2019 Annual Inspection Report
Inactive CCR Surface Impoundment

City of Ames Steam Electric Plant

Ames Municipal Electric System
502 Carroll Avenue
Ames, Iowa 50010

SCS ENGINEERS

Report Number 27219426.00 | April 2020

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April 14, 2020
File No. 27219426.00

Mr. Brian Trower
Assistant Director – Electric Services
Ames Municipal Electric System
502 Carroll Avenue
Ames, Iowa 50010

Subject: 2019 Coal Combustion Residuals (CCR) Inactive Surface Impoundment Inspection

Dear Mr. Trower:

SCS Engineers has prepared the 2019 CCR Inactive Surface Impoundment Inspection and Report for the City of Ames Steam Electric Plant in general accordance with the requirements set forth in §257.83(b) of the CCR Rule (40 CFR 257.50-107).

If you have any questions regarding this document, please contact the undersigned.

Sincerely,

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PE CERTIFICATION

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Christine L Collier

Digitally signed by Christine Collier
Date: 2020.04.14 21:23:16 -05'00'

(signature) (date)

Christine L. Collier

(printed or typed name)

License number 17963

My license renewal date is December 31, 2021.

Pages or sheets covered by this seal:
Entire Document

1 INTRODUCTION

On April 17, 2015, the United States (US) Environmental Protection Agency (EPA) issued the final version of the federal Coal Combustion Residuals (CCR) Rule to regulate the disposal of CCR materials generated from the combustion of coal at electric utilities and independent power producers. The initial federal CCR Rule allowed for inactive CCR surface impoundments that had completely closed by April 17, 2018, to have no other requirements applied to that unit (i.e., the "early closure" provisions). However, on June 14, 2016, the United States Court of Appeals for the D.C. Circuit ordered the vacatur of these "early closure" provisions in Code of Federal Regulations (CFR) 40 Part §257.100. The effect of the vacatur is that inactive CCR surface impoundments must now comply with the requirements applicable to existing CCR surface impoundments. Inactive power plant ash impoundments containing CCR are regulated under 40 CFR Part §257.100.

The City of Ames (City) Ames Municipal Electric System operates a Steam Electric Plant (SEP) located at 200 E 5th Street in Ames, Iowa. The Inactive CCR Surface Impoundment (Impoundment) associated with the Ames Municipal Electric System SEP is subject to the CCR Rule and in accordance with the rule must be inspected annually by a qualified professional engineer as specified in Section §257.83 of the rule. SCS Engineers (SCS) completed the 2019 annual site inspection of the Ames Municipal Electric System SEP Impoundment on December 17, 2019. This report provides documentation of the requirements in 257.83(b)(1) and (2).

1.1 PURPOSE

The purpose of the annual site inspection is to, through observation, ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices. Per 40 CFR §257.83(b)(1), the site inspection must, at a minimum, include:

- A review of available information regarding the status and condition of the CCR unit, operating records files, weekly inspections, structural stability assessments, and results of previous annual inspections - §257.83 (b)(1)(i)
- A visual site inspection of the CCR unit and appurtenant structures to identify signs of distress or malfunction of the CCR unit and appurtenant structures - §257.83 (b)(1)(ii)
- A visual site inspection of any hydraulic structures underlying the base or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation - §257.83 (b)(1)(iii)
- A site inspection report that includes the following:
    - Changes in geometry since the last inspection - §257.83 (b)(2)(i)
    - Location and type of existing instrumentation and maximum recorded readings since the last inspection -§257.83 (b)(2)(ii)
    - Approximate minimum, maximum and present depth and elevation of impounded water and CCR since the last inspection - §257.83 (b)(2)(iii)

- Storage capacity of the impounding structure at time of inspection - §257.83(b)(2)(iv)
- Approximate volume of impounded water and CCR in unit at time of inspection - §257.83 (b)(2)(v)
- Appearance of actual or potential structural weakness of the CCR unit - §257.83(b)(2)(vi)
- Any other changes which may have affected the stability or operation of the CCR unit since the last inspection - §257.83 (b)(2)(vii)

1.2 FACILITY DESCRIPTION

The City of Ames owns and operates a full service electric utility d/b/a the Ames Municipal Electric System with generation, transmission, and distribution assets necessary to serve the City. The City owns and operates two generating facilities, the City of Ames Steam Electric Plant and the City of Ames Combustion Turbine Station. The City of Ames Steam Electric Plant has two generating units (7 and 8), with nameplate ratings of 33 and 65 megawatts, which went into commercial operation in 1967 and 1982, respectively. Both units were outfitted with pulverized coal boilers providing steam to non-reheat turbine-generators. For fuel, the boilers were designed for and used ultra-low sulfur sub-bituminous coal from the Powder River Basin in Wyoming, along with co-firing refuse derived fuel (RDF). In 2016, both units were converted from coal to natural gas, while still co-firing RDF. By discontinuing the discharge of CCR to the ash site as of October 19, 2015, the Impoundment qualifies as an "inactive" site under 40 CFR §257.53. RDF has been co-fired in the Steam Electric Plant since 1975.

Placement of CCR into the Impoundment ceased prior to October 19, 2015. The Impoundment continues to be operated by the Ames Municipal Electric System SEP to dispose of the non-CCR ash from the co-firing of refuse derived fuel (RDF) in the power plant's boilers. The RDF ash is transported (sluiced) from the power plant and is discharged into the primary ash basin to allow time for the ash to settle out to clarify the water. Water from the primary basin ultimately flows into a structure with stop-logs connecting the primary ash pond with the first of two clear water ponds. After passing through the two clear water basins, the water enters the pump house at the southwest corner of the second clear water basin where it is pumped back to the power plant for reuse as ash transport (sluice) water. The pump house has two (2) pumps rated at 1,350 gallons per minute (gpm) to pump the water back to the power plant. There are times in order to best manage the water balance of the pond system that it becomes necessary to discharge a portion of the clean return water into the field lying to the south of the pump house and clear water basins.

2 REVIEW OF AVAILABLE INFORMATION

Ms. Christine Collier of SCS completed an annual site observation and review of the Ames Municipal Electric System SEP Impoundment on December 17, 2019, in accordance with 40 CFR §25783(b)(1). Ms. Collier is a licensed professional engineer in Iowa and holds a Master's of Science degree in Environmental Engineering. She has over 20 years of experience in the design, construction, and operation of solid waste management facilities.

2.1 OPERATING RECORD REVIEW

Per §257.83(b)(1)(i), SCS reviewed the available information in the operating record for the Impoundment in support of the visual observation discussed below. SCS reviewed operating record materials provided by the Ames Municipal Electric System SEP and the information posted on the Ames Municipal Electric System's CCR Rule Compliance Data and Information website for this facility. Compliance documents to meet the April 17, 2018, deadline under §257.100(e)(3)(i), (iv), and (v), §257.100(e)(4)(ii), and §257.100(e)(6)(i) and (ii) were completed as required. Additional specific documents reviewed include, but are not limited to the previous annual site inspection report prepared by SCS Engineers April 16, 2019, and weekly visual inspection logs and monthly instrumentation readings provided by Ames Municipal Electric System SEP.

Review of the above documents did not uncover any unresolved issues that indicated operation, safety, or structural concerns on the Ames Municipal Electric System SEP Impoundment.

2.2 VISUAL INSPECTION

SCS visually observed the Impoundment to identify signs of distress or malfunction of the CCR unit and appurtenant structures per §257.83(b)(1)(ii). In addition, a visual observation of the 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 of these features per §257.83(b)(1)(iii) was completed for features readily visible from the ground surface. Figure 1 contains the overall site layout, monitoring well locations, site features, and noted areas. Note that Unit 7 in the SEP was undergoing significant repairs to the boiler and the turbine-generator and Unit 8 was not in operation at the time of the site observation; no sluice water or cooling tower blowdown discharge into the Impoundment was occurring. In addition, an on-site geotechnical assessment of the CCR properties was in progress at the time of this site observation as Ames Municipal Electric System prepares to complete a partial clean closure (east portion) and partial close in place (west portion) of the Impoundment over the next 18 months.

3 ANNUAL INSPECTION RESULTS

The site observation checklist, included in Appendix A, was utilized during the annual site inspection. The overall site layout is shown on Figure 1. Photographs taken to compare the current facility conditions to those during the 2018 site inspection are included in Appendix B. Additionally, photos are included of the pipe that connects the west channel to the northern area in the Impoundment and the pipe in the northern area in the Impoundment that discharges flow from the SEP sump drains and cooling tower blowdown. No significant changes were noted in comparison with 2018/2019 photographs. The results of the annual site inspection, along with a description of any deficiencies identified during the visual observation, are further summarized in the following sections in accordance with 40 CFR §257.83(b)(2).

3.1 CHANGES IN GEOMETRY

There were no apparent changes in the geometry of the Impoundment when compared to the previous SCS site inspection report, the historical construction drawings provided by the Ames Municipal Electric System SEP, or the site observation photographs. Based on information provided by Ames Municipal Electric System SEP staff, minor maintenance of the Impoundment was completed in 2019 to remove buildup of accumulated ash in the western channel of the Impoundment (see Figure 1). The ash that was removed was stockpiled on ash berms within the Impoundment. This work did not result in a significant change to the geometry of the RDF/coal ash material within the Impoundment.

3.2 INSTRUMENTATION AND READINGS

Historically there have been three piezometers and one groundwater monitoring well (east of the bike path east of the Impoundment) that are utilized for groundwater level readings. Eight groundwater monitoring wells were installed in June 2018. Figure 1 includes the locations of these points. Table 1 below provides a summary of the monitoring points, maximum recorded readings since the previous annual site inspection and the date on which those readings occurred.

Table 1. Instrument Information

Instrument Name[1]	Max Reading Since Previous Observation[2,3]	Date Recorded
MW-1[4,5]	55.20	3/19/2019
PZ-1[5,6]	57.85	3/19/2019
PZ-2[5,6]	57.57	3/19/2019
PZ-3[5,6]	56.80	3/19/2019
MW-101[4,5]	58.75	3/19/2019
MW-102[4,5]	58.59	3/19/2019
MW-103[4,5]	58.48	3/19/2019

Instrument Name[1]	Max Reading Since Previous Observation[2,3]	Date Recorded
MW-104[4,5]	58.10	3/19/2019
MW-105[4,5]	58.19	3/19/2019
MW-106[4,5]	58.03	3/19/2019
MW-107[4,5]	57.60	3/19/2019
MW-108[4,5]	57.31	3/19/2019

Notes:

(1) See Figure 1 for location of monitoring points.
(2) Groundwater elevation based on local site datum, top of casing based on City survey data from July 2018 and March 2019.
(3) Elevations shown relate to the Plant Datum. Adjust City survey data by adding (823.549 feet) City Datum to obtain elevations related to Plant Datum.
(4) Readings taken to complete background sampling through March 2019 and then transitioned to semi-annually during groundwater sampling events by SCS staff
(5) March 19, 2019 groundwater levels were supplemental levels collected by Ames Municipal Electric System SEP Staff.
(6) Readings taken monthly by Ames Municipal Electric System SEP Staff and during background/semi-annual sample events by SCS staff.

3.3 DEPTH AND ELEVATION OF IMPOUNDED CCR AND WATER

The maximum and minimum depths of impounded water frequently change depending on Ames Municipal Electric System SEP operations and rainfall events. The minimum, maximum, and present depth and elevation of the impounded surface water and CCR since the previous annual site observation are noted in Table 2 below. Please note that dry CCR is stockpiled above the dike elevation within the western portion of the Impoundment.

Table 2. CCR and Water Level Information

	Depth	Elevation	Description
Minimum[1]	10.00[2]	69.00[2]	Water level from Ames Municipal Electric System SEP measurements
Maximum[1]	11.17[2]	70.17[2]	
Present	9.80[2]	68.80[2]	Water level on date of observation
Current – CCR Level[3]	16.70	75.70	Pad elevation at northwest corner of hoop building
	43.45	102.45	Built-up CCR stockpiles within Impoundment – pile located between two sluice channels

Notes:

(1) - Based on water level information provided by Ames Municipal Electric System SEP.
(2) – Depth and elevation at Impoundment Outlet Structure.
(3) – Based on May 2019 topographical survey by Bolton & Menk.

3.4 STORAGE CAPACITY

Based on the grades provided on the Construction Record drawings, Sheet 7 of 14 dated December 1982 by Lutz, Daily & Brain, the storage capacity of the Impoundment to the top of the berm (elevation 74 feet) is approximately 209,262 cubic yards (cy). The storage capacity to the operating level, with three feet freeboard (elevation 71 feet) is approximately 161,995 cy. There have not been modifications to the Impoundment since the 1982 construction; therefore, these storage capacities remain the same.

3.5 VOLUME OF IMPOUNDED CCR AND WATER

The approximate volume of the impounded water and CCR/RDF ash material at the time of the site inspection was 199,525 cubic yards (cy). A bathymetric and topographical survey of the Impoundment was performed by Bolton & Menk in May 2019. Calculations based on the survey information resulted in a total volume of 172,500 cubic yards (cy) of CCR/RDF ash material. The volume of the surface water at the time of the bathymetric survey was estimated to be 31,900 cy for a total estimated volume of 204,400 cy. The water level at the time of the bathymetric/topographical survey was 893.91 feet above mean sea level or 70.36 feet by Plant datum. Re-evaluation with the water table at 68.80 feet as noted during the December 2019 inspection provides an estimated total of 25,700 cy of water. In addition, based on estimates provided by Ames Municipal Electric System staff, approximately 1,590 tons of RDF ash material, or 1,325 cy of RDF ash material, were added to the pond in 2019. The volume of impounded CCR and water at the time of the inspection was therefore estimated to be 199,525 cy. Table 3 provides data used to determine the 2019 volume.

Table 3. Estimated Volume of Impounded CCR and Water

Source	Quantity	Notes
May 2019 Calculated CCR Ash/RDF Ash Volume	172,500 cy	May 2019 Bolton & Menk bathymetric and topographic survey
May 2019 Calculated Water Volume	31,900 cy	May 2019 Bolton & Menk bathymetric and topographic survey
December 2019 Calculated Water Volume	25,700 cy	Calculated through CADD
2019 RDF Ash/Material Added to Impoundment	1,325 cy	Provided by Ames Municipal Electric System staff
2019 Volume of Impounded CCR and Water	**199,525 cy**	**Approximate based on calculations**

3.6 STRUCTURAL WEAKNESS OR DISRUPTIVE CONDITIONS

The site inspection included a review of the appearance of an actual or potential structural weakness of the Impoundment. The visual observation included a review for the presence of the conditions listed in Table 4, which also includes items noted during the site inspection.

Table 4. Site Inspection Item Details

Site Observation Condition	Comment
Seepage	None noted.
Sloughing, slumping, or sliding	None noted.
Excessive settlement	None noted.
Surface cracking	None noted.
Inappropriate vegetation growth	See comments below.
Animal impacts	See comments below.
Erosion damage	See comments below.
Failing riprap	None noted.
Failing outlet or outfall structures	None noted.

Item Noted	Comment	Action Level
Inappropriate vegetation growth	Trees were noted growing on both the upstream and downstream slopes.	Removal with routine maintenance
Animal impacts	Indications of beavers were noted based on tree marks and an apparent home in an interior CCR pile. There is no animal activity in the exterior dikes. See Appendix A Checklist Notes, Area 1 on the aerial photograph for approximate area.	Continued observation
Erosion damage	Erosion noted in southeast corner of Impoundment on the inboard slope. Also noted in the last site observation. Ames Municipal Electric System SEP staff stated they are in the process of developing a plan for the future of the Impoundment, with modifications to occur within the next 20 months. See Appendix A Checklist Notes, Area 2 on the aerial photograph for approximate area.	Repair with routine maintenance

3.7 OTHER CHANGES AFFECTING STABILITY OR OPERATION

Based on the information provided by the Ames Municipal Electric System SEP staff and on-site observation, other change(s) which may have affected the stability or operation of the Impoundment structure since the previous annual site inspection were not observed.

4 REVISIONS, RECORDKEEPING, AND REPORTING

This document will be placed in the facility's operating record (§257.105(g)(6)) and on the Ames Municipal Electric System SEP's CCR Rule Compliance Data and Information website (§257.107(g)(5)). The Ames Municipal Electric System SEP will notify the Iowa Department of Natural Resources (DNR) that this report has been completed and placed in the facility's operating record and on the Ames Municipal Electric System SEP CCR Rule Compliance Data and Information website (40 CFR §257.106(g)(5)). The next annual site inspection report is due one year from the completion of this report.

LEGEND:

MONITORING WELL OR PIEZOMETER

200 0 200 400

SCALE FEET

REV.	DATE	CK BY
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

SHEET TITLE
CCR SITE OBSERVATION

PROJECT TITLE
2019 ANNUAL INSPECTION REPORT
INACTIVE CCR SURFACE IMPOUNDMENT

CLIENT
CITY OF AMES MUNICIPAL ELECTRIC SYSTEM
AMES, IA

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PROJ. NO.	DWN. BY:	CHK. BY:	QA/A RVW BY:	PROJ. MGR
27219426.00	ZEM	CLC	CLC	CLC
DSN. BY: JRR				

CADD FILE:
CCR SITE INSPECTION.DWG

DATE:
3/31/20

FIGURE NO.
1

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Appendix A

Site Observation Checklist

Coal Combustion Residuals Impoundment
Annual Site Observation Checklist

Facility Name	Feature ID	Observation Date
CCR Ash Unit Ames Municipal Electric System	CCR Impoundment	December 17, 2019

1.	Date: 12/17/19	2.	Check the type of observation being conducted		x Annual Site Observation by Qualified Professional Engineer □ Special Observation
3.	Observer's Name: Christine L. Collier, P.E.			4.	Name of Impoundment: CCR Ash Unit Ames Municipal Electric System
5.	Weather: Cloudy, Wind WNW 13 mph			6.	Temperature: 25 degrees F

A.	CREST	YES	NO	N/A
1.	Are there any visual settlements cracks or scarps on the crest or embankment?		X	
	If yes: Type of Visual Concern / Location / Comments 1 _____ _____ _____ 2 _____ _____ _____ 3 _____ _____ _____			
2.	Is roadway well-maintained and safe to travel?	X		
3.	Are animal burrows present?		X	
B.	**UPSTREAM FACE**	**YES**	**NO**	**N/A**
1.	Is there water impounded against face?	X		
2.	Are there any brush, trees, or other unwanted vegetation? Multiple locations	X		
3.	Are there any slumps or eroded areas? See Figure 1 Area 2	X		
4.	Are animal burrows present? Beavers have been observed in the impoundment and have built nest on the **interior** portion of the impoundment (See Figure 1 Area 1)		X	
5.	Is vegetation in good condition?	X		
C.	**IMPOUNDMENT POOL**	**YES**	**NO**	**N/A**
1.	Are depressions or sinkholes present?		X	
2.	Are there any eddies or other signs of leakage or scarps? .		X	
3.	Is extraneous material floating in the pool (trees, limbs, etc.)? Refuse Derived Fuel Remnants	X		
4.	Is water entering the spillway, but not exiting through the outlet?		X	
5.	Is water exiting the spillway, but not entering the spillway?		X	
6.	Is water exiting the spillway flow clear and without visible particles?	X		
7.	If impoundment is closed, is cover eroded?			X
8.	If impoundment is closed, is vegetative cover well established?			X
9.	Is sufficient freeboard present?	X		
10.	Is pond in danger of overtopping?		X	
11.	Approximate amount of freeboard - 5.2 feet			

Coal Combustion Residuals Impoundment
Annual Site Observation Checklist

Facility Name	Feature ID	Observation Date
CCR Ash Unit Ames Municipal Electric System	CCR Impoundment	December 17, 2019

D.	DOWNSTREAM SLOPE AND TOE	YES	NO	N/A
1.	Are any of the following present: erosion, slides, cracks, depressions, bulges, or sloughing? If so, describe:		X	
2.	Are seeps present? If so, describe flow and location:		X	
3.	Is rip rap present? If so, describe condition:		X	
4.	Are animal burrows present?		X	
5.	Is vegetation in good condition?	X		
6.	Is water flowing from internal drains?			X
E.	**SPILLWAYS: ERODABLE CHANNEL**	**YES**	**NO**	**N/A**
1.	Are any of the following present: erosion, slides, cracks, depressions, bulges, or sloughing?			X
2.	Is vegetation in good condition?			X
3.	Is there any debris in the channel?			X
4.	Is rip rap continuous and in good condition?			X
F.	**SPILLWAYS: STRUCTURES AND OUTLET PIPES**	**YES**	**NO**	**N/A**
1.	Are there any restrictions or obstructions (debris, vegetation, trees)?		X	
2.	Any observed distress to structure?		X	
3.	Any deterioration of outlet pipe? Visual only		X	
4.	Any erosion where outlet pipe exits the embankment? If so, describe:		X	

Appendix B

Photographs

Coal Combustion Residuals Impoundment
Annual Site Observation Photographs

Facility Name	Feature ID	Site Observation Date
CCR Ash Unit Ames Municipal Electric System	CCR Impoundment	December 17, 2019

Photo 1: 2018 East Ash sluice pipe to Ash Pond Receiving Ditch

Photo 2: 2019 East Ash sluice pipe to Ash Pond Receiving Ditch

Photo 3: 2018 North dike crest view east along Ash Pond

Photo 4: 2019 North dike crest view east along Ash Pond

Coal Combustion Residuals Impoundment
Annual Site Observation Photographs

Facility Name	Feature ID	Site Observation Date
CCR Ash Unit Ames Municipal Electric System	CCR Impoundment	December 17, 2019

Photo 5: 2018 North dike interior slope view west along ash pond

Photo 6: 2019 North dike interior slope view west along ash pond

Photo 7: 2018 Erosion along inside slope south embankment

Photo 8: 2019 Erosion along inside slope south embankment

Coal Combustion Residuals Impoundment
Annual Site Observation Photographs

Facility Name	Feature ID	Site Observation Date
CCR Ash Unit Ames Municipal Electric System	CCR Impoundment	December 17, 2019

Photo 9: 2018 Outside slope north embankment viewing west. New fence and vegetation needing removal.

Photo 10: 2019 Outside slope north embankment viewing west.

Photo 11: 2018 Ash pond outlet structure

Photo 12: 2019 Ash pond outlet structure

Coal Combustion Residuals Impoundment
Annual Site Observation Photographs

Facility Name	Feature ID	Site Observation Date
CCR Ash Unit Ames Municipal Electric System	CCR Impoundment	December 17, 2019

Photo 13: 2018 Inside the Clear Water Basin outlet valve control structure

Photo 14: 2019 Inside the Clear Water Basin outlet valve control structure

Photo 15: 2018 Gauge located at ash pound outlet structure (AP-1)

Photo 16: 2019 Gauge located at ash pound outlet structure (AP-1)

Coal Combustion Residuals Impoundment
Annual Site Observation Photographs

Facility Name	Feature ID	Site Observation Date
CCR Ash Unit Ames Municipal Electric System	CCR Impoundment	December 17, 2019

Photo 17: 2018 Gauge located within pump house (CW-2)

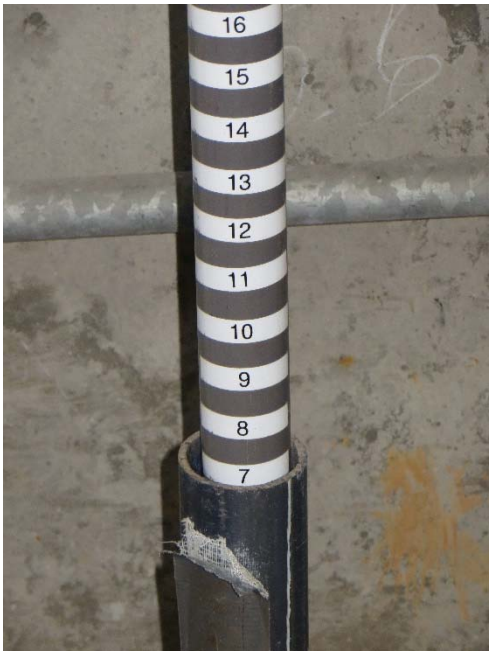

Photo 18: 2019 Gauge located within pump house (CW-2)

Photo 19: 2018 Example of vegetative growth to be removed on northeast corner of the ash pond.

Photo 20: 2019 Example of vegetative growth to be removed on northeast corner of the ash pond.

Coal Combustion Residuals Impoundment
Annual Site Observation Photographs

Facility Name	Feature ID	Site Observation Date
CCR Ash Unit Ames Municipal Electric System	CCR Impoundment	December 17, 2019

Photo 21: 2018 Animal impacts. See Area 1 on aerial photo.

Photo 22: 2019 Animal impacts. See Area 1 on aerial photo.

Photo 23: 2018 Erosion on inboard slope southeast portion of the ash pond from south looking northeast. See Area 2 for location.

Photo 24: 2019 Erosion on inboard slope southeast portion of the ash pond from west looking along the south/southeast. See Area 2 for location.

Coal Combustion Residuals Impoundment
Annual Site Observation Photographs

Facility Name	Feature ID	Site Observation Date
CCR Ash Unit Ames Municipal Electric System	CCR Impoundment	December 17, 2019

Photo 25: 2018 Ash sluice pipe to West Ash Pond Receiving Ditch

Photo 26: 2019 Ash sluice pipe to West Ash Pond Receiving Ditch

Photo 27: 2018 Typical groundwater monitoring well installed in June 2018.

Photo 28: 2019 Typical groundwater monitoring well installed in June 2018.

Coal Combustion Residuals Impoundment
Annual Site Observation Photographs

Facility Name	Feature ID	Site Observation Date
CCR Ash Unit Ames Municipal Electric System	CCR Impoundment	December 17, 2019

Photo 29: 2019 Pipe structure connecting west channel to northern area in the ash pond.

Photo 30: 2019 SEP floor drain and cooling tower blowdown discharge pipe into the north side of north storage area in the ash pond.

Photo 31: 2018 Chain link fence installed around perimeter of the ash pond property.

Photo 32: 2019 Chain link fence installed around perimeter of ash pond property in 2018.