Gainesville Regional Utilities
Deerhaven Generating Station

Coal Combustion Residual Units
Annual Inspection Report
(11 December 2020 – 8 December 2021)

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1 Introduction

The Deerhaven Generating Station (site) has two coal combustion residuals (CCR) units: a surface impoundment system and a landfill. The surface impoundment system is comprised of two ash ponds (i.e., Ash Cell #1, Ash Cell #2) located within the same slurry wall containment system. These cells receive cooling tower blowdown and bottom ash sluice water from the site's coal-fired combustion unit (i.e., Unit #2) through a piping network that allows discharge to either cell. Cooling tower blowdown represents the largest discharge stream routed to these cells and sluiced ash constitutes a relatively small portion of the discharges received by these cells. As the water moves through the ash cells, bottom ash settles, and the decant water gravity drains to adjacent pump back ponds (i.e., Pump Back Cell #1, Pump Back Cell #2) through subsurface culverts, which run beneath the embankment separating each ash cell from its adjacent pump back cell. The culvert inlets are enclosed within stoplog structures (located inside the ash cells near the embankment separating each ash cell from the adjacent pump back pond) to minimize ash entering the culverts. The adjacent pump back cells are exclusively used to store the decant water prior to treatment and re-use in plant operations. The slurry wall containment system is located beneath the peripheral embankment, which encompasses the surface impoundment system, the pump back cells, and two front-end treatment (FET) lime sludge cells. The slurry wall is keyed into an existing, underlying clay layer. Figure 1 presents a layout view of the surface impoundment system and the two adjacent pump back cells at the site. The locations of several piezometers, which are used to qualitatively monitor for seepage through the exterior embankments, are also shown.

Figure 1. Layout of the CCR Surface Impoundment System, Adjacent Pump Back Cells, and Piezometers

The CCR landfill primarily accepts flue gas desulfurization byproducts from the Unit #2 scrubbing process. The landfill also accepts the bottom ash that is periodically (i.e., approximately every five years) excavated

from the surface impoundment system and lime sludge that is periodically dredged from front-end treatment sludge ponds. Occasionally, fly ash is also deposited in the landfill when it is not hauled offsite for beneficial use. The landfill is comprised of four cells (i.e., Cells 1-4), sequentially arranged from west to east. The bottom of each landfill cell is graded to drain contact water (i.e., water that contacts CCR) intercepted by the cell bottom. In addition, perforated PVC pipes were installed at the base of the cells. Specifically, these pipes are located in the middle of each cell and between each cell to intercept and gravity-drain the contact water to a drainage ditch located along the northern toe of the landfill (i.e., the Northern Drainage Ditch).

Similar to the surface impoundment system, a slurry wall containment system, which is keyed into an existing underlying clay layer, encompasses the landfill and the Northern Drainage Ditch. A series of stormwater ditches located outside the slurry wall route stormwater to either a wetland area located just west of the landfill or to a stormwater pond located to the southeast of the landfill. Currently, Cells 1, 2, and 3 of the CCR landfill are actively receiving CCR and other non-CCR materials. Figure 2 presents an aerial layout of the CCR landfill at the site, facing west.

Figure 2. Aerial Image of CCR Landfill Facing West

Title 40 Code of Federal Regulations (CFR) 257.83(b) and 257.84(b) requires that CCR units be annually inspected by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of each CCR unit is consistent with recognized and generally accepted good engineering standards. 40 CFR 257.53 defines a qualified professional engineer as “an individual who is licensed by a state as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge, and experience to make the specific technical certifications required under this subpart. Professional engineers making these certifications must be currently licensed in the

state where the CCR unit(s) is located". This report was prepared under the supervision of Pradeep Jain, who is a licensed professional engineer in the State of Florida (FL PE License No. 68657).

2 CCR Surface Impoundment System

2.1 Review of Relevant Information

2.1.1 Overview

The following documents have been reviewed by Innovative Waste Consulting Services LLC (IWCS), doing business as Innovative Technical Solutions (ITS), to understand the design and operation of the CCR surface impoundment system located at the site while preparing the previous annual inspection reports:

a) Construction drawings for the surface impoundment system certified as conforming to construction records (B&M 1981)
b) Bid documents for the site, including construction specifications for the surface impoundment system (B&M 1980)
c) A Site Certification Application for Unit 2 (RUB 1977)
d) A State of Florida Department of Environmental Regulation Electric Power Plant Site Certification Review FDER (1978)
e) Slope Stability and Liquefaction Potential Analysis, CCR Impoundment System, Deerhaven Generating Station (DGS) (UES 2015)
f) Slope Stability and Liquefaction Potential Analysis, CCR Impoundment System, Deerhaven Generating Station (DGS) (UES 2020a).
g) A topographic survey of the surface impoundment system (DSI 2015)
h) Coal Combustion Residuals (CCR) Surface Impoundment System Hazard Potential Classification (UES 2016a)
i) Coal Combustion Residuals (CCR) Abutment and Base Surface Impoundment System Evaluation (UES 2016b)
j) CCR Surface Impoundment System and Landfill Groundwater Monitoring Systems Design and Construction (UES 2017); UES completed the installation and development of the groundwater monitoring wells around each of the CCR units in March 2017.
k) Coal Combustion Residuals (CCR) Surface Impoundment System and Updated Landfill Groundwater Monitoring Systems Design and Construction UES (2020b)
l) Groundwater Sampling and Analysis Plan for the Coal Combustion Residuals Units (IWCS 2017c); the plan provides details on the methodology to be used for sampling and analyzing groundwater data collected from the monitoring well networks of each CCR unit.

Since the last inspection, no modification has been made to the design and operational procedures of the surface impoundment system. GRU ceased accepting CCRs and non-CCRs in Ash Cell 1 in October 2021 and started dewatering the cell for closure. GRU plans to relocate bottom ash from Ash Cell 1 to the onsite CCR landfill and repurpose the cell to only manage non-CCR waste streams. The following additional documents developed since the previous annual inspection were reviewed for this report preparation:

a) IWCS (2021a). Coal Combustion Residuals Surface Impoundment System Inflow Design Flood Control System Plan, prepared by Innovative Waste Consulting Services LLC for Gainesville Regional Utilities, September 2021.
b) IWCS (2021b). Coal Combustion Residuals Surface Impoundment System Closure Plan (Version 2.0), prepared by Innovative Waste Consulting Services LLC for Gainesville Regional Utilities, September 2021.
c) UES (2021a). Coal Combustion Residuals (CCR) Surface Impoundment System Periodic Hazard Potential Classification, prepared by Universal Engineering Services for Gainesville Regional Utilities, September 2021.
d) UES (2021b). Coal Combustion Residuals (CCR) Abutment and Base Surface Impoundment System Periodic Structural Stability Evaluation, prepared by Universal Engineering Services for Gainesville Regional Utilities, September 2021.
e) Fifty-two (52) weekly (7-day) inspection worksheets
f) Twelve (12) monthly (30-day) inspection worksheets

2.1.2 Review of Weekly and Monthly Inspection Worksheets

Weekly and monthly inspection worksheets for the CCR surface impoundment system have been completed and placed in the operating record since 19 October 2015. ITS reviewed the worksheets for all the weekly and monthly inspections conducted since the previous annual inspection. Documentation reporting that the deficiencies identified during the previous annual inspection have been addressed is available on GRU's publicly accessible internet site.

40 CFR 257.83(a)(1)(i) and (iii) respectively establish maximum time intervals for weekly (i.e., seven days) and monthly (i.e., 30 days) inspections of the surface impoundment system. There were eight and four instances where this maximum time interval was exceeded for weekly and monthly inspections, respectively. The following unusual conditions were reported in weekly and monthly inspection worksheets covering the current annual inspection period:

a) Elevated Ash Cell Water Levels – The top of the peripheral berm surrounding each of the ash cells is at an elevation of 195 feet, referenced to the National Geodetic Vertical Datum of 1929 (NGVD29). The ash cells are operated with a normal maximum operating level of 193 feet (NGVD29) to provide 2 feet of freeboard in case of heavy rain/storm events and other contingency events (e.g., during the brine concentrator outage). Water levels higher than 193 ft NGVD29 were observed for four (4) and eleven (11) weekly inspections for Ash Cell #1 and Ash Cell #2, respectively, during the time period covered by this report.

   For Ash Cell #1, the first occurrence of elevated water levels was reported on 6/29/2021 due to heavy rains. The water level in Ash Cell #1 was observed to be below 193 feet for the subsequent two weekly inspections but was elevated for the following three weekly inspections (from 7/20/2021 through 8/3/2021) due to heavy rain from Hurricane Elsa. The water level in Ash Cell #1 was reported to be below 193 ft elevation starting the weekly inspection on 8/10/2021.

   For Ash Cell #2, the first incidence of elevated water levels was reported on 3/15/2021 due to brine concentrator outage and cessation of CCRs and non-CCR flow into Ash Cell #1 for cleaning. All the

other ten incidences of elevated water levels were observed during the weekly inspections from 4/19/2021 through 8/10/2021. The water elevation in Ash Cell # 2 was reported to be intermittently above 193 feet (NGVD29) due to multiple factors, including heavy rain before and from Hurricane Elsa, pump and valve failure, and the Ash Cell #1 outage. The operators closely monitored pond levels and adjusted process water and stormwater pumping to the ponds to reduce the ash pond levels expeditiously during these events.

b) Butterfly Valve Failure. The butterfly valve that is used to control the decant water flow from Ash Cell #2 to the Pump Back Cell #2 has been reported to be inoperable since 5/5/2021. GRU plans to repair the valve after Ash Cell #2 is dewatered. Currently, all the CCR and non-CCR waste streams are routed to Ash Cell #2 as Ash Cell #1 is being dewatered for closure. Once Ash Cell #1 is repurposed to accept only non-CCR flows, Ash Cell #2 will be dewatered for closing and repurposing to manage only non-CCR waste streams; the malfunctioning butterfly valve will be repaired once the cell is dewatered.

During each monthly inspection, depth-to-liquid readings in the piezometers located on the embankments of Ash Cell #1 and Ash Cell #2 were measured. The water levels measured in these piezometers are used to qualitatively assess potential embankment seepage areas; Piezometer P-2, P-3, and P-4 are used to monitor exterior embankments for Ash Cell #1, and P-1 is used to monitor the exterior embankment of Ash Cell #2. The liquid elevation in the piezometers was compared to the liquid elevation in each adjacent ash pond. Figures 3 and 4 present a comparison of the measured liquid levels for Ash Cell #1 and corresponding piezometers and Ash Cell #2 and corresponding piezometer(s), respectively. The measurements taken by ITS engineers on the day of the annual inspection were consistent with those measured by GRU during the most recent monthly inspection.

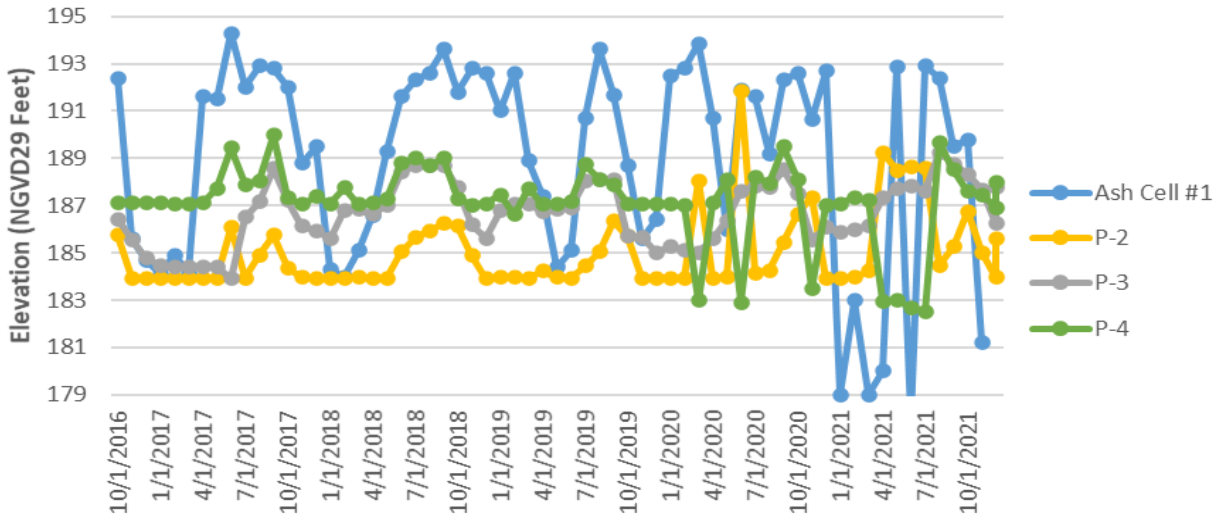


Figure 3. Liquid Elevations for Ash Cell #1 and Piezometers

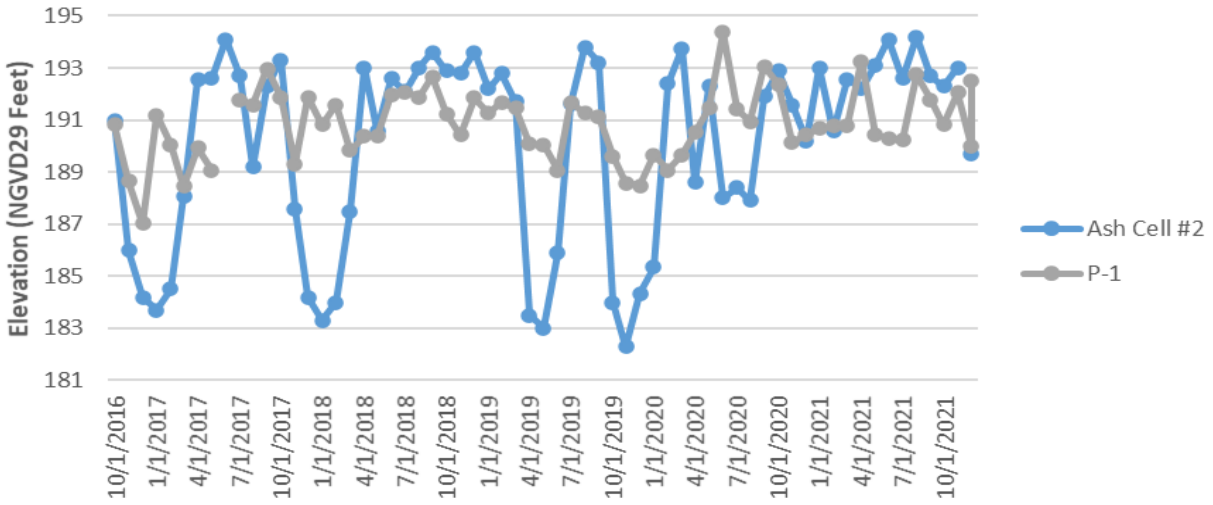


Figure 4. Liquid Elevations for Ash Cell #2 and Piezometer

2.2 Field Inspection

ITS inspected the CCR surface impoundment system on December 6, 2021. The following section describes the observations made during the inspection.

2.2.1 Signs of Distress or Malfunction of CCR Unit or Appurtenant Structures

No sign of distress or malfunction was observed for the visible sections of the ash ponds or the stoplog structures. The condition of the submerged interior slopes and the stoplogs could not be visually inspected in Ash Cell #2. Although Ash Cell #1 did not contain free water, it contained a significant amount of CCRs on the northeast interior slope, which partially obstructed the view of the interior slopes. GRU reported that the butterfly valve in Ash Cell #2 was malfunctioning at the time of ITS inspection. GRU is using a portable pump to move water from Ash Cell #2 to Pump Back Pond #2. GRU is planning to fix this issue when Ash Cell #2 is dewatered for cleaning next year.

2.2.2 Hydraulic Structures

ITS was not able to inspect the subsurface culverts which connect each ash cell to its adjacent pump back pond as these were submerged below the water levels in the ash ponds and pump back ponds. Therefore, ITS recommends that GRU conduct a dry/semi-dry inspection of the culverts to assess their structural integrity.

2.2.3 Geometrical Changes of CCR Unit

ITS conducted a topographic survey of select features of the surface impoundment system on 2 December 2021. A comparison of the topographic conditions collected during this survey to those observed in the survey conducted by DSI (2015) does not suggest any significant deviations in geometry from those observed during the previous annual inspection. Appendix A includes a comparison between the elevations of the features during this inspection to those presented by DSI (2015). Please note that the

survey equipment used by ITS has a manufacturer-listed maximum accuracy of 4 inches. The surveyed elevations should be considered as rough approximations as the survey was not performed by a licensed surveyor.

2.2.4 Instrumentation Locations and Maximum Readings

Apart from a groundwater monitoring system (separately discussed in detail in annual groundwater monitoring and corrective action reports), the piezometers adjacent to each of the two ash ponds are the only instruments used to monitor the surface impoundment system. Table 1 presents the location of the piezometers, along with their maximum recorded readings over the last annual inspection period. Please note that the easting and northing coordinates are referenced to US State Plane 1983 Florida North 0903. The maximum reading liquid elevations are referenced to NGVD29. As a point of comparison, the top of the peripheral berm surrounding each of the ash cells is at an elevation of 195 feet NGVD29. The maximum elevations observed during the reporting period for all the piezometers except for PZ-3 and PZ-4 were within the range of those observed during the previous reporting period. The maximum elevations observed during the reporting period for P-1 and P-2 were 1.1 and 2.6 ft, respectively, lower than those observed during the previous reporting period. The maximum elevations observed during the reporting period for P-3 and P-4 were 0.7 and 0.2 ft higher, respectively, than those observed during the previous reporting period.

Table 1. Location, Type, and Maximum Recorded Readings of Existing Instrumentation

Piezometer	Easting	Northing	Max Elevation (NGVD29)
P-1	2636972.5	284823.8	193.3
P-2	2636725.5	284571.1	189.3
P-3	2636691.7	284443.8	189.2
P-4	2636873.5	284259.3	189.7

2.2.5 Elevation of CCR and Impounded Water

Table 2 presents a comparison of the water levels observed on the day of inspection with the maximum and minimum levels recorded by GRU staff during weekly and monthly inspections; the water levels in the ponds are tracked with a staff gauge painted on one of the concrete walls of the stoplog structure in each ash pond. It should be noted that all liquid depths in each pond were calculated assuming the bottom of the ash ponds is located at 179 feet NGVD29, as indicated in the B&M (1981) drawing set. The surface of the settled bottom ash is not evenly distributed – the elevations presented in Table 2 correspond to the water elevation of the ponds.

Table 2. Maximum, Minimum, and Present Depth and Elevation of CCR and Water

Location	Media	Parameter	Unit	12/2/21	Minimum of the Weekly and Monthly Measurements	Maximum of the Weekly and Monthly Measurements
Ash Cell #1	Water	Elevation	feet (NGVD29)	179	176.6	194.3
		Depth	feet	0	0	15.3
Ash Cell #2	Water	Elevation	feet (NGVD29)	191.4	187.8	195.8
		Depth	feet	12.4	8.8	16.8

2.2.6 Storage Capacity and Volume of CCR and Impounded Water

A large portion of the CCR surface in Ash Cell #2 was inundated at the time of this inspection (as shown in Figure 1 aerial image); the current CCR storage capacity of the surface impoundment systems could not be estimated. However, based on construction records, it is estimated that the CCR surface impoundment system has a total volumetric capacity of 17.3 million gallons (or approximately 85,400 cubic yards), not including the capacity associated with the 2 feet of freeboard.

Based on the present (i.e., 6 December 2021) water elevation in Ash Cell #2, the total in-place volume of water and CCR in this cell is roughly estimated to be 7.4 million gallons (or approximately 36,525 cubic yards). Although Ash Cell #1 did not contain any standing water and the CCR surface was visible, the deposited CCRs were too soft to walk for accessing the in-place CCR surface. A topographic survey of the current CCR surface could not be performed to assess its elevation and in-place volume. The measurement of a few spots suggests that most of the CCRs are located below the elevation of 189 ft (NGVD29). Assuming a uniform elevation of 189 ft (NGVD29) throughout the cell, Ash Cell #1 is estimated to contain 27,915 cubic yards of CCRs. It is important to note that this is a conservatively overestimate of the in-place CCRs.

2.2.7 Structural Weaknesses and Adverse Conditions

ITS visually inspected the external side slopes of the surface impoundment system and the pump back cells to identify any potential indicators of structural weakness or any other adverse condition, including signs of erosion; bulging; depressions; cracks; animal forage holes; boils; or excessive, turbid, or sediment-laden seepage. No signs of structural weakness or adverse conditions were observed during the annual inspection.

2.2.8 Other Changes Affecting Stability or Operation

The height of grass on the southern and western slopes of the surface impoundment system on 6 December 2021 was found to be less than the maximum 6-inch requirement (§257.74(d)(iv)). Apart from the observations discussed above, no other changes or circumstances, which may impact the stability or operation of the surface impoundment system, were noted during the inspection.

3 CCR Landfill

3.1 Review of Relevant Information

The following documents have been reviewed by ITS, to understand the design and operation of the CCR landfill located at the site while preparing this annual inspection report:

a. Coal Combustion Residuals Landfill Run-on and Run-off Control System Plan (Version 2.0) (IWCS 2021a)
b. A total of 52 weekly CCR landfill inspection worksheets were reviewed; these worksheets covered the period from 11 December 2020 through 6 December 2021. 40 CFR 257.84(a)(1)(i) establishes a maximum time interval of 7 days for weekly inspections of the CCR landfill. All 52 weekly CCR landfill inspections were performed without exceeding the maximum time interval.

The worksheets allow the inspector to categorize observations as *Acceptable*, *Area of Concern*, or *Needs Attention*. *Area of Concern* is defined in the worksheet as "may develop into a *Needs Attention* area if not addressed. Monitor the situation and reevaluate during the next inspection. Address as necessary." It should be noted that an *Area of Concern* is not indicative of a problem but is used to proactively identify and monitor circumstances that have an elevated chance of developing into a problem. *Needs Attention* is defined in the worksheet as "currently or imminently presents a human-health, operation or environmental hazard/problem. Address as soon as possible."

Forty-one (41) *Needs Attention* observations were reported in the weekly inspection worksheets reviewed for this report. The majority of these observations appear to be because of the presence of loose ash piles that were not spread and compacted (13 occasions) and high-water level in the Northern Drainage Ditch, which was above the underdrains (13 instances) or downcomer (10 instances). Based on supervisor notes included in the inspection worksheets, it appears that these issues were addressed expeditiously and were generally resolved within a day of the observation.

The *Needs Attention* observations corresponded to the following nine categories:

1) **Loose Piles of CCR (13 instances)** – loose piles of CCR accumulated on the landfill surface were observed – these piles have the potential to contribute to dust emissions. The presence of loose piles was a frequently occurring issue during the reporting period. One of these observations was reported to be due to equipment maintenance.
2) **Water Level Above Underdrain Outlets (13 instances)** – four underdrain pipes collect and transport CCR contact water to the Northern Drainage Ditch. Multiple events under this category are directly related to heavy rainfall. On all occasions, the Northern Drainage Ditch was pumped down as soon as feasible following these observations.
3) **Downcomer pipes clogged or damaged (10 instances) –** two downcomer pipes drain contact water from the top of the landfill into the Northern Drainage Ditch. On ten occasions, the downcomer outlets were observed to be inundated due to elevated water elevation in the Northern Drainage Ditch.
4) **Overgrown Vegetation (5 instances)** – Vegetation on the side slopes of the CCR landfill was observed to be taller than 6 inches. Mowing activities were suspended for 20 weeks to identify

and acquire safer mowing equipment that is more stable on the landfill side slopes; the previously used mower slid on the slope on a few occasions and posed a safety risk.

Twenty-nine (29) "Areas of Concern" were noted. These are listed as follows:

1. **Grass and other vegetation height on external slopes (18 instances).** As mentioned above, landfill side slope mowing was suspended for a period to identify and procure a mower suitable for mowing the slopes.
2. **Stormwater culverts/ditches being clogged, damaged, or eroded (3 instances).** The water level in the stormwater pond resulted in water back-up into the culverts on the southeast corner of the landfill in March 2021.
3. **Access roads and ramps navigable, erosion, rutting, and ponding (2 instances)**. The access road was reported to be slippery and rutted on two occasions.
4. **Hay bales condition (2 instances)**. The hay bales were found to be deteriorating and were replaced to address the issue.
5. **Northern Drainage Ditch sediment accumulation (2 instances).** CCR accumulation around the outlet of the downcomer was observed on two occasions.
6. **Erosion of active surface area (1 instance)**. The areas were regraded to address cracks, rills, and depressions.
7. **Northern Drainage Ditch bank erosion (1 instance)**. A localized erosion of the southern slope of the Northern drainage Ditch was reported.

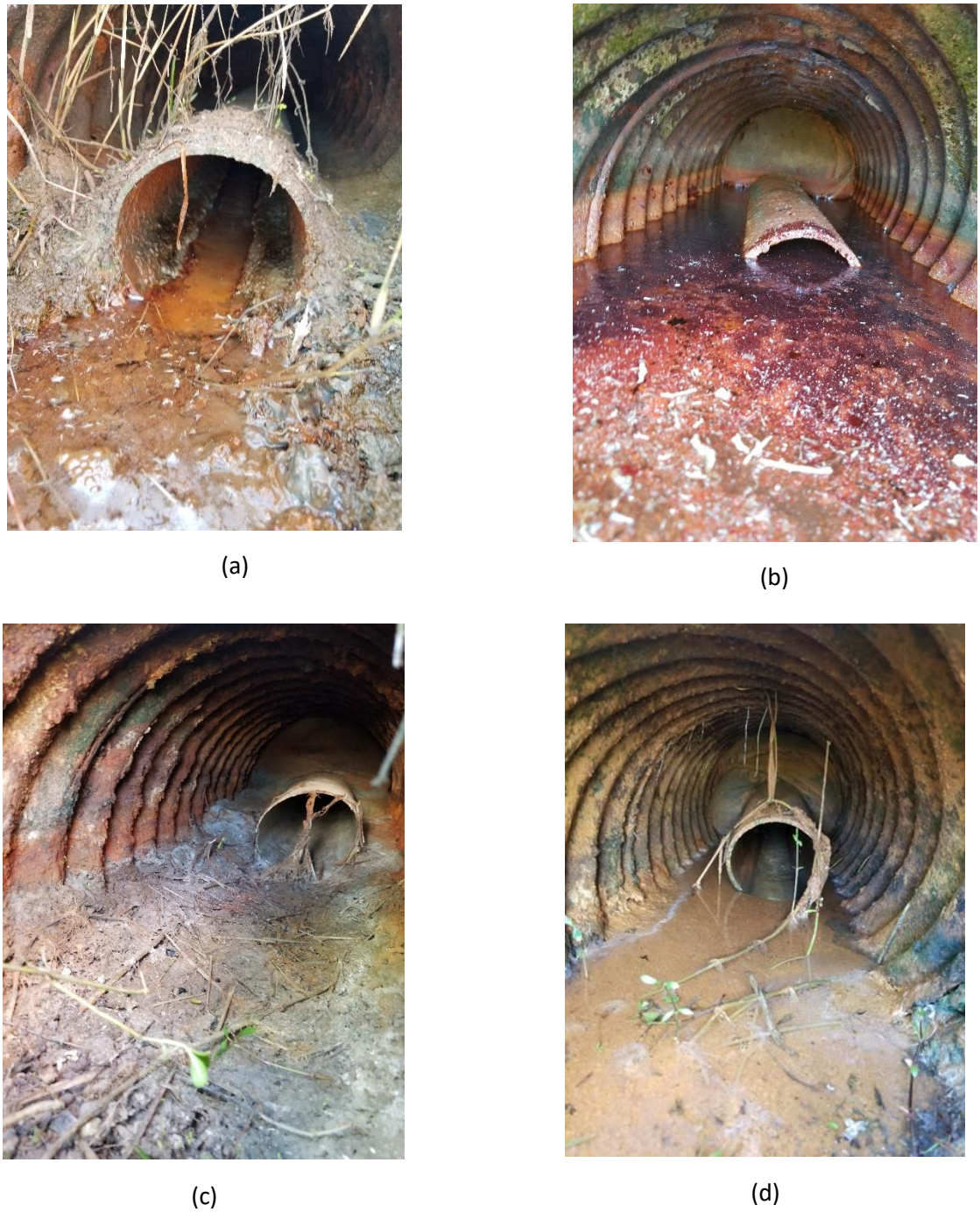
Based on supervisor notes included in the inspection worksheets, it appears that these issues were addressed expeditiously and were generally resolved within a day of the observation. With the exceptions of the observations pertaining to the vegetation height and the stormwater culverts and ditches noted above, no issues were observed in two consecutive inspections. Supervisor notes indicate that the sediments accumulated in the Northern Drainage Ditch will be removed by January 2022.

3.2 Field Inspection

ITS inspected the CCR landfill on 6 December 2021. The following section describes observations made during the inspection event.

3.2.1 Signs of Distress or Malfunction

Sedimentation around the underdrain outlets in the Northern Drainage Ditch was observed. The sediments appear to impede drainage from the underdrains causing water to back up into the underdrains (Figure 5).



(a) (b)

(c) (d)

Figure 5. Sediment Build-up Around Underdrain Outlets of (a) Cell 1, (b) Cell 2, (c) Cell 3, and (d) Cell 4

3.2.2 Geometrical Changes of CCR Landfill

In accordance with the landfill filling plan, the interior of Cell 1 and Cell 2 and the peripheral berm on the external side slopes of Cell 1 and Cell 2 is progressively raised by approximately 4 feet for each lift of deposited CCR. No changes in the geometry of the landfill indicative of structural instability or weakness were noted. Since the last inspection, no modification has been made to the design and operational

procedures of the landfill. Since the last annual inspection, three new piezometers were installed in September 2021 to assess radium exceedances observed at LF-5.

3.2.3 Volume of CCR

ITS conducted a topographic survey of the landfill on 6 December 2021 and used AutoCAD Civil 3D 2013 cut-and-fill procedures to estimate the in-place CCR volume; the landfill bottom elevation was assumed to be 184 feet NGVD29 (as approximately shown in B&M 1981). Approximately 518,500 cubic yards of CCR and other materials (i.e., cover soil, FET lime sludge) have been deposited in the landfill to date. The topographic survey and the estimated in-place volume should be considered as a rough approximation as the survey was not performed by a licensed surveyor.

3.2.4 Structural Weaknesses and Adverse Conditions

ITS performed a visual inspection of all exterior slopes of the CCR landfill for any appearance of actual or potential structural weakness, including signs of erosion, bulging, depressions, cracks; animal forage holes; boils, or excessive, turbid, or sediment-laden seepage. No signs of structural weakness and adverse conditions were observed.

3.2.5 Other Changes Affecting Stability or Operation

Apart from those discussed above, no other changes or circumstances, which may impact the stability or operation of the landfill, were noted during the inspection.

3.2.6 Miscellaneous

This section summarizes other miscellaneous observations for GRU's consideration. These observations do not have any major impact on the landfill's performance or stability.

a) Localized erosion of the southeast corner of Northern Drainage Ditch was observed (Figure 6)
b) Mower ruts were observed on the southeast corner and southwest toe of the landfill (Figure 7). These ruts can potentially accumulate stormwater run-off.
c) Thick vegetation around the culverts on the north side of Cell 3 was observed (Figure 8). These culverts route contact water run-off from Cells 3 and 4 to the Northern Drainage Ditch.
d) Sediment build-up in the Northern Drainage Ditch around the downcomers outlets was observed (Figure 9).
e) Loose piles were present on top of the landfill (Figure 10).
f) Unvegetated spots on the stormwater channel on the west and south sides of the landfill were observed (Figure 11).
g) An identification label is missing for two groundwater monitoring wells and one piezometer located on the west side of the landfill.

Figure 6. Erosion near the Southeast Corner of North Drainage Ditch

Figure 7. Erosion on Southeast Corner on Landfill

Figure 8. Thick Vegetation Around the Culverts Located on the North Side of Cell 3

Figure 9. Sediment Accumulation in the Northern Drainage Ditch

Figure 10. Several Loose Piles on Top of Landfill

Figure 11. Unvegetated Areas in Stormwater Channel on the South and West Side of the Landfill

4 Summary of Deficient Conditions and Recommendations

Table 3 presents a summary of the locations of each deficient condition observed during the annual inspection.

Table 3. Location Summary of Deficient Conditions Observed During the Annual Inspection

CCR Unit	Location	Condition
Surface Impoundment System	Ash Cell # 2	Butterfly valve malfunctioning
CCR Landfill	Northern Drainage Ditch	Sedimentation around the underdrains outlets
	Southeast Corner on Landfill and Northern Drainage Ditch	Erosion
	Southeast and southwest slope (near slope toe)	Mower ruts
	Cell 3 culverts	Thick vegetation around the culvert inlets and outlets
	Northern Drainage Ditch	Sediment accumulation
	Top of landfill Cells 1 and 2	Loose piles
	Stormwater channel on the south and west sides of the landfill	Unvegetated areas
	Two groundwater monitoring wells and one piezometer on the west side of the landfill	Identification labels missing

All deficiencies identified for the CCR units were brought to the attention of GRU on 17 December 2021. Per §257.83(b)(5) and §257.84(b)(5), GRU is required to address these identified deficiencies as soon as feasible and document the corrective measures taken.

40 CFR 257.83(a)(1)(i) and (iii) respectively establish maximum time intervals for weekly (i.e., seven days) and monthly (i.e., 30 days) inspections of the surface impoundment system. There were 8 and 4 instances where this maximum time interval was exceeded for weekly and monthly inspections for the impoundment system, respectively. Similarly, 40 CFR 257.84(a)(1)(i) establishes a maximum time interval of 7 days for weekly inspections of the CCR landfill. All the weekly inspections were performed within this maximum time interval of 7 days. GRU is recommended to perform the weekly and monthly inspections within these maximum intervals.

5 References

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6 Professional Engineer Certification

This plan was prepared under the supervision, direction, and control of the undersigned registered professional engineer (PE). The undersigned PE is familiar with the requirements of 40 CFR 257.83(b) and 84(b). The undersigned PE certifies that this CCR unit annual inspection report meets the requirements of 40 CFR 257.83(b) and 84(b).

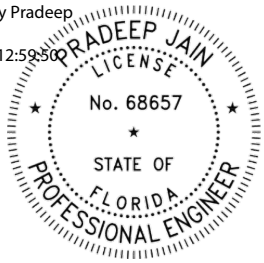
Name of Professional Engineer: Pradeep Jain

Pradeep Jain Digitally signed by Pradeep Jain Date: 2021.12.22 12:59:50 -05'00'

Company: Innovative Waste Consulting Services, LLC

PE Registration State: Florida

Florida PE License No.: 68657



This item has been digitally signed and sealed by Pradeep Jain, PE, on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Appendix A

Comparison Table of Surface Impoundment System Elevations from DSI (2015) and Elevations Observed by ITS 3 December 2021

Surface Impoundment System Feature	3 December 2021 Elevation (feet NGVD29)	DSI (2015) Survey Elevation (feet NGVD29)
Top of Embankment - Ash Cell 1	194.5 – 195.6	194.9 - 195.9
Top of Embankment - Ash Cell 2	195.2 – 195.9	194.7 - 195.6
Top of Embankment - Pump Back Cell 1	187.9 – 188.1	187.6 - 188.7
Top of Embankment - Pump Back Cell 2	188.4 – 188.5	188.1 - 188.8
Stoplog Structure - Ash Cell 1	195.2	195.3
Stoplog Structure - Ash Cell 2	195.4	195.2
Stoplog Bridge Abutment - Ash Cell 1	194.7	194.8 - 194.9
Stoplog Bridge Abutment - Ash Cell 2	195.1	194.8 - 194.9
Top of North Splash Block Ash Cell 1	194.6	194.7
Top of South Splash Block Ash Cell 1	194.7	194.7
Top of North Splash Block Ash Cell 2	194.6	194.7
Top of South Splash Block Ash Cell 2	194.6	194.6 - 194.7
Electrical Equipment Building Retaining Walls	188.1 – 188.2	188.1 - 188.4
Ash Pipe Drain Pit	179.7 – 180.4	179.6 - 180.3
Ash Cell 1 Outer Embankment Toe	182.5 – 182.9	182.6 - 182.7
Ash Cell 2 Outer Embankment Toe	181.9 – 182.7	182.1 - 182.7