



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

October 30, 2017

Mr. Tim Matz, P.E.
Corporate Director of Environmental Affairs
Lehigh Cement Company
300 East John Carpenter Freeway
Irving, TX 75062

RE: Lehigh Cement Company CKD Pile Site - NPDES Permit No. WA0045586
Compliance Inspection September 20, 2017

Dear Mr. Matz:

On September 20, 2017, I conducted a compliance inspection at the Lehigh Cement Company Closed Kiln Dust (CKD) Pile groundwater treatment facility in Metaline Falls, Washington. The facility is clean and well ordered. Frank Rorie and Brent Miller, Geosyntec consultants, provided all of the information that I needed. In addition, we discussed the enhancement pilots running at the facility and the work plan for getting the facilities discharge into compliance with permit limits.

I reiterated the importance of considering the newly promulgated water quality standards and the impacts on the reissued permit in development. During review of the current permit, an error was found. The Fact Sheet for the permit issued in 2006 indicated that manganese has a reasonable potential and as such should have a water quality based effluent limit of 50 ug/L. The groundwater cleanup level was found to be 2,240 ug/L. However, the NPDES permit should have implemented the water quality-based effluent limit. The next permit will reevaluate the reasonable potential and may result in a much lower limit for manganese. This is a concern because the submitted DMRs typically exceed the 50 ug/L for manganese.

I have requested an updated permit application and priority pollutant scan. I am also requesting sampling of the surface water upstream of the outfall. I plan to have a revised permit ready for your review in the coming year.

Enclosed is the inspection report. If you have any questions, please contact me at (509) 329-3519 or dwas461@ecy.wa.gov.

Regards,

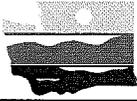
Diana Washington, P.E.
Senior Engineer
Water Quality Program

DW:red

Enclosure: Compliance Inspection Report

cc: Brent Miller, Geosyntec Project Director
Brian Petty, Geosyntec Program Director
Huckleberry Palmer, Ecology Toxics Cleanup Program





Section A: National Data System Coding (i.e., PCS)

Transaction Code 1 N 2 5	NPDES # 3 WA-0045586 11	yr/mo/day 12 17/09/20 17	Inspection Type 18 C	Inspector 19 S	Fac Type 20 2
Remarks 21 7 66					
Inspection Work Days 67 1 69	Facility Self-Monitoring Evaluation Rating 70 5	BI 71 N	QA 72 N	Reserved 73 _____ 74 _____ 75 _____ 80	

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number) Lehigh Cement Company Closed Cement Kiln Dust Pile Site Milepost 14.7 14551 State Route 31 Metaline Falls, WA 99153	Entry Time/Date 10:48 AM 9/20/2017	Permit Effective Date 11/01/2006
	Exit Time / Date 1:38 PM 9/20/2017	Permit Expiration Date 10/30/2011
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) Frank Rorie Operator Brent Miller Project Director	Other Facility Data (e.g. SIC NAICS, and other descriptive information) Treatment system designed to capture groundwater impacted by the kiln dust repository. Full description of the treatment system is included as the introduction to the summary of findings.	
Name, Address of Responsible Official/Title/Phone and Fax Number Tim Matz Corporate Director of Environmental Affairs 300 East John Carpenter Freeway Irving Tx, 75062 (972) 653-3787	Contacted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

<input checked="" type="checkbox"/> Permit	<input checked="" type="checkbox"/> Self-Monitoring Program	<input type="checkbox"/> Pretreatment	<input type="checkbox"/> MS4
<input checked="" type="checkbox"/> Records/Reports	<input type="checkbox"/> Compliance Schedules	<input type="checkbox"/> Pollution Prevention	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Facility Site Review	<input checked="" type="checkbox"/> Laboratory	<input type="checkbox"/> Stormwater	
<input checked="" type="checkbox"/> Effluent/Receiving Water	<input checked="" type="checkbox"/> Operations & Maintenance	<input type="checkbox"/> Combined Sewer Overflow	
<input type="checkbox"/> Flow Measurement	<input checked="" type="checkbox"/> Sludge Handling/Disposal	<input type="checkbox"/> Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments

(Attach additional sheets of narrative and checklists, including Single Event Violation codes, as necessary)

Overview of Treatment System:
The leachate from the Closed Kiln Dust (CKD) Pile discharges to groundwater. The groundwater moves through to the capture zone, then funnels to the carbon dioxide injection system to neutralize pH. They recirculate the groundwater and expose it to air to increase the dissolved oxygen content. The treated groundwater is sampled monthly. They discharge through a series of gabion cobble baskets to Sullivan Creek. They sample the system before discharge to the cobble baskets. The CKD has a surface water collection system to minimize the stormwater infiltrating through the CKD to groundwater. The collected surface water discharges through the south culvert to the wetlands up stream of the treatment system.

Name(s) and Signatures of Inspector(s) Diana Washington P.E.	Agency/Office/Phone and Fax Numbers Ecology/Spokane/509-329-3519	Date 10/27/2017
Signature of Management Q A Reviewer Adriane P. Borgias	Agency/Office/Phone and Fax Numbers Ecology/Spokane/509-329-3515	Date 10/30/2017

Water Compliance Inspection Report
Section D. Summary of Findings/Comments (continued)

Huckleberry Palmer from Ecology's Toxics Control Program and I met with Frank Rorie and Brent Miller of Geosyntec. The inspection started in the office where they provided the Operations and Maintenance Manual, and access to the permit and electronic records. They accessed the PLC SCADA system via a laptop computer. According to the information provided, the site was developed under a number of permits including the NPDES permit, orders, and Nationwide Declaration of Environmental Covenants (2/19/2008).

The operator said that all samples are sent to Test America, except field parameters such as pH and dissolved oxygen (DO). We had a discussion about the requested priority pollutant scan needed to be submitted with the permit application, and the requested Sullivan Creek sampling upstream of the outfall. We discussed the list of metals requested for the receiving water and I acknowledged that they only need to sample total chromium but do not need to sample chromium VI.

The treatment system is below ground surface. The site was clean and in good condition. Pictures attached show the above ground elements of the treatment system, the SCADA control system, and the sampling ports.

I discussed the Discharge Monitoring Report (DMR) violations. Lehigh said that they are piloting a number of treatment system upgrades to address the ongoing violations of permitted metals concentration. We talked about the need to get the discharge into compliance. Lehigh indicated that the estimated discharge for the original design was much less than originally estimated. I asked if they have flow monitoring on the discharge and they reported that they do not. Frank indicated that the amount of discharge is dependent upon the amount of groundwater discharged to the system, which is dependent upon infiltration of rain and snow through and under the CKD.

We discussed the NPDES permit. Lehigh said that they have modeled the mixing of the discharge. I provided information about how Ecology models the discharge, the mixing zone, and about changes in the Water Quality Criteria adopted in November 2016. Lehigh asked about how the background concentration would affect the limits given to the discharge. I informed Lehigh that if the surface water background is higher than the criteria then the River does not have any assimilative capacity, and dilution and mixing will not be available. The new permit will require flow monitoring for the effluent. Lehigh should take this into consideration when designing the upgrades for the treatment system. It is also important during the pilots that they design to meet the new water quality criteria for all constituents entering the treatment capture zone that are above criteria.

Pollutant	Current Permit Limit (ug/L)	Newly Promulgated Criteria (ug/L)
Total Arsenic	5	0.018
Total Chromium	10	Depends on receiving water hardness
Total Lead	5	Depends on receiving water hardness
Total Manganese	2,240	Depends on receiving water hardness

The total manganese limit in the permit appears to be a typo. According to the Fact Sheet the limit should have been 50 ug/L. Most of the reported values exceed the 50 ug/L limit. This will need to be addressed in the next permit cycle.

I requested an updated permit application from Lehigh and they are collecting the priority pollutant data. Ecology will provide Lehigh with an opportunity to review the draft permit prior to Public Comment.

Upon completion of the inspection, I asked about the waste in the front of the building. Lehigh indicated that they lease the space to the Machine shop.

Section D: COMPLETED BY: Diana Washington P.E.

TITLE: Senior Engineer/Permit Manager 

DATE: 10/26/2017

TELEPHONE: 509-329-3519

INSTRUCTIONS

Section A: National Data System Coding (*i.e.*, *PCS*)

Column 1: Transaction Code: Use N, C, or D for New, Change, or Delete. All inspections will be *new* unless there is an error in the data entered.

Column 3 - 11: NPDES Permit No.: Enter the facility's NPDES permit number – third character in permit number indicates permit type for U=unpermitted, G=general permit, etc.. (*Use the Remarks columns to record the State permit number, if necessary.*)

Columns 12 - 17: Inspection Date: Insert the date entry was made into the facility. Use the year/month/day format (e.g., 94/06/30 = June 30, 1994).

Column 18: Inspection Type*: Use one of the codes listed below to describe the type of inspection:

A	Performance Audit	U	IU Inspection with Pretreatment Audit	!	Pretreatment Compliance (Oversight)
B	Compliance Biomonitoring	X	Toxics Inspection	@	Follow-up (enforcement)
C	Compliance Evaluation (non-sampling)	Z	Sludge – Biosolids	{	Stormwater-Construction-Sampling
D	Diagnostic	#	Combined Sewer Overflow-Sampling	}	Stormwater-Construction-Non-Sampling
F	Pretreatment Follow-up	\$	Combined Sewer Overflow-Non-Sampling	:	Stormwater-Non-Construction-Sampling
G	Pretreatment (Audit)	+	Sanitary Sewer Overflow-Sampling	~	Stormwater-Non-Construction-Non-Sampling
I	Industrial User (IU) Inspection	&	Sanitary Sewer Overflow-Non-Sampling	<	Stormwater-MS4-Sampling
M	Multimedia	\	CAFO-Sampling	-	Stormwater-MS4-Non-Sampling
N	Spill	=	CAFO-Non-Sampling	>	Stormwater-MS4-Audit
O	Compliance Evaluation (Oversight)	2	IU Sampling Inspection		
P	Pretreatment Compliance Inspection	3	IU Non-Sampling Inspection		
R	Reconnaissance	4	IU Toxics Inspections		
S	Compliance Sampling	5	IU Sampling Inspection With Pretreatment		
		6	IU Non-Sampling Inspection with Pretreatment		
		7	IU Toxics With Pretreatment		

Column 19: Inspector Code: Use one of the codes listed below to describe the *lead agency* in the inspection

A - State (Contractor)	O - Other Inspectors, Federal/EPA (Specify in Remarks columns)
B - EPA (Contractor)	P - Other Inspectors, State (Specify in Remarks columns)
E - Corps of Engineers	R - EPA Regional Inspector
J - Joint EPA/State Inspectors-EPA Lead	S - State Inspector
L - Local Health Department (State)	T - Joint State/EPA Inspectors-State Lead
N - NEIC Inspectors	

Column 20: Facility Type: Use one of the codes below to describe the facility.

1 - Municipal. Publicly Owned Treatment Works (POTWs) with 1987 Standard Industrial Code (SIC) 4952.

2 - Industrial. Other than municipal, agricultural, and Federal facilities.

3 - Agricultural. Facilities classified with 1987 SIC 0111 to 0971.

4 - Federal. Facilities identified as Federal by the EPA Regional Office.

5 - Oil & Gas. Facilities classified with 1987 SIC 1311 to 1389

Columns 21-66: Remarks: These columns are reserved for remarks at the discretion of the Region.

Columns 67-69: Inspection Work Days: Estimate the total work effort (to the nearest 0.1 work day), up to 99.9 days, that were used to complete the inspection and submit a QA reviewed report of findings. This estimate includes the accumulative effort participating inspectors; any effort for laboratory analyses, testing, and remote sensing; and the billed payroll time for travel and pre and post inspection preparation. This estimate does not require detailed documentation.

Column 70: Facility Evaluation Rating: Use information gathered during the inspection (regardless of inspection type) to evaluate the quality of the facility self-monitoring program. Grade the program using a scale of 1 to 5 with a score of 5 being used for very reliable self-monitoring programs, 3 being satisfactory, and 1 being used for very unreliable programs.

Column 71: Biomonitoring Information: Enter D for static testing. Enter F for flow through testing. Enter N for no biomonitoring.

Column 72: Quality Assurance Data Inspection: Enter Q if the inspection was conducted as follow-up on quality assurance sample results. Enter N otherwise.

Columns 73-80: These columns are reserved for regionally defined information.

Section B: Facility Data

This section is self-explanatory except for "Other Facility Data," which may include new information not in the permit or PCS (e.g., new outfalls, names of receiving waters, new ownership, and other updates to the record).

Section C: Areas Evaluated During Inspection

Check only those areas evaluated by marking the appropriate box. Use Section D and additional sheets as necessary. Support the findings, as necessary, in a brief narrative report. Use the headings given on the report form (e.g., Permit, Records/Reports) when discussing the areas evaluated during the inspection.

Section D: Summary of Findings/Comments

Briefly summarize the inspection findings. This summary should abstract the pertinent inspection findings, not replace the narrative report. Reference a list of attachments, such as completed checklists taken from the NPDES Compliance Inspection Manuals and pretreatment guidance documents, including effluent data when sampling has been done. Use extra sheets as necessary.

*Footnote: In addition to the inspection types listed above under column 18, a state may continue to use the following wet weather and CAFO inspection types until the state is brought into ICIS-NPDES: K-CAFO, V-SSO, Y-COS, W-Stormwater, 9-MS4. States may also use the new wet weather CAFO and MS4 inspection types show in column 19 of this form. The EPA regions are required to use the new wet weather CAFO and MS4 inspection types for inspections with an inspection date (DTIN) on or after July 1, 2005.

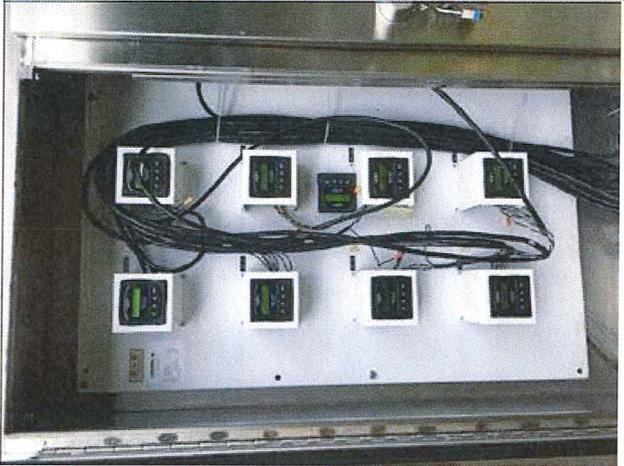
Description	Photographs
<p>Cobble armored bank between the treatment system and the creek.</p>	 <p>Ctrl+Click HERE to view full size image</p>
<p>Stream energy dissipation upstream of the treatment system infiltration zone.</p>	 <p>Ctrl+Click HERE to view full size image</p>
<p>Kiln dust repository south of the treatment system</p>	 <p>Ctrl+Click HERE to view full size image</p>

Sampling sump. Discharge valve closed. Samples taken from the left sampling pipe when not discharging. The pipe is purged until stable. Sample taken from the left sampling pipe when the system is discharging.



[Ctrl+Click HERE to view full size image](#)

The pH gauge control panel and alarm system.



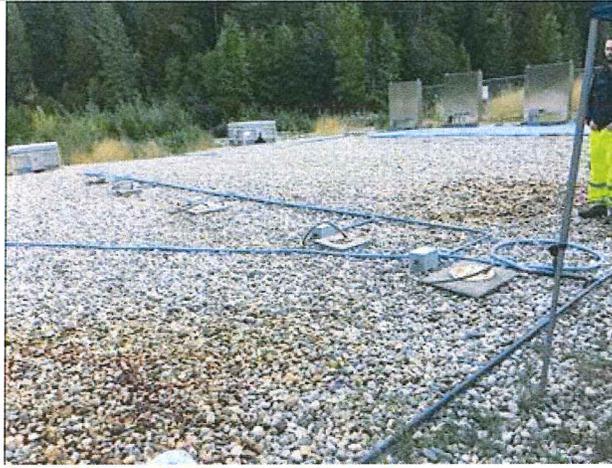
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Pilot dissolved oxygen distribution system recirculates treated wastewater using 5-gallon buckets to expose pH neutralized wastewater to air. This increases dissolved oxygen concentration. Iron staining resulted from directly spraying water onto the gravel to increase dissolved oxygen concentration.



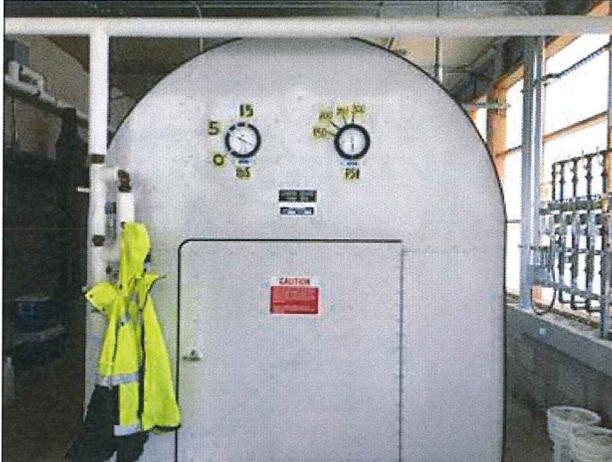
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Capture zone CO₂ treatment system



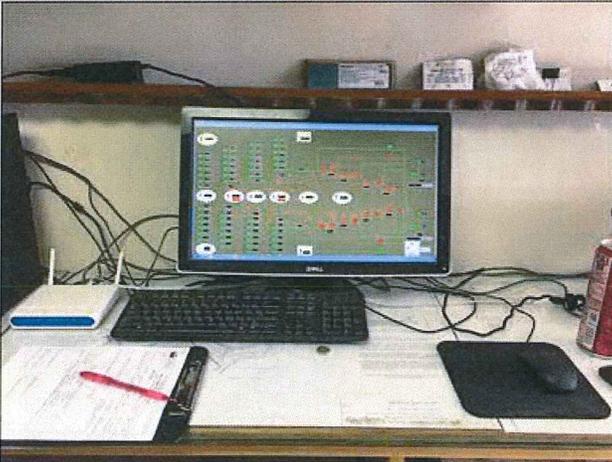
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CO₂ storage



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SCADA control display



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