



Facility Evaluation Report (FER) Part 1

For Compliance with 40 CFR §257.75(c)

Legacy Coal Combustion Residuals (CCR) Surface
Impoundments and CCR Management Units Final
Rule

Ray Nixon Power Plant

Colorado Springs Utilities

December 13, 2024



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Appendix A. Fly Ash Cleanup Documentation

Table i. Summary of 40 CFR Section §257.75 Facility Evaluation Required Components

Facility Evaluation Requirements	Compliance with Requirement
(c)(1) No later than February 9, 2026, the owner or operator of an active facility or a facility with a legacy CCR surface impoundment must prepare a Facility Evaluation Report Part 1, which shall contain, to the extent reasonably and readily available, the information specified in paragraphs (c)(1)(i) through (xiv) of this section. The owner or operator has prepared the Facility Evaluation Report Part 1 when the report has been placed in the facility's operating record as required by §257.105(f)(25).	Complete when Part 1 FER is placed in facility operating record
(i) The name and address of the person(s) owning and operating the facility; the unit name associated with each regulated CCR unit and CCR management unit at the facility; and the identification number of each regulated CCR unit and CCR management unit if any have been assigned by the state or by the owner.	Section 2.0
(ii) The location of any CCR management unit identified on the most recent U.S. Geological Survey (USGS) 7½-minute or 15-minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available. The location of each regulated CCR unit at the facility must also be identified in the same manner.	Sections 2.0 and 2.1
(iii) A statement of the purpose(s) for which each CCR management unit at the facility is or was used.	Section 2.2
(iv) A description of the physical and engineering properties of the foundation and abutment materials on which each CCR management unit is constructed.	Section 2.3
(v) A discussion of any known spills or releases of CCR, including any associated remediation activities, from each CCR management unit and whether the spills or releases were reported to state or federal agencies.	Section 2.4
(vi) Any record or knowledge of structural instability of each CCR management unit.	Section 2.5
(vii) Any record or knowledge of groundwater contamination associated or potentially associated with each CCR management unit.	Section 2.6
(viii) The size of each CCR management unit, including the general lateral and vertical dimensions and an estimate of the volume of waste contained within the unit.	Section 2.7
(ix) Dates when each CCR management unit first received CCR and when each CCR management unit ceased receiving CCR.	Section 2.8
(x) Identification of all types of CCR in each CCR management unit at the facility.	Section 2.9
(xi) A narrative description of any closure activities that have occurred, including any applicable engineering drawings or reports.	Section 2.10
(xii) A narrative that documents the data reviewed as part of the facility evaluation process, and that lists all data and information indicating the presence or absence of CCR management units at the facility.	Section 2.11
(xiii) Any supporting information used to identify and evaluate CCR management units at the facility, including but not limited to any construction diagrams, engineering drawings, permit documents, wastestream flow diagrams, aerial photographs, satellite images, historical facility maps, any field or analytical data, groundwater monitoring data or reports, inspection reports, documentation of interviews with current or former facility workers, and other documents used to identify and evaluate CCR management units at the facility.	Section 2.12

Table i. Summary of 40 CFR Section §257.75 Facility Evaluation Required Components

Facility Evaluation Requirements	Compliance with Requirement
(xiv) A narrative description of any data gaps for information in paragraphs (c)(i) through (xiii) of this section, not available in existing information collection records and a plan for remedying identified data gaps through a physical examination of the facility, including any field or laboratory work needed to remedy data gaps in the Facility Evaluation Report Part 1 record. The plan must include the major milestones needed to fill the identified data gaps (e.g., a physical examination of the facility, sampling of media, measurements of CCR concentrations in and around the unit or physical presence, delineation of CCR management unit(s)) and dates to complete such needed tasks. Also, as necessary and timely, any updates to data gap remedy plans must be added to the public record during the Facility Evaluation Report Part 1.	Sections 2.13 and 2.14
(2) The owner or operator of any facility regulated under this subpart must obtain a certification from a qualified professional engineer stating that the Facility Evaluation Report Part 1 meets the requirements of paragraph (c)(1) of this section.	Section 3.0
(3) The owner or operator of any facility regulated under this subpart must certify the Facility Evaluation Report Part 1 required by paragraph (c)(1) of this section with the following statement signed by the owner or operator or an authorized representative:	Section 4.0
(4) No later than February 9, 2026, the owner or operator must notify the Agency of the establishment of a CCR website using the procedures in §257.107(a) via the "contact us" form on EPA's CCR website.	Complete
(5) The owner or operator of any facility regulated under this subpart that does not contain any CCR management unit must submit Facility Evaluation Report Part 1 documenting the steps taken during the facility evaluation to determine the absence of any CCR management unit. The Facility Evaluation Report Part 1 must include the certifications required under paragraph (c)(3) of this section.	N/A

1. Introduction and Purpose

On May 8, 2024, the United States Environmental Protection Agency (EPA) finalized changes to the Coal Combustion Residuals (CCR) regulations for inactive surface impoundments at inactive electric utilities, referred to as legacy CCR surface impoundments and added regulations for CCR Management Units (CCRMUs). Through implementation of the 2015 CCR rule, EPA found areas at regulated CCR facilities where CCR was disposed of or managed on land outside of regulated units at CCR facilities, referred to as CCRMUs. The updated Rule requires groundwater monitoring, corrective action, closure, and post-closure care requirements for all CCRMUs at covered facilities. This Rule change, referred to as the Legacy CCR Rule, has an effective date of November 8, 2024.

Covered facilities are required to complete a facility evaluation, which includes preparation of a Part 1 Facility Evaluation Report (FER) followed by a Part 2 FER. Covered facilities include active electric utilities or independent power producers that generated power for the electrical grid on or after October 19, 2015. By this definition, the Ray Nixon Power Plant (RNPP) is an active facility, considered a covered facility, and is required to prepare a Part 1 FER.

The purpose of this Part 1 FER is to review reasonably and readily available information for RNPP on CCR management and whether CCR was either routinely and systematically placed on land, or where facility activities otherwise resulted in measurable accumulations of CCR on land to ultimately determine the potential existence and locations of CCRMUs containing at least one ton of CCR.

The definition of a CCRMU from 40 CFR Section §257.53 is:

CCR management unit means any area of land on which any noncontainerized accumulation of CCR is received, is placed, or is otherwise managed, that is not a regulated CCR unit. This includes inactive CCR landfills and CCR units that closed prior to October 19, 2015, but does not include roadbed and associated embankments in which CCR is used unless the facility or a permitting authority determines that the roadbed is causing or contributing to a statistically significant level above the groundwater protection standard established under § 257.95(h).

This report documents the historical records that were reviewed, identifies data gaps, and describes a plan for conducting a physical inspection of the site to verify locations and fill data gaps in the Part 2 FER.

The format of this report follows the required CCR Rule FER elements in 40 CFR Section §257.75(c)(1)(i) through (xiv).

2. Facility Description

The RNPP facility is owned and operated by Colorado Springs Utilities (Utilities) and is located at the Clear Spring Ranch (CSR) site south of Fountain, Colorado in El Paso County. The RNPP facility began operation in 1980. RNPP is an active coal-fired plant comprised of a steam turbine generator with a capacity of 225 megawatts (MW). The plant also contains two simple cycle 35-MW gas turbines used for peaking power, these turbines were installed in 2000 and operate on natural gas (Thompson, 2004). RNPP is scheduled to shut down by 2030. A site location map for RNPP is provided as Figure 1.

Site owner and contact information is:

Colorado Springs Utilities – Operations Division
Attn: Power Plant Manager
P.O. Box 1103, Mail Code 40
Colorado Springs, CO 80947

Facilities at RNPP that have stored or treated coal ash include the CCR Landfill, 4-Ponds, and the Brine Disposal Area (Figure 2 and Figure 3). According to the response provided by Utilities to the 2010 EPA Information Collection Request (ICR) associated with effluent limitations guidelines, there was 9.72 acres of active/inactive/open ash ponds and 80.3 acres of active/inactive/open landfills associated with RNPP. It was not specified in the ICR which ash ponds and landfills these acreages apply to; however, the ash pond acreage is similar to the total acreage of the 4-Ponds and the landfill acreage is similar to the CCR Landfill footprint (the 4-Ponds and CCR Landfill are described below). The ICR also referenced the indoor dry bottom ash handling system was installed in 1999 – the retrofit was a complete conversion from a wet to dry bottom ash handling system (Ray D Nixon 06767 Part C.pdf).

The CCR Landfill in the southern portion of CSR covers approximately 75 acres and is regulated via the Colorado Department of Public Health and Environment (CDPHE) Regulations Pertaining to Solid Waste Sites & Facilities 6 CCR 1007-2 Part 1 (Solid Waste Regulations), El Paso County's Certification of Designation (CD) requirements, and the EPA CCR Rule. Utilities received the CD for the CCR Landfill from El Paso County in 1978.

From 1978 to 1980, ash from Utilities' Martin Drake Power Plant (Drake) was placed within ash storage trenches located within the limits of the CCR Landfill in the southern portion of the CSR site (Figure 3). To dispose of the Drake ash (slurry) a series of trenches and dikes (built with fly ash and soil) were constructed in order to retain the ash slurry until water naturally evaporated allowing the ash to be covered with soil (Woodward-Clyde Consultants, 1978). This initial placement of CCR within the landfill footprint (i.e., Phase 1 of placement) consisted of filling the undisturbed low-lying areas and constructed trenches with ash and covering with soil up to grades that would support future phases of ash disposal in the landfill (Figure 2). The practice of slurry deposition in trenches ceased by 1980. The landfill received fly ash and bottom ash from Drake from 1980 until August 2021, which is when Drake ceased operation of its coal-burning units.

Since coal-burning operations began at RNPP in 1980, bottom ash and fly ash have been generated at RNPP. Bottom ash from RNPP was initially managed using the 4-Ponds as described below. After settlement in the ponds, final disposal in the CCR Landfill occurred approximately four times per year. Fly ash from RNPP was initially placed in the low-lying areas of the western portion of the CCR Landfill and the ash storage trenches with ash from Drake (Figure 2). The landfill is active and continues to receive ash from RNPP. Because the CCR Landfill is regulated under the 2015 CCR Rule, the CCR Landfill is not considered a CCRMU for this facility evaluation.

The 4-Ponds include four former storage ponds (NE Pond, SE Pond, NW Pond and SW Pond) that were used to temporarily hold bottom ash prior to placement in Utilities' permitted CCR Landfill (Figure 3). The ponds were constructed in 1980 and used for CCR management until 2000. The 4-Ponds are currently interconnected via underground piping and utilized as Colorado Department of Public Health and Environment (CDPHE) Solid Waste Regulations Section 9 Type A Impoundments associated with the RNPP's Zero Discharge Water Treatment Plant (ZDWTP) and Front Range Power Plant (FRPP) operations. Until RNPP transitioned to dry bottom ash handling in 2000, bottom ash from RNPP was sluiced via a pipeline to the NE Pond or SE Pond for settlement. The use of the NE and SE Ponds alternated to allow for removal of settled ash. The SW Pond received overflow water from the NE and SE Ponds, and the NW Pond received overflow water from the SW Pond. Water from the NW Pond was then recycled back to the ash sluice tank at RNPP (CSU, 2018). When RNPP converted to dry bottom ash handling in 2000, the 4-Ponds were no longer needed for ash handling. The NE Pond was re-purposed as the FRPP Blowdown Basin and the SE Pond was re-purposed as the ZDWTP Backwash Basin (CSU, 2018). Each of the 4-Ponds were closed by ash removal prior to the CCR Rule effective date in October 2015. The NE Pond was cleaned out in 2002, the SE Pond was cleaned out in 2012, and the NW and SW Ponds were cleaned out in September 2015. All sediment was removed from the 4-Ponds and disposed in the onsite CCR Landfill (Former Ash Pond Clean Out Summary with Attachments.pdf). The 4-Ponds closure activities are described in more detail in Section 2.10. In summary, based on the records reviewed, there is no reason to believe there is greater than one ton of CCR remaining in any of the 4-Ponds. Because there is not greater than one ton of CCR in any of the 4-Ponds these former ponds are not considered CCRMUs.

The Brine Disposal Area is located to the northeast of the onsite CCR Landfill (Figure 2). This disposal area is located within the boundaries established by the CD's ash disposal site permit and was formerly identified as the waste salt/fly ash disposal sites (Undated Ash Landfill Operations Plan.pdf). This area received dewatered waste salt brine from the ZDWTP's decant basins that was mixed with fly ash from the RNPP fly ash silo. Disposal of waste salts/brine and fly ash in this area appears to have ceased in 1994 when the CCR Landfill's Engineering Design and Operations Report (EDOR), also known as an Engineering Design and Operations Plan [EDOP], was amended to receive waste salts from the ZDWTP in the landfill. The area was reportedly covered with soil in approximately 2008 and is currently utilized as a soil stockpile area. Although this area was originally considered part of the permitted ash disposal site, recent CCR Landfill documents (Closure Plan, Post-Closure Plan, and EDOP) do not indicate it is part

of the regulated CCR Landfill. The quantity of fly ash mixed with waste salts/brine for disposal is unknown. Due to the potential for more than one ton of fly ash being placed in the Brine Disposal Area, and because it is not currently part of the regulated CCR Landfill, this area is considered a CCRMU. Additional investigation is warranted to estimate the quantity of fly ash in the Brine Disposal Area (see Section 2.13).

Table 1 includes a summary of details for each facility described above.

Table 1. RNPP Facility Details

Facility Name	Year Constructed	Lined	Potential CCRMU
CCR Landfill	1978	No	No
NE Pond (4-Ponds)	1980	Yes – asphalt	No
SE Pond (4-Ponds)	1980	Yes – asphalt	No
NW Pond (4-Ponds)	1980	Yes – clay	No
SW Pond (4-Ponds)	1980	Yes – clay	No
Former Brine Disposal Area	1980s	Unknown	Yes

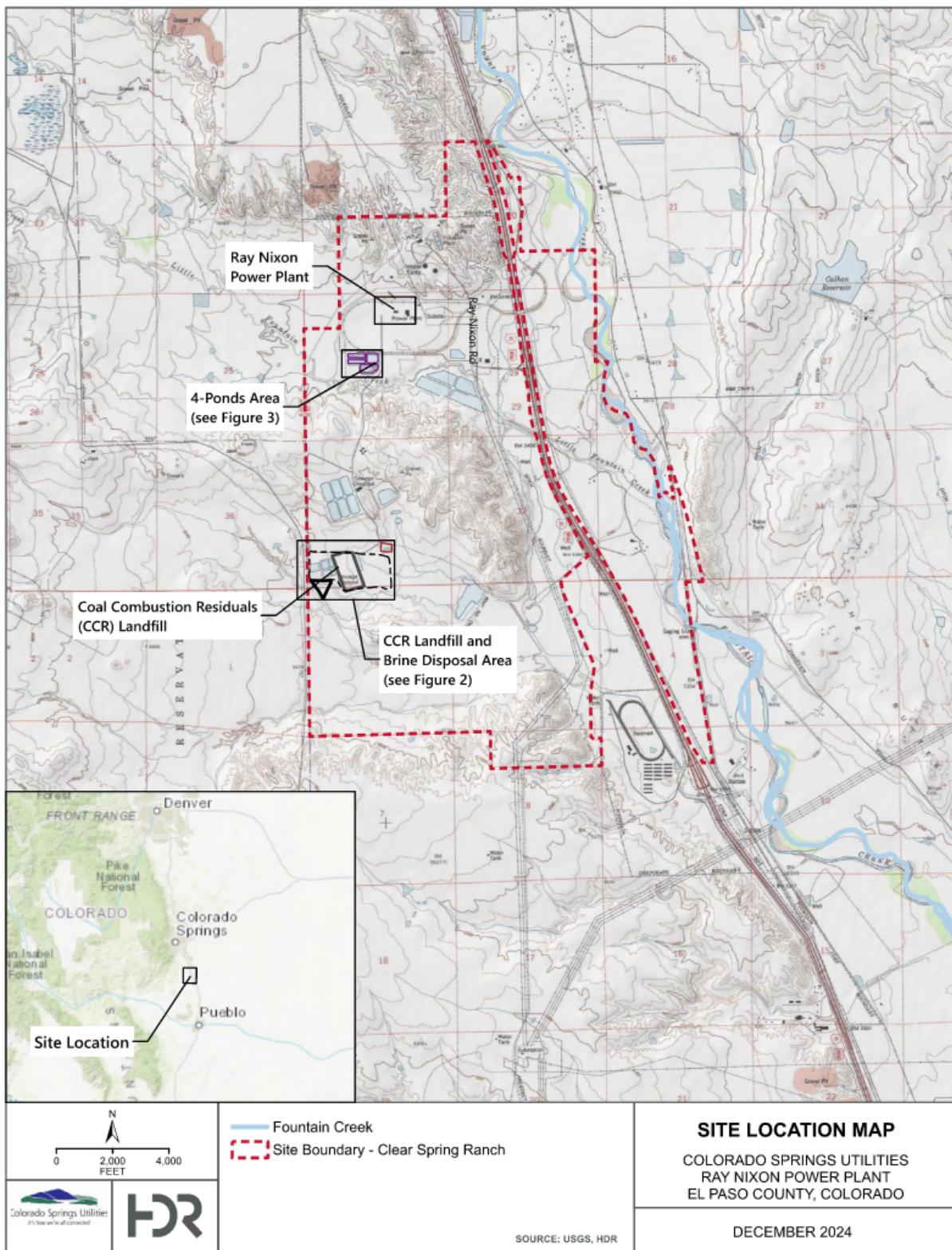


Figure 1. Site Location Map

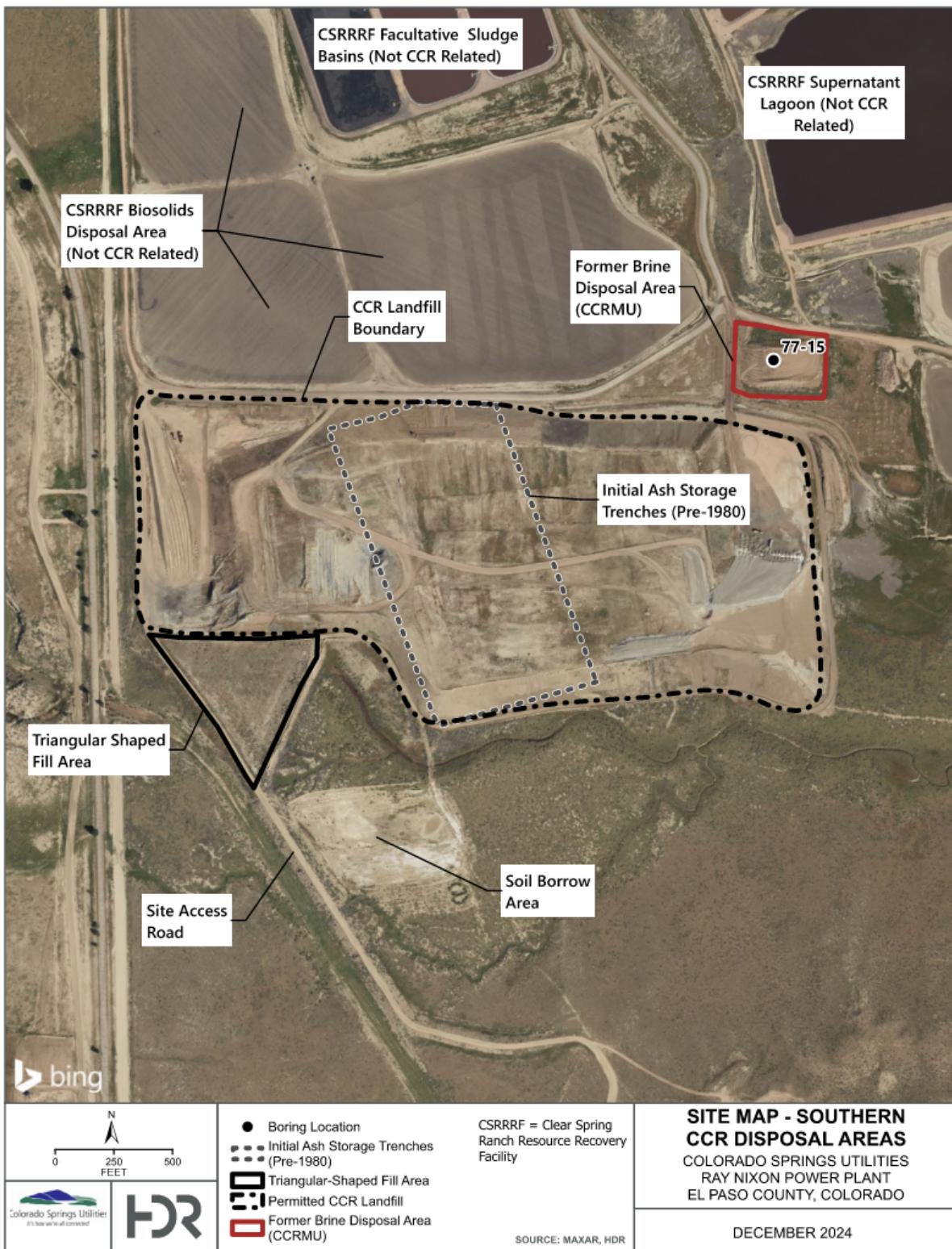


Figure 2. Site Map – Southern CCR Disposal Areas



Figure 3. Site Map – 4-Ponds

2.1. CCRMUs Identified on Maps

There is a former Brine Disposal Area that reportedly received fly ash mixed with brine from the ZDWTP's decant basins, when the disposal area was previously in use. The Brine Disposal Area is the only CCRMU identified at RNPP. Plant drawings and historic aerial maps illustrate the location of the Brine Disposal Area and confirm disposal occurred until approximately 1994. Figure 2 shows the approximate boundary of the Brine Disposal Area. There is currently a soil stockpile located on top of the former Brine Disposal Area. Due to the unknown quantity of fly ash in this disposal area, additional investigation is warranted to confirm the Brine Disposal Area is a CCRMU, as described in Section 2.13.

2.2. Purpose of CCRMU

The Brine Disposal Area was used for disposal of brine/waste salts from the ZDWTP's decant basins. This disposal area was not specifically utilized by the RNPP but fly ash from RNPP was mixed with the brine/waste salts as part of the disposal process.

2.3. Physical and Engineering Properties of Foundation and Abutment Materials of CCRMU

The Brine Disposal Area appears to have been a natural low-lying disposal unit that was essentially filled with waste and soil to surrounding surface grades. Based on the records reviewed, it appears there may have been up to approximately 20 feet of fill in this unit from approximately 1980 to around 1994. Existing conditions in this area of the site include a soil stockpile that is used for cover material in the CCR Landfill.

2.4. Known Spills or Releases of CCR

One spill of CCR was identified as part of this facility evaluation. The spill occurred outside of the paved fly ash silo operational area within an earthen secondary containment basin associated with a power plant fuel oil storage tank, located on the north side of the RNPP. The spill was cleaned up in October 2024, all CCR from the spill was removed and disposed in the onsite CCR Landfill. Because the spill was contained within an existing secondary containment area, the spill was not reported to State or Federal agencies. Cleanup documentation for the fly ash spill is included in Appendix A.

Based on records reviewed, there are no other known spills or releases of CCR from ash treatment or storage units at the facility.

2.5. Structural Instability

Based on records reviewed, there is no indication of structural instability related to the former Brine Disposal Area. There are no engineered structures related to the unit.

2.6. Groundwater Contamination Associated with the CCRMU

There are groundwater monitoring wells at the RNPP site associated with the CCR Landfill, former ash storage ponds (i.e., 4-Ponds), and other non-CCR related monitoring at the site. There are no groundwater monitoring wells associated with the former Brine Disposal Area; however, based on Utilities' 2023 Annual Groundwater Monitoring Report for the CCR Landfill (CSU, 2024), there were no statistically significant levels for Appendix IV constituents in the monitoring network for the nearby CCR Landfill. Additionally, although the landfill is proximate to the former Brine Disposal Area, the monitoring network for the CCR Landfill does not include monitoring for groundwater flow upgradient and beneath the former Brine Disposal Area. Therefore, based on the records reviewed there is no record of groundwater contamination associated with the former Brine Disposal Area.

2.7. Physical Dimensions of the CCRMU

The physical dimensions (lateral extent) of the former Brine Disposal Area were estimated using drawings and historic aerial images of the area (Figure 3). There is one boring log from 1977 (boring 77-15) that indicates the existing ground surface prior to waste placement in the area was around 5,465 feet and that bedrock was encountered at approximately 5,446 feet (Woodward-Clyde Consultants, 1978). Considering the existing ground surface elevations, the historic boring data prior to waste placement, and the assumption that the Brine Disposal Area was excavated to bedrock for waste placement, the former Brine Disposal Area may contain fly ash to depths of approximately 20 feet, or to a bottom elevation near 5,446 feet.

While the general area used for waste salts/brine and fly ash disposal is evident in historic aerial photographs and drawings, they are insufficient to confirm the lateral and vertical extent of CCR in the former Brine Disposal Area. Based on the records reviewed, the approximate area of the former Brine Disposal Area is 2.5 acres and the vertical extent of waste mixed with fly ash is potentially up to 20 feet deep (or to a bottom elevation near 5,446 feet).

2.8. Operation Dates of Each CCRMU

The former Brine Disposal Area received waste salts/brine mixed with fly ash from approximately 1980 to 1994.

2.9. CCR Type(s)

Based on the records reviewed, the type of CCR that appears to have been placed in the former Brine Disposal Area was fly ash (mixed with waste salts/brine to accommodate transport for disposal).

2.10. Narrative Description of Any Closure Activities

No records were identified that addressed the removal of coal ash or closure of the former Brine Disposal Area. This section does not address closure of the CCR Landfill as it is not a CCRMU.

Cleanout documentation for the 4-Ponds was available for review and is described in Table 2 (Former Ash Pond Clean Out Summary with Attachments.pdf). The NE Pond and SE Pond were cleaned out prior to being transferred for use by the FRPP and ZDWTP facilities. The NW and SW Ponds were cleaned out prior to the effective date of the 2015 CCR Rule.

All ash and sediment from the 4-Ponds were removed during the clean outs, resulting in no CCR remaining in each of the ponds.

Table 2. RNPP 4-Ponds Clean Out Summaries

Year	Pond	Clean Out Description*	Liner Description*
2002	NE Pond	<ul style="list-style-type: none"> Sediment was removed to asphalt liner and basin was washed with a high-pressure hose. Sampling of soil beneath the asphalt liner was not conducted. 	
2012	SE Pond	<ul style="list-style-type: none"> 1376 tons of sediment was removed and disposed in the CSR CCR Landfill. Cleaned until asphalt liner was visible. Sampling of soil beneath the asphalt liner was not conducted. 	6 inches asphalt, 18 inches gravel, and 2 feet clay (minimum)
2015	NW and SW Ponds	<ul style="list-style-type: none"> In total 4,368 tons of material was removed from the two ponds and disposed in the CSR CCR Landfill. Cleaned until clay liner was clearly visible. Photo documentation confirms that all material (ash, coal dust, or dirt) above the clay liner was removed and the clay liner was clearly evident throughout the entire pond. Sampling of the clay liner and soil beneath the liner was not conducted in 2015. However, soil sampling beneath the ponds was conducted in 2012 – 3 soil samples were collected 2 feet below the sediment/liner interface of each pond (6 total samples) and analyzed for: <ul style="list-style-type: none"> 27 metals, bicarbonate, carbonate, total alkalinity, bromide, chloride, fluoride, ammonia, nitrate, nitrite, sulfate, total organic carbon, VOCs, and SVOCs. Only arsenic was measured in the clay liner samples at levels above its EPA Regional Screening Level (RSL). Although arsenic concentrations were above the EPA RSL, the measured concentrations in the clay liner samples ranged from 10.6 to 11.8 mg/kg, which are within the range of EPA's 95% UCLM Background Soil Arsenic Concentrations in Colorado for native grassland, rangeland, or agriculture (3-14 mg/kg). Therefore, the arsenic concentrations in the clay liner samples beneath the ponds are likely naturally occurring and not due to the presence of CCR. VOCs and SVOCs were not detected in the samples. 	2 feet clay (minimum)

*From Ash Pond Clean Out Summary with Attachments.pdf

2.11. Narrative of Data Reviewed

Documents that were reviewed and found to be significant to the findings of the identified CCRMU at RNPP are described in narrative format in this section. Section 2.12 lists all the documents reviewed for this Part 1 FER.

Records Reviewed

BRINE DISPOSAL AREA

Records were reviewed that indicated the Brine Disposal Area should be investigated as a CCRMU. The historic Operational Plan for the Ray Nixon Waste Salt/Fly Ash Disposal Site confirms that RNPP fly ash was mixed with waste salts/brine from concrete decant basins and placed in the waste salt/fly ash disposal pit (what is referred to as the Brine Disposal Area in this facility evaluation) separate from the ash disposal site (i.e., CCR landfill), within the boundaries established by the CDPHE-permit and CD for the ash disposal site. Historic aerial imagery also confirms the location of the Brine Disposal Area outside of the CCR Landfill footprint.

Waste salt brine was generated at the RNPP effluent treatment plant (i.e., the ZDWTP) as a waste byproduct of the water evaporation process. The waste salt slurry was temporarily stored and contained in concrete basins located adjacent to the facility. The waste salt slurry was dewatered on a continuous basis by pumping the liquid brine to solar evaporation ponds, and the remaining salt waste was removed and transported to the waste salt/fly ash disposal site by two methods. One method included mixing the waste salt slurry/brine with fly ash from RNPP to absorb any remaining moisture in the waste salt brine before transporting via truck/trailer to the Brine Disposal Area. When this method was employed, which was up to approximately 4 times per year from 1980 to approximately 1994, approximately 100 tons of fly ash with a moisture content of 5-10% was unloaded and pushed into the decant basin with a front-end loader. The waste salt/fly ash mixture was then loaded into an open-bed pusher trailer and transported to the Brine Disposal Area by way of a paved roadway except for the last 100 yards adjacent to the Brine Disposal Area. The other disposal method consisted of adding softened well water to the decanted waste salt slurry, pumping into a tanker, and transporting to the Brine Disposal Area by way of a gravel roadway or the same roadway used by trailers transporting the waste salt/fly ash mixture (Undated Ash Landfill Operations Plan.pdf).

In 1994, the EDOR for the CCR Landfill was modified to include acceptance of waste salts from the ZDWTP for disposal within the landfill footprint. The location of waste salt/brine disposal then transitioned to an approximate 3.6-acre area in the southeast portion of the CCR Landfill. The location was confirmed with review of historical aerial imagery and a CSR Site Map from 2004 (CSU, 2004).

One boring log from 1977 (boring 77-15, identified on Figure 2) advanced prior to placement of waste salt and fly ash in the Brine Disposal Area indicated the ground surface elevation was approximately 5,465 feet at that time and bedrock was encountered at approximately 19 feet below ground surface, or at an elevation of approximately 5,446 feet (Woodward-Clyde Consultants, 1978).

Significant findings from the records reviewed associated with the Brine Disposal Area include the approximate limits of the disposal area, the approximate total depth of the unit, and that there was potentially up to approximately 6,000 tons of fly ash mixed with waste salts and placed in the Brine Disposal Area (this quantity assumes approximately 100 tons of fly ash was mixed with waste salt/brine 4 times per year for 15 years). The extent and estimated quantity of

ash in the CCRMU should be verified via field investigation/sampling as described in Sections 2.13 and 2.14.

CCR LANDFILL

The CCR Landfill is regulated by the EPA CCR Rule, CDPHE, and El Paso County. The land-use is authorized via a CD obtained from El Paso County (CD #004-001) in 1978. Placement of CCR in the landfill commenced in 1978 after receipt of the CD. The CCR Landfill is an active landfill permitted under the 2015 CCR Rule and therefore not considered a CCRMU.

4-PONDS

Records reviewed for the 4-Ponds describe how the ponds were used as former bottom ash ponds, closed by ash removal prior to the effective date of the CCR Rule (October 15, 2025), and repurposed as Type A Impoundments associated with the FRPP and ZDWTP at the facility.

The Former Ash Pond Clean Out Summary (Former Ash Pond Clean Out Summary with Attachments.pdf) for each of the 4-Ponds and additional photos of clean out of the NW and SW Ponds confirm that all CCR and sediment were removed from the 4-Ponds during the clean outs in 2002 (NE Pond), 2012 (SE Pond) and 2015 (NW and SW Ponds). The NE and SE Ponds are asphalt-lined (6-inches of asphalt on top of an 18-inch gravel layer and minimum 2 feet of clay). The NW and SW Ponds are clay-lined (minimum 2 feet prior to 2015 clean out).

As requested by CDPHE in November 2015, Utilities prepared a Demonstration Report for the 4-Ponds located at CSR (CSU, 2018) to provide additional support and justification for classifying the 4-Ponds as Type A Impoundments pursuant to Colorado Solid Waste Regulations. This Demonstration Report detailed the past and current uses of the ponds, design characteristics, influent sources and quality, pond water and sludge quality, below-liner soil quality, groundwater quality in the vicinity of the ponds, and confirmed that all pre-existing solids from bottom ash/water slurry management activities related to the RNPP was removed from the 4-Ponds prior to October 2015. Supported by information in the Demonstration Report, the 4-Ponds were deemed suitable for classification as Type A Impoundments based on waste characteristics, site setting, and point of compliance (Section 9.1.6(A)(3) of Solid Waste Regulations). In general, Section 9 of CDPHE's Solid Waste Regulations classify Type A Impoundments as having no reasonable potential to adversely impact groundwater at the point of compliance. The 4-Ponds continue to serve as critical lined wastewater ponds that support operations of the RNPP and FRPP.

As described below, there was no evidence of CCR on the ground or in the vicinity of the 4-Ponds during the site visit. Because there is not greater than one ton of CCR in the 4-Ponds and they were repurposed as Type A Impoundments (i.e., critical wastewater treatment ponds for RNPP and FRPP operations), these former ash ponds are not considered CCRMUs.

Site Visits and Interviews

In addition to reviewing records, HDR conducted an initial site visit on July 23, 2024 and a subsequent site visit on October 9, 2024 to confirm the records review findings and help identify

and evaluate CCRMUs at the facility. Current and former Utilities personnel knowledgeable of the site operations were present for the site visits to provide site-specific details.

The initial site visit findings did not identify any additional storage of CCR on the ground around the facility at locations that are not identified above. The “triangular-shaped fill area” to the southwest of the CCR Landfill was identified during the site visit. Utilities personnel familiar with site operations reported it was likely a soil-only stockpile, but Utilities personnel could not confirm when the triangular-shaped area was filled. There is no evidence that CCR would have been used to fill the triangular-shaped area; however, due to the uncertainty of when it was filled and the material used it should be verified that CCR is not present in this stockpile via field investigation/sampling as described in Sections 2.13 and 2.14. Additionally, it was uncertain if the access road to the south of the triangular-shaped fill area was filled, partially filled, or cut in to native soil when it was previously constructed. Due to the uncertainty of when the access road was constructed it should be verified that CCR was not used for constructing the road and not present via field investigation/sampling as described in Sections 2.13 and 2.14.

The site visit on October 9, 2024 was conducted specifically to visually inspect the fly ash silo area on the north side of RNPP. During this visit and as described in Section 2.4, a spill of fly ash to the ground surface adjacent to the paved fly ash silo operations area was discovered and subsequently cleaned up in October 2024. Cleanup documentation included in Appendix A confirms that no CCR was present on the ground surface outside the paved fly ash silo operations area following cleanup.

Interviews with Utilities’ personnel during the site visits did not identify any additional storage of CCR on the ground or spills around the facility at any locations that are not identified above. Additionally, the historic aerial photographs reviewed (listed in Section 2.12) did not identify any additional storage of CCR on the ground around the facility at any locations that are not identified above.

2.12. Supporting Information to Identify and Evaluate CCRMU

The following sections list all the documents reviewed as part of the Part 1 FER. Any documents that were single files (photographs, maps, aerial photographs, etc.) that did not belong to a specific report or study that can be referenced are listed below using the file names only. Any documents listed below that were significant to the findings of the CCRMU are described in narrative format in Section 2.11 above.

Construction Diagrams and Engineering Drawings

The following construction diagrams and engineering drawings were reviewed for this Part 1 FER:

- Nixon – 1975 – Water retention pond cross sections 2.tif.
- Nixon – 1975 – Water retention pond cross sections 3.tif.
- Nixon – 1975 – Water retention pond cross sections 4.tif.
- Nixon – 1975 – Water retention pond cross sections 5.tif.

- Nixon – 1975 – Water retention pond cross sections.tif.
- Nixon – 1979 – #1 bottom ash lines from boiler to ash disposal ponds.tif.
- Nixon – 1979 – Ash pond structure grounding, lighting, power & control circuits.tif.
- Nixon – 1979 – Roads and ash pond construction specifications.pdf.
- Nixon – 1980 – Evaporation ponds, piping details.tif.
- Nixon – Ash pond levees.tif.
- Nixon – 1981 – Nixon bottom ash ponds intake structure schematic.tif.
- Nixon – 1981 – Nixon plot plan – bottom ash ponds.pdf.
- Nixon – 1981 – Nixon plot plan – retention pond area.tif.
- Nixon – 1997 – Nixon plot plan schematic – ash pond area.dwg.
- Nixon – 2002 – Bottom ash basins site layout.tif.
- Nixon – 2002 – Nixon plot plan – bottom ash ponds.pdf.
- Nixon – 2004 – Ash pond sample locations.pdf.
- Nixon – 2004 – Nixon ash pond levees repair schematic.pdf.
- Nixon Air Heater Ash Estimate.pdf.

Permit Documents

The following permit documents were reviewed for this Part 1 FER:

- 06767 Follow-up Questions Nixon.pdf.
- EPA Questionnaire Request (Cover Letter Plant 06767 Nixon.pdf).
- Drake Ash Handling Questionnaire (Ray D Nixon 06767 Part C.pdf).

Waste Stream Flow Diagrams

The following waste stream flow diagrams were reviewed for this Part 1 FER:

- Nixon – Bottom Ash Flow Diagram.pdf.
- 2010 Nixon Water Balance – ICR.pdf.
- Bottom Ash Drag Chain System Diagram.pdf.
- Ray D Nixon 06767 Prt D WWT-1 Zero Discharge Plant Flow Diagram.pdf.

Aerial Photographs and Satellite Images

The following aerial photographs were reviewed for this Part 1 FER:

- 1947 – Aerial – CSR.png.
- Nixon Ponds – Labeled Aerial Photo.pdf.
- CSR – 1983 Aerial.tif
- CSR – 1988 Aerial.tif
- CSR – 1991 Aerial – High Resolution.tif
- CSR – 1991 Aerial.tif
- CSR – 1993 Aerial.tif
- CSR – 1999 Aerial.tif

Photographs

The following photographs were reviewed for this Part 1 FER:

- Pond Pictures North Pond 001.JPG – Pond Pictures North Pond 026.JPG.
- Pond Pictures North Pond 040.JPG – Pond Pictures North Pond 043.JPG.
- Pond Pictures North Pond 761.JPG – Pond Pictures North Pond 769.JPG.
- Pond Pictures South Pond 757.JPG – Pond Pictures South Pond 760.JPG.
- Pond Pictures South Pond 773.JPG – Pond Pictures South Pond 775.JPG.
- Pond Pictures South Pond 778.JPG – Pond Pictures South Pond 792.JPG.

Historical Facility Maps

The following historical facility maps were reviewed for this Part 1 FER:

- 2015 Ash Landfill Area with 1976 (rev 1986) Disposal Map.pdf.
- 2015 Ash Landfill Area with 1977 Disposal Area.pdf.
- 2015 Ash Landfill Area with 1980 Disposal Area.pdf.
- 2015 Ash Landfill with 1981 to 1984 Disposal.pdf.
- Original Ash Management.pdf.

Field or Analytical Data

The studies listed below included borings that were drilled in or near the CCR Landfill and Former Brine Disposal Area.

- Boring logs.pdf.
- Logs with WSE.pdf.

Groundwater Monitoring Data or Reports

The following additional documents were reviewed for this Part 1 FER:

- *Annual Groundwater Monitoring Report for 2023, Colorado Springs Utilities' Clear Spring Ranch, Coal Combustion Residuals Landfill, El Paso County, Colorado* (CSU, 2024).
- *Annual Groundwater Monitoring Report for 2022, Colorado Springs Utilities' Clear Spring Ranch, Coal Combustion Residuals Landfill, El Paso County, Colorado* (CSU, 2023).

Inspection Reports and Documentation of Interviews

No records of inspection reports or documentation of interviews with current or former facility workers were available for the facility.

Other Documents

The following additional documents were reviewed for this Part 1 FER:

- *Inventory and Preliminary Classification Report* (CSU, 2013).
- *It's How We're All Connected: The Story of Colorado Springs Utilities* (Forte, 2018).

- 1978 – Design Related – Ash Area and Retention Dam – Woodward Clyde.pdf (Woodward-Clyde Consultants, 1978).
- *Specifications for Ash Disposal Area, R. D. Nixon Detention and Diversion Dams, El Paso, County* (Lutz Daily & Brain, 1978).
- Former Ash Pond Clean Out Summary with Attachments.pdf.
- *Demonstration Report, Ray Nixon & Front Range Power Plant's Solid Waste Impoundments, Colorado Springs Utilities' Clear Spring Ranch, El Paso County* (CSU, 2018).
- *Demonstration Report, Zero Discharge Wastewater Treatment Plant Solid Waste Impoundments, Colorado Springs Utilities' Clear Spring Ranch, El Paso County* (CSU, 2017).
- Undated Ash Landfill Operations Plan.pdf.
- *Engineering Design and Operations Plan, Clear Spring Ranch Coal Combustion Residuals Landfill, El Paso County* (CSU, 2019).
- *Coal Combustion Residuals (CCR) Landfill, Closure Plan, Clear Spring Ranch, El Paso County, Colorado* (AECOM, 2016).
- *Coal Combustion Residuals (CCR) Landfill, Post-Closure Plan, Clear Spring Ranch, El Paso County, Colorado* (AECOM, 2016).
- *Fly Ash Cleanout Memorandum, Ray Nixon Power Plant* (HDR, 2024).

2.13. Data Gaps

After reviewing all available records provided by Utilities, the following data gaps have been identified:

1. The primary data gap identified is the size of the Brine Disposal Area CCRMU, including the lateral and vertical dimensions and an estimate of the volume of CCR. As discussed in Section 2.7, the general location of the Brine Disposal Area can be estimated from historical records, but there is uncertainty with the extent and dimensions of the area. This data gap will be remedied in the Part 2 FER as described in Section 2.14.
2. It could not be confirmed during the records review and site visit what material was used to fill the triangular-shaped fill area located immediately southwest of the CCR Landfill. Although there is no evidence that CCR would have been used to fill the area, there is uncertainty and given its proximity to the CCR Landfill it should be verified that CCR is not present in this fill area. This data gap will be remedied in the Part 2 FER as described in Section 2.14.
3. It could not be confirmed during the records review and site visit what material was used to construct the access road south of the triangular-shaped fill area. Although there is no evidence that CCR would have been used to construct the road, there is uncertainty and given its proximity to the CCR Landfill it should be verified that CCR is not present in this area. This data gap will be remedied in the Part 2 FER as described in Section 2.14.

2.14. Data Gap Remedy Plan

To remedy Data Gap 1 identified in Section 2.13, a physical investigation will be performed with the objective of identifying the size and vertical and horizontal extent of the CCRMU. The field work will include subsurface investigation activities (drilling exploratory borings) to confirm the presence/absence of CCR. It is assumed at this time that the ash mixed with waste salts can be delineated visually using continuous sampling while drilling. Photographs of the investigation activities will be documented. The subsurface investigation will generally utilize a reasonable spacing for initial investigation locations and a step out approach to identify the size and vertical and lateral extent of the CCRMU. Step out locations will extend from known ash locations. Following the field investigation, vertical and lateral profiles of the CCRMU will be prepared to show the extent of CCR and estimate the volume of CCR contained in the unit.

To remedy Data Gaps 2 and 3 identified in Section 2.13, subsurface investigation activities (i.e., drilling exploratory borings) will be performed to confirm the presence/absence of CCR in the triangular-shaped fill area and access road to the south. Since material used for constructing/filling these features is unknown, continuous sampling will be performed while drilling. Photographs of the investigation activities will be documented. Up to two investigation borings will be reasonably spaced and advanced throughout the triangular-shaped fill area. Similarly, up to two investigation borings will be reasonably spaced and advanced along the access road. If CCR is identified in these areas, a step out approach will be employed such that the size and vertical and lateral extent of CCR can be identified.

The estimated date for completing the data gap remedy work described above, and including in the Part 2 FER, is no later than the end of 2025.

3. Professional Engineer Certification

Facility Evaluation Report – Part 1 for Compliance with the Coal Combustion Residuals Rule

Colorado Springs Utilities (Utilities)

Ray Nixon Power Plant (RNPP), Colorado Springs, Colorado

I hereby certify that this Facility Evaluation Report – Part 1 for the Ray Nixon Power Plant meets the requirements of 40 CFR Section §257.75(c)(1).



Jeffrey C. Hearn
Colorado PE License: 58093
License Renewal Date: 10/31/2025

4. Owner Certification

Facility Evaluation Report – Part 1 for Compliance with the Coal Combustion Residuals Rule

Colorado Springs Utilities (Utilities)

Ray Nixon Power Plant (RNPP), Colorado Springs, Colorado

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME

TITLE

DATE

5. References

AECOM, 2016. Coal Combustion Residuals (CCR) Landfill, Closure Plan, Clear Spring Ranch, El Paso County, Colorado, October 11, 2016.

AECOM, 2016. Coal Combustion Residuals (CCR) Landfill, Post-Closure Plan, Clear Spring Ranch, El Paso County, Colorado, October 11, 2016.

CSU, 2004. Clear Spring Ranch Site Map, Colorado Springs Utilities, December 1, 2004.

CSU, 2013. Inventory and Preliminary Classification Report, Colorado Springs Utilities' Clear Spring Ranch, Interstate 25 and Ray Nixon Road / Exit 125, El Paso County, April 24, 2013.

CSU, 2017. Demonstration Report, Zero Discharge Wastewater Treatment Plant Solid Waste Impoundments, Colorado Springs Utilities' Clear Spring Ranch, El Paso County, May 17, 2017.

CSU, 2018. Demonstration Report, Ray Nixon & Front Range Power Plant's Solid Waste Impoundments, Colorado Springs Utilities' Clear Spring Ranch, El Paso County, June 29, 2018.

CSU, 2019. Engineering Design and Operations Plan, Clear Spring Ranch Coal Combustion Residuals Landfill, El Paso County, July 3, 2019.

CSU, 2023. Annual Groundwater Monitoring Report for 2022, Colorado Springs Utilities' Clear Spring Ranch, Coal Combustion Residual Landfill, El Paso County, Colorado, January 31, 2023.

CSU, 2024. Annual Groundwater Monitoring Report for 2023, Colorado Springs Utilities' Clear Spring Ranch, Coal Combustion Residual Landfill, El Paso County, Colorado, January 31, 2024.

Forte, 2018. It's How We're All Connected: The Story of Colorado Springs Utilities.

HDR, 2024. Fly Ash Cleanout Memorandum, Ray Nixon Power Plant, November 6, 2024.

Lutz Daily & Brain, 1978. Specifications for Ash Disposal Area, R. D. Nixon Detention and Diversion Dams, El Paso County, May 23, 1978.

Meigs, 1987. A Century of Power 1886–1986, Colorado Springs Department of Utilities, Electric Transmission & Distribution Division.

Thompson, 2004. A Quick History of the Power Plants of the Pikes Peak Region.

Woodward-Clyde Consultants, 1978. Fly Ash Impoundment, R. D. Nixon Power Plant, Fountain, Colorado, January 3, 1978.

Appendix A. Fly Ash Cleanup Documentation

Memorandum

Date: Wednesday, November 06, 2024

Project: Ray Nixon Power Plant Fly Ash Cleanout

To: Heather Barbare, PE and Brock Foster, PE (Colorado Springs Utilities)

From: Chad Hearn, PE (HDR)

Subject: **Fly Ash Cleanout**

HDR Engineering, Inc. (HDR) has prepared this memorandum to summarize fly ash delineation and cleanout activities that occurred at the Ray Nixon Power Plant (RNPP) in October 2024. The RNPP facility is owned by Colorado Springs Utilities (Utilities) and is located at the Clear Spring Ranch (CSR) site south of Fountain, Colorado in El Paso County. Fly ash from RNPP is managed by using a fly ash silo for containerization prior to transporting for disposal in the onsite Coal Combustion Residuals (CCR) Landfill.

On October 9, 2024, a fly ash spill was identified outside the paved fly ash silo operational area within an earthen secondary containment basin associated with a power plant fuel oil storage tank. This area is located on the north side of the RNPP (**Figure 1**). It was evident that a nearby stormwater catch basin from the paved area allowed for fly ash to migrate to the secondary containment basin by way of precipitation runoff from the fly ash operational area over an unknown period of time. The location of the catch basin in the vicinity of the fly ash silo is shown on **Figure 1**. The remainder of this memorandum provides a summary of the initial delineation of the fly ash spill and cleanout activities performed on October 23, 2024.

HDR performed the delineation activities and oversaw the cleanout including visual verification of removal, and collection and analysis of confirmation soil samples.

Fly Ash Delineation

Prior to the delineation activities, an 811 locate request was performed for public utility clearance in the spill area. HDR staff visually confirmed the extent of fly ash on the ground surface and collected delineation soil samples (NIX-CS-1 to NIX-CS-7) on October 18, 2024. The delineation soil samples were collected immediately below the layer of fly ash for microscopic analysis to confirm presence/absence of fly ash in the soil immediately beneath the deposited fly ash. Two additional “control” samples were collected for comparison to the delineation soil samples, NIX-ASH-1 was known fly ash and NIX-SO-1 was soil collected in an area with no fly ash visually present. Samples were packaged and shipped to HDR’s Ann Arbor, Michigan office for the microscopic analysis. Delineation soil sample locations were recorded with a handheld GPS unit and are shown on **Figure 1**.

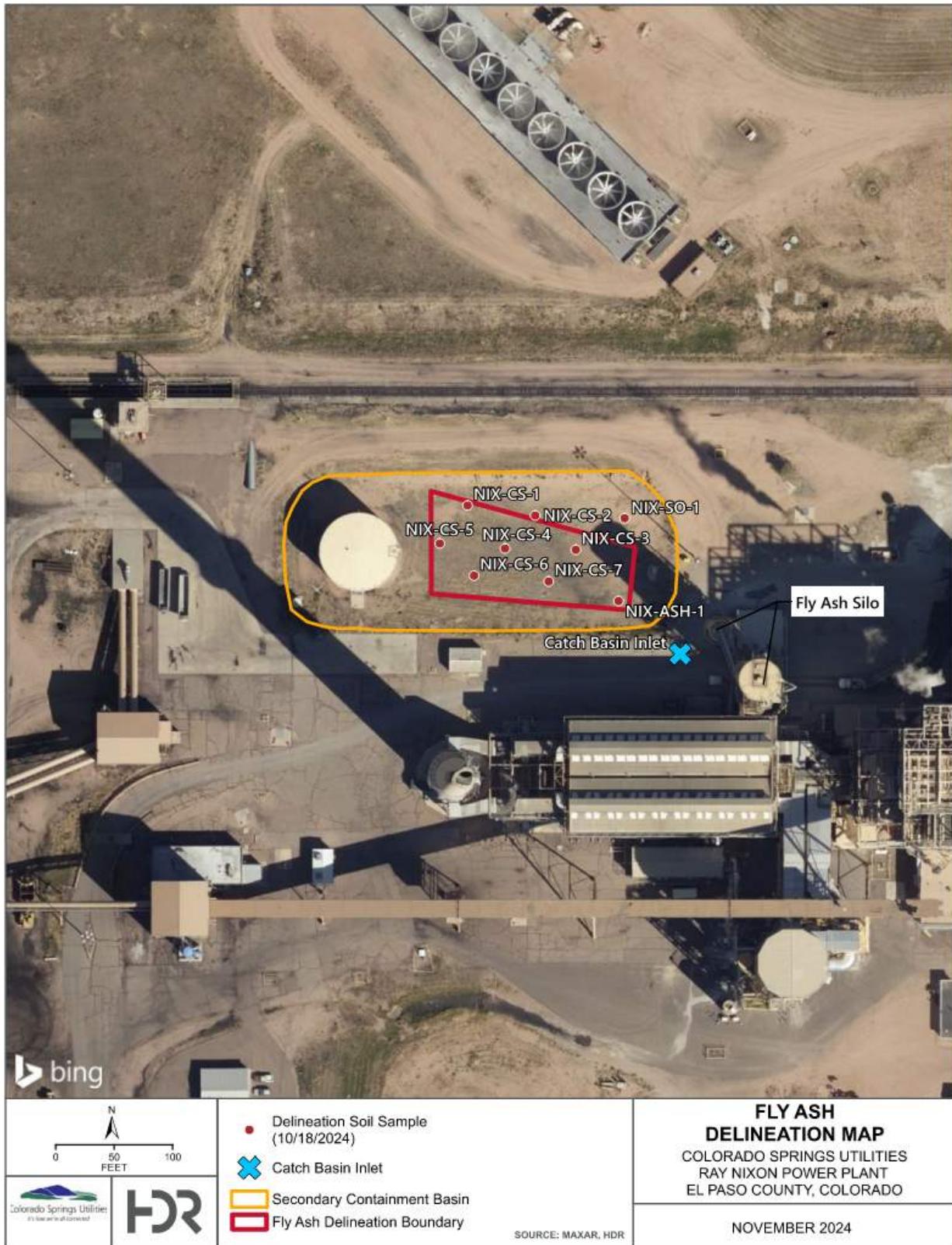


Figure 1. Delineation Sample Location Map

The visual verification and delineation sampling confirmed there was up to approximately three (3) inches of fly ash in the northernmost borings (NIX-CS-1 and NIX-CS-3) and up to approximately six (6) inches of fly ash in the southernmost borings (NIX-CS-4 to NIX-CS-7). Microscopic analysis of the fly ash sample (NIX-ASH-1) showed pervasive gray ash powder coatings on all particulates. These ash coatings were not observed in the delineation samples (NIX-CS-1 to NIX-CS-7) and no fly ash was present in the NIX-SO-1 sample (see **Attachment 1** for photos of the delineation samples). Based on the delineation activities, the volume of surface-deposited fly ash in the secondary containment basin was estimated to be approximately 160-180 cubic yards.

Fly Ash Removal and Cleanout Activities

On October 23, 2024, Utilities cleaned out the stormwater catch basin and pipe near the fly ash silo, removed the surface-deposited fly ash from the secondary containment basin, and disposed of all removed fly ash and soil in the onsite CCR landfill. HDR staff performed oversight of the cleanout activities to verify the fly ash deposited in the secondary containment basin was removed. The stormwater drain inlet and pipe were cleaned out using a pressure washer and a vac truck to capture all fly ash cleaned from the drain and pipe. The surface-deposited fly ash and soil in contact with the ash was then removed from the secondary containment basin using an excavator, loaded in to dump trucks, weighed, and hauled to the CCR landfill for disposal. After the cleanout was complete, HDR staff performed a final visual inspection, captured photos of the final cleanout/removal (see **Attachment 2** for post-cleanout photos), and collected confirmation soil samples as described below. Utilities indicated they will implement maintenance procedures associated with the fly ash silo operational area to prevent future fly ash accumulation outside the paved fly ash silo area.

The total weight of removed fly ash and soil from the secondary containment basin was approximately 339 tons (see **Attachment 3** for scale tickets).

Confirmation Soil Sampling

In addition to the visual verification of fly ash removal, HDR staff collected confirmation soil samples at five (5) locations throughout the removal area (NIX-CS-8 to NIX-CS-12). The soil samples were collected with a hand auger immediately beneath the soil surface following final fly ash/soil removal activities. Samples were packaged and shipped to HDR's Ann Arbor, Michigan office for microscopic analysis. Confirmation soil sample locations were recorded with a handheld GPS unit and are shown on **Figure 2**.

Microscopy analysis of the confirmation soil samples confirmed the visual verification that no fly ash was present in the surface soil following the fly ash cleanout/removal area in the secondary containment basin (see **Attachment 4** for photos of confirmation samples).

The fly ash removal and cleanout activities and results described above confirm that the fly ash surface spill identified outside the fly ash silo operational area on October 9, 2024 was cleaned up on October 23, 2024.



Figure 2. Confirmation Soil Sample Location Map

Attachments

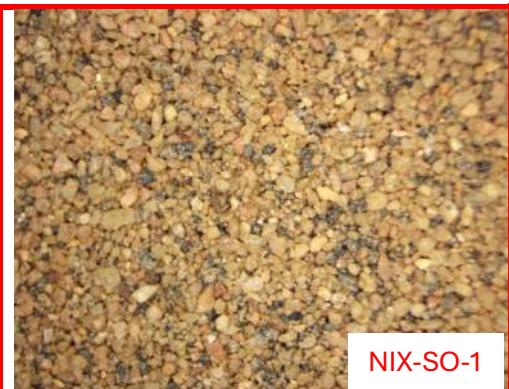
- Attachment 1 Delineation Soil Sample Photos
- Attachment 2 Post-Cleanout Photos
- Attachment 3 Scale Tickets for Removed Fly Ash and Soil
- Attachment 4 Confirmation Soil Sample Photos

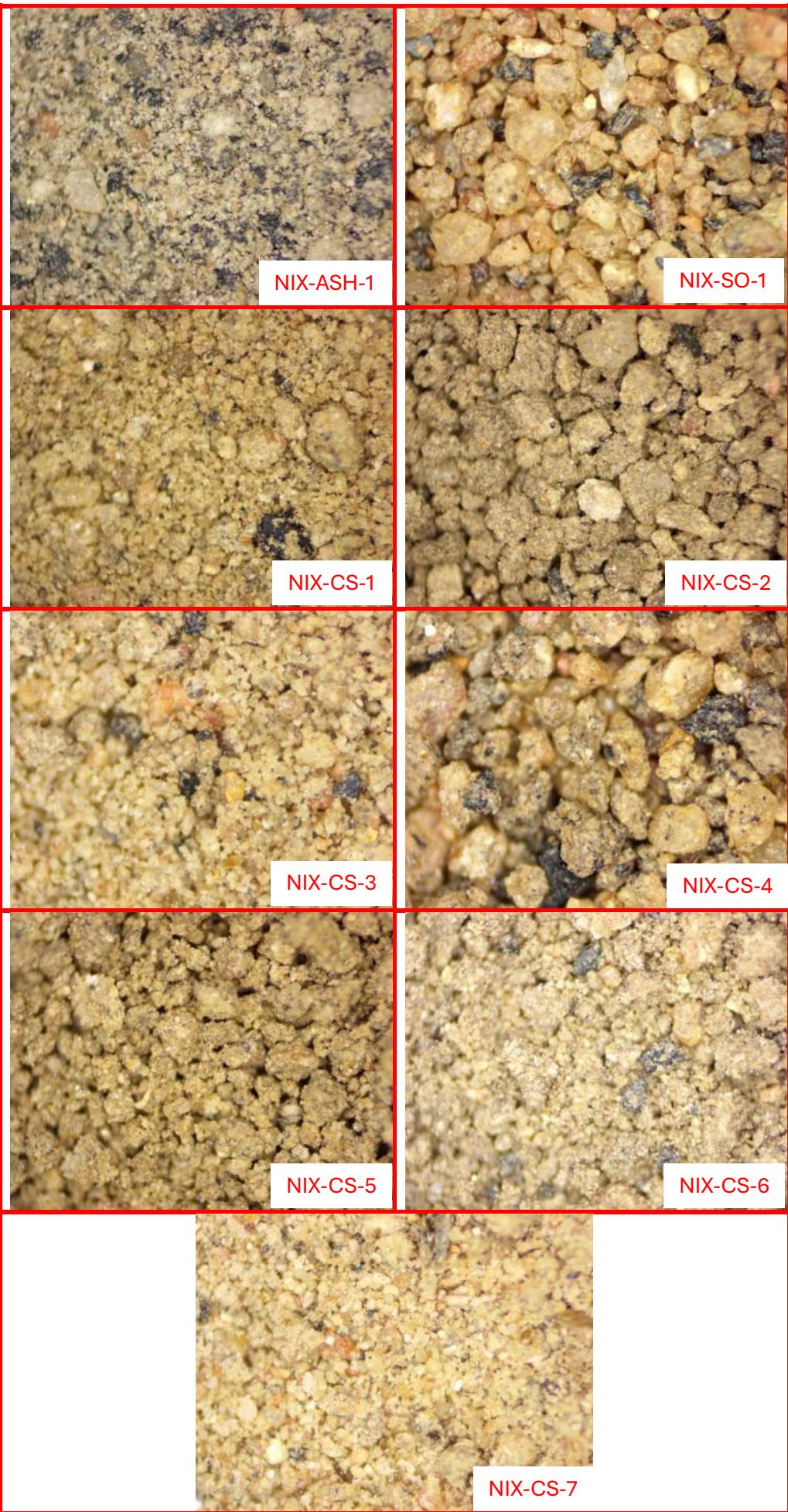


ATTACHMENT 1

DELINEATION SOIL SAMPLE PHOTOS









ATTACHMENT 2

POST-CLEANOUT PHOTOS



Photograph 1 – View of containment basin from northeast following completion of excavation.



Photograph 2 – View of containment basin from north following completion of excavation.



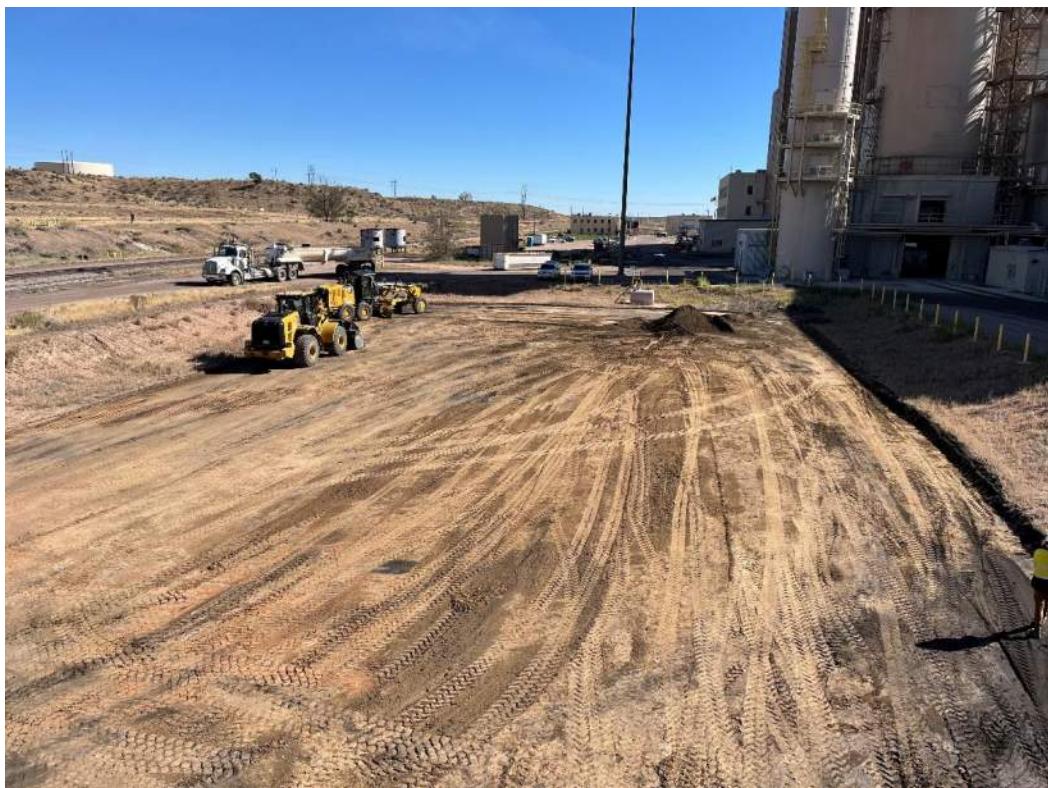
Photograph 3 – View of containment basin from east following completion of excavation.



Photograph 4 – View of containment basin from northwest following completion of excavation.



Photograph 5 – View of containment basin from south following completion of excavation.



Photograph 6 – View of containment basin from west following completion of excavation.



ATTACHMENT 3

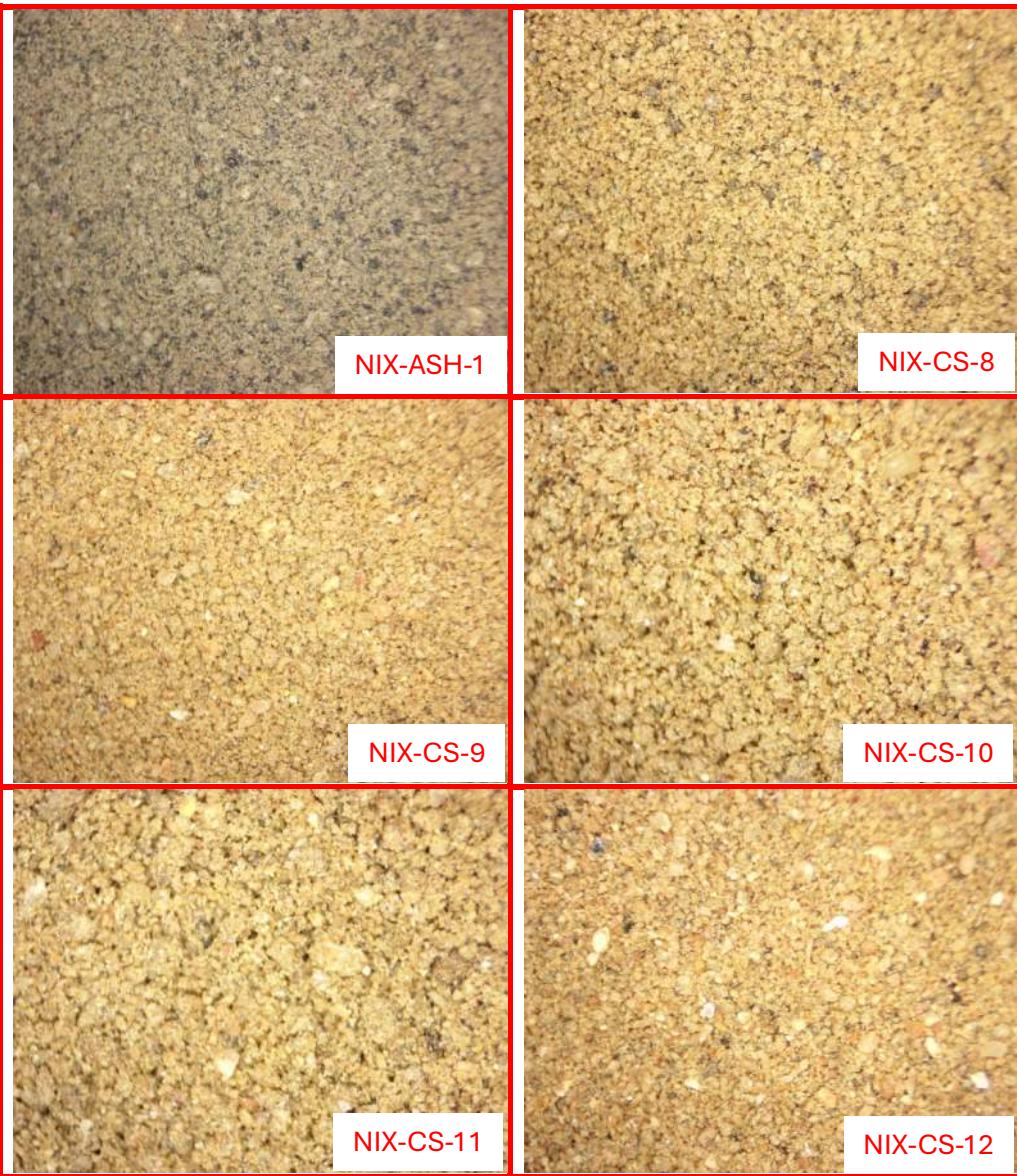
SCALE TICKETS FOR REMOVED FLY ASH AND SOIL

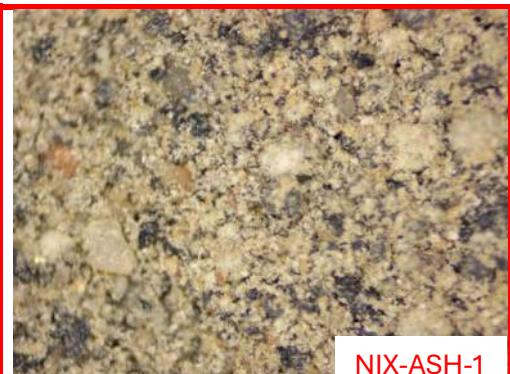


ATTACHMENT 4

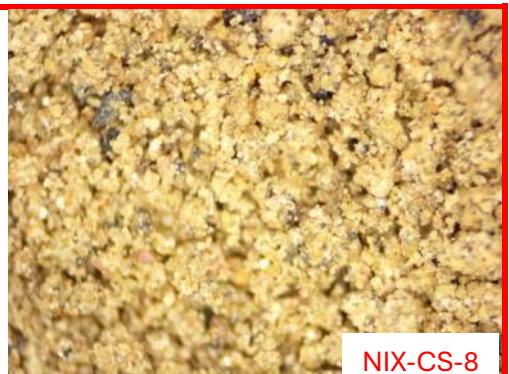
CONFIRMATION SOIL SAMPLE PHOTOS



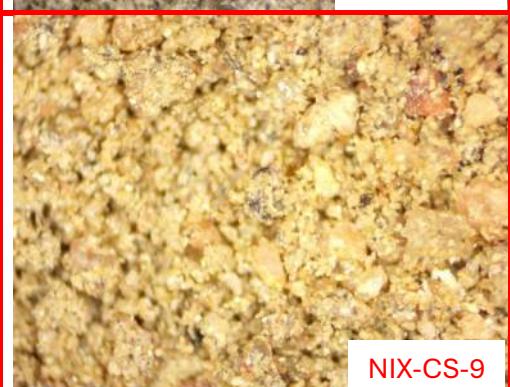




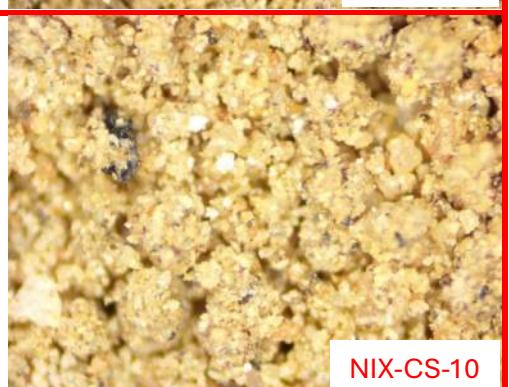
NIX-ASH-1



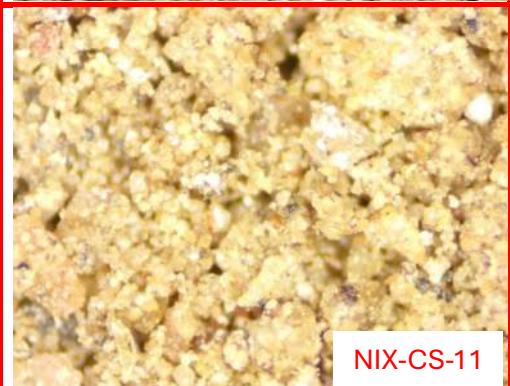
NIX-CS-8



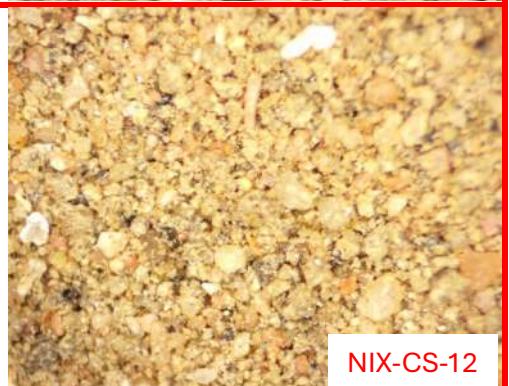
NIX-CS-9



NIX-CS-10



NIX-CS-11



NIX-CS-12