

REPORT OF INDUSTRIAL STORMWATER COMPLIANCE SAMPLING INSPECTION (CSI)

At

Capital Quarries - Sullivan
3105 Hwy FF
Bourbon, MO 65441
NPDES Permit # MOG490078

On

February 21, 2024

By

U. S. ENVIRONMENTAL PROTECTION AGENCY: Region 7
Enforcement and Compliance Assurance Division (ECAD)

1.0 INTRODUCTION

I performed an Industrial Stormwater Compliance Sampling Inspection (CSI) at Capital Quarries-Sullivan Quarry in Bourbon, Missouri on February 21, 2024. The inspection was authorized by Section 308(a) of the Federal Water Pollution Control Act, as amended. This narrative report and attachments present the findings and observations made during the Industrial Stormwater CSI. The inspection was conducted in accordance with the procedures described herein and following all applicable EPA Region 7 Standard Operating Procedures (SOPs), unless otherwise noted.

2.0 PARTICIPANTS

Capital Quarries:

Chris Thiltgen, Regulatory Compliance Officer (573) 644-2982
Email: cthiltgen@capitalquarries.com
Paul Welch, Site Superintendent

Missouri Department of Natural Resources (MDNR)

Dustin Hampton, Environmental Supervisor (573) 840-9054
Trevor Carihfield, Environmental Assistant
Kaden Clark

U.S. Environmental Protection Agency (EPA):

Hannah Lewis, Life Scientist (913) 551-7679 (Lead Inspector)
Email: lewis.hannah@epa.gov
Zachary Leibowitz, Environmental Scientist

3.0 INSPECTION PROCEDURES

On February 20, 2024, I conducted reconnaissance activities along the tributary which flows through the Capital Quarries facility. I began by viewing the tributary where it flows under Hwy

FF, approximately 150 yards downstream of Outfall 003. I then followed the tributary south stopping at access points along the way to view the tributary and Carter Creek. I saw fine grain sediment deposits within the tributary with deeper accumulations of these sediments in pools. The furthest downstream point of Carter Creek I was able to access was near 38.1330° N, - 91.1575° W. I was unable to access Carter Creek where it meets the Meramec River due to the lack of property access permission.

The following day, prior to entering the facility, I conducted a visual reconnaissance of the tributary upstream of the facility along Farris Rd. The streambed consisted of pebbles, minimal sediment, and leaf deposits (images 1, 2). The water was clear.

On February 21, 2024, I arrived unannounced at the facility scale house at 8:45 a.m., introduced myself to the attendant, and requested to speak with Chris Thiltgen. She stated he was not on site and subsequently contacted Paul Welch. Soon afterwards, MDNR staff arrived, and I introduced myself and Zachary Leibowitz. Paul Welch arrived at the scale house a few minutes later and stated that Mr. Thiltgen would be coming from Jefferson City with an estimated arrival within 2 hours. I presented my credentials, introduced Mr. Leibowitz and the MDNR staff, and explained the scope and purpose of the inspection to Mr. Welch. I informed Mr. Welch I would be performing a complete Industrial Stormwater inspection, consisting of a visual inspection of the facility, a review of records being maintained at the facility, and sample collection.

I explained to Mr. Welch that I would be conducting the Industrial Stormwater inspection under the authority of Section 308(a) of the Federal Water Pollution Control Act to evaluate the facility's compliance status with the requirements of the Clean Water Act and with the National Pollutant Discharge Elimination System (NPDES) Missouri State Operating Permit issued by the Missouri Department of Natural Resources (MDNR) which authorizes the discharge of process wastewater, mine/pit dewatering, and/or stormwater. I stated that I would document my findings and observations by making photocopies, taking photographs and/or videos, and obtaining statements from facility staff. I also explained the concept of confidential business information (CBI).

A hardcopy Spill Prevention, Control, and Countermeasure (SPCC) Plan dated March 2018 and a Storm Water Pollution Prevention Plan (SWPPP) were on site and available for review. Mr. Welch stated that Mr. Thiltgen had the most current version of each document and would be bringing them later. I reviewed the two plans that were on site during the inspection. All the participants, except Mr. Thiltgen, toured the facility together led by Mr. Welch. Mr. Thiltgen met us near Outfall 003 at approximately 11:00 a.m. Shortly afterwards, Mr. Thiltgen stated he needed to leave for another meeting. So, I asked him to send me the most current version of the SWPPP and SPCC digitally (attachments 5 and 6). I followed up later, after the inspection was complete, with an email at 1:16 p.m. on February 22 requesting various documents be provided digitally.

I completed my inspection and summarized the preliminary findings with all the participants, except Mr. Thiltgen, during the exit meeting. I emailed a digital Confidentiality Notice to Mr. Thiltgen, which he returned signed indicating no confidential business information had been provided during the inspection (attachment 8). Samples were collected during the inspection at Outfall 003. Twenty-seven photographs were taken during the inspection. See attachment 2 for the digital image log and photos #1 - #27.

4.0 FACILITY DESCRIPTION

4.1 Facility Operations

The facility is located at 3105 Hwy FF, Bourbon, Missouri with a tributary to Carter Creek forming the western border at times. The tributary, which flows south into Carter Creek to the Meramec River, was flowing at the time of the inspection. At this facility, activities include rock washing and rock quarrying (images 8, 14, 17). The facility is permitted under Standard Industrial Classification (SIC) code 1422. The active quarry pit is located in the northwest corner of the facility while the rock washing machinery is located near the east property boundary (images 8, 14, 17). Wash water is pumped to the rock washer from a side pond which is fed by the quarry pit pump (images 14, 15). A sediment trap channels process water from the rock washer west to the sediment pond (images 18, 19, 21). The sediment pond includes jetties to increase detention time as the process water flows towards Outfall 003. Material that accumulates in the sediment trap and sediment pond is dredged and placed in piles near the rock washer along the east boundary (image 20).

A scale house, maintenance building, and fueling station are also located on site (images 6,7). According to Mr. Thiltgen, the maintenance building has four floor drains which are connected to a single exterior capped pipe. Used oil drums, a ~150-gallon used oil tank, and a 10,000-gallon diesel tank are stored inside secondary containment (image 7). Capital Quarries has one active pit located in the northwest corner of the facility. They no longer have access to the adjoining inactive pit to the east. There are two access roads to the active pit in the far west border of the site that utilize similarly sized culvert crossings over the tributary. The northernmost access road leads a short distance down to the pit floor while the second pit access road located ~55 feet downstream leads further east into the pit and closer to the pit pond. A third culvert crossing over the tributary is the main access road into the facility, is ~115 feet downstream of the second pit access road, and utilizes two culverts, each of which is much larger than the single culvert at the two pit access roads (attachment 3).

According to the SWPPP, the facility operates Monday through Friday, 9 hours each day. See attachment 3 for the facility layout, photo locations, and stormwater flow patterns. Accumulated water from the quarry flows southeast to the pit pond for dewatering. The pit pond has a float-operated pump that directs water up the quarry pit face, across the facility surface, and eventually to the side pond (images 12-16). Process water from the rock washer is piped underground through PVC pipes to the sediment trap. From the sediment trap, process water flows through a culvert, into the sediment pond, over the rock channel, and through Outfall 003 at the tributary. Stormwater flowing within the tributary along the west side of the quarry pit continues south through multiple Capital Quarries culvert crossings and through multiple asphalt plant culvert crossings before meeting the Outfall 003 discharge point. In general, stormwater runoff across the site flows southeast and south to ultimately reach the sediment pond. Although the rock washer was not in operation during the inspection, water was being discharged from the sediment pond.

4.2 Regulatory History

MDNR reissued the NPDES permit to the facility with an expiration date of April 30, 2027. The conditions of the current NPDES permit number MOG490078 are in effect from November 1, 2023, through April 30, 2027 (attachment 7). The facility has been inspected by MDNR four times in the last three years due to complaints. Three of the four inspections resulted in violation notifications (attachment 9).

5.0 FINDINGS AND OBSERVATIONS

The weather conditions at the time of the inspection were cool and clear (55°F). The facility and surrounding area had not received rainfall in the 5 days preceding the inspection. I observed the tributary upstream and downstream of the facility, as well as Carter Creek downstream of the facility. The tributary was pooled upstream of the facility and dry at the quarry pit access road and main facility access road. However, the tributary was flowing at Outfall 003 (images 1,2). Sediment deposits within the tributary were noted downstream of the quarry pit access road crossings and main access road culvert crossing as well as downstream of Outfall 003 (images 3-5, 10,11,25). Sediment deposits were also seen in Carter Creek as far downstream as 38.1330° N, -91.1575° W.

5.1 Self-Monitoring Data Review

I reviewed the digital copies of analytical results and Discharge Monitoring Reports (DMRs) covering the period of December 2020-February 2024 shared by Mr. Thiltgen after the inspection. All data obtained from the facility has been stored as electronic records on EPA's secure server. During my review, I noted that monitoring event documents were missing for the first quarter of 2021. Mr. Thiltgen explained in an email that Capital Quarries decided to close all sites to personnel not assigned to that particular location beginning January 1, 2021. So, Mr. Thiltgen collected the sample for the first quarter of 2021 on December 30, 2020, before the facility was quarantined.

Another finding during the records review is that laboratory quality control/quality assurance (QA/QC) documentation was not provided with any of the laboratory analytical results.

Lastly, the analyses of samples for settleable solids were not conducted within the allowable hold time. Part VII. of the NPDES Permit MOG490078 references MDNR's Standard Conditions for NPDES Permits. Part 1, Section A of the Standard Conditions includes sampling and monitoring requirements under 10 CSR 20-7.015 (9)(D)2 which states that "the analytical and sampling methods used must conform to federal regulation 40 CFR Part 136.3..." The maximum hold time, according to 40 CFR Part 136.3, for settleable solids is 48 hours. When reviewing laboratory analytical and chain of custody documents, the facility's samples for settleable solids often do not meet the hold time for settleable solids.

5.2 Sample Results

Grab samples were collected from Outfall 003 at the confluence of the tributary and sediment pond discharge. The Oil & Grease samples were preserved with hydrochloric acid, while the metals samples were preserved with nitric acid. The samples were placed on ice in a sealed ice chest and transported to the Region 7 STC laboratory.

The analytical results from the inspection were received on March 15, 2024, from the Region 7 STC laboratory. This data was not discussed during the exit meeting. The analytical results for settleable solids (SS), non-filterable solids (NFS), Oil & Grease, and pH of the samples I collected are presented in Table 1 below. The total suspended solids parameter is represented as NFS by the Region 7 STC laboratory. See attachment 4 for the analytical data packet.

Table 1: Analytical Results of Samples Collected During the Inspection at Outfall 003

Parameter	Sample 2400058-01	Permit Limit ⁵
SS (mL/L/hr) ³	ND UJ ⁴	1.5/1.0
NFS (mg/L) ¹	ND	70/70
Oil & Grease	ND	15/10
pH ²	6.64	6.5-9.0

¹mg/L = milligrams per liter.

²pH is not to be averaged; pH was measured in the field.

³mL/L/hr = milliliters per liter per hour

⁴The analyte was not found in the sample at or above the reporting limit. The reporting limit is an estimate due to insufficient sample volume provided to perform a laboratory duplicate as required for this method.

⁵Permit limits are listed as daily maximum/monthly average.

The analytical results in Table 1 show the facility was in compliance with the effluent limits listed in the NPDES permit at the time of the inspection. Additional analysis for metals was conducted, and those results can be found in attachment 4.

5.3 Stormwater Pollution Prevention Plan (SWPPP)

The NPDES permit requires the facility to maintain and implement a SWPPP. I was provided an outdated hardcopy SWPPP during the inspection by Mr. Welch. Included with the hardcopy SWPPP were inspection reports from June 2020-January 2024 and training records for 2019. On February 23rd, Mr. Thiltgen shared a more current digital version of the SWPPP and accompanying documents which I placed into the ECAD electronic file system (attachment 5). According to the SWPPP, the document was created on June 1, 2023, with no revisions since that date. I reviewed the SWPPP documents provided by Mr. Thiltgen and noted they do not meet the NPDES permit requirements.

The SWPPP and NPDES permit require routine site inspections of the stormwater structures and best management practices implemented by the facility. I reviewed digitally provided inspection records from January 2021 through January 2024 and found them to be complete. MDNR stated in a report dated February 20, 2024, that the facility “failed to maintain the site inspection log for the month of November 2023.” However, during my record review, the November 2023 inspection report was present and complete. It appears the November 2023 inspection report may have been created after MDNR’s January 18, 2024 inspection.

Part V.4.(c) of the NPDES permit requires a SWPPP to include a listing of BMPs and a narrative explaining how the BMPs will be implemented to control and minimize the amount of potential contaminants entering stormwater. Although the SWPPP includes a chart with exposed material

and material management practices, it is not representative of site conditions and activities during the inspection. It does not include potential contaminants from rock washing activities, pit dewatering, or tributary road crossings. BMPs to address the potential contaminants are also not described for each of these locations/activities.

The NPDES permit requires a SWPPP map to include specific components listed in Part V.4.(e). The SWPPP map provided by the facility does not include the following required components: all structural controls, stormwater conveyances, and vehicle/equipment maintenance areas.

Part V.4.(g) of the NPDES permit requires quarterly visual assessments of stormwater discharge from a storm event. Flow through Outfall 003 is a combination of stormwater runoff from the quarry access road in the northwest portion of the facility and mixed stormwater/pit dewatering/rock wash water from the sediment pond. The facility documents monthly site inspections at Outfall 003 but does not indicate whether the discharges are related to storm events. The tributary that flows through the west portion of the facility and through the adjacent asphalt plant property includes runoff from the northwest quarry access road and runoff from the adjacent asphalt plant. Thus, the discharges from the tributary, above Outfall 003, associated with a rain event should be visually assessed on a quarterly basis separate from discharges from the sediment pond. The separate assessment of the tributary could aid in the facility's evaluation of the effectiveness of controls or implemented best management practices where the facility impacts the tributary.

During the facility tour, I observed multiple culverts crossing the tributary. The two pit access roads each had a single, similarly sized culvert (image 10). The culvert crossing for the main access road to the facility has two much larger culverts than the pit access roads (image 11). Mr. Welch stated that the most upstream crossing is overwhelmed by heavy rains which washes out the crossing (images 9,10). This culvert appeared damaged possibly from previous washouts. There was a stockpile of quarry material located near the tributary banks and road crossing with the potential to be carried into the tributary via stormwater runoff (image 10). Also, the section of tributary between the two pit access road crossings did not have any sediment or erosion controls in place (image 10). Sediment deposits were photographed in the tributary downstream of the two pit access road crossings (image 11). However, sediment deposits were not present when viewing the tributary immediately upstream while standing on the most upstream pit access road (image 9). Based upon these observations, the two pit access road culverts should be evaluated by an engineer to determine whether they are appropriately designed with follow-up of corrective actions. Also, best management practices, sediment controls, and erosion controls should be implemented, installed, and maintained in this area to prevent pollutants from leaving the facility.

6.0 SUMMARY

The facility personnel provided documentation in a timely manner upon request. The following findings were made after the inspection was completed and not discussed with the facility personnel.

1. MDNR stated in a report dated February 20, 2024, that the facility "failed to maintain the site inspection log for the month of November 2023." During my record review, the November 2023 inspection report was present and complete. It appears the November

2023 inspection report may have been created after MDNR's January 18, 2024 inspection.

2. Laboratory analytical documentation showing the QA/QC information was not provided by the facility. NPDES permit Part VI.10
3. The SWPPP does not meet the requirements listed in Part V.4.(c) and V.4.(e) of the NPDES Permit.
4. The design and sizing of the two pit access road culvert crossings should be evaluated by an engineer followed by the completion of any corrective actions necessary.
5. The SWPPP implementation was inadequate due to 1) the lack of BMPs at the northwest quarry access road along the tributary and downstream of the crossing evident by the sediment deposits in the tributary, 2) the fine grain sediment deposits present in the tributary at and downstream of Outfall 003, and 3) poor BMPs for quarry material stockpiles near the tributary. The facility must install and maintain effective sediment and erosion controls to prevent pollutants from leaving the property. NPDES permit Part VI.1.(d) and (e)
6. Analyses of samples for settleable solids do not meet the hold time requirements detailed in 40 CFR Part 136. NPDES permit Part VII

**HANNAH
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ATTACHMENTS:

1. NPDES Industrial Stormwater Worksheet (6 pages)
2. Digital Image Log (30 pages)
3. Facility Layout and Photo Locations Maps (2 pages)
4. Sample Analysis Results Project HML2409 (13 pages)
5. SWPPP (196 pages)
6. SPCC Plan (158 pages)
7. NOI and NPDES Permit (40 pages)
8. CBI (1 page)
9. MDNR Violations (58 pages)