Annual CCR Unit Inspection Report

Lon D. Wright Power Plant
Fremont, Nebraska

Prepared for

Fremont Department of Utilities

400 E. Military Road
Fremont, NE 68025

March 20, 2017

TETRA TECH

TETRA TECH, INC.
6307 Center Street, Suite 210
Omaha, Nebraska

Scott Schmoker, P.E. — 3/21/2017 Date

PROFESSIONAL CIVIL ENGINEER
SCOTT D. SCHMOKER
-8251
STATE OF NEBRASKA
3/21/2017

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Executive Summary

On January 4, 2017, Tetra Tech completed an annual coal combustion residue Unit (CCR Unit) inspection by a qualified professional engineer (P.E.) for the City of Fremont Department of Utilities (FDU) Lon D. Wright Power Plant (LDW). The primary purpose of the inspection was to assure that the CCR Unit is designed, constructed, operated, and maintained consistent with recognized and generally accepted good engineering standards and protective of human health and the environment. The inspection included review of Fremont's current Fossil Fuel Combustion Ash Monofill Permit (Permit Number NE0203777), CCR Unit maintenance and compliance evaluation forms, and observation of the CCR Unit and associated activities.

Recommendations developed through the inspection process are listed below:

When weather allows, it is recommended that FDU take measures in early 2017 to clean out the plugged drain slots in the leachate collection pipes in the CCR unit disposal area. Subsequently, a camera inspection should be scheduled to thoroughly inspect the collection system for damage or abnormalities.

Section 1: Introduction

1.1 Facility Information

Facility Name:	**Lon D. Wright Power Plant (LDWPP)**
Facility Street Address:	2701 E. First St. Fremont, NE 68025
Owner Name:	**Fremont Department of Utilities (FDU)**
Owner Address:	400 E. Military Avenue Fremont, NE 68025

1.2 CCR Unit Information

The Lon D. Wright Power Plant operates an ash monofill (CCR Landfill Unit) for staging and disposal of ash (CCR) resulting from coal combustion related to on-site power generating activities. The design of the CCR Unit incorporates a composite liner, leachate collection system, final cover, and a surface water control system. The liner system includes a 2-foot-thick clay liner compacted to maximum permeability of 1x10-7 cm/sec and a 60-mil high density polyethylene (HDPE) liner. The leachate collection system includes a minimum 12-inch granular drainage layer spread over the top of the liner. The drainage layer allows leachate to gravity drain along the bottom of the Monofill to perforated 6-inch-diameter PVC piping embedded in the drainage layer. Geotextile fabric was spread over the entire drainage layer, and a 6-inch protective soil cover was placed over the geotextile fabric. The leachate collection piping discharges leachate into a sump area where the leachate is pumped to the leachate retention pond. Berms, approximate 7-foot-high, protect the CCR Unit from storm water run-on and prevent storm water run-off from the active portions of the CCR Unit.

1.3 Purpose

This report has been prepared to document the inspection of the FDU CCR Unit. The inspection was conducted by Tetra Tech on January 4, 2017 and meets the compliance requirements for annual CCR inspections found under 40 CFR 257.84. This report includes inspection checklists, observations, findings and recommendations, and a photographic log of the inspection. No testing or sampling was conducted during the inspection.

Section 2: Annual CCR Unit Inspection

2.1 Objectives

This inspection was conducted to fulfill the requirement for a CCR Unit landfill found at 40 CFR 257.84 to conduct an inspection by a qualified professional engineer at intervals not exceeding 1 year. The initial inspection was conducted on January 5, 2016. This annual CCR Unit inspection was conducted to ensure that the design, construction, operation, and maintenance of the CCR Unit is consistent with recognized and generally accepted good engineering standards and protective of human health and the environment. This report describes the results of the January 4, 2017 annual CCR Unit inspection conducted at LDW.

2.2 CCR Unit Inspection Method

Tetra Tech completed an initial inspection (baseline) on January 5, 2016 following the Fremont Department of Utilities Annual CCR Unit Inspection Protocol (December 2015). All subsequent annual inspections will continue to follow the approved inspection protocol. The inspection was conducted by Tetra Tech's Scott Schmoker, P.E., and Mark Podany, senior project manager. Tony Sedlacek, chemistry supervisor and environmental coordinator for FDU, escorted Messrs. Schmoker and Podany for the duration of the inspection. Mr. Sedlacek provides environmental oversight of the CCR Unit. Records and copies of requested records were provided by Mr. Sedlacek. Weather conditions were windy, partly cloudy, and temperature approximately -10 degree Fahrenheit. There was no snow but the leachate pond surface was frozen and conditions were dry.

2.3 Review of Operations and Maintenance Data

CCR Unit compliance, operations, and maintenance records were reviewed to assess operating conditions, issues, and maintenance activities occurring during the previous 1-year period. The following records (dated January 5, 2016 to January 5, 2017) and permits were reviewed:

1) Work Order History Reports specific to CCR Unit operations from January 5, 2016 to January 5, 2017.

2) Monofill Storm Water Pollution Prevention Plan - Maintenance and Repairs of Control Measures from January 2016 through December 2016.

3) Weekly CCR Unit Compliance Evaluation Forms beginning January 4, 2016 through January 9, 2017.

4) FDU Ash Monofill Leachate System Pumps Monthly Operational Inspection Log Sheet January 2016 through December 2016.

5) FDU letter dated April 26, 2016, to NDEQ with notification of repair of monitoring well #2 concrete pad.

6) FDU letter dated October 18, 2016, to NDEQ with notification of repair to a damaged portion of the landfill liner.

7) NDEQ Inspection of FDU's Fossil Fuel Combustion Ash Disposal Area cover letter and report dated November 15, 2016.

8) Fremont Department of Utilities Fossil Fuel Combustion Ash Monofill Permit (Permit Number 0203777), effective July 16, 2016, issue by Nebraska Department of Environmental Quality.

9) Fremont Department of Utilities Fugitive Dust Control Plan, October 2015.

10) Fremont Department of Utilities CCR Unit Annual Inspection Protocol, December 2015.

2.4 Visual Inspection

A visual inspection was conducted of the CCR Unit including the lined disposal area, leachate collection pond and visible portion of the system, pump house, Phase I berms, run-on and run-off system, and ground water monitoring system and well locations.

2.4.1 CCR Unit Lined Disposal Area

The CCR Unit was observed for placement of CCR on the lined area, signs of water accumulation on the liner (ponding), fugitive dust, run-on and run-off control measures, and overall condition of the CCR Unit and associated operations (see Appendix B Photographs).

A visual inspection of the lined disposal area was conducted by walking the perimeter of the CCR Unit. The south side of the CCR disposal area was demarcated with poles on the east and west sides to show the extent of the liner. The extent of the liner on the north, east, and west sides were identified by the designed proximity to the Phase I berms. No issues were observed and the CCR appeared to be well within the confines of the lined area and no changes were noted in the geometry of the permitted design of the Unit. A review of the December 10, 2015 topographical survey data indicates that Phase I contains approximately 19,098 cubic yards of CCR resulting in approximately 13,472 cubic yards of air space available. A visual comparison between the amount of CCR in the disposal area during the January 5, 2016 and the January 4, 2017 inspections appears to indicate less CCR. This is attributed to the beneficial uses of CCR and demand for it in construction projects.

Mr. Sedlacek explained and showed the area designated by an orange safety cone where repair was made to a damaged portion of the CCR unit liner by a back hoe (see photograph #8). Documentation was provided including a letter dated October 18, 2016, to NDEQ notifying the agency that the liner was damaged and repaired in a timely manner.

Condition and adequacy of the engineered storm water run-on and run-off structures associated with the CCR Unit were evaluated. There was no indication that storm water run-on and run-off measures were failing or inadequate. No sign of erosion, ponding off the lined area, accumulation of CCR off the lined area, washouts, or any abnormal conditions were observed.

Recommendations: FDU should continue to be diligent in meeting the CCR unit operation requirements. Observation of CCR unit operations, design, geometry, ash volume, and maintenance appear to meet the requirements and no adverse conditions were noted. No structural weaknesses or any other conditions were observed that would disrupt operation and safety.

2.4.2 Leachate Collection System

Observation of the leachate collection system was conducted by walking the perimeter of the lined leachate collection pond (see Photograph #3), entering the pump house (building located between the disposal area and leachate collection pond that protects the leachate pumps and associated pipes and valves), and the leachate collection pipes that rise from the bottom of the CCR Unit disposal area liner and extend above the berm and are nested in a concrete weir. A high level alarm is in place to notify FDU staff when leachate needs to be pumped to the leachate collection pond. Mr. Sedlacek explained that FDU staff maintain the system to ensure the amount of leachate on the disposal unit liner does not exceed twelve inches above the liner.

Weather conditions resulted in the leachate pond being frozen and inhibited observation of the leachate to visually evaluate for abnormalities such as discoloration or accumulation of CCR solids within the containment. The depth of the leachate was not measured but there was sufficient capacity remaining between the pond level and the top of the liner. Damage by rodents to the upper portion of the liner observed during the January 5, 2016 annual inspection were repaired and no further damage to the upper portion of the visible liner was observed (see photographs #4 through #6). Rodent bait traps continue to be in place along the top edge of the liner. At each bait station location there were orange safety cones sitting on top of plastic rodent bait traps. As required, written notification to NDEQ by FDU was provided August 16, 2016, verifying the repair on August 1, 2016, of the damaged leachate liner.

The pump house is located between the leachate collection pond and the disposal area. It provides protection for the pumps, piping and valves. This system is designed to allow for managing leachate as required under certain operating conditions. The pump house floor was dry and no issues were identified with any of the system components. Mr. Sedlacek provided the FDU Ash Monofill Leachate System Pumps Monthly Operational Inspection Log Sheet that is kept in the pump house and completed after each monthly inspection. No issues were identified in the monthly log. Mr. Sedlacek stated that in January 2016 the sump pump pvc pipe became frozen and broke. Leachate was temporarily managed with an aboveground hose connected to the pump until warmer weather would allow for the repair. The repair was made on March 22, 2016. This issue and action dates were described in FDU's monofill SWPPP Maintenance and Repairs of Control Measures and Work Order History Report.

A visual inspection of the leachate piping risers, concrete weir, and high level alarm was conducted. The risers provide access to the lateral pvc collection pipes installed along the bottom of the disposal area but above the liner. According to Mr. Sedlacek, the annual camera inspection of the collection pipes occurs at this access port. A camera inspection of the leachate collection system was last conducted by a third party on December 6, 2016 and December 12, 2016. Plugged drain slots and the retention of water

in the piping have impeded a complete camera inspection of the system. NDEQ was contacted and made aware of the situation. FDU will proceed during warmer weather in spring 2017 to hire a company to use high pressure water to clean the plugged pvc leachate collection pipes. Subsequently, a camera inspection should be conducted. During the January 4, 2017 annual inspection, no issues were identified and the exposed collection pipe risers, concrete weir and high level alarm appeared to be in good operating condition.

Recommendations: FDU should continue to be diligent in meeting the leachate system requirements. Although the previously damaged liner has been repaired and in good working condition, FDU should continue to be diligent about eradicating pests that are known to cause damage to the upper portion of the leachate collection pond liner. In addition, planned measures to clean solid material from the leachate collection drain slots should be taken as soon as weather allows. No other conditions were observed that indicated any structural weakness, change in geometrical design, or a disruption in operation and safety of the leachate collection system.

2.4.3 Phase I Berms and Phase II Area

Condition of the Phase I berms and Phase II area were evaluated for erosion, vegetative cover, signs of structural failure, animal burrows, and any abnormalities (see Photographs #1, 2, 7, and 8). Tetra Tech did not observe any abnormal conditions or issues that warrant corrective action. This position is supported by the results of the October 26, 2016 NDEQ unannounced inspection of FDU's ash disposal operations, whereby no violations or concerns were noted. The slope and condition of the berms were observed by Tetra Tech to be in good condition and no obvious indication of animal burrows or signs of erosion or lack of vegetation.

Recommendations: FDU should continue to be diligent in meeting the requirements for proper berm management. No conditions were observed that indicated any structural weakness, change in geometrical design, or a disruption in operation and safety of the Phase I berms and Phase II area.

2.4.4 Ground Water Monitoring Wells

As of 2016, seven ground water monitoring wells encompass the CCR Unit including the disposal area and leachate collection pond. This system is designed to provide access to ground water for the purpose of monitoring and testing certain parameters and constituents used to detect release of CCR material to the environment.

Ground Water Monitoring Well #2 identified in the previous annual inspection report as having a significant crack in the concrete pad was repaired by pouring a new pad (see Photograph #10). Notification of this repair was made to NDEQ in a letter dated April 26, 2016.

Also identified in the previous annual report was the upheaving of Ground Water Monitoring Well #4. This well was abandoned and replaced with a new #4 monitoring well (see Photograph #9). In addition, based on the recommendations of FDU's *"Groundwater Monitoring System Assessment,"* dated January 28, 2016, three additional wells were installed to improve detection of a release and analysis of ground water constituents.

No additional issues were noted during the January 4, 2016 inspection. Monitoring well risers and concrete pads were in good shape and all riser caps were locked.

Recommendations: FDU should continue to be diligent in meeting the ground water requirements associated with the CCR unit. No other conditions were observed that indicated any structural weakness, change in geometrical design, or a disruption in operation and safety of the groundwater monitoring system.

Under the new CCR Rule, groundwater monitoring and corrective action requirements are codified under 40 CFR 257.90 through 257.98, and owners and operators are required to be in compliance with these requirements on or before October 17, 2017. The stated groundwater requirements are, in summary:

1. *Install a groundwater monitoring system (40 CFR 257.91);*

2. *Develop a groundwater sampling and analysis program, including statistical procedures for evaluating groundwater monitoring data (40 CFR 257.93);*

3. *Initiate detection monitoring to obtain at least eight (8) independent samples for each background and downgradient well for constituents listed in Appendix III to part 257 (40 CFR 257.94(b));*

4. *Begin evaluating the groundwater monitoring data for statistically significant indications of groundwater impacts (40 CFR 257.94).*

FDU is currently in the process of obtaining eight independent samples as described under #3 above.

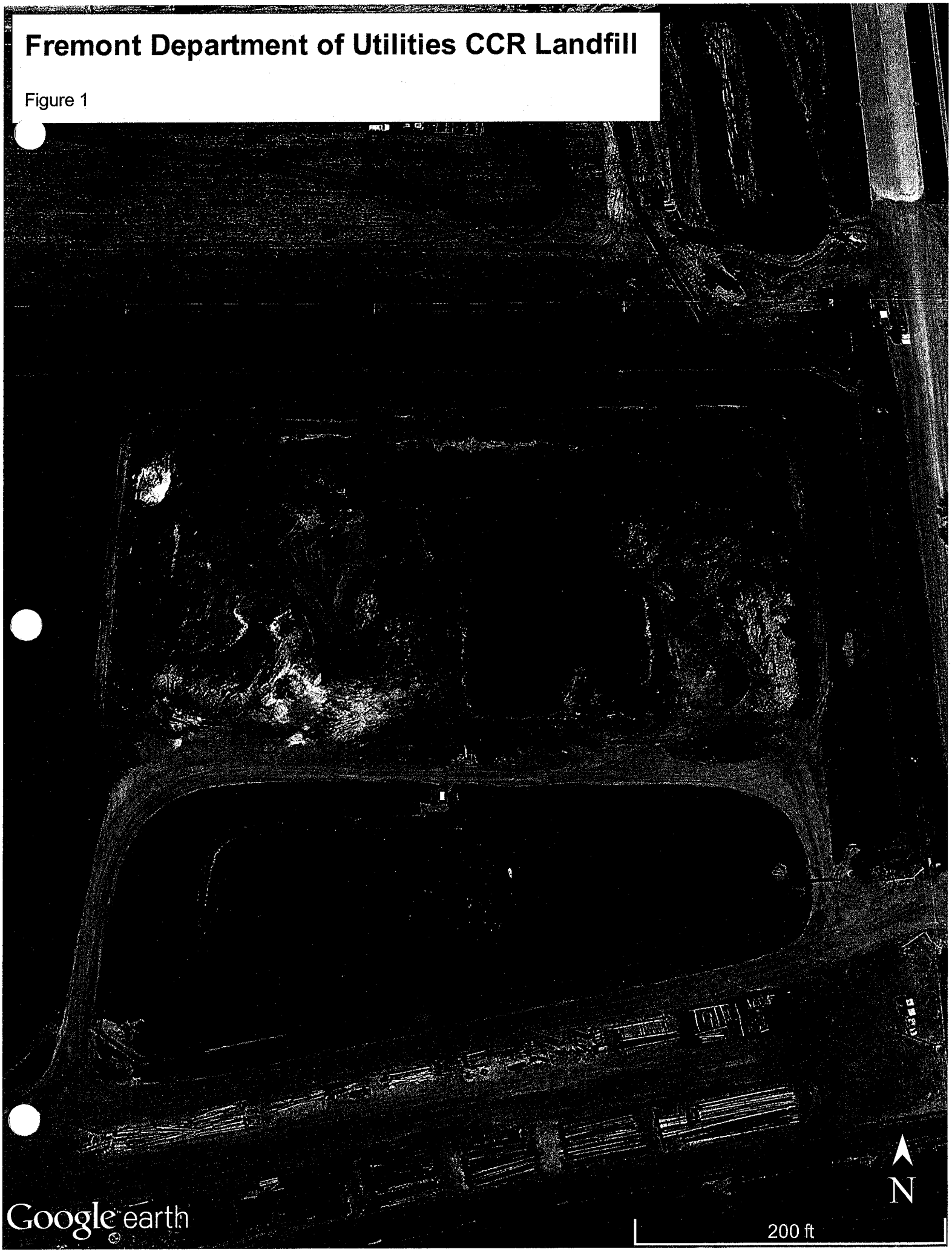
Summary

On January 4, 2017, Tetra Tech conducted FDU's CCR Unit inspection required to be conducted annually by a qualified professional engineer. Based on observations, it is the opinion of Tetra Tech that FDU has designed, constructed, operated, and maintained the CCR unit with recognized and generally accepted good engineering standards that are protective of human health and the environment. It is recommended that as soon as weather allows that FDU take measures to clean out the leachate pipe drain slots to achieve a thorough camera inspection of the drainage system. FDU should consider and implement the recommendations provided in this report to ensure meeting the conditions of both state (permit) and federal CCR Landfill Unit requirements.

Figure 1

Fremont Department of Utilities CCR Landfill

Figure 1



APPENDIX A

Annual CCR Unit Inspection Checklist

Scott Schmoker
Mark Podany

Annual CCR Unit Inspection Checklist

Lon D. Wright Power Plant

Circle either "YES" or "NO" to each question in the tables below:

1/4/17

OUTSIDE PERIMETER:

1. Is visible evidence of CCR (i.e., ash) present around the outside perimeter of the CCR Unit?	YES	(NO)
2. Is visible evidence of storm water runoff issues such as pooling or significant erosion present outside the perimeter of the CCR Unit?	YES	(NO)
Provide a detailed description of any "YES" answers and mark location data on the map provided as Figure 1 of the Annual CCR Unit Inspection Protocol:		

Photograph Numbers: 1, 2, 7, 8

BERM:

1. Is visible evidence of CCR (i.e., ash) present on the crest and outside slope of the CCR Unit berm?	YES	(NO)
2. Is visible evidence of burrowing animals present on the slopes or crest of the berm?	YES	(NO)
3. Is visible evidence of erosion, cracks, or irregularities present on the berm?	YES	(NO)
4. Is the vegetative cover on the berm sufficient to prevent erosion?	(YES)	NO
Provide a detailed description of any "YES" answers and mark location data on the map provided as Figure 1 of the Annual CCR Unit Inspection Protocol:		

Photograph Numbers: 1, 2, 7, 8

Scott Schmoker
Mark Podany

1/4/17

LINED AREA:

1. Is visible evidence of improper placement of CCR (i.e., ash) present?	YES	NO
2. Is visible evidence of burrowing animals present in the lined area?	YES	NO
3. Is visible evidence of liquid accumulation in the lined area present within the lined area?	YES	NO
4. Is visible evidence of liner failure or compromise present?	YES	NO

Provide a detailed description of any "YES" answers and mark location data on the map provided as Figure 1 of the Annual CCR Unit Inspection Protocol:

Previously damaged liner by a backhoe has been repaired.

Photograph Numbers: 1, 2, 7, 8

LEACHATE SYSTEM:

1. Is visible evidence of leaks from the piping, valves, or pumps present?	YES	NO
2. Is visible evidence of excessive corrosion on metal parts of the system?	YES	NO
3. Is the leachate in the leachate pond cloudy or muddy? NA	YES	NO

Provide a detailed description of any "YES" answers and mark location data on the map provided as Figure 1 of the Annual CCR Unit Inspection Protocol:

- Leachate pond surface frozen.

Photograph Numbers: 3, 4, 5, 6

APPENDIX B

Photographs

Photograph #1 1/4/17
Photograph taken facing northwest on access road between south end of monofill lined area and the leachate collection pond.

Photograph #2 1/4/17
Photograph taken from same location as previous photo but in a northeastern direction. CCR material shown in the background is staged for beneficial use with the exception of the brown material in the background center of the photo, which is bottom ash staged for disposal at the municipal landfill.

Photograph #3 1/4/17
Photograph taken facing southwest showing the leachate collection pond. Ice had formed on the water surface.

Photograph #4 1/4/17
Close-up photograph showing the repair of the leachate collection pond liner that was previously damaged by rodents.

Photograph #5 1/4/17
Photograph taken facing east showing the northern edge of the exposed leachate collection pond liner. Ice covered the surface of the leachate pond. Orange cones with rodent bait traps can be seen along the lip of the liner. The liner has been repaired and no evidence was observed of further damage by rodents.

Photograph #6 1/4/17
Close-up view showing another area of leachate pond liner repair.

Photograph #7 1/4/17
Photograph taken facing south showing the CCR unit phase I berm.

Photograph #8 1/4/17
Photograph taken facing north showing the west berm of the phase I disposal area. The orange safety cone indicates the area where the liner was damage by a back hoe. The liner has since been repaired.

Photograph #9 1/4/17
Photograph showing the new active ground water monitoring well #4 in the foreground (orange). The monitoring well in the background (brown) is no longer used due to structural issues with the well tube and has been abandoned.

Photograph #10 1/4/17
Photograph showing ground water monitoring well #2 with a newly poured concrete pad. The concrete pad was previously cracked and in need of repair.

APPENDIX C

Work Order History Reports

Run: 1/05/2017
1:37PM
Page: 1

Work Order History Report

Dates: From 1/05/2016 To 1/05/2017. Equipment: From MONOFILL To MONOFILL.
Query: None.

EQUIPMENT:MONOFILL MONOFILL

WO	TASK	SCHEDULED	DONE		ACT	EST	BREAK	EMP	TYPE
3,726	1	1/11/16	1/11/16	INSPECT LECHATE PUMPS MONTHLY	1.00	1.00	0.00	TV	PM
		DID INSPECTION PROCEDURE, ALL GOOD							
3,790	1		1/14/16	LECHATE POND LEVEL HIGH - WILL RUN PUMP	1.00	0.00	0.00	TV	BK
		POND LEVEL WAS 3'9". RAN PUMP OR APPROX 11 HOURS ON 1/13 AND 1/14. PUMPED IT DOWN TO 3'1"							
3,951	1	2/10/16	2/09/16	INSPECT LECHATE PUMPS MONTHLY	1.00	1.00	0.00	TT	PM
4,069	9999		2/25/16	PUMP STORM / PROCESS WATER @ MONOFILL TO RETENTION POND (EAST CENTRAL CELL)	16.00	0.00	0.00	DH	UN
		HARTUNG/TAYLOR PUMPED WATER FROM MONOFILL CELL TO LEACHATE POND WITH HYDRAULIC PUMP							
4,066	1		2/26/16	RUN LECHATE PUMP	24.00	0.00	0.00	DH	SC
		RAN FOR 8 HOURS ON 2/24, 2/25, 2/26 INTO JOCKEY SYSTEM							
4,111	1	3/11/16	3/08/16	INSPECT LECHATE PUMPS MONTHLY	1.00	1.00	0.00	TT	PM
4,183	1		3/09/16	MONOFILL LECHATE SUMP PUMP DISCHARGE PVC PIPE HAS FROZE AND BROKE. BREAK IN PIPE WAS OBSERVED NEAR TRANSITION OF SURE PUMP FLEX LINE TO PVC. CORRECTIVE ACTION WAS TAKEN ASAP BY PLACING AN ABOVE GRADE DISCHARGE HOSE BETWEEN SURE PUMP HOSE AND POND. LEACHATE SYSTEM IS FUNCTIONAL AND WILL BE REPAIRED AFTER IT WARMS UP.	4.00	0.00	0.00	DH	BK
		REPLACED BROKEN PIPE WITH NEW PVC							
4,208	9999		3/22/16	REPAIR RUTS IN MONOFILL BURM	2.00	0.00	0.00	DH	UN
		HARTUNG REPAIRED RUTS							
4,251	1	4/08/16	4/04/16	INSPECT LECHATE PUMPS MONTHLY	1.00	1.00	0.00	TT	PM
		NO PROBLEMS FOUND, 3.6' POND LEVEL							
4,278	1		4/20/16	MONITORING WELL #2 AT THE MONOFILL HAS A CRACK IN THE CONCRETE WELL PAD. BASED ON AN NDEQ INSPECTION, THE PAD NEEDS TO BE REPLACED.	4.00	0.00	0.00	TS	BK
		REMOVED OLD PAD AND REPLACED WITH NEW							
4,352	9999		4/25/16	PUMP STORM WATER FROM STORAGE TO LECHATE POND	4.00	0.00	0.00	TV	UN
		VOSS/TAYLOR PUMPED STORM WATER FROM STORAGE TO LECHATE POND							
4,391	1	5/06/16	5/09/16	INSPECT LECHATE PUMPS MONTHLY	1.00	1.00	0.00	DN	PM
		NO PROBLEMS, LEVEL 3'5". LEACHATE TRANSFER PUMP RAN TO REMOVE RAIN WATER							
4,493	9999		5/12/16	MOW	2.00	0.00	0.00	WD	UN
		WATER DEPT ATTEMPTED TO MOW AT MONOFILL, DID WHAT THEY COULD, WAS TOO WET TO DO ALL.							
4,492	9999		5/17/16	PUMP ASH CELL INTO LECHATE	6.00	0.00	0.00	TT	UN
		TAYLOR/HARTUNG - PUMPED ASH CELL INTO LECHATE POND							
4,495	9999		5/19/16	MOW AT MONOFILL	16.00	0.00	0.00	TT	UN
		MOWED 5/18 AND 5/19 - USED BATWING MOWER							
4,497	9999		5/19/16	PUMP LECHATE POND	4.00	0.00	0.00	TT	UN
		HARTUNG/TAYLOR - RAN PUMP FOR 4 HRS							
4,496	9999		5/20/16	SPRAY WEEDS AT MONOFILL	8.00	0.00	0.00	TT	UN
		5/16-5/20 - 8 HRS - SPRAYED WEEDS							
4,591	1	6/12/16	6/01/16	INSPECT LECHATE PUMPS MONTHLY	1.00	1.00	0.00	TT	PM
		ALL LOOKED GOOD							
4,634	1	7/05/16	7/01/16	INSPECT LECHATE PUMPS MONTHLY	1.00	1.00	0.00	TT	PM
2,338	1		8/04/16	FOUND MULTIPLE HOLES IN MONOFILL LECHATE POND. HOLES ARE SMALL & ROUND, AT AREA WHERE LINER TUCKS BACK INTO EARTH. CALLED PEST PROS TO ABATE RODENTS. POSSIBLY GROUND SQUIRRELS. WILL HAVE LINER REPAIRED AFTER RODENTS ARE GONE.	0.00	0.00	0.00	FH	BK

Work Order History Report

Dates: From 1/05/2016 To 1/05/2017. Equipment: From MONOFILL To MONOFILL.

Query: None.

				PEST PROS PLACED 9 RODENT TRAPS 5/15/15.					
		PER GARY OGDEN GSI		COMPLETED REPAIRS					
3,432	1		8/22/16	ADDITIONAL SMALL RODENT BURROWS AND CHUTES AND TWO LARGE RODENT BURROWS WERE OBSERVED DURING THE SITE INSPECTION WALK AROUND WITH THE NDEQ. PEST PROS WAS CONTACTED TO ADD ADDITIONAL BAIT TRAPS AND DETERMINE WHAT RODENT CAUSED THE LARGE BURROWS. 11/23 PEST PROS ADDED ADDTIONAL BAIT TRAPS AND ASSESSED WHAT RODENT CAUSED THE LARGE BURROWS.	0.00	0.00	0.00	TS	UN
4,354	1		8/22/16	MOW AT THE MONOFILL	0.00	0.00	0.00	FH	UN
4,738	1	7/31/16	9/01/16	INSPECT LECHATE PUMPS MONTHLY	0.50	1.00	0.00	TT	PM
5,055	1	10/01/16	10/25/16	INSPECT LECHATE PUMPS MONTHLY	1.00	1.00	0.00	TT	PM
		INSPECTED, ALL OK							
5,339	1	11/24/16	11/16/16	INSPECT LECHATE PUMPS MONTHLY	1.00	1.00	0.00	TT	PM
5,443	1	12/16/16	12/19/16	INSPECT LECHATE PUMPS MONTHLY	0.75	1.00	0.00	TT	PM
5,360	2	11/27/16	12/22/16	CAMERA LECHATE COLLECTION SYSTEM ANNUALLY	8.00	3.00	0.00	TS	PM

SEDLACEK/OGDEN - THE CAMERA INSPECTION WAS INITIALLY COMPLTED ON 12/6/16. THE SURE PUMP WAS RAN UNTIL PUMP SUCTION WAS BROKEN. ALL 3 PIPES WERE INSPECTED, 2-6" AND 1-18". WATER COMPLETELY FILLING ALL 3 PIPES WAS OBSERVED AT APPOX 33 FT. THE NDEQ WAS CONTACTED W/ THE RESULTS OF THE CAMERA INSPECTION. NDEQ STATED THEY REQUIRE THE ENTIRE PIPE TO BE INSPECTED AND TEH WATER WOLD NEED TO BE PUMPED OUT OF THE PIPES. ON 12/12/16 A SUMP PUMP WAS PLACED IN THE 18" PIPE WHICH THE 2-6" PIPES DRAIN INTO THE DRAIN THE PIPES FOR ANOTHER INSPECTION. THE 18" PIPE WAS PUMP OUT UNTIL THE PUMP BROKE SUCTION. THE 2ND CAMERA INSPECTION WAS ABLE TO BE COMPLETED ON THE ENTIRE 18" PIPE AND THE 2-6" PIPES WERE STILL FULL OF WAER AT 33FT. THE DRAIN SLOTS IN THE 18" PIPE AND THE 2-6" PIPES WERE OBSERVED TO BE PLUGGED W/ WHAT LOOKE LIKE CALCIUM. NDEQ WAS CONTACTED ON THE RESULTS OF THE INSPECTION. THE CORRECTIVE ACTION DECIDED BY THE FDU IS TO CONTRACT A COMPANY TO WATER WHIP OR WATER JET THE SLOTS OPEN WITH A PROPOSED SCHEDULE OF MARCH 2017.

Equipment Total:	109.25	14.00	0.00
Grand Total:	109.25	14.00	0.00

APPENDIX D

Monofill SWPPP Maintenance and Repairs of Control Measures

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Leachate Collection Pond

Regular Maintenance Activities:

The leachate collection Pond level is high and was pumped down to add capacity.

Regular Maintenance Schedule:

As needed

Date of Action: 1/13/16 & 1/14/16

Reason for Action: ☒ **Regular Maintenance** ☐ **Discovery of Problem**

If Problem,

- Description of Action Required:

- Date Control Measure Returned to Full Function: 1/14/16

- Justification for Extended Schedule, if applicable:

Notes:

Pump was operated on 1/13 and 1/14.

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Leachate sump pump

Regular Maintenance Activities:
The sump pump PVC pipe froze and broke. An above ground hose will be utilized to pump leachate from liner to pond until temperatures allow to repair PVC fitting.

Regular Maintenance Schedule:
As needed

Date of Action: 1/18/16

Reason for Action: ☐ **Regular Maintenance** ☒ **Discovery of Problem**

If Problem,

- **Description of Action Required:**
PVC pipe froze and broke, will not allow leachate to be pumped from monofill liner to pond. An above ground hose will be utilized until temperatures allow to repair PVC fitting.

- **Date Control Measure Returned to Full Function:** 3/22/16

- **Justification for Extended Schedule, if applicable:**
The current temperatures are below the temperature requirements for the PVC glue.

Notes:
After repair the system returned to normal operating conditions.

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Ash Monofill East Central Cell

Regular Maintenance Activities:
Pumped ponded stormwater from ash monofill cell to leachate collection pond using sump pump

Regular Maintenance Schedule:
As needed

Date of Action: 2/25/16

Reason for Action: ☒ **Regular Maintenance** ☐ **Discovery of Problem**

If Problem,

- **Description of Action Required:**

- **Date Control Measure Returned to Full Function:** 2/25/16
- **Justification for Extended Schedule, if applicable:**

Notes:

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Leachate Collection Pond

Regular Maintenance Activities:

Pumped the leachate collection pond water to power plant jockey water system to lower the level of the pond.

Regular Maintenance Schedule: As needed

Date of Action: 2/24/16 & 2/25/16 & 2/26/16

Reason for Action: ☒ **Regular Maintenance** ☐ **Discovery of Problem**

If Problem,

- **Description of Action Required:**

- **Date Control Measure Returned to Full Function:** 2/26/16
- **Justification for Extended Schedule, if applicable:**

Notes:

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Ash monofill

Regular Maintenance Activities:

Pumped ponded stormwater from ash monofill to leachate collection pond using sump pump

Regular Maintenance Schedule:

As needed

Date of Action: 4/25/16

Reason for Action: ☒ **Regular Maintenance** ☐ **Discovery of Problem**

If Problem,

- **Description of Action Required:**

- **Date Control Measure Returned to Full Function:** 4/25/16
- **Justification for Extended Schedule, if applicable:**

Notes:

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Leachate collection pond

Regular Maintenance Activities:
The leachate collection pond water was pumped to the power plant jockey water system to lower the pond level.

Regular Maintenance Schedule: As needed

Date of Action: 5/9/16

Reason for Action: ☒ **Regular Maintenance** ☐ **Discovery of Problem**

If Problem,

- **Description of Action Required:**

- **Date Control Measure Returned to Full Function:** 5/9/16
- **Justification for Extended Schedule, if applicable:**

Notes:

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Ash Monofill

Regular Maintenance Activities:
Pumped ponded stormwater from ash monofill to leachate collection pond using sump pump.

Regular Maintenance Schedule:
As needed

Date of Action: 5/17/16

Reason for Action: ☒ **Regular Maintenance** ☐ **Discovery of Problem**

If Problem,

- **Description of Action Required:**

- **Date Control Measure Returned to Full Function:** 5/17/16
- **Justification for Extended Schedule, if applicable:**

Notes:

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Detention Pond liner

Regular Maintenance Activities: N/A

Regular Maintenance Schedule: N/A

Date of Action: May 15, 2015

Reason for Action: ☐ **Regular Maintenance** ☒ **Discovery of Problem**

If Problem,

- **Description of Action Required:** Rodents believed to be ground squirrels that chewed four to five holes along the edge of the detention pond liner. Pest Pros was hired and placed bait traps near burrows and along animal tunneling locations. The bait traps were placed at these locations on May 15, 2015. It will take an estimated two to three months to completely eradicate the rodents. Once the rodents have been eradicated, the liner will be repaired.
- **Date Control Measure Returned to Full Function:** August 1, 2016
- **Justification for Extended Schedule, if applicable:**
The detention pond liner will not be repaired and at full function for an estimated two to three months to allow the bait trap station to work. This method is slower and less aggressive than a chemical treatment which was not chosen since if any got into the water, it would be discharge to rawhide creek.

Notes:

See supporting documentation (emails, POs, Photos) for corrective actions.

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Leachate Collection Pond (Detention Pond) Liner and Phase II

Regular Maintenance Activities: N/A

Regular Maintenance Schedule: N/A

Date of Action: 11/23/15

Reason for Action: ☐ **Regular Maintenance** ☒ **Discovery of Problem**

If Problem,

- **Description of Action Required:** Additional signs of rodent activity is widespread in phase I, mainly around the Leachate Pond liner, Two large burrows were also discovered along with smaller burrows and chutes in phase II, Pest Pros was on-site on November 23 to assess the burrows and add additional bait traps.
- **Date Control Measure Returned to Full Function:** 8/1/16
- **Justification for Extended Schedule, if applicable:**

Notes:

The large burrows were inspected by Pest Pros and believed to be from hibernating skunk or groundhog. As of 2016 the burrows appear to be abandoned. The pond liner was repaired on 8/1/16.

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Ash Monofill

Regular Maintenance Activities:

Pumped ponded stormwater from ash monofill to leachate collection pond using sump pump.

Regular Maintenance Schedule:

As Needed

Date of Action: 5/19/16

Reason for Action: ☒ **Regular Maintenance** ☐ **Discovery of Problem**

If Problem,

- **Description of Action Required:**

- **Date Control Measure Returned to Full Function:** 5/19/16
- **Justification for Extended Schedule, if applicable:**

Notes:

Ash Monofill Site SWPPP
Maintenance and Repairs of Control Measures

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - justification for any extended maintenance/repair schedules.

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Leachate collection system

Regular Maintenance Activities:

Annual camera inspection of leachate collection system piping

Regular Maintenance Schedule:

Date of Action: 12/12/16

Reason for Action: ☐ **Regular Maintenance** ☒ **Discovery of Problem**

If Problem,

- **Description of Action Required:**
The slotted pipe needs to be hydrojetted to clear the deposits seen during the camera inspection that is not allowing the water to drain properly.

- **Date Control Measure Returned to Full Function:**

- **Justification for Extended Schedule, if applicable:**
Due to cold weather the hydrojetting will be scheduled for the spring of 2017.

Notes:

Weekly CCR Unit Compliance Evaluation Forms are maintained in the CCR Operating Record located at the Lon D Wright Power Plant

APPENDIX E

Weekly CCR Unit Compliance Evaluation Forms

APPENDIX F

Leachate System Pumps Monthly Operational Inspection Sheet

FDU ASH MONOFILL
LEACHATE SYSTEM PUMPS
MONTHLY OPERATIONAL INSPECTION LOG SHEET

Pump Type	Pump Operational	Leachate Pump Hours	Leachate Sump Level (feet)	Leachate Retention Pond Surface Water Level (Elevation) (Feet)	Date	Inspector Name
Leachate Transfer Pump	(Y) / N	—			11-25-15	T.NT
Hydrovactor Pump	(Y) / N	—			11-25-15	TNT
Leachate Sump Pump	(Y) / N	25520	N/A	99.6 on 9-4	11-24-15	TNT
Leachate Transfer Pump	(Y) / N				12-10-15	TNT
Hydrovactor Pump	(Y) / N				12-10-15	TNT
Leachate Sump Pump	(Y) / N	25567.1	.81	3' 2"	12-10-15	TNT
Leachate Transfer Pump	(Y) / N	~~25732.9~~	~~.61~~	3,9	1-13-16	TV
Hydrovactor Pump	(Y) / N				1-13-16	TV
Leachate Sump Pump	(Y) / N	25732.9	.61	3.4	1-13-16	TV
Leachate Transfer Pump	Y / N	—		~~3.4~~	~~2-9-16~~ 1-13-16	TV
Hydrovactor Pump	(Y) / N	—			2-9-16	TV
Leachate Sump Pump	(Y) / N	25803.8	3.4	3'6"	2-9-16	TV
Leachate Transfer Pump	(Y) / N	~~25803.8~~	~~3.4~~		3-8-16	TT
Hydrovactor Pump	(Y) / N	—			3-8-16	TT
Leachate Sump Pump	(Y) / N	25908	1.43	3' 2"	3-8-16	TT
Leachate Transfer Pump	(Y) / N				4-1-16	TT
Hydrovactor Pump	(Y) / N				4-1-16	TT
Leachate Sump Pump	(Y) / N	25917.2	1.34	3' 1"	4-1-16	TT
Leachate Transfer Pump	(Y) / N			3' 5"	5-9-16	DLW
Hydrovactor Pump	(Y) / N				5-9-16	DLW
Leachate Sump Pump	(Y) / N	26014.2	.68		5-9-16	DLW
Leachate Transfer Pump	(Y) / N	~~26073.6~~	~~.68~~		6-1-16	T.T
Hydrovactor Pump	(Y) / N	—	—	—	6-1-16	T.T
Leachate Sump Pump	(Y) / N	26073.6	.68	3'2.4"	6-1-16	T.T
Leachate Transfer Pump	(Y) / N	~~26073.6~~	~~.68~~	~~3'2.4"~~		
Hydrovactor Pump	Y / N					
Leachate Sump Pump	Y / N					
Leachate Transfer Pump	Y / N					
Hydrovactor Pump	Y / N					

FDU ASH MONOFILL
LEACHATE SYSTEM PUMPS
MONTHLY OPERATIONAL INSPECTION LOG SHEET

Pump Type	Pump Operational	Leachate Pump Hours	Leachate Sump Level (feet)	Leachate Retention Pond Surface Water Level (Elevation) (Feet)	Date	Inspector Name
Leachate Transfer Pump	(Y) / N				7-1-16	T.T
Hydrovactor Pump	(Y) / N				7-1-16	T.T
Leachate Sump Pump	(Y) / N	26339.0	.76	2' 7"	7-1-16	T.
Leachate Transfer Pump	(Y) / N	26460.0	.77	3'	8-30-16	TT
Hydrovactor Pump	(Y) / N				8-30-16	TT
Leachate Sump Pump	(Y) / N				8-30-16	TT
Leachate Transfer Pump	(Y) / N				9-1-16	TT
Hydrovactor Pump	(Y) / N				9-1-16	TT
Leachate Sump Pump	(Y) / N	26483.6	1.13	3' 2"	9-1-16	TT
Leachate Transfer Pump	(Y) / N				10-27-16	TT
Hydrovactor Pump	(Y) / N				10-27-16	TT
Leachate Sump Pump	(Y) / N	26551.6	1.36	3' 3"	10-27-16	TT
Leachate Transfer Pump	(Y) / N				11-16-16	TT
Hydrovactor Pump	(Y) / N				11-16-16	TT
Leachate Sump Pump	(Y) / N	26553.8	1.50	2' 1"	11-16-16	TT
Leachate Transfer Pump	(Y) / N				12-19-16	TT
Hydrovactor Pump	(Y) / N				12-19-16	TT
Leachate Sump Pump	(Y) / N	26556.3	1.04	2' 2"	12-19-16	TT
Leachate Transfer Pump	Y / N					
Hydrovactor Pump	Y / N					
Leachate Sump Pump	Y / N					
Leachate Transfer Pump	Y / N					
Hydrovactor Pump	Y / N					
Leachate Sump Pump	Y / N					
Leachate Transfer Pump	Y / N					
Hydrovactor Pump	Y / N					
Leachate Sump Pump	Y / N					
Leachate Transfer Pump	Y / N					
Hydrovactor Pump	Y / N					
Leachate Sump Pump	Y / N					