



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region08

Ref: 8ENF-W-NW

SENT VIA EMAIL
DIGITAL READ RECEIPT REQUESTED

Travis Culliton
Lead Management Program Analyst
Federal Highways Administration – Central Federal Lands
Travis.culliton@dot.gov

Re: Inspection Report for Federal Highways Administration's Building 52A
Groundwater Remediation Facility, NPDES Permit No. CO0034860

Dear Mr. Culliton:

On October 13, 2022, representatives of the U.S. Environmental Protection Agency (EPA) inspected the Federal Highways Administration's (FHWA) Building 52A Groundwater Remediation Facility located in the Denver Federal Center in Denver, Colorado to evaluate compliance with the facility's NPDES permit requirements. The inspection was conducted under the authority of Section 308 of the Clean Water Act (Act). Enclosed is a report of the inspection.

Inspection findings are summarized within the enclosed inspection report in a table titled "Findings, Corrective Actions and Recommendations." Within **thirty (30) days** of receipt of this report, please provide the EPA with a summary of corrective actions taken to address each of the findings identified in the report and any information that may change the findings. This summary should be sent to:

Emilio Llamozas
Llamozas.emilio@epa.gov

Please contact me at 303-312-6407 or llamozas.emilio@epa.gov if you have any questions regarding this letter or the enclosed report.

Sincerely,

Emilio Llamozas
NPDES and Wetlands Enforcement Section
Enforcement and Compliance Assurance Division

Enclosures:

- 1) NPDES Inspection Report
- 2) Photo Log

cc: Chris Beall, Senior Geologist, Stantec (via email)

NPDES Inspection Report

National Database Information	
Inspection Date: 10/13/2022	Inspection Type: Compliance Evaluation Inspection
Entry/Exit Time: 9:11 am / 11:44 am	NPDES ID Number: CO0034860
Inspection ID: 202210 CO0034860	
Lead inspector and affiliation: Emilio Llamozas, EPA Region 8	
Inspector and affiliation: Lisa-kay Prideaux, Mike Boeglin, Stephanie Meyers, and Akash Johnson (EPA Region 8)	
Inspector and affiliation: Raymond Andrews and CJ Langlois (EPA Region 10)	
Inspector and affiliation: Cassandra Rice, Tyler Barber (EPA HQ) and Michael Eckard (EPA HQ Contractor)	

Facility Location Information	
Site/Facility Name & Location: Federal Highways Administration – Central Federal Lands Building 52A Groundwater Remediation Facility Denver Federal Center, Building 52A Denver, Colorado 80228 Lat: 39°43'1.82"N Long: -105°7'8.37"W	Mail Report to: Travis Culliton travis.culliton@dot.gov Chris Beall Christopher.Beall@stantec.com

Contact Information	
	Name(s)/Title
Facility Contacts:	Travis Culliton, Lead Management Program Analyst, FHWA (present during inspection)
	Chris Beall, Senior Geologist, Stantec Consulting Services, Inc. (primary lead and present during inspection)
	Patrick Kowing, Materials Engineering Technician, FHWA (not present during inspection)
Person/Company meeting definition of Owner/Operator	Federal Highways Administration – Central Federal Lands
Authorized Official(s)	Travis Culliton, Lead Management Program Analyst, FHWA

Areas Evaluated During Inspection		
<u>Permit</u>	<u>Self-Monitoring Program</u>	Pretreatment
<u>Records</u>	Compliance Schedule	Pollution Prevention
<u>Facility Site Review</u>	Laboratory	Stormwater
<u>Effluent/Receiving Waters</u>	<u>Operations and Maintenance</u>	Combined Sewer Overflow
<u>Flow Measurement</u>	<u>Sludge Handling/Disposal</u>	Sanitary Sewer Overflow

Report Review and Signature		
Drafter Signature/Name	Address/Phone Number	Date
	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202	11/03/2022
Emilio Llamozas	303-312-6407	
Reviewer Signature/Name	Address/Phone Number	Date
Lisa-kay Prideaux	U.S. EPA Region 8, Montana Operations Office 10 West 15th Street, Suite 3200 Helena, Montana 59626	11/08/2022
	406-457-5022	
Supervisor Signature/Name	Address/Phone Number	Date
	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202	11/15/2022
Mike Boeglin	303-312-6250	

Inspection Narrative and Site Description

On October 13, 2022, at approximately 9:00 am, the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) inspectors, Emilio Llamozas and eight other EPA inspectors and one contractor (inspectors) arrived at Federal Highways Administration (FHWA) Building 52A Groundwater Remediation Facility (Building 52A or facility) located on the Denver Federal Center (DFC) in Denver, Colorado, to conduct an industrial discharger inspection. The purpose of the inspection was to evaluate the FHWA Building 52A's compliance with its NPDES permit requirements. The state of Colorado has not taken the delegation for NPDES Federal Facilities; therefore, the EPA issues the NPDES permits and performs the inspections for those facilities located on Federal property in Colorado. The inspection was also used as an opportunity to train the inspectors on the use of Smart Tools, which is a new software for inspectors to take notes and photographs during inspections. EPA Headquarters and their contractor, Plateau, Inc., provided Smart Tools training to the inspectors during the facility inspection. On November 1, 2017 the NPDES permit was transferred from the U.S. General Administration (GSA) to the FHWA.

The inspectors met with Mr. Travis Culliton, Lead Management Program Analyst for the FHWA and Mr. Christopher Beall, Senior Geologist for Stantec Consulting Services, Inc. to have an opening conference to discuss the logistics for the inspection. Mr. Patrick Kowing, Materials Engineer Technician for the FHWA, welcomed the inspectors to the facility, but did not participate in the inspection. After presenting their inspector credentials and explaining the purpose of the inspection, the inspectors proceeded to ask a series of questions to help them understand the unit processes at the facility and evaluate the facility's compliance with its NPDES permit.

The facility's permit expiration date was September 30, 2018; however, the permit has been administratively extended. Mr. Beall indicated that the Colorado Department of Health and Environment (CDPHE) had recently designated Lakewood Gulch as a potential drinking water source. The facility discharges into McIntyre Gulch, which flows into Lakewood Gulch. Because Lakewood Gulch is designated as a potential drinking water source it has to meet 1,4-Dioxane water quality standards. The DFC contaminated groundwater contains 1,4-Dioxane, which was used as a stabilizer in 1,1,1-trichloroethane (TCA) tanks. Therefore, it appears that the new NPDES permit will have 1,4-Dioxane effluent limits. 1,4-Dioxane is not readily treated by aeration so additional treatment will need to be added once the facility gets a renewal permit with 1,4-Dioxane effluent limits. The facility representatives indicated that there is one other facility on the DFC that will also need to treat the groundwater to remove 1,4-Dioxane and there is a potential of combining the groundwater flow from both facilities to consolidate the treatment to minimize costs.

The lead inspector had briefly reviewed prior to the inspection the operation and maintenance manual, discharge monitoring reports (DMRs), associated laboratory analysis, and wastewater flow data for the second quarter of 2021 and the first quarter of 2022. The lead inspector asked questions regarding the records reviewed and noted his observations in a checklist. The other inspectors took notes in the Smart Tools software. A full review of the documents was performed after the inspection.

The inspectors then observed one deep groundwater extraction well (photo 241) and toured the wastewater treatment system in Building 52A (photos 242-252) and the outfall (photo 253) as explained below to evaluate compliance with the NPDES permit requirements. Throughout the

inspection, the lead inspector noted his observations in a checklist. The other inspectors took notes in the Smart Tools software. Photographs taken during the inspection are included in the attached photo log.

The FHWA's groundwater remediation Building 52A facility is a RCRA corrective action site that has seven groundwater extraction wells, a groundwater treatment facility with a permitted direct discharge to the McIntyre Gulch on the DFC property. The influent to the groundwater treatment system comes from two shallow and five deep groundwater extraction wells located on the DFC used to treat contaminated groundwater from two leaking underground storage tanks that were installed by the FHWA at the site in 1978. One of the tanks stored unused 1,1,1-trichloroethane (TCA) and had a capacity of 250 gallons. 1,4-Dioxane was used as a stabilizer in TCA. The second tank stored waste TCA and other wasted solvents, and had a capacity of 560 gallons. The FHWA removed the tanks in December of 1992. The contaminated groundwater plume is between Buildings 52 and 53 and to the south of Building 53. The groundwater plume is traveling towards the east.

Throughout the year the groundwater extraction wells operate and collect between 2,000 to 10,000 gallons per day of groundwater depending on precipitation and the time of the year (photo 242). When the power goes out the system cannot discharge because the pumps cannot operate. The treatment system has an alarm/notification system that sends emails and text messages to the operators when there are equipment failures. The groundwater collected from wells is treated at the treatment system using a clarifier (photo 243). In the clarifier, the soil mixed with the groundwater is removed when it comes into contact with the clarifier plates and drops to the bottom of the clarifier. The solids in the clarifier had not been removed since 2012 or 2014 according to facility representatives. From the clarifier the water goes to the first and second stage aeration units (photos 244 and 248). Aqua Mag and water are blended together and injected at calculated amounts in the first stage aeration unit to protect the treatment system from corrosion and scaling (photos 245 and 246). Facility representatives indicated the Aqua Mag contains phosphate. The facility has been able to reduce their phosphate discharge by controlling the amount of Aqua Mag added to the system. The aeration removes the TCA from the groundwater and the air is emitted in a stack at the top of Building 52A (photo 252). The effluent from the wastewater treatment system goes through a flow meter and is discharged at Outfall 001 located just west of Building 52A inside a storm drain inlet (photo 253). The facility performs a flow verification procedures for the meter with a drum and a specified volume of water to ensure the flow meter is reading correctly (photo 251). The sampling point is a spigot inside the facility (photo 250) just upstream of the outfall and just after the flow meter (photo 249).

The ultraviolet oxidation, hydrogen peroxide and granulated activated carbon treatment units are no longer used at the facility. The EPA was notified of the equipment changes on February 11, 2013. The floor in Building 52A is coated with epoxy. Any spills in the building would flow to the sump in the southeast corner of the facility (photo 247). The sump is pumped to the Holding Tank T-210, which is then pumped to the clarifier. The facility also had a satellite hazardous waste station used to store used oil and hazardous waste (photo 247).

After the facility tour, the inspectors held a closing conference with Mr. Culliton and Mr. Beall where they discussed preliminary findings from the inspection. The inspection concluded when the inspectors left the site at approximately 11:44 am. On November 2, 2022, the EPA sent an email to Mr. Culliton and Mr. Beall with the preliminary findings from the inspection. On November 3, 2022, Mr. Beall provided a response to each of the preliminary findings.

Findings, Corrective Actions and Recommendations

Finding #1: The solids in the clarifier unit have not been removed since 2012 or 2014 according to the facility representative.

The solids in the clarifier unit have not been removed since 2012 or 2014 according to the facility representative. Section 3.3.2.4 and Table 1 of the Operation and Maintenance Manual indicate that solids in the clarifier unit are to be removed on an annual basis. The solids in the clarifier unit need to be removed to ensure the proper operation and maintenance of the treatment system. The facility representatives are planning to remove the solids in the clarifier in August or September 2023. They are currently researching facilities that will accept the solids in order to comply with the Colorado Department of Public Health and Environment (CDPHE) Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) requirements.

Permit Requirement:

Part 3.5.1 of the NPDES permit states, “The permittee shall, as soon as reasonable and practicable, but no later than six (6) months after the effective date of this permit, do the following as part of the operation and maintenance program for the wastewater treatment facility:

- 3.5.1.1. Have a current O & M Manual(s) that describes the proper operational procedures and maintenance requirements of the wastewater treatment facility;
- 3.5.1.2. Have the O & M Manual(s) readily available to the operator of the wastewater treatment facility and require that the operator become familiar with the manual(s) and any updates;
- 3.5.1.3. Have a schedule(s) for routine operation and maintenance activities at the wastewater treatment facility; and,
- 3.5.1.4. Require the operator to perform the routine operation and maintenance requirements in accordance with the schedule(s).”

Part 3.6 of the NPDES permit states, “Collected screenings, grit, solids, sludge, or other pollutants removed in the course of treatment shall be buried or disposed in a manner consistent with all applicable federal and state regulations (i.e., 40 CFR 257, 40 CFR 258, 40 CFR 503) and in a manner so as to prevent any pollutant from entering any waters of the United States or creating a health hazard.

In addition, the use and/or disposal of sewage sludge shall be done under the authorization of an NPDES permit issued for the use and/or disposal of sewage sludge by the appropriate NPDES permitting authority for sewage sludge. Sludge/digester supernatant and filter backwash shall not be directly blended with or enter either the final plant discharge and/or waters of the United States.”

Corrective Action:

On November 3, 2022, the FHWA provided a response to the preliminary findings email and indicated that “FHWA acknowledges this comment and are planning to remove and have treated and disposed of, the solids from the clarifier unit during the first half of 2023. Recently acquired analytical data of the clarifier unit solids have allowed FHWA to identify a likely treatment and disposal facility. A waste profile is currently being developed for the clarifier unit solids.”

Provide a notification to the EPA when the solids from the clarifier unit are removed and disposed of including a summary of the disposal method and copies of the waste disposal manifest.

Finding #2: The facility was using an unapproved 40 C.F.R. 136 method for VOCs analysis.

The facility was using EPA method 8260B for volatile organic compounds (VOCs) analysis, which is a RCRA method. This method is not an approved method under 40 C.F.R. 136 for wastewater. Part 2.2 of the NPDES permit requires monitoring to be conducted according to the test procedures approved under 40 C.F.R. 136. The approved VOCs methods under 40 C.F.R. 136 include:

- a. EPA Method 601
- b. Standard Methods 6200 C-2011 or 6200 B-2011
- c. EPA Methods 624.1 or 1624B
- d. O-4127-96 or O-4436-16

Permit Requirement:

Part 2.2 of the NPDES permit states, "Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. Sludge monitoring procedures shall be those specified in 40 CFR 503, or as specified in the permit."

Corrective Action:

On November 3, 2022, the FHWA provided a response to the preliminary findings email and indicated that "FHWA acknowledges this comment and the use of EPA Method 8260B for analysis of VOCs. FHWA will begin using, during the next NPDES sampling event in the first quarter of 2023, test procedures approved under 40 C.F.R. 136 for VOCs and, if required, Oil and Grease."

Once the first quarter of 2023 samples are taken, provide the laboratory results to the EPA with the methods used for VOCs, and Oil and Grease, if the Oil and Grease sample is necessary.

Finding #3: The facility's Operation and Maintenance Manual needs to be updated to current operating conditions.

The facility's Operation and Maintenance Manual that was prepared in 2014 needs to be updated. Some of the updates include:

- a. The introduction needs to be updated to indicate that FHWA is operating the facility instead of GSA.
- b. The number of active groundwater wells needs to be updated throughout the document.
- c. Table 5 needs to be updated with the approved VOCs and Oil and Grease methods under 40 C.F.R. 136. Table 5 had EPA method 413.2 for oil and grease analysis, which is not a 40 C.F.R. 136 method. Approved 40 C.F.R. 136 methods for Oil and Grease include EPA Method 1664 and Standard Method 5520B.

Permit Requirement:

Part 3.5.1 of the NPDES permit states, "The permittee shall, as soon as reasonable and practicable, but no later than six (6) months after the effective date of this permit, do the following as part of the operation and maintenance program for the wastewater treatment facility:

- 3.5.1.1. Have a current O & M Manual(s) that describes the proper operational procedures and maintenance requirements of the wastewater treatment facility;
- 3.5.1.2. Have the O & M Manual(s) readily available to the operator of the wastewater treatment facility and require that the operator become familiar with the manual(s) and any

updates;

3.5.1.3. Have a schedule(s) for routine operation and maintenance activities at the wastewater treatment facility; and,

3.5.1.4. Require the operator to perform the routine operation and maintenance requirements in accordance with the schedule(s).”

Corrective Action:

On November 3, 2022, the FHWA provided a response to the preliminary findings email and indicated that “FHWA acknowledges this comment. The facility may be shut down pending an agreement with the property owner (GSA) in the next six to eight months. If the shutdown does not occur on or before July 1, 2023, the facility Operation and Maintenance Manual will be updated in full. In the interim, the following will be updated manually in the field copy:

- GSA will be replaced with FHWA as the operator of the facility
- The number of active extraction wells will be updated from 11 to seven throughout the document
- Table 5 will be updated to show approved methods under 40 C.F.R. 136.”

Provide an updated copy of the Operation and Maintenance Manual to the EPA.