


Mercury Minimization Plan Annual Report

for the:

Greenidge Power Generation Station

March 2022

prepared for:

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Table of Contents

Section 1. Introduction.....	1-1
Section 2. Monitoring Results	2-1
Section 3. Sources of Mercury	3-1
Section 4. Control Strategy.....	4-1
Section 5. Summary	5-1

Figures

Figure 1: Mercury Time-Series Plot	2-2
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Tables

Table 1: Mercury Concentration and Sample Collection Date Summary	2-1
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1. Introduction

Greenidge Generation LLC (Greenidge) owns and operates the Greenidge Power Generating Station (Greenidge Station or the Station) in the Town of Torrey, Yates County, New York. The Greenidge Station burns natural gas with the permitted option to co-fire up to 19% wood biomass. A State Pollutant Discharge Elimination System (SPDES) permit (No. NY0001325) is maintained for discharges from the site.

Since the 50 ng/L permit limit exceeds the state-wide calculated water quality based effluent limit (WQBEL) of 0.70 ng/L, a Mercury Minimization Program (MMP) has been developed and is maintained as part of the SPDES permit requirements. This report is intended to satisfy the MMP annual report requirements for industrial facilities as described in Greenidge's SPDES permit for monitoring conducted during the 2021 calendar year. Specifically, the following five required elements are included:

1. Summarize the monitoring results from the applicable monitoring period;
2. List known and potential sources of mercury;
3. Summarize all actions taken to support the mercury control strategy laid out in Section 4 of the March 2011 MMP prepared by AES Greenidge, LLC;
4. Describe actions planned for the upcoming year; and
5. Summarize the MMP's progress toward the goal stated in the SPDES permit "to reduce mercury effluent levels in pursuit of the calculated WQBEL" of 0.7 ng/L.

2. Monitoring Results

Currently, mercury monitoring is performed at two key locations onsite, Outfalls 02C and 002. Stormwater runoff from the former coal pile storage area and a minor contribution of plant process waters are treated in an onsite wastewater treatment plant (WWTP) and discharged through Outfall 02C. Outfall 02C discharges offsite via Outfall 002.

Sampling for mercury is performed by Adirondack Environmental Services, Inc (ADK) of Albany, New York at Outfalls 002 and 02C on a quarterly basis in accordance with the site's SPDES permit and Section 2.1 of the MMP. Laboratory analysis, also conducted by ADK, is performed using EPA Method 1631 as required.

The following table shows the results of mercury monitoring for 2021 at Outfalls 002 and 02C.

Table 1: Mercury Concentration and Sample Collection Date Summary

<i>Quarter</i>	<i>Monitoring Period</i>	<i>Mercury Concentration (Collection Date)</i>	
		<i>Outfall 02C</i>	<i>Outfall 002</i>
1	01/01/21 – 03/31/21	0.8 ng/L (02/09/21)	0.7 ng/L (01/07/21)
2	04/01/21 – 06/30/21	1.0 ng/L (04/29/21)	2.0 ng/L (04/15/21)
3	07/01/21 – 09/30/21	1.6 ng/L (07/15/21)	0.5 ng/L (07/08/21)
4	10/01/21 – 12/31/21	<0.5 ng/L (10/28/21)	0.6 ng/L (10/07/21)

All test results in 2021 were well below the 50 ng/L permit limit. Fifty percent of test results in 2021 were also less than or equal to the WQBEL of 0.7 ng/L.

The graph below includes all available data from the beginning of 2012 to the end of 2021. Concentrations at Outfall 02C have leveled-off around the WQBEL over the last several years. Annual average mercury concentration in Outfall 02C were slightly higher in 2021, but still below 1.0 ng/L. Non-detect data are indicated by unfilled data points. After several years of no discharge between 2013 and early-2017, concentrations in Outfall 002 have trended slightly higher than those in Outfall 02C, but in 2021 the annual average concentration for the two Outfalls were essentially equivalent.

Annual average mercury concentration in Outfall 002 since restarting in 2017 is 0.88 ng/L. This is not only far below the 50 ng/L permit limit, but also significantly lower than the 12 ng/L threshold for the mercury concentration found due to natural atmospheric deposition as stated in DOW 1.3.10.

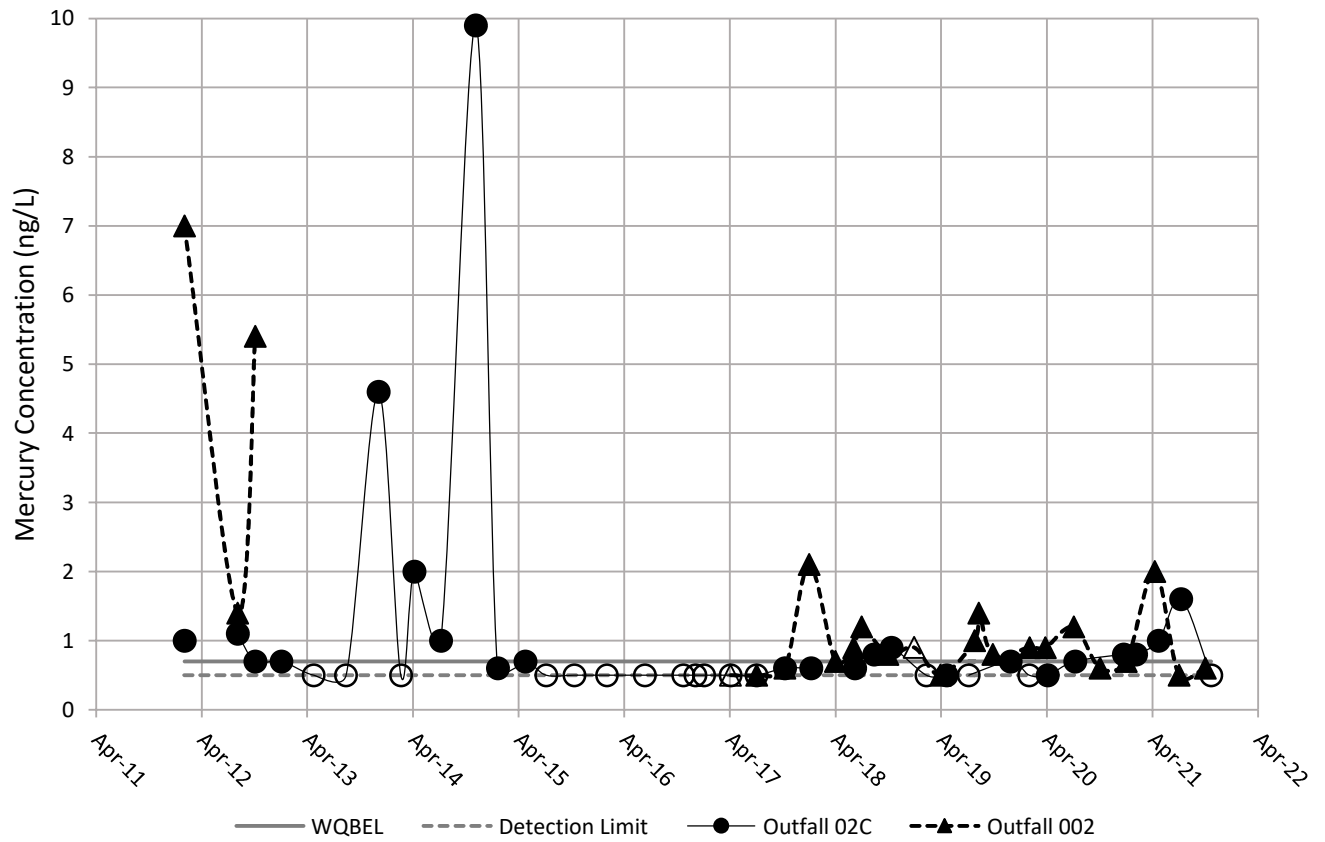


Figure 1: Mercury Time-Series Plot

3. Sources of Mercury

During historic coal-fired operations, potential sources of mercury included runoff from the roof of the Station (due to atmospheric deposition of mercury from the Station's stacks which is subsequently washed off with precipitation), boiler sluice system and other maintenance/cleaning wastewaters, and stormwater runoff from the raw coal storage piles. The coal pile storage area is lined with a fabric-reinforced Hypalon liner to help minimize the infiltration of surface water runoff into the subsurface and surrounding groundwater. Since switching to natural gas, these sources have been cleaned up and all unused coal has been removed from the site. Accumulated sediment in C-Pond may be a source of mercury. Otherwise, sources of mercury onsite are limited.

4. Control Strategy

The control strategy outlined in the 2011 MMP remains largely effective at the Greenidge Station. As noted in Section 3, effective management of raw material and waste streams has been conducted over the past several years to minimize contact of mercury containing materials with stormwater.

5. Summary

The mercury concentrations measured in 2021 at Outfalls 002 and 02C were significantly less than the SPDES effluent limit of 50 ng/L. The highest measured concentration of mercury in 2021 was 2.0 ng/L in Outfall 002. Half of all samples collected during the current reporting year were less than or equal to the mercury WQBEL of 0.7 ng/L.

Current operations appear to have significantly contributed to the goal of the MMP to reduce mercury effluent levels in pursuit of the WQBEL of 0.7 ng/L. Additional actions specifically aimed at mercury control are not considered necessary.