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Reid/HMP&L CCR Surface Impoundment

Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
CCR Surface Impoundment 2020 Annual Inspection Report

Big Rivers Electric Corporation
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Project number: 60636853

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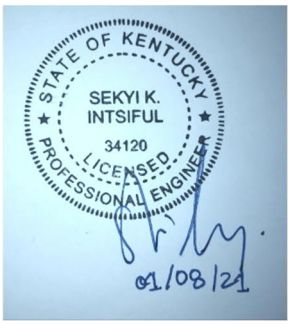

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1 Project Background

In accordance with the United States Environmental Protection Agency (USEPA) Final Coal Combustion Residual (CCR) Rule §257.83, annual inspection by a qualified professional engineer is required for each CCR surface impoundment.

The CCR Rule requires a visual inspection by a licensed civil engineer of each CCR unit to ensure the design, construction, operation and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. AECOM completed the annual inspection in accordance with CCR Rule requirements and prepared this Annual Inspection Report for the Reid/HMP&L CCR Surface Impoundment at Sebree Station, located in Robards, at the boundary of Henderson County on the southeast and Webster County on the northeast, Kentucky. This inspection was performed in accordance with the scope of work presented in our proposal number OPP-963821, dated July 23, 2020 executed under purchase order 260600 as part of general services agreement with Big Rivers Electric Corporation dated November 16, 2017.

The CCR unit has been in existence for more than 40 years. The CCR unit operator has general maintenance and repair procedures in place as they determine necessity. There are no known occurrences of structural instability of the CCR unit. The current Reid/HMP&L CCR Surface Impoundment footprint is approximately 25.4 acres and 29.4 acres corresponds to entire area along toe of dikes. An aerial photograph of Reid/HMP&LCCR Surface Impoundment is shown below in Figure 1.

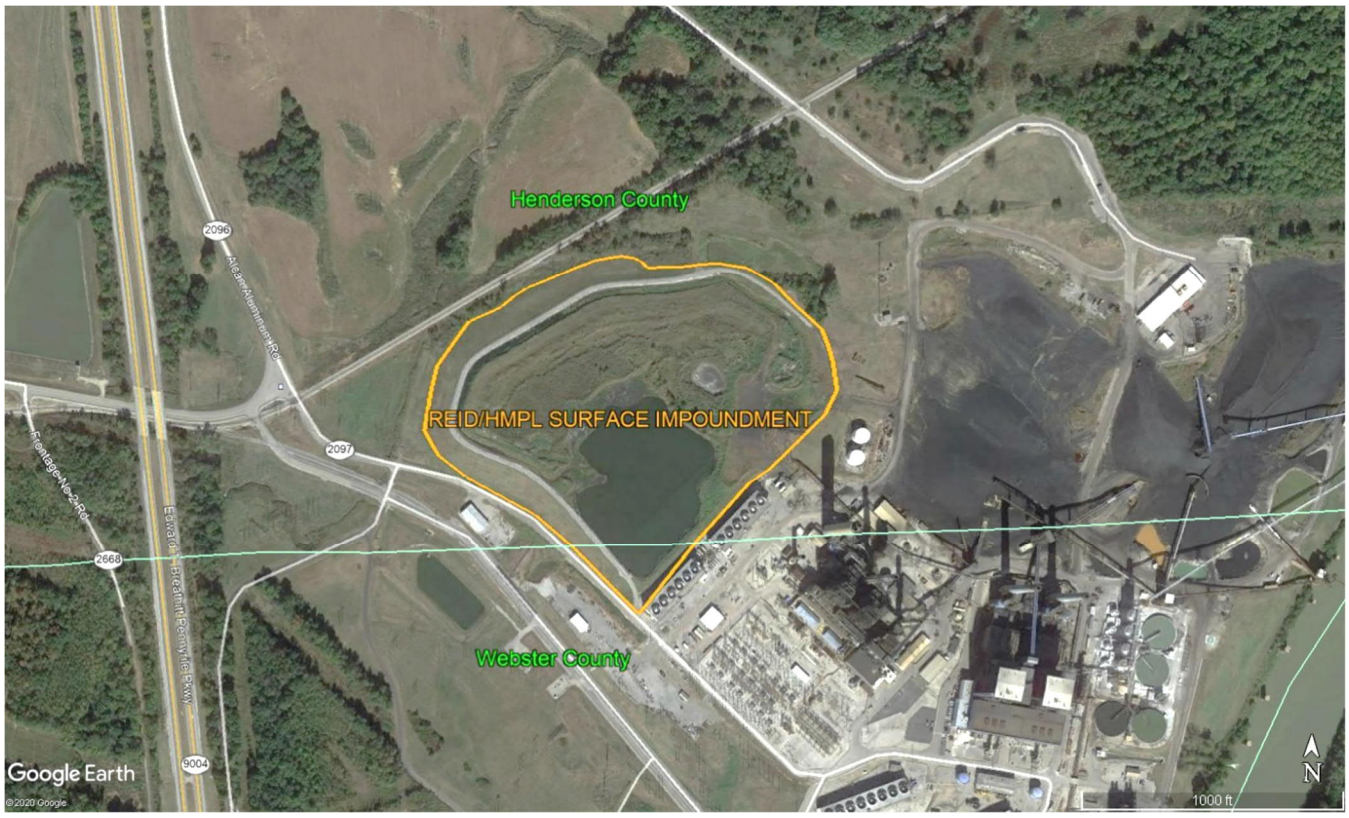

Figure 1: Big Rivers Reid/HMP&L CCR Surface Impoundment Overview (Google Earth, 2020)

2 Regulatory Requirements

The annual inspection must include the criteria specified in CCR Rule Section 257.83(b) (1) which at a minimum includes:

(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., CCR unit design and construction information required by §§ 257.73(c)(1) and 257.74(c)(1), previous periodic structural stability assessments required under §§ 257.73(d) and 257.74(d), the results of inspections by a qualified person, and results of previous annual inspections);

(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and

(iii) A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.

In addition to the annual inspections, 7-day inspections and 30-day instrumentation monitoring per CCR Rule Section 257.83 (a) (1) are completed by BREC and are documented in the facility operating record per § 257.105(g)(5).

Once the annual inspection has been completed, the CCR Rule Section 257.83(b) (2) requires the qualified professional engineer to prepare a report following each inspection that addresses the following:

(i) Any changes in geometry of the impounding structure since the previous annual inspection;

(ii) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;

(iii) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;

(iv) The storage capacity of the impounding structure at the time of the inspection;

(v) The approximate volume of the impounded water and CCR at the time of the inspection;

(vi) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures;

(vii) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

3 Review of Available Information

Prior to completing the visual inspection of the CCR unit, AECOM reviewed the 2019 Annual Inspection Report, dated January 13, 2020 prepared by AECOM, Inc. for the CCR surface impoundment. Observations by the inspecting engineer were documented in the inspection report and BREC completed the appropriate repairs where necessary. The observations from the 2019 annual inspection which were subsequently addressed by BREC include:

- A depression, possibly as a result of settlement, on the side slope along the southern dike which may be associated with drainage pipes in the vicinity.
- Excessive vegetation was noted within the riprap on the inboard slopes and the east embankment downstream slope.
- Rutting and ponded water were observed at the southwest toe of slope.

The 2019 inspection concluded “no deficiencies or disrupting conditions that would require immediate measures to remedy were identified in the inspection. The inspection findings consisted of maintenance items that were not observed to be signs or potential signs of significant structural weakness.” Although no deficiencies were identified, the previously stated observations were addressed as part of surface impoundment general maintenance and monitoring.

4 Inspection Observations & Procedures

The Reid/HMP&L CCR Surface Impoundment consists of an ash pond located immediately west of the Sebree Station cooling towers. The ash pond received CCR effluent flow from the Robert A. Reid and the HMP&L Station 2 generating units prior to February 1, 2019, at which point the pond was retired. Per CCR Rule Section 257.83 (b) (3) the owner or operator of the CCR unit (BREC) must complete the initial inspection no later than January 18, 2016. This report summarizes the sixth annual inspection performed by BREC since the final CCR Rule took effect on October 14, 2015. The inspection was completed on August 18, 2020 to visually inspect the dikes of the impoundment, and on September 25, 2020 to inspect the hydraulic structures with use of a remote operated camera. The inspections were completed by AECOM personnel Mark Keown, P.E. and Sekyi Intsiful, P.E.

Visual inspection of the surface impoundment and embankments was conducted on August 18, 2020. The inspection began at the south entrance near the toe of the embankment. The principal spillway stop log structure was also inspected during this event. The stop log structure was in good condition showing no signs of deterioration or instability, and the inlet to the structure was not obstructed. The overflow weir discharges into a 48-inch outlet pipe. A first attempt was made by Envision Contractors, LLC (Envision) on August 18, 2020 to inspect the outlet pipe via remote operated camera, however, the inspection was terminated due to sediment buildup around a bend located approximately 21 feet into the pipe. The second attempt at the outlet pipe inspection by remote video camera was completed on September 25, 2020 by Envision. The inspection ended after approximately 156 feet due to the inability of the remote video camera rover to complete a turn at the 45-degree bend located at the toe of embankment southwest of south cooling tower. However, the inspected piping section within the embankment appeared to be clear, including being clear of the previously identified sediment buildup, and in good working condition. No signs were present of bad pipe joints or leaks that may result in internal erosion of the embankment. There was a minor sag in the pipe observed however, this did not show signs of affecting the structural integrity of the outlet pipe and the sag should continue to be monitored.

The inspection proceeded along the west, moving north along the crest and toe of west and north embankments, to the east along the crest then returning to the southern corner along the toe of the eastern dike. The dike becomes incised at the southeast corner and portions of the east side of the pond. West and north outboard slopes were well vegetated and mowed, except for very limited cases where the top portion of the slope had inadequate vegetation on the southwest. Possible animal burrow or piping was noted on the crest of embankment near northwest of impoundment. Some overgrown vegetation was noted within the riprap on the north and west inboard slopes and completely covering crest and slope of eastern dike. Ruts and ponded water were observed at the southwest toe of slope. These observations were addressed by BREC following the inspection and are discussed further in Section 5.

5 Inspection Findings

Per CCR Rule Section 257.83(b) (2) the following deductions were made after completion of the inspection.

5.1 CCR Surface Impoundment Geometry

The Reid/HMP&L CCR Surface Impoundment consists of an earthen embankment on the south, west and north sides and incised to the east as shown in Figure 1. The impoundment is approximately 2,500 feet to the west of the Green River and the maximum height of the embankment is approximately 42 feet along the west dike. As discussed previously in Section 4, the ash pond no longer receives CCR flow as of February 1, 2019.

Per the 2020 annual inspection observations, BREC patched the animal burrow or possible piping on the northwest using #2 rock; rolled and dense graded aggregate placed on top, ruts were regraded; seeded and straw laid at the southwest corner, hand mowed vegetation within riprap on the north and west inboard slopes, and cleared excessive vegetation on the crest and slope of the east dike. Depressions were regraded and seeded by BREC.

5.2 CCR Surface Impoundment Instrumentation

The Reid/HMP&L CCR Surface Impoundment instrumentation consists of five piezometers and one water level indicator.

Piezometers

The location and maximum recorded readings of each piezometer between the January 13, 2020 inspection report and the most recent September 23, 2020 groundwater monitoring event are presented in the table below.

Piezometer ID	Northing	Easting	Top of Casing Elevation (AMSL)	Depth to Water Static Level (ft.)	Static Water Elevation (AMSL)
P-1A	483464.43	1491086.43	428.95	11.73	417.22
P-2A	483141.96	1491515.32	428.63	13.06	415.57
P-3A[1]	483772.54	1491306.43	428.75	19.27	409.48
P-4	483033.84	1491399.12	397.44	4.25	393.19
P-5	483415.93	1490969.80	395.34	8.65	386.69

Notes

1. Piezometer data does not include February and March 2020 readings due to repairs on piezometer.

Water Surface Level Indicator

The maximum groundwater reading since the January 13, 2020 annual inspection report was approximately 11.73 feet below top of casing in P-1A, corresponding to the water surface elevation of 417.22 feet above mean sea level.

5.3 CCR Surface Impoundment Contents Depths and Elevations

The approximate minimum, maximum and present depths, and elevation of the impounded water and CCR since the previous annual inspection of the Reid/HMP&L CCR Surface Impoundment are provided below. The measurements are based on the survey report by Associated Engineers, Inc. dated October 1, 2020. The basis for the measurements includes: the available measured water surface elevations, the September 2020 flight derived topographic contours and bathymetric survey data and the best available as-built design data for the impoundment prior to placement of CCR materials provided by BREC.

Elevations are provided as feet above mean sea level (ft. AMSL) and depths are provided as height in feet above the impoundment's design bottom prior to placement of CCR material. All values are rounded off to the nearest tenth of a foot.

CCR Surface Impoundment Properties	Minimum	Maximum	Present
Depth of Impounded Water (ft.)	Not Available[1]	Not Available[1]	16.3[2]
Elevation of Impounded Water (ft. AMSL)	< 424.8	426.4	423.7
Depth of Impounded CCR Material (ft.)	9.9	40.7	40.7
Elevation of Impounded CCR Material (ft. AMSL)	407.4	433.0	428.7[3]

[1] Depth not available due to absence of bathymetric survey data at times of minimum and maximum pool elevations. However, the depth of impounded water ranged up to approximately 16.3 feet at the time of survey.
[2] At location of maximum impounded water depth
[3] At location of maximum CCR material depth

5.4 CCR Surface Impoundment Storage Capacity

The total storage capacity of the Reid/HMP&L CCR Surface Impoundment at the time of the September 2020 survey was estimated to be 758,873 cubic yards cubic yards. This volume assumed CCR can be placed up to the spillway elevation of 425.8 ft above MSL. The storage capacity was provided by Associated Engineers, Inc. and the estimated capacity is based on the available measured water surface elevations; September 2020 flight derived topographic contours; and bathymetric survey data and the best available as-built design data for the impoundment, prior to placement of CCR material, provided by BREC.

5.5 CCR Surface Impoundment Contents Volumes

The total volume of CCR material contained in the Reid/HMP&L CCR Surface Impoundment at the time of the September 2020 survey was estimated to be 720,711 cubic yards, which includes CCR material above the impoundment pool elevation. The total volume of impounded water was estimated at 66,957 cubic yards. The estimated volumes are based on the September 2020 flight derived topographic contours and bathymetric survey data and the best available as-built design data for the impoundment prior to placement of CCR material provided by BREC.

5.6 CCR Surface Impoundment Structural, Operational, and Safety Items

No deficiencies or disrupting conditions that would require immediate measures to remedy were identified in the inspection. The inspection findings consisted of maintenance items that were not observed to be signs or potential signs of significant structural weakness. The video inspection, completed on September 25, 2020 by Envision, of the outlet piping associated with the structure shows the pipes are in good condition. It was observed that sediment tends to accumulate in flatter sections of pipe during periods of low discharge due to slower moving water. However, the accumulation is minor and will likely be forced out during periods of higher discharge from the overflow weir.

The visual observations were primarily limited to minor vegetation growth within the riprap on the upstream slope of the north and east embankments, and overgrown vegetation on the north and west upstream slopes and along the east embankment crest and slopes. Ruts and ponded water observed within the southwest corner were regraded, re-seeded and straw laid following the inspection. At the time of this report, BREC had addressed or was planning to address the inspection observations. The observations are discussed further below in Section 6 “Recommendations”. BREC has been made aware of the aforementioned observations and are continuing to monitor the areas.

5.7 CCR Surface Impoundment Changes

There have been no changes to the Reid/HMP&L CCR Surface Impoundment since the previous 2019 annual inspection that may have the potential to affect the stability or operation of the CCR unit. Changes include typical operations activity and maintenance such as mowing or spraying to control vegetation on the upstream slopes of the perimeter berm. As discussed previously, the CCR surface impoundment no longer receives CCR flow from the plant.

6 Recommendations

6.1 General Maintenance Items and Monitoring Conditions

1. Continue to spray 2 to 3 times per year to kill weeds along the outboard slopes of the surface impoundment. Current schedule is effective.
2. Continue to monitor the re-graded and re-seeded areas. Continue to use lightweight mowing equipment to minimize rutting if subgrade is soft or wet. Monitor for any signs of seepage such as wetness on the slope or flowing water.
3.
4. Continue monthly trapping and monitoring animal burrowing activity or apparent piping to determine source of opening on top of embankments.

6.2 Repairs and/or Deficiencies

Based on the results of the inspection and provided the general maintenance items discussed above are addressed and monitored, no deficiencies were identified, and no repairs required for the Reid/HMP&L CCR Surface Impoundment.

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Green CCR Surface Impoundment

Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
CCR Surface Impoundment 2020 Annual Inspection Report

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January 8, 2021

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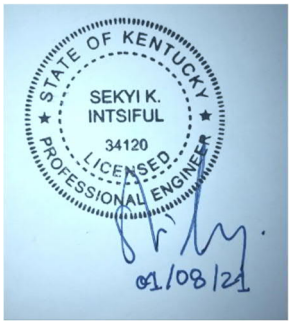

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1. Project Background

In accordance with the United States Environmental Protection Agency (USEPA) Final Coal Combustion Residual (CCR) Rule §257.83, annual inspection by a qualified professional engineer is required for each CCR surface impoundment.

The CCR Rule requires a visual inspection by a licensed civil engineer of each CCR unit to ensure the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. AECOM completed the annual inspection in accordance with CCR Rule requirements and prepared this Green CCR Surface Impoundment Annual Inspection Report for the Sebree Generating Station, located in Robards, at the boundary of Henderson County on the southeast and Webster County on the northeast, Kentucky. This inspection was performed in accordance with the scope of work presented in our proposal number OPP-963756, dated August 23, 2019, executed under purchase order 260599 as part of general services agreement with Big Rivers Electric Corporation dated November 16, 2017.

The CCR unit has been in existence for more than 40 years. The CCR unit operator has general maintenance and repair procedures in place as they determine necessary. There are no known occurrences of structural instability of the CCR unit. The current Green CCR Surface Impoundment footprint is approximately 23 acres. An aerial photograph showing the approximate limits of the Green CCR Surface Impoundment is shown below in **Figure 1**.

Figure 1: Green CCR Surface Impoundment Aerial Photograph (Google Earth, 2020)

2. Regulatory Requirements

The annual inspection includes the criteria specified in CCR Rule Section 257.83(b) (1) which at a minimum includes:

(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record. These files include, CCR unit design and construction information required by §§ 257.73(c)(1) and 257.74(c)(1), previous periodic structural stability assessments required under §§ 257.73(d) and 257.74(d), the results of inspections by a qualified person, and results of previous annual inspections;

(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and

(iii) A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.

In addition to the annual inspections, 7-day inspections and 30-day instrumentation monitoring per CCR Rule Section 257.83 (a) (1) are completed by BREC and are documented in the facility operating record per § 257.105(g)(5) .

Once the annual inspection has been completed, the CCR Rule Section 257.83(b) (2) requires the qualified professional engineer to prepare a report following each inspection that addresses the following:

(i) Any changes in geometry of the impounding structure since the previous annual inspection;

(ii) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;

(iii) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;

(iv) The storage capacity of the impounding structure at the time of the inspection;

(v) The approximate volume of the impounded water and CCR at the time of the inspection;

(vi) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures;

(vii) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

3. Review of Available Information

Prior to completing the visual inspection of the CCR unit, AECOM reviewed the 2019 Annual Inspection Report, prepared by AECOM and dated January 10, 2020, for the CCR surface impoundment. Observations by the inspecting engineer were documented in the inspection report and BREC completed the appropriate repairs where necessary. The observations from the 2019 annual inspection include:

- Missing gravel over portions of crest of access road near south of embankment,
- Some vegetation within upstream embankment slope riprap along west embankment,
- Erosion was noted on the northeast corner of the surface impoundment, and
- Excessive phragmites noted at portions of east side of the south embankment.

The 2019 inspection concluded “no deficiencies or disrupting conditions that would require immediate measures to remedy were identified in the inspection. The inspection findings consisted of maintenance items that were not observed to be signs or potential signs of significant structural weakness.”

After the inspection observations were made available to BREC, maintenance measures were completed at the Green CCR Surface Impoundment. In summary, no deficiencies were identified and the previously stated observations are being addressed as part of surface impoundment general maintenance and monitoring.

4. Inspection Procedures & Observations

The Green CCR Surface Impoundment consists of an ash pond which receives flow from the plant and is located approximately 400 feet west of the Green River at the Sebree Station. This report summarizes the sixth annual inspection performed by BREC since the final CCR Rule took effect.. The inspection was completed on August 18, 2020 to visually inspect the dikes of the impoundment. The inspection was completed by AECOM personnel Mark Keown, P.E. and Sekyi Intsiful, P.E. A camera inspection of the spillway was conducted on the same date, with AECOM observing the video provided by Envision Contractors, LLC.

Visual inspection of the surface impoundment and embankments were performed on August 18, 2020. The inspection began at the southwest area of the impoundment on the embankment crest access road. The crest access road was paved with gravel and appeared to be well maintained. However, an area of the crest access road was missing gravel or covered with soil along portions of the south embankment. Riprap was present as slope protection on the upstream embankment slope, and typically appeared to be well maintained, however, some vegetation was noted on the west and south embankments. Lack of vegetation was noted at the outboard slope at southwest of the impoundment due to traffic. Slight bulging/sloughing was noted within the riprap upstream slope near the northwest area of the impoundment. The south embankment downstream slope was generally well vegetated and maintained, however, the east side of the south embankment contained excessive phragmites.

The east side of the impoundment interior contains CCR material at or above the current pool elevation. Active management of CCR material was observed stored above the pool elevation. The east crest access road was not well separated from interior CCR storage areas, however, showed no signs of instability or deficiencies.

The south embankment contains the emergency overflow structure, which consists of two 30-inch diameter corrugated steel discharge pipes. The pipe conveyances were inspected on August 18, 2020 by Envision Contractors, LLC (Envision) using a remote camera and found to be in acceptable operating condition.

5. Inspection Findings

In accordance with CCR Rule Section 257.83(b) (2) the inspection findings are presented in the following sections.

5.1. CCR Surface Impoundment Geometry

The Green CCR Surface Impoundment consists of an earthen embankment to the south, and incised on the remaining sides. The south embankment has a maximum height of approximately 19.5 feet. The middle of the south embankment was constructed on a ridge and the toe of the embankment was previously a drainage area.

The west side of the pond is bounded by a gravel access road, with a drainage ditch to the west, and generally less than five feet in height. The original design drawings by Burns and Roe, Inc., dated August 10, 1978 show the west side of the pond as incised. Although shown as incised on the design drawings, the east side of the impoundment has a maximum height of approximately eight feet above surrounding ground surface, with a 40-foot wide access road parallel to the east dike supporting the toe of slope. CCR has been placed above the normal pool elevation on the upstream side of the east dike creating reclaimed land. The area has been regraded as part of the active CCR management operations.

5.2. CCR Surface Impoundment Instrumentation

The Green River CCR Surface Impoundment instrumentation consists of five piezometers and one water level indicator.

Piezometers

The location and maximum recorded measurements of each piezometer between the previous January 10, 2020 inspection report and the most recent September 23, 2020 groundwater monitoring event are presented in the table below.

Piezometer ID	Northing	Easting	Top of Casing Elevation (AMSL)	Depth to Water Static Level (ft.)	Static Water Elevation (AMSL)
P-1A	480202.55	1492104.21	396.17	12.88	383.29
P-2A	480186.48	1492464.48	395.98	13.44	382.54
P-3A	480175.11	1492692.75	395.91	14.00	381.91
P-6[1]	480122.51	1492462.58	379.33	0.30	379.03
P-7[1]	480137.28	1492099.00	380.26	0.85	379.41

Notes

1. Piezometer data does not include January 2020 readings due to Green River water elevation covering piezometers P-6 and P-7 and rendering them inaccessible.

Water Surface Level Indicator

The maximum groundwater elevation measurement since the January 10, 2020 annual inspection report was approximately 12.88 feet below the top of casing in P-1A, corresponding to a water surface elevation of 383.29 feet above mean sea level.

5.3. CCR Surface Impoundment Contents Depths and Elevations

The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection of the Green CCR Surface Impoundment are provided below. The measurements are based on the survey report by Associated Engineers, Inc. dated October 1, 2020. The basis for the measurements includes: the available measured water surface elevations, the September 2020 flight derived topographic contours and bathymetric survey data, and as-built design data for the impoundment prior to placement of CCR material prepared by Burns and Roe, Inc. Engineering and Consultants, dated June 30, 1978, provided by BREC.

Elevations are provided as feet above MSL (ft. AMSL) and depths are provided as height in feet above the impoundment's design bottom prior to placement of CCR material. All values are rounded off to the nearest tenth of foot.

CCR Surface Impoundment Properties	Minimum	Maximum	Present
Depth of Impounded Water (ft)	Not Available[1]	Not Available[1]	12.0[2]
Elevation of Impounded Water (ft AMSL)	391.5	392.0	391.5
Depth of Impounded CCR Material (ft)	19.5	55.4	55.4[3]
Elevation of Impounded CCR Material (ft AMSL)	379.5	415.4	415.4[3]

Notes

[1] Depth not available due to absence of bathymetric survey data at times of minimum and maximum pool elevations. However, the depth of impounded water ranged up to approximately 12.0 feet at the time of survey.

[2] At location of maximum impounded water depth

[3] At location of maximum CCR material depth

5.4. CCR Surface Impoundment Storage Capacity

The total storage capacity of the Green Surface Impoundment at the time of the September 2020 survey was estimated to be 976,165 cubic yards. This volume was based on the assumption CCR can be placed up to the spillway elevation of 393.8 ft above MSL. The storage capacity is provided by Associated Engineers, Inc. and the estimated capacity is based on the available measured water surface elevations, September 2020 flight derived topographic contours and bathymetric survey data, and the as-built design data for the impoundment, prior to placement of CCR material, prepared by Burns and Roe, Inc. Engineering and Consultants, dated June 30, 1978, provided by BREC.

5.5. CCR Surface Impoundment Contents Volumes

The total volume of CCR material contained in the Green CCR Surface Impoundment at the time of the September 2020 survey was estimated to be 880,954 cubic yards which includes CCR material above the impoundment pool elevation. The total volume of impounded water was estimated at 115,384 cubic yards. The volumes are based on the survey completed by Associated Engineers, Inc. in September of 2020. The estimated volumes are based on the September 2020 flight derived topographic contours and bathymetric survey data and the as-built design data for the impoundment prior to placement of CCR material, prepared by Burns and Roe, Inc. Engineering and Consultants, dated June 30, 1978, provided by BREC. Please note that the volume of water may decrease as it is displaced by the incoming CCR material, and that the surface water level may vary as well.

5.6. CCR Surface Impoundment Structural, Operational, and Safety Items

No deficiencies or disrupting conditions that would require immediate measures to remedy were identified in the inspection. The inspection findings consisted of maintenance items that were not observed to be signs or potential signs of significant structural weakness. The video inspection of the piping associated with the structure, completed on August 18, 2020 by Envision, indicates the pipes are in good condition to operate as designed and the outfall is unobstructed. The observations were limited to minor bulging/sloughing, sparse vegetation and weed control as discussed further in Section 6 below. BREC was made aware of the aforementioned observations. The issues associated with the observations were addressed prior to the time this report was written.

5.7. CCR Surface Impoundment Changes

There have been no changes to the Green Surface Impoundment since the previous 2019 annual inspection that may have the potential to affect the stability or operation of the CCR unit. Changes include typical operations activity such as placement of additional CCR material and maintenance such as mowing or spraying to control vegetation on the upstream slopes of the perimeter berm.

6. Recommendations

6.1 General Maintenance Items and Monitoring Conditions

1. Continue to spray 2 to 3 times per year to kill weeds along the inboard slopes of the surface impoundment. Current schedule is effective.
2. Sparse vegetation due to traffic was noted in a small area near the crest of the south embankment and a small strip on the west access road berm on the downstream side. No signs of erosion were present. After notifying BREC of the sparse vegetation, the areas were regraded; re-seeded and protected with straw mats. The repairs have reduced the risk of erosion propagation by providing temporary straw protection while the vegetative cover

is established. BREC has been made aware of the excessive phragmites on the east side of the south embankment and were planning to mow as part of routine maintenance at the writing of this report. No further actions or repairs required aside from maintenance and inspection of the repairs.

6.2 Repairs and/or Deficiencies

Based on the results of the inspection and the general maintenance items completed by BREC after the inspection findings were documented, no deficiencies were observed and no further repairs are required for the Green CCR surface impoundment at this time.