
San Francisco Bay Regional Water Quality Control Board

October 2, 2019
Place ID 2020435 (LW)

Santa Clara County
Department of Planning and Development
Attn: Rob Eastwood
70 W. Hedding St.
San Jose, CA 95110
(Sent via email to rob.eastwood@pln.sccgov.org)

Subject: Comments on the Application for Reclamation Plan Amendment for the Lehigh Permanente Quarry and Cement Plant, Cupertino, Santa Clara County

Dear Mr. Eastwood:

Water Board staff have reviewed Lehigh Hanson's May 22, 2019, Application to Amend the 2012 Reclamation Plan for the Permanente Quarry (the Application) and are aware you deemed it incomplete in a July 22, 2019 letter. To assist in your evaluation of future submittals, we are providing comments on proposed changes that might impact water quality, including recommendations for additional data and analysis. For the benefit of other interested parties, we have also outlined our oversight role, particularly with respect to reclamation.

As you are aware, we have monitored Permanente Creek water and determined that selenium concentrations in the water column periodically exceed standards. We also know that it is periodically toxic due to a different, but as yet unknown cause. Staff in our Groundwater Protection and NPDES¹ divisions are addressing selenium from Lehigh with Waste Discharge Requirements and NPDES permits (discussed in detail below), which require Lehigh to identify and remediate or mitigate site sources of selenium to Permanente Creek. Staff in our Watershed Division are working to ensure Permanente Creek is restored to its natural function. Staff in our Planning division are evaluating the extent of the problem downstream of the site and will determine whether additional actions are necessary. They are also investigating the cause of toxicity and will be seeking stakeholder input on our process for that soon, likely in 2020.

We also have the responsibility and authority to ensure reclamation design and implementation will be protective of surface and groundwater quality. The primary regulatory mechanism for our oversight of reclamation is Waste Discharge Requirements (WDRs, Order No. R2-2018-0028). Lehigh must submit for approval a

¹ National Pollutant Discharge Elimination System

series of technical reports demonstrating that reclamation designs (referred to as closure in WDRs) are adequately protective of water quality, including:

WDRs Provision 4 - Preliminary Closure Plans must be submitted every two years, allowing us to oversee and guide selection of reclamation methods. In this living document, Lehigh Hanson must demonstrate proposals to reclaim the site will be protective of water quality. These plans must detail proposed strategies, evaluate existing relevant data, identify data gaps and outline plans and schedules to address those data gaps prior to submittal of final closure documents. Lehigh Hanson submitted the first Preliminary Closure Plan on June 30, 2019 (see attached letter recognizing completion) and an update is due on that date in 2021.

WDRs Provision 5 - Closure and Post-Closure Maintenance Plans must be submitted years in advance of construction and include final designs, as well as strategies for monitoring and maintenance.

WDRs Provision 6 - Closure Completion reports must be submitted after implementation to demonstrate designs were constructed as approved and propose any additional necessary monitoring to verify reclamation did not impact water quality.

The remainder of this letter focuses on potential water quality or regulatory impacts of changes proposed in the Application and comments we are aware of from reviewing the following documents:

- Lehigh Hanson – May 22, 2019 Application, Project Description and Supplemental Environmental Information (Binder 2)
 - Geotechnical report for WMSA
 - Application, Cover and Revegetation Plan
- City of Cupertino – Comments on Application July 3, 2019
- Midpeninsula Regional Open Space District - Comments on Application July 3, 2019
- Santa Clara County – Incomplete Letter July 22, 2019

1. **Lehigh Hanson proposes to retain materials in the WMSA rather than using them to backfill the Quarry Pit, specifically stating that the reason for the change is concern over groundwater quality, particularly leaching of selenium from limestone. This justification was questioned by Midpeninsula Regional Open Space District who suggested that Water Board staff endorsed the use of WMSA material for backfill in our WDRs.**

The WDRs are designed to allow us to evaluate (and if necessary, prohibit) any proposed method, but it does not endorse or require any approach. Additional data would be necessary before we could comment on the cogency of Lehigh's argument that this change is necessary to protect groundwater quality. Current data suggests that some overburden material may leach metal(loid)s, particularly

selenium from limestone, but potentially also other metal(loid)s from non-limestone rocks under future geochemical conditions. Of potential additional concern, as described in Findings 8 and 33 through 35 of the WDRs, wastes other than overburden have been identified in previous investigations and observed in the WMSA by Water Board staff, including cement kiln dust and bricks, construction debris, and rock-crushing fines. The long, unrecorded history of the site means there may be other wastes as well.

Despite these concerns, we have not received any information that suggests it is infeasible to use the bulk of materials from the WMSA as backfill. A robust and highly-regulated strategy to chemically characterize and segregate suspect material may be sufficient to keep mobile contaminants from the WMSA out of the Quarry Pit. If Lehigh Hanson selects this method, our WDRs require they demonstrate it can be done safely (Provisions 4 and 5), including waste characterization, as well as hydrogeological and geochemical modelling.

However, the WDRs only require this analysis if this method is selected for reclamation. If they select to leave the material in the WMSA as proposed in the Application, then the WDRs require they demonstrate that can be protective of water quality.

In short, the WDRs require evaluation only of selected methods and do not require they evaluate alternatives. We therefore recommend these options be thoroughly evaluated in the alternatives analysis required of the Environmental Impact Report and also suggest including the option to leave the Quarry Pit to fill into a lake. We can review the submittals and provide you technical guidance on potential water quality impacts of these alternatives as needed.

2. Lehigh Hanson proposes to import approximately 20 to 33 million cubic yards of clean soil to backfill the Quarry Pit.

Similar to the process described above, a robust imported-soil characterization process, as well as hydrogeological and geochemical modelling would be necessary to demonstrate water quality will not be impacted before approval of this design. Water Board staff would require the development of soil acceptance criteria, then oversee operations and monitoring of the surrounding creeks and groundwater downgradient of the Quarry Pit during and after completion to ensure groundwater is not impacted during and after implementation. This would most likely be covered in future updates to the WDRs.

3. Lehigh Hanson proposes to cover the WMSA similarly to EMSA with coarse materials (overburden mixed with on-site topsoil as available); 12 inches on highwall benches seeded with shrubs and trees, 6 inches elsewhere, seeded with shrubs and grasses, amended as necessary to support vegetation growth.

The Application suggests that a low-permeability layer is not necessary because groundwater is not impacted. We are concerned with this reasoning for two reasons:

- a. It has not been demonstrated that groundwater has and will not be impacted by waste materials on site. While groundwater data collected thus far does not indicate widespread contamination, certain wells periodically contain elevated selenium. Under our direction, Lehigh Hanson is currently investigating whether the source is local (near those wells) or a result of infiltration through the WMSA followed by transport to these wells; and
 - b. This justification fails to account for seeps that occur on the site resulting from infiltration of stormwater, some of which have been measured to contain elevated concentrations of selenium as well as nickel, molybdenum, vanadium, copper, and zinc. Furthermore, leaching tests on waste materials suggest other metal(loid)s may be leachable under certain conditions². Currently, these seep waters are treated prior to discharge; however, it is our understanding that water from these seeps will be directed to offsite creeks after reclamation is complete.
- 4. The WDRs require analysis to determine whether a low-permeability cover, or similar means of reducing infiltration may be necessary, and verification monitoring will be required to demonstrate the discharge of seeps to creeks does not impact water quality. Lehigh Hanson submitted slope stability analysis in Appendix G that we deem inadequate.**

We concur with the concerns outlined in your May 22, 2019 Incomplete letter. In addition, as you are aware, two slides have been documented at the site, the Greenstone Slide within the Quarry Pit and the Yeager Yard slide for which the County and Water Board staff issued Notices of Violation. Unstable slopes are a water quality risk, threatening creeks with the discharge of soils and wastes, some of which contain leachable contaminants. It is unclear in the Application if areas of instability currently managed operationally will be adequately addressed after reclamation when Lehigh Hanson is no longer operating on-site.

Furthermore, we have concerns about the slope stability analysis presented in

² Data submitted pursuant to the following reports available in GeoTracker:
WDRs Self-Monitoring Program
13260 Waste Characterization Report May 2014
13267 Runoff and Seep Characterization Requirement September 2014
Memorandum: May 21, 2019, Yeager Yard Seep Water Samples

Appendix G. The data used was sourced from only 5 borings total, taken from two transects that cover a distance of approximately 3,200 feet each. Significant uncertainty would therefore exist with respect to the thickness and composition of each layer. We are particularly concerned about waste (labelled incorrectly as simply greenstone) on steep slopes in the WMSA, above Permanente Creek, such as in the area represented in section B figures.

Furthermore, the analysis classified all materials in the WMSA as overburden, however we are aware other materials are present that might alter the analysis, including cement and rock-crushing fines, as well as bricks and construction debris. Finally, the analysis does not take seepage, which currently contributes to instability and slides, into account. It is unclear whether seeps will be preventable post-reclamation, especially on any slopes that will not require a low-permeability layer (slopes with no leachable contaminants). A more robust analysis may be necessary to demonstrate proposed slopes will be stable. These concerns were not entirely addressed in revisions submitted in Lehigh's September 30, 2019, letter responding to your July 22, 2019, notice that the Application was incomplete.

5. Lehigh Hanson proposes to extend mining of the Quarry Pit on the North Quarry Highwall, lowering the ridge about 100 feet.

The Application states that mining is necessary for stability of this wall. We are concerned about slides in this area. However, it is unclear if additional mining is necessary or if buttressing would suffice as originally planned. It might be useful to evaluate buttressing with WMSA and imported material as options in the alternatives analysis required of the Environmental Impact Report

We noted also that the boundary of the Slide Area is inconsistent between Figures 3 and 7 in the Project Description and Supplemental Environmental Information (Binder 2). In Figure 7, the Slide Area is approximately 1/6 the size outlined in Figure 3, which includes the Pond 4 and upper treatment plant area. Figure 7 depicts the slide as it has been historically discussed with Water Board staff. This should be resolved in future reports.

6. Lehigh Hanson proposes a new quarry across Permanente Creek in the Rock Plant Reserve Area.

Our WDRs and NPDES permits would need to be updated to regulate these activities. Revisions to the WDRs and NPDES permits would include addressing additional pollutant loading in stormwater runoff or process water discharges and addressing any impacts to beneficial uses from additional loss of flow in Permanente Creek associated with a new quarry pit collecting subsurface flows from the watershed south of Permanente Creek. The permits would also address impacts of the new quarry on the local population of California Red-Legged Frogs.

7. Lehigh Hanson proposes to use the existing PG&E access road or create a new haul road to transport greenstone aggregate to Stevens Creek Quarry.

These greenstone materials will be needed to backfill the Quarry Pit should reclamation of the Quarry proceed as outlined in the approved 2012 Reclamation Plan.

8. The Permanente Creek Restoration Area extends into the slope of the WMSA, which is a regulated waste management unit under the WDRs.

This activity and the on-site placement of material removed from Permanente Creek will require oversight by Water Board staff (See Provisions 4 and 5 of WDRs No. R2-2018-0028). If construction is concurrent to reclamation of the WMSA, it will be covered by the 401 Water Quality Certification for the Permanente Creek Restoration Project and current (or future) WDRs, however additional oversight may be necessary should the project occur before WMSA reclamation.

We appreciate the ongoing collaboration between our agencies and hope you find these comments useful. Please feel free to contact Lindsay Whalin of my staff at lwhalin@waterboards.ca.gov or (510) 622-2363 should you have questions.

Sincerely,

Lisa Horowitz McCann
Assistant Executive Officer

CC:

Water Board's Lehigh Permanente Quarry and Cement Plant Lyriss Mailing List

Robert Salisbury, County of Santa Clara Planning Office
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Attachments:

Recognition of Completion of the 2019 Preliminary Closure Plans for the Lehigh Permanente Quarry and Cement Plant, October 1, 2019