
San Francisco Bay Regional Water Quality Control Board

January 22, 2013
CIWQS Place ID: 273205(LW)
PCA Site ID: 2020435

Lehigh Southwest Cement Company
Attn: Axel Conrads (Axel.Conrads@LehighHanson.com)
24001 Stevens Creek Blvd.
Cupertino, CA 95014
Sent via Certified Mail and email

Subject: Staff Comments on the Workplan for Characterization of the Eastern and Western Materials Storage Areas, for the property located at 24001 Stevens Creek Boulevard, Cupertino, Santa Clara County

Dear Mr. Conrads:

This letter provides Water Board staff (Staff) comments on the *Workplan for Characterization of the Eastern and Western Materials Storage Areas* (Workplan) submitted November 30, 2012. In general, Staff concurs with your approach, which includes collecting soil samples from five borings, drilled to the depth of bedrock using a sonic drill rig, from both the East Materials Storage Area (EMSA) and West Materials Storage Area (WMSA). The Workplan proposes to collect soil samples every five-feet, or more frequently when changes in lithology occur. The Workplan proposes to composite all samples with the same lithology for analysis of Title 22 metals. A WET (waste extraction test) will be completed if the STLC is exceeded by a factor of ten.

We concur with the majority of the Workplan. However, there are a few elements that cause us concern. Please revise the Workplan to address the following:

1. **Unsigned Reports:** Pursuant Title 27 Chapter 4, 21710(d), Report of Waste Discharge and Other Reporting Requirements:

Any report submitted under this section or any amendment or revision thereto which proposes a design or design change (or which notes occurrences) that might affect a Unit's containment features or monitoring systems shall be approved by a registered civil engineer or a certified engineering geologist.

Therefore, the Workplan, and all correspondence with the Regional Water Board, which interprets, or proposes the collection of, hydrogeological data must be reviewed by and include the signature of a licensed engineer or geologist. Please address this requirement in a revision of the Workplan.

2. **Boring Depth:** The Workplan proposes to drill soil borings to the depth of bedrock. We concur this is necessary to adequately evaluate potential contamination at depth. However, please demonstrate that this will not create a vertical conduit for the spread of contamination into underlying groundwater.
3. **Waste Beneath EMSA:** Staff's review of historical documents indicates the EMSA may have been built above the Dry Canyon Storage and Former Impoundment areas, which were used as wet and dry dumps for the historical magnesium and aluminum manufacturing facilities, as well as the aluminum research facility on site. Please provide a map illustrating the locations and extent of the Dry Canyon Storage Area, the Former Impoundment Area, and of the EMSA. If there is overlap, please specify in your Workplan how characterization of additional wastes associated with these sites will be addressed. If the Dry Canyon Storage or Former Impoundment areas were clean closed, please provide evidence to demonstrate that.
4. **Constituents of Concern:** In our response to the draft EIR for Reclamation of the site, Staff informed you that we are concerned that wastes other than overburden and low grade limestone were disposed of in the EMSA and WMSA. A historic document ⁽¹⁾ and observations during inspections indicate that cement kiln dust and rock plant fines have been and may be currently disposed of in these waste piles. In addition, during inspections Staff observed cement kiln bricks, known to contain elevated concentrations of chromium, as well as concrete rubble and iron rebar in the EMSA and WMSA. We are concerned about the potential water quality impact of these additional wastes in the waste piles.

Furthermore, we are concerned about the possible presence of additional unknown wastes in the EMSA and WMSA. It is our understanding that no official records of disposal for the EMSA, WMSA, Dry Canyon Storage Area, or the Former Impoundment Area were kept historically. However, historical documents summarizing environmental investigations ⁽²⁾ indicate that wastes from mining, aluminum research; and magnesium, aluminum, and cement manufacturing have been disposed of in these areas. This suggests a history of dumping of potentially toxic waste that must be addressed. Therefore, the list of potential constituents of concern (PCOCs) is much greater than the list of analytes proposed in the Workplan. Please revise the list to include all potential pollutants that may have been stored or disposed of in these areas.

5. **Composite Samples:** The Workplan proposes to composite all soil samples of the same lithology for chemical analysis. We are concerned that this method will dilute some potential contamination and fails to provide necessary information about potential stratification of the waste. Please revise the Workplan to collect and analyze discrete soil samples.

6. **Comparison of WET results to Hazardous Waste Criteria:** We concur with your plan to evaluate the leaching potential of wastes, however we are concerned that the use of a WET procedure utilizing deionized water may not be most appropriate for analysis of leaching from mining and other wastes due to precipitation. Please provide support for this proposed methodology or consider another test, such as the Synthetic Precipitation Leaching Procedure (SPLP). In addition, we are concerned that comparison to hazardous waste criteria (STLC) is inadequate to evaluate potential impacts to water quality, as regulated under California Code of Regulations, title 27. Comparison to more applicable water and soil quality standards is advised.

Finally, Staff wish to inform you that we have concerns over the hydrogeological data and conclusions of the November 2011 report entitled *Hydrologic Investigation* (the Report)⁽³⁾. The Report was cited in the Workplan, as well as the Reclamation Plan, and it appears Lehigh is relying on its findings with respect to waste and hydrogeologic characterization. The following describes our primary concerns with this report:

- A. The soil borings and groundwater data collected in this report were off-site and likely from the other side of a groundwater divide, on the ridge south of Permanente Creek (see attached figure). These data therefore are not representative of the hydrogeology or the quality of groundwater at the site in question.
- B. We are concerned about the geochemical methods and findings of the report. Specifically:
- a. The Report utilized fresh specimens mined from the quarry to assess leachability of the overburden waste in the EMSA and WMSA. These specimens are not representative because they have not been exposed to air as long as the waste in the piles. This is significant because, in general the leachability of metals and selenium increases with exposure to oxygen. Thus, leachability data of specimens freshly mined is not equivalent to leachability of the waste in the EMSA or WMSA, which has been exposed to oxygen since removal from the quarry.
 - b. For similar reasons, geochemical data from quarry wall washing is not equivalent to the leachability of waste in the EMSA or WMSA, and data gleaned from these experiments is not applicable in estimating contamination in runoff from the waste piles.
 - c. PCOCs such as metals and selenium were not evaluated in the surfacewater/stormwater investigation; therefore the data have limited utility.

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- d. Groundwater samples were collected from offsite. Though the lithology is similar, and may be useful as reference data, it is not representative of the quality of groundwater on site.
- e. The assessment of the acid-generating potential of the waste was inadequate. Only a single sample of each lithological unit was tested. This is insufficient data to conclude that there is no potential for acid generation. As noted in the Report, pyrite is associated with site rocks of all types except chert. Pyrite is a sulfur-bearing mineral commonly associated with acid mine drainage. Therefore, the acid generating potential of the waste must be better characterized.

We urge you to take these concerns into consideration in all future submittals relating to site hydrogeochemistry.

If you have any questions, please contact Lindsay Whalin at (510) 622-2363 or by email at LWhalin@waterboards.ca.gov.

Sincerely,

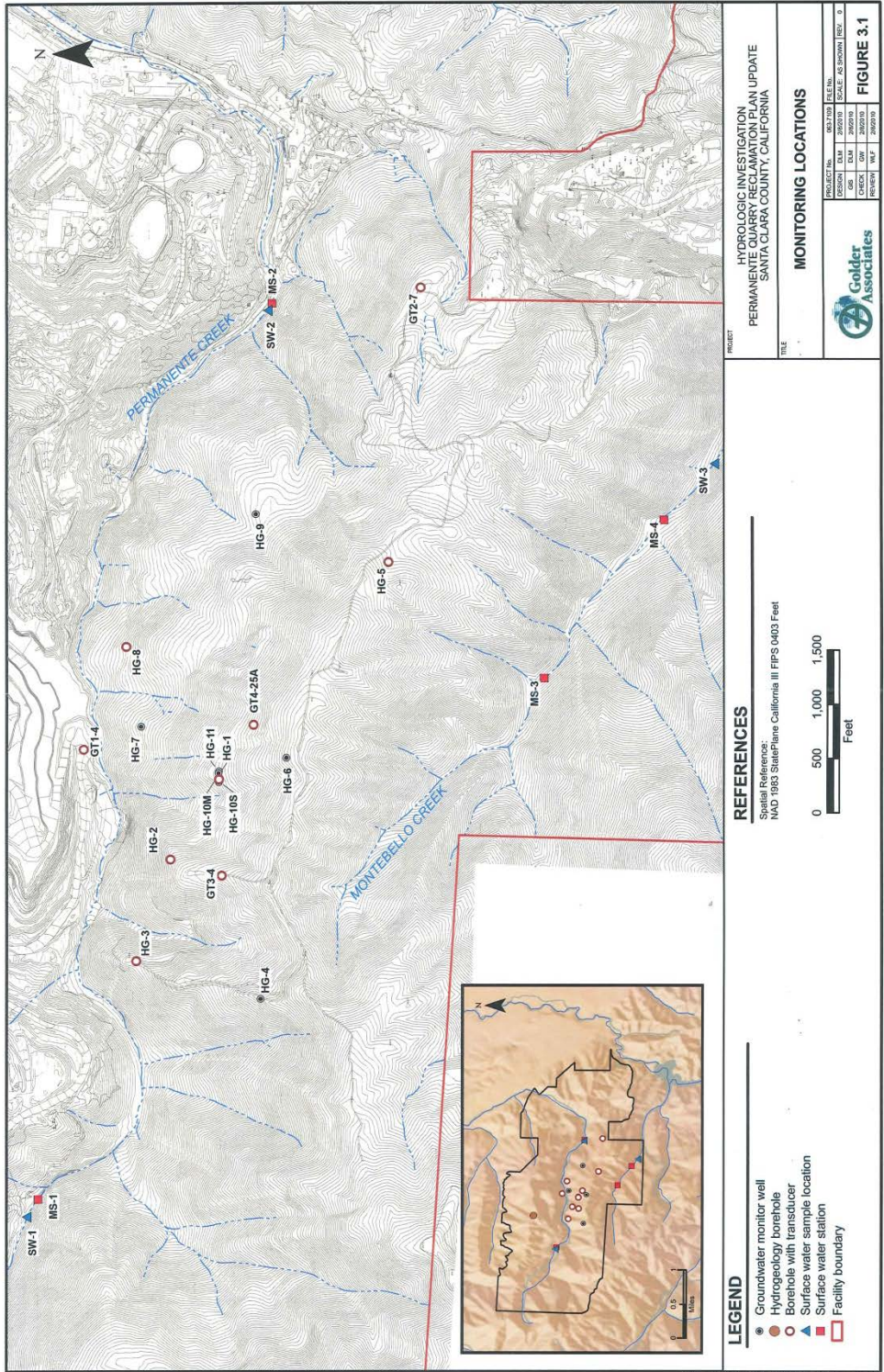
Lindsay Whalin, MS, PG
Engineering Geologist

Bibliography

1. **US EPA Region IX.** *CERCLA Screening Site Inspection*. 1991.
2. **Kaiser Aluminum Chemical Corporation.** *Environmental Evaluation Report*. June 1993.
3. **Golder Associates.** *Hydrologic Investigation: Permanente Quarry Reclamation Plan Update (Revision 1.0)*. 2011.

Attachment: Figure 3.1 from 2011 Hydrologic Investigation depicting location of soil and groundwater data used.

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