

**2019 JTEC LANDFILL INSPECTION REPORT  
CITY UTILITIES OF SPRINGFIELD, MISSOURI**

**PREPARATION DATE:**

**January 10, 2020**

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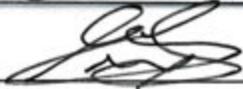
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## JTEC LANDFILL INSPECTION REPORT CERTIFICATION

Gerald Fox, Missouri Professional Engineer, License Number 2013019048, hereby certifies that the 2019 JTEC Landfill Inspection Report herein meets the requirements of 40 CFR Section 257.84.

Name: Gerald Fox

Signature: 

Date: 1/10/2020

Affix Seal Here:



## **1. WEEKLY LANDFILL INSPECTIONS REVIEW**

A City Utilities of Springfield MO (CU) qualified person performed weekly landfill visual inspections of the JTEC landfill for the year 2019. 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 pursuant to 40 CFR 257.84(a)(1)(i). No major concerns were noted on the weekly inspections reviewed. Visible erosion on the active section of the landfill was noted after heavy rainfall events. Work orders to regrade and compact the affected areas were submitted and completed in a timely manner after discovery of visible erosion. Animal burrows were discovered and noted on the weekly inspections. CU responded to the animal burrow by contacting the United State Department of Agriculture (USDA) to remediate the issue. Work orders to replace the rock track out pad entering the landfill were submitted and completed in a timely manner.

## **2. ANNUAL LANDFILL INSPECTION REVIEW**

On January 6, 2020 a CU qualified professional engineer performed an annual inspection on the JTEC 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

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- 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 JTEC 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 JTEC landfill that will disrupt the operation and safety of the CCR unit. The finished or capped portion of the landfill appears to be functioning properly and is being maintained with adequate vegetation presently. The water run-off system appears to be working properly in both the capped and uncapped areas with no ponding or visible signs of surface water. CU is placing the CCR in a conditioned state within the landfill as required by the CCR rule. No fugitive dust was observed during the inspection. The landfill leachate system is in good working condition maintaining containment of the leachate water. CU has an active work order to clean the leachate/stormwater retention area within the landfill footprint to re-establish its original capacity.

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, fugitive dust incidents and state inspection reports. According to the CCR operating record, sections on the west side of the landfill had final clay and topsoil layers applied. Upon completion of the topsoil layer, hydro

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seeding was completed to establish adequate vegetation. During the month of February, the CCR conditioning equipment for JTEC Unit 2 became inoperable. While diagnosing and performing maintenance on the CCR conditioning equipment CU hauled 1300 tons of unconditioned ash to the landfill using tarped, end dump trucks. In order to minimize fugitive dust, and to condition the ash during placement, CU built a berm in the area the ash was being placed and used a water truck to apply water on the CCR after it was dumped from the tarped trucks. Also, in the month of February CU had a CCR spill event during a maintenance activity on the Unit 1 CCR filter receiver. The unconditioned CCR was collected using a vacuum truck and taken to the landfill. In order to condition the ash prior to placement, CU used a water truck to spray water on the CCR as it was dumping from the vacuum truck. During the months of March and October, the JTEC landfill received CCR from maintenance vacuuming activities that occurred during unit outages. Two vacuum trucks were dumped per day for 15 total days or approximately 300 tons of CCR. This CCR was not conditioned through the JTEC CCR conditioning equipment on-site. In order to condition the ash prior to placement, CU used a water truck to spray water with the CCR as it was dumping from the vacuum truck.

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. In April 2019, a portion of the landfill on the west slope was filled to final grade. In June 2019, the clay and topsoil of that area was completed according to CCR regulations. Upon completion of the final cover, the area was hydro seeded during the fall growing season. Several vertical lifts have also occurred in the active portion of the landfill in 2019. CU is in the process of moving the outer berm/road on the out skirts of the landfill along the east and southeast portions of the landfill in order to maximize the landfill's permitted capacity. That project is still ongoing.

As part of this annual inspection, CU is required to estimate the amount of CCR within the JTEC landfill. In 2018, the estimated volume within the landfill was 1,582,000 cubic yards of CCR. CU performed a landfill survey in November 2019. The results of the survey estimate the total permitted volume of the landfill to be 3,199,000 cubic yards, not including the 24-inch thick final cover, and the current fill volume of the landfill, not including the 24-inch thick final cover, to be 1,632,000 cubic yards of CCR. Therefore in 2019 CU placed approximately 50,000 cubic yards of CCR within the landfill. At the conclusion of 2019, the remaining volume of approximately 1,567,000 cubic yards is available for CCR placement.

In conclusion, the JTEC landfill appears to be in good working condition with no major issues. CU continues to watch for visible erosion during heavy rainfall events and remedies the situation as quickly and practically as possible.

APPENDIX A  
(Annual Landfill Inspection Checklist)



**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: JTEC Landfill	Date Inspected: 1/6/2020	Inspector: Gerad Fox, PE	
	<b>YES</b>	<b>NO</b>	<b>COMMENTS</b>
<b>CAPPED (INACTIVE)</b>			
A. Visual settlement or depressions?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
B. Visible sign of structural weakness?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C. Proper function/maintenance of run-off system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
D. Condition present that may disrupt operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
E. Surface water percolation minimized?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
F. Adequate vegetation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
G. Visible erosion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
H. Transverse, longitudinal, or desiccation cracks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
I. Cap system maintained and operational?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
J. Visible animal burrows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>UNCAPPED (ACTIVE)</b>			
A. Visible settlement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
B. Signs of structural weakness?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C. Proper function/maintenance of run-off system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
D. Condition present that may disrupt operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
E. Proper placement of waste?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
F. Surface water percolation minimized?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
G. Dust controlled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
H. Visible erosion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Note 1 Below
I. Transverse, longitudinal, or desiccation cracks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
J. Visible depressions, bulges, sloughs, or slides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
K. Visible animal burrows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>LEACHATE COLLECTION</b>			
A. Presence of leachate collection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
B. Visible sign of leachate leaving system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

**LANDFILL INSPECTION CHECKLIST (continued)**

	YES	NO	COMMENTS
<b>ADDITIONAL ANNUAL INSPECTION ITEMS</b>			
A. Review of available operating records?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
B. Review results of weekly inspections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
C. Review previous annual inspections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
D. Any visible sign of stress/malfunction of unit or structures?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
E. Any visible changes in geometry?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Note 2 Below
F. Approx. volume of CCR in unit? 1,632,000 CY			
G. Liner system maintained and operational?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**ADDITIONAL COMMENTS:**

Note 1: Visible erosion noted on the uncapped portion of the landfill specifically on the slope that do not see much activity. Also note that the trackout pad leading into the landfill needs to be replaced.

Note 2: See 2019 Annual JTEC Landfill Inspection Report for geometry change details.

Inspector Signature and Seal: