

20231115 – IMG_2578
The Cell 1 leachate collection pond and southern portion of the western slope.

20231115 – IMG_2581
Reeds and sediment filling the drainage ditch at the western toe of the Cell 3 slope.



20231115 – IMG_2584
The Cell 3/Cell 1 junction, facing east from the western toe.

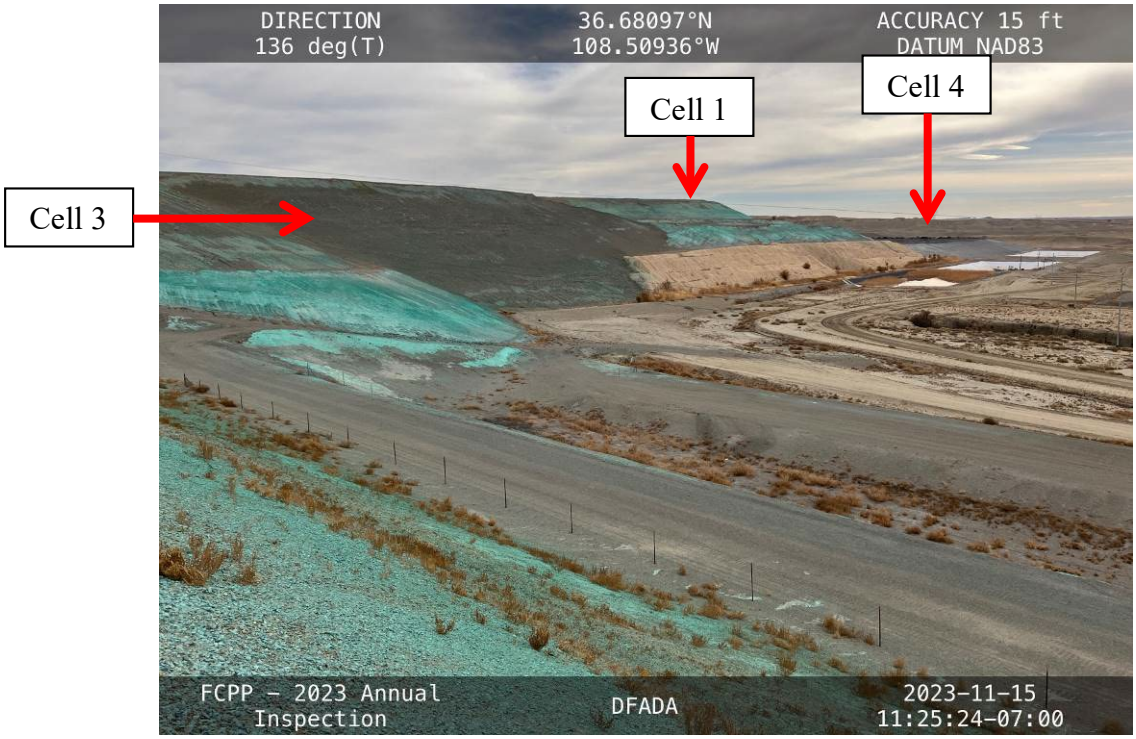


20231115 – IMG_2587

The LAI/Cell 3 groin with evidence of historic erosion on the slope and current erosion at the toe.

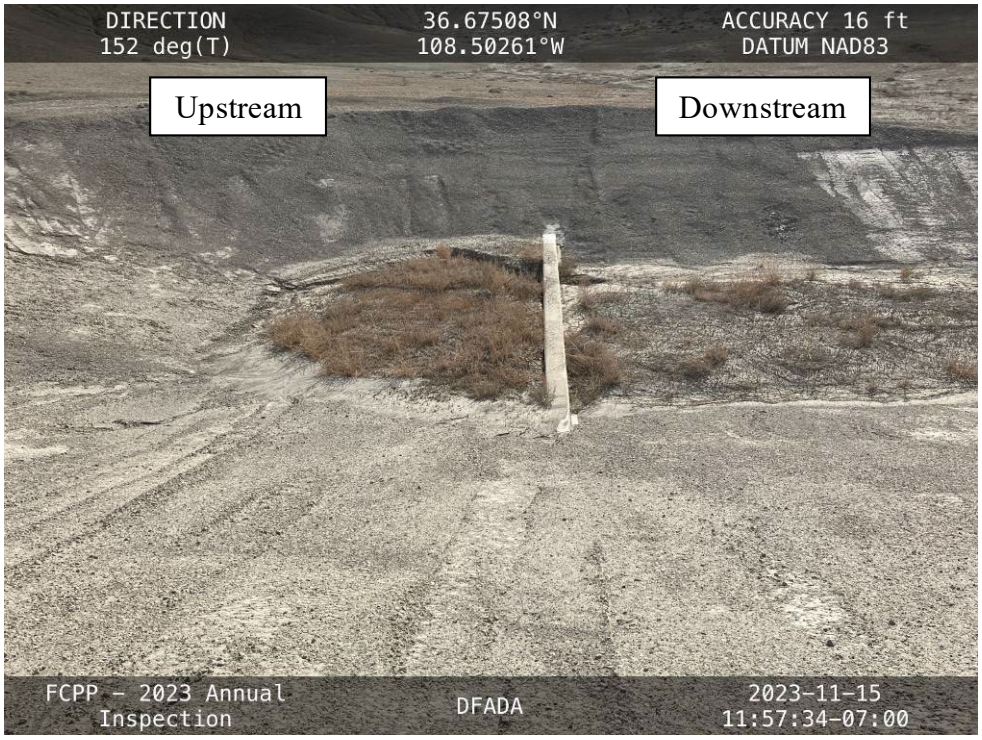
20231115 – IMG_2589

The downstream toe of the Cell 3 West Embankment, facing south.

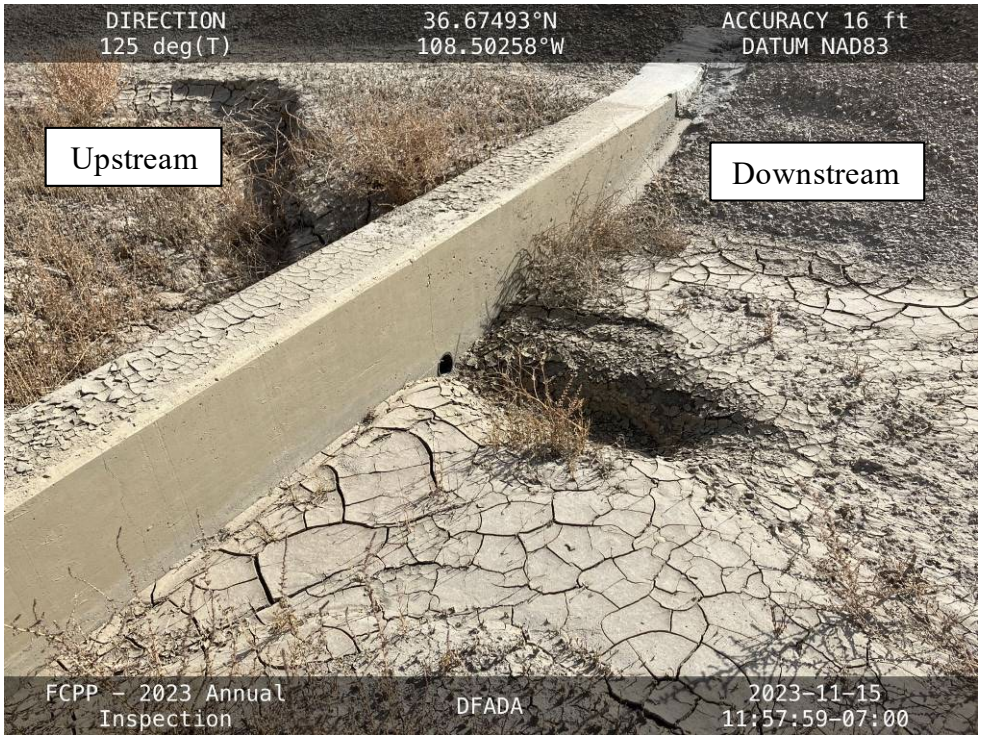


20231115 – IMG_2717
The downstream slope of DFADA Cells 1, 3, and 4, facing south from the LDWP crest.

20231115 – IMG_2766
The Stormwater Diversion Channel south of Cell 4 downstream of the stilling basin, facing southwest.

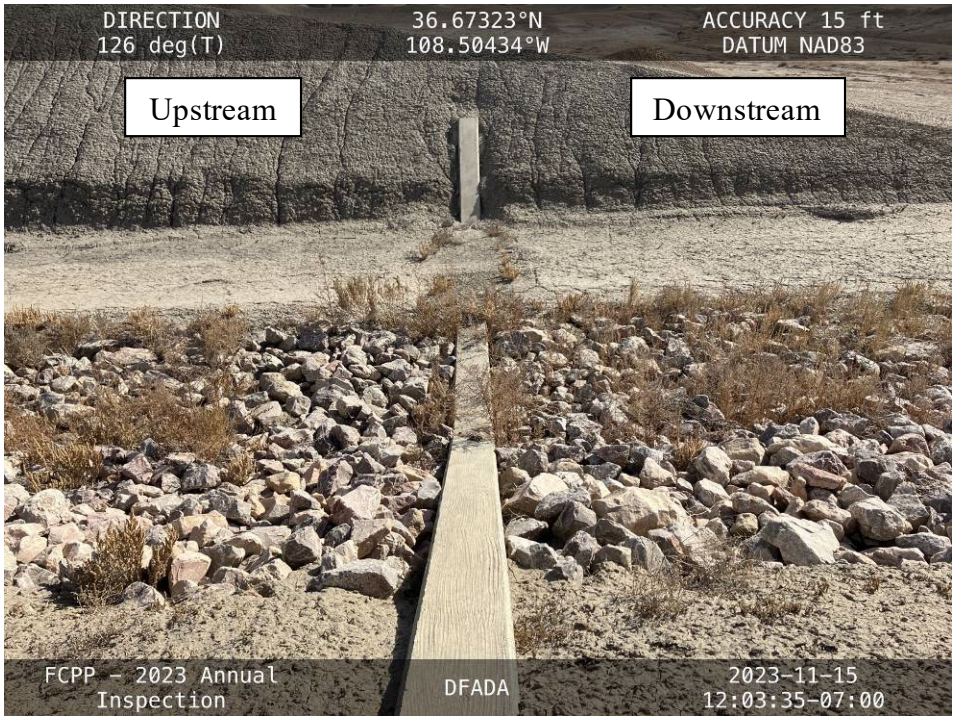


20231115 – IMG_2767
The new concrete weir wall in the new stilling basin filled with sediment on both sides.



20231115 – IMG_2769
A drainage hole in the new concrete weir wall.

20231115 – IMG_2772
Several feet of erosion where the Stormwater Diversion Channel previously terminated, immediately upstream of the section lined with cement-treated base.



20231115 – IMG_2776
The headwall at the end of the Stormwater Diversion Channel with sediment on both sides.

20231115 – IMG_2778
The end of the Stormwater Diversion Channel, facing south.

20231115 – IMG_2781
3.5 feet of erosion at the outlet for the Stormwater Diversion Channel.

20231115 – IMG_2782
Erosion around the new outlet for the Stormwater Diversion Channel.

20231115 – IMG_2785
The inlet to the Stormwater Diversion Channel, facing north from the ash haul road.

APPENDIX E

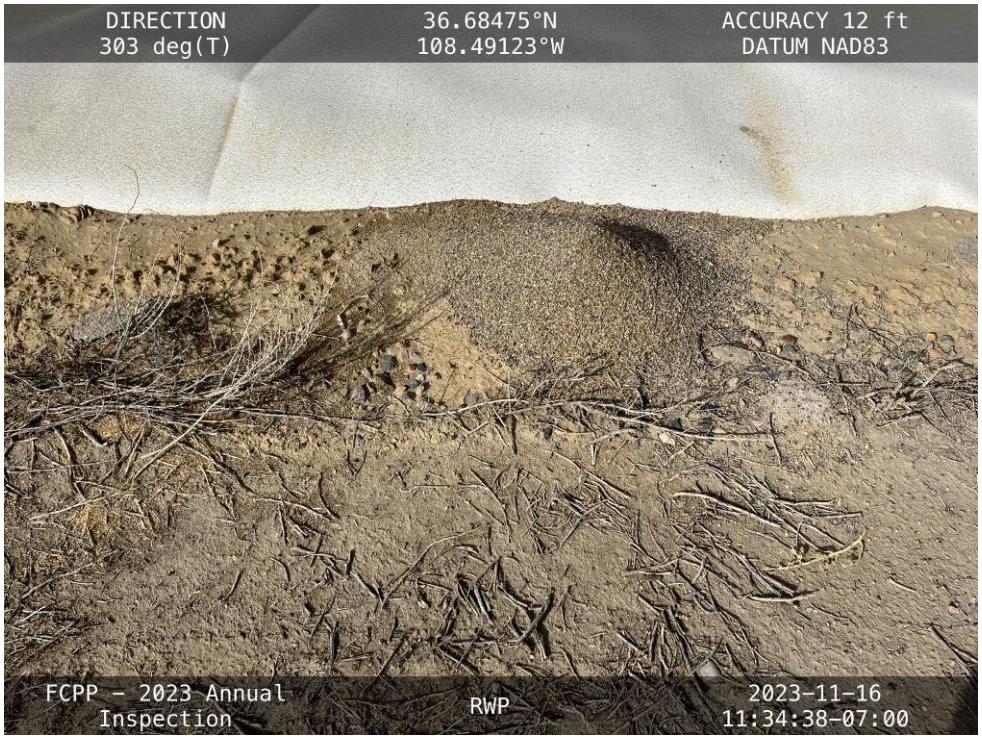
RETURN WATER POND (RWP) PHOTO LOG

20231116 – IMG_3114
The upstream slope of the Northeast Embankment, facing northwest from the eastern corner.

20231116 – IMG_3115
The upstream slope of the Southeast Embankment, facing southwest from the eastern corner.

20231116 – IMG_3119
The crest of the Southeast Embankment, facing southwest from the eastern corner.

20231116 – IMG_3120
The drainage ditch along the downstream slope of the Southeast Embankment, facing southwest.



20231116 – IMG_3121
An ant hill on the crest of the Southeast Embankment.

20231116 – IMG_3123
The upstream slope of the RWP Internal Embankment, facing northwest.

20231116 – IMG_3124
The crest of the Internal Embankment, facing northwest.

20231116 – IMG_3125
The upstream northeast slope of the FGD Pond Internal Embankment, facing northwest.

20231116 – IMG_3126
The empty FGD Pond cell, facing west.

20231116 – IMG_3127
The upstream southeast slope of the FGD Pond cell, facing southwest.

20231116 – IMG_3128
The crest of the FGD Pond Southeast Embankment, facing southwest.

20231116 – IMG_3129
The drainage ditch on the downstream side of the FGD Pond Southeast Embankment, facing southwest.

20231116 – IMG_3145
The drainage ditch on the downstream side of the FGD Pond Southeast Embankment, facing northeast.

20231116 – IMG_3146
The crest of the FGD Pond Southeast Embankment, facing northeast.

20231116 – IMG_3148
The upstream slope of the FGD Pond Southwest Embankment with two repaired areas in the foreground, facing northwest.

20231116 – IMG_3149
The crest of the FGD Pond South Embankment, facing northwest.

20231116 – IMG_3150
The downstream slope of the FGD Pond Southwest Embankment, facing northwest.

20231116 – IMG_3153
The western corner of the FGD Pond, facing northwest.

20231116 – IMG_3155
Sediment filling the drainage ditch on the western corner of the FGD Pond.

20231116 – IMG_3156
The drainage ditch on the western corner of the FGD Pond, facing southeast from the western corner.

20231116 – IMG_3157
The crest of the Southwest Embankment of the FGD Pond, facing southeast from the western corner.

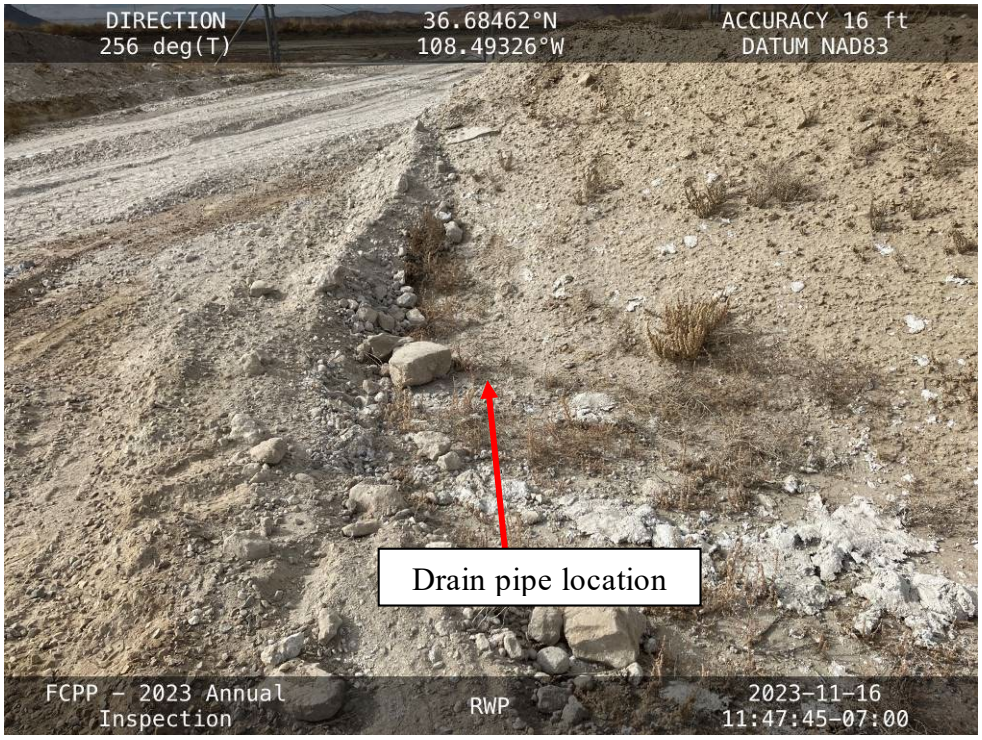
20231116 – IMG_3160
The upstream slope of the FGD Pond Northwest Embankment, facing northeast.

20231116 – IMG_3161
The crest of the FGD Pond Northwest Embankment, facing northeast.

20231116 – IMG_3162
The downstream slope of the FGD Pond Northwest Embankment, facing northeast.

20231116 – IMG_3163
FGD spilled outside the FGD Pond during recent removal activities.

20231116 – IMG_3164
The FGD Pond Inlet Pipes.



20231116 – IMG_3165
Sediment (to be removed) blocking the drain pipe on the western corner of the RWP.

20231116 – IMG_3176
The upstream slope of the FGD Pond Internal Embankment, facing southeast.

20231116 – IMG_3177
The crest of the FGD Pond Internal Embankment, facing southeast.

20231116 – IMG_3178
The upstream slope of the RWP Internal Embankment with loose liner where previous construction activity took place (arrow), facing southeast.

20231116 – IMG_3180
The RWP cell inlet along the upstream slope of the Northwest Embankment, facing northeast.

20231116 – IMG_3181
The crest of the RWP Cell Northwest Embankment, facing northeast.

20231116 – IMG_3182
Connections for the new pipes between the RWP and FGD Pond cells.

20231116 – IMG_3187
RWP cell inlet pipes.

20231116 – IMG_3189
RWP cell inlet pipes.

20231116 – IMG_3193
The western corner of the RWP cell Internal Embankment, with loose liner where previous construction activity took place (arrow).

20231116 – IMG_3195
An ant hill on the RWP Northwest Embankment crest.

20231116 – IMG_3196
The return water pipe and pumps along the downstream slope of the Northwest Embankment.

20231116 – IMG_3197
The return water pipe along the upstream slope of the Northwest Embankment.

20231116 – IMG_3201
The downstream slope of the Northwest Embankment, facing southwest from the north corner.

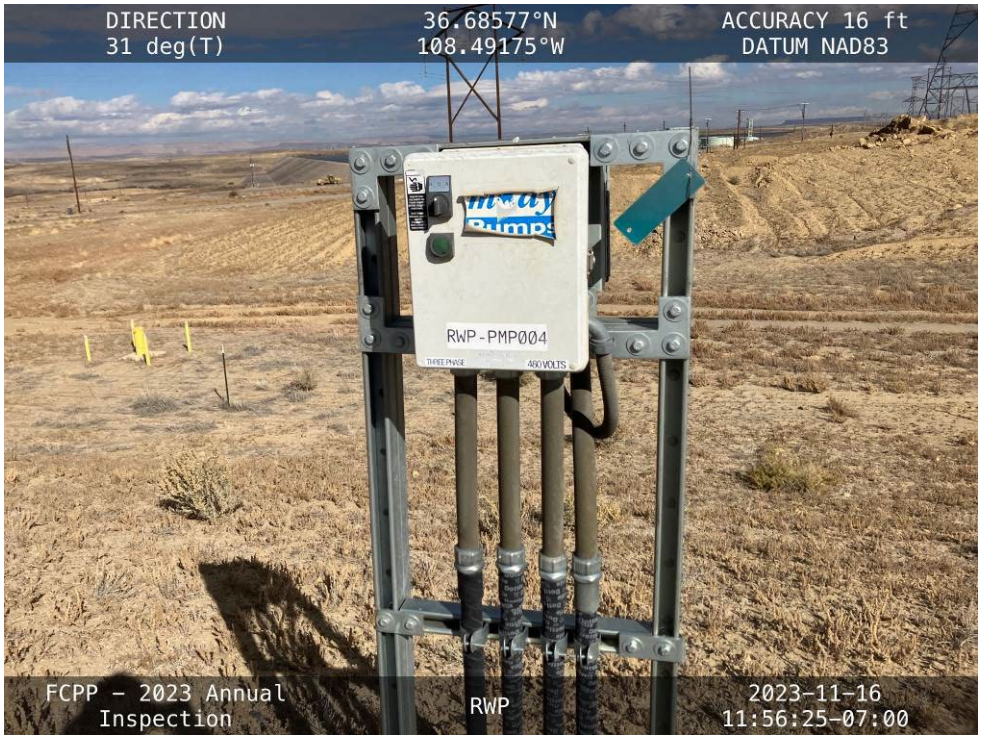
20231116 – IMG_3204
The crest of the Northwest Embankment, facing southwest from the north corner.

20231116 – IMG_3205
The upstream slope of the Northeast Embankment, facing southeast from the north corner.

20231116 – IMG_3206
The crest of the Northeast Embankment, facing southeast from the north corner.

20231116 – IMG_3207
The downstream slope of the Northeast Embankment, facing southeast from the north corner.

20231116 – IMG_3208
A monitoring well installed at the toe of the Northeast Embankment.



20231116 – IMG_3211
The LCRS pump control for RWP Pump 004 on the north side of the RWP.

20231116 – IMG_3212
The LCRS riser pipes and crane on the north side of the RWP.

20231116 – IMG_3213
The upstream slope of the Northwest Embankment, facing southwest from the north corner.

20231116 – IMG_3218
The liner pulling out of the anchor trench along the Northeast Embankment.

20231116 – IMG_3220
The downstream slope of the RWP cell Northeast Embankment, facing northwest from the eastern corner.

20231116 – IMG_3221
The crest of the RWP cell Northeast Embankment, facing northwest from the eastern corner.