

April 30th, 2024

Mary Barnett, Ecologist
Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR. 72118-5317

Re: 1st Quarter 2024 Activities Report, Outfall 007 TRE
El Dorado Chemical Company
NPDES Permit # AR 00000752; AFIN 70-00

Dear Ms. Barnett:

As required by the Storm Water Toxicity Reduction Evaluation (TRE) Plan for Outfall 007 (dated 10 August 2023) and in accordance with ADEQ's approval dated 22 August 2023, this letter provides the quarterly activities report for the above referenced TRE.

TRE activities completed during the period from January 1, 2024 through March 31, 2024 include:

- 1) Continued the baseline whole effluent toxicity (WET) testing and analytical chemistry on a monthly basis.
- 2) Exploratory digging and isolation of the source of zinc.

Additional details of the completed activities follow.

Continued the routine baseline toxicity testing and associated analytical chemistry.

During this period, the routine WET tests were completed monthly for the 1st storm event of each respective month.

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The monthly WET tests results are summarized in the following table:

Date	NOEC	DO	pH	Alkalinity	Hardness	Conductivity	Residual CL	Notes
1/2/2023	46.7	8.0	4.4	1.1	78	340	<0.05	
2/8/2023	100	7.6	7.3	30	100	480	<0.05	
3/2/2023	100	7.2	6.9	10	170	830	0.09	
4/2-3/2023	45	6.9	7.1	20	79	390	<0.05	
5/5/2023	45	7.7	7	20	18	94	0.06	
6/10/2023	20.4	7.5	9.2	59	300	1200	>0.05	
6/13/2023	100	7.4	6.6	7.3	140	480	>0.05	ReTest
7/4/2023	100	6.0	7.2	14	110	610	<0.05	
8/8/2023	32	6.8	6.7	8	110	460	<0.05	
9/4/2023	100	7.7	7	15	150	1400	<0.05	
10/5/2023	45	8.0	7.6	35	46	180	<0.05	
11/10/2023	45	8.0	7.2	54	150	1500	<0.05	
12/16/2023	56	7.2	7.1	58	240	1300	<0.05	
1/5/2024	75	7.8	5.6	32	170	1100	<0.05	
2/10/2024	56	8.9	8.6	50	340	2100	<0.05	
3/1/2024	100	9.0	7.8	11	59	310	<0.05	

The October test result showed a NOEC at a 45% concentration.

After conducting a detailed assessment of the October WET, the following parameters stood out.

Nitrate 99 mg/L
Nitrite 0.17 mg/L
Fluoride 5.0 mg/L
Zinc 1.0 mg/L
Aluminum 120 mg/L
Sulfate is at 790 mg/L

Other trace metals were also present. Based on the above breakdown, Nitrate and Zinc could be contributing to the NOEC level. However, Zinc toxicity is reduced as Hardness is increased and the tested effluent water is relatively Hard with a Calcium concentration of 150 mg/L.

The November through February tests showed similar results of NOEC at 45% to 75% concentration. The March results are from a day with lower flow rates and the entire drainage area did not contribute to the flow, including the area of concern.

Additional activities and Mock Effluent Trial

In addition to the routine WET testing, collection of additional facility information has been initiated. This information includes but is not limited to facility operations, chemical use data, tracking of internal housekeeping records, and documentation of activities within the individual outfall sub-basins.

We conducted a mock effluent trial to attempt to replicate the results from the October WET testing. The mock effluent had a NOEC of 56%. We conducted additional mock trials

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isolating Fluoride, Nitrate, and Zinc. The mock trials for Fluoride and Nitrate passed at 100% effluent, however, Zinc failed at a NOEC of 32%.

An area of concern has been identified that appears to be contributing to elevated zinc. Contaminated groundwater has seeped into the drainage ditch directed towards Outfall 007. The pH of this water is between 2 and 3 SU. While we do not utilize zinc in any of our processes, it is naturally occurring in the soil. It appears that the low pH water is leaching zinc from the soil and transporting it to the ditch. Our in-house laboratory has found zinc concentrations in the collected water at 6.0 mg/l.

Based upon review of historical drawings and exploratory excavation, no pipes or other discharge points were found in the area that could be a potential source. While digging, a layer of clay was encountered. Contaminated water appeared to be perched on the clay layer.

Future Activities.

Activities planned for the 2nd Quarter 2024 include continuation of the routine monthly storm water WET testing, continued monitoring of effluent constituents, tracking of site storm data (duration and magnitude), and discharge volumes. In addition, the compilation of facility data including the monitoring of routine storm water discharge data with particular attention to facility conditions during the WET monitoring periods will continue.

The facility will install a French drain at the clay layer to collect this water that is flowing to the ditch. The water will be pumped back into the plant for additional treatment and diverted away from Outfall 007. Engineering design should be completed by May 30, 2024 and installation complete by July 15, 2024.

Please do not hesitate to contact me if you have any questions or require additional information regarding the implementation of the Outfall 007 TRE.

Respectfully submitted,

Charles McDowell
Environmental Leader