2017 JRPS LANDFILL INSPECTION REPORT

CITY UTILITIES OF SPRINGFIELD, MISSOURI

PREPARATION DATE:

January 11, 2018

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JRPS LANDFILL INSPECTION REPORT CERTIFICATION

Gerad Fox, Missouri Professional Engineer, License Number 2013019048, has prepared the 2017 JRPS Landfill Inspection Report herein as required 40 CFR Section 257.84.

Name: Gerad Fox

Signature:

Date: 1/11/2018

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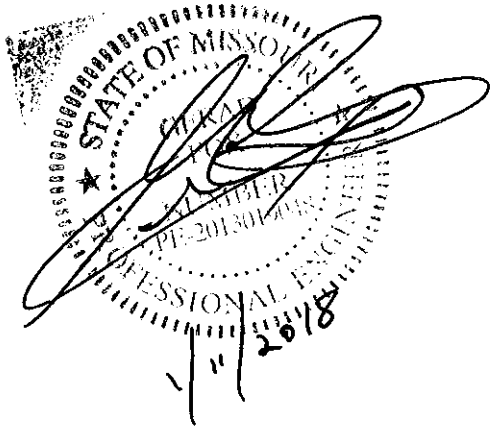

1. WEEKLY LANDFILL INSPECTIONS REVIEW

A City Utilities of Springfield MO (CU) qualified person performed weekly landfill visual inspections of the JRPS landfill each week in the year 2017. Inspections were completed using a Landfill Inspection Checklist prepared by CU. Inspection items include:

- Visible settlement or depressions
- Visible sign of structural weakness
- Proper function/maintenance of run-off system
- Condition present that may disrupt operation
- Surface water percolation minimized
- Adequate vegetation (Capped Areas)
- Visible erosion
- Transverse, longitudinal, or desiccation cracks
- Cap system maintained and operational (Capped Areas)
- Proper placement of waste (Uncapped Areas)
- Dust controlled
- Transverse, longitudinal, or desiccation cracks
- Visible depressions, bulges, sloughs, or slides
- Visible animal burrows
- Presence of leachate collection
- Visible sign of leachate leaving system

During this process each weekly Landfill Inspection Checklist was reviewed along with the corrective action(s) taken for each condition noted on the weekly Landfill Inspection Checklist. CU performed the weekly inspections at least every 7 days as required by the Coal Combustion Residual (CCR) rule. There was only one major concern noted on the weekly inspections reviewed since the previous inspection. On May 1, 2017, it was discovered that the leachate retention pond had been breached. A power failure of the temporary leachate pumping system and 10 inches of rainfall over a three-day period allowed excess water to accumulate in the leachate retention pond and cause the pond berm to breach. CU restored power to the temporary leachate pumping system and repaired the berm on the same day it was discovered. All final cover areas affected were restored, and vegetation reestablished. Other minor issues in the weekly inspections included, starting in March 2017, CCR mounding was noted on a weekly basis due to the vast amounts of CCR being placed in the JRPS landfill due to the clean closure project of the inactive retired temporary ash holding ponds located at the facility. CU was actively trying to address this issue and in July 2017 all CCR placed in the JRPS landfill from the clean closure project was determined to be at final grade and contractors began placing a temporary cap on the landfill. On the October 12, 2017 weekly inspection, it was noted that a temporary cap was placed on the JRPS landfill and the area had been seeded to establish vegetation. Visible erosion in capped or uncapped was not an issue in 2017. No animal burrows were noted on the weekly inspections for 2017. However, in the

past CU has responded to the animal burrows by contacting the United State Department of Agriculture (USDA) to remediate the issue. Overall the weekly landfill inspections and process appears to be functional and appropriate in ensuring the JRPS landfill is operating properly.

2. ANNUAL LANDFILL INSPECTION REVIEW

On January 5, 2018 a CU qualified professional engineer performed an annual inspection on the JRPS Landfill. The inspection was completed using the Landfill Inspection Checklist – Annual form. The annual inspection checklist is attached to this report. Inspection items include:

- Visible settlement or depressions
- Visible sign of structural weakness
- Proper function/maintenance of run-off system
- Condition present that may disrupt operation
- Surface water percolation minimized
- Adequate vegetation (Capped Areas)
- Visible erosion
- Transverse, longitudinal, or desiccation cracks
- Cap system maintained and operational (Capped Areas)
- Proper placement of waste (Uncapped Areas)
- Dust controlled
- Transverse, longitudinal, or desiccation cracks
- Visible depressions, bulges, sloughs, or slides
- Visible animal burrows
- Presence of leachate collection
- Visible sign of leachate leaving system
- Review of available operating records
- Review results of weekly inspections
- Review previous annual inspections
- Any visible sign of stress/malfunction of unit or structures
- Any visible changes in geometry
- Approx. volume of CCR in unit
- Liner system maintained and operational

The JRPS landfill appears to be in good working/operating condition. Results of the inspection checklist attached show no actual or potential structural weakness present in or around the JRPS landfill that will disrupt the operation and safety of the CCR unit. Since the last annual inspection, the JRPS landfill has completed a lift and a temporary cap that has been placed on the entire landfill. The newly final capped portions on the outer slopes and the temporary capped portion have been seeded, however it was done very late into the seeding season and 70% coverage has not been established. Silt socks have been

deployed to prevent top soil erosion and silt migration to the adjacent water ways. Additional seeding on the newly capped areas will most likely be necessary during the 2018 spring seeding season. The capped portion of landfill that is currently vegetated is adequate and being maintained. The water run-off system appears to be working properly in the capped areas with minimal ponding or visible signs of surface water. No fugitive dust was observed during the inspection. The landfill leachate system was modified since the last annual inspection. The original leachate collection system collected the leachate in a retention pond and pumped the leachate to the temporary ash holding ponds on site. Once the clean closure project of the inactive retired temporary ash holding ponds began, CU installed a temporary system to pump the leachate collected in the retention pond to the City of Springfield sewer system. In October 2017, the completion of a new permanent leachate collection system was completed. The new system no longer has a leachate retention pond. All leachate is now collected and directly pumped to the City of Springfield sewer system by the new permitted permanent pump station. Upon inspection the leachate collection system is in good working condition.

The landfill operating records were reviewed. The landfill operating record includes daily amount of ash hauled to the landfill as well as records of any maintenance activities including but not limited to; final cover placement, seeding and mowing, outfall water releases, soil cement application, and state inspection reports.

As stated in the Weekly Inspection Report Review section of this report, the weekly landfill inspections were reviewed, verified and determined to be satisfactory.

The CCR rule states that any geometry changes since the last annual inspection and the previous annual inspections reports are to be reviewed as part of this report. CU has completed a lift and a temporary cap has been placed on the entire JRPS landfill. Previous annual inspection reports noted a shortfall in record keeping and visible erosion issues during heavy rainfall events. CU's record keeping continues to improve and visible erosion incidents were not an issue in 2017 according to the weekly inspections reviewed.

As part of this annual inspection, CU is required to estimate the amount of CCR within the JRPS landfill. CU performed a landfill survey in December 2017. As of the date of this certification, the official survey report has not been finalized but preliminary estimates were available and included. The permitted capacity of the JRPS landfill 1,866,886 cubic yards if all permitted landfill lifts are completed. At the time of the survey the JRPS landfill had approximately 1,552,000 cubic yards of CCR within the landfill leaving the remaining volume of approximately 315,000 cubic yards available for CCR placement.

In conclusion the JRPS landfill appears to be in good working condition with no unresolved major issues. CU continues to watch for visible erosion during heavy rainfall events and plans to remedy the situation as quickly and practicably possible. Additionally, CU will continue to address any animal burrows that

become active this spring. CU personnel will ensure adequate vegetation is established on the newly capped/covered portions and will be re-evaluated entering the spring seeding season.

APPENDIX A

(Annual Landfill Inspection Checklist)

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LANDFILL INSPECTION CHECKLIST-ANNUAL INSPECTION BY PROFESSIONAL ENGINEER

The CCR landfill is visually examined by a licensed professional engineer as required by §257.84 and is recorded in the facility's operating record as required by § 257.105.

ID: JRPS Landfill	Date Inspected: 1/5/2018	Inspector: Gerad Fox, P.E.	
	YES	**NO**	**COMMENTS**
CAPPED (INACTIVE)			
A. Visual settlement or depressions?	☐	☑	
B. Visible sign of structural weakness?	☐	☑	
C. Proper function/maintenance of run-off system?	☑	☐	
D. Condition present that may disrupt operation?	☐	☑	
E. Surface water percolation minimized?	☑	☐	
F. Adequate vegetation?	☐	☑	See note below
G. Visible erosion?	☐	☑	
H. Transverse, longitudinal, or desiccation cracks?	☐	☑	
I. Cap system maintained and operational?	☑	☐	
J. Visible animal burrows?	☑	☐	See note below
UNCAPPED (ACTIVE)			
A. Visible settlement?	☐	☐	N/A - See note below
B. Signs of structural weakness?	☐	☐	N/A - See note below
C. Proper function/maintenance of run-off system?	☐	☐	N/A - See note below
D. Condition present that may disrupt operation?	☐	☐	N/A - See note below
E. Proper placement of waste?	☐	☐	N/A - See note below
F. Surface water percolation minimized?	☐	☐	N/A - See note below
G. Dust controlled?	☐	☐	N/A - See note below
H. Visible erosion?	☐	☐	N/A - See note below
I. Transverse, longitudinal, or desiccation cracks?	☐	☐	N/A - See note below
J. Visible depressions, bulges, sloughs, or slides?	☐	☐	N/A - See note below
K. Visible animal burrows?	☐	☐	N/A - See note below
LEACHATE COLLECTION			
A. Presence of leachate collection?	☑	☐	
B. Visible sign of leachate leaving system?	☐	☑	

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LANDFILL INSPECTION CHECKLIST (continued)

	YES	NO	COMMENTS
ADDITIONAL ANNUAL INSPECTION ITEMS			
A. Review of available operating records?	☑	☐	
B. Review results of weekly inspections?	☑	☐	
C. Review previous annual inspections?	☑	☐	
D. Any visible sign of stress/malfunction of unit or structures?	☐	☑	
E. Any visible changes in geometry?	☑	☐	See note below
F. Approx. volume of CCR in unit? 1,552,000 cubic yards			
G. Liner system maintained and operational?	☑	☐	See Note Below

ADDITIONAL COMMENTS:

No major issues were found at the JRPS landfill during the annual inspection. Since the last inspection in January 2017, the landfill has contracted the completion of one vertical lift and placement of a temporary cap on the entire landfill. At this time, the landfill is not receiving additional CCR. However, CU maintains the ability/approvals to mine ash for beneficial use purposes and has chosen not to permanently close the remaining permitted fill area. All areas that were capped were seeded in October/November of 2017 to establish vegetative cover. However, 70% coverage has not been achieved. The leachate system was modified (following MDNR approvals) since the last annual inspection and is functioning properly. An animal burrow was noted on the southeast side of the landfill during this inspection, but observations concluded that the burrow did not look active. CU has contacted the USDA to investigate further.

Inspector Signature and Seal:

STATE OF MISSOURI
1/31/2018