WORKPLAN FOR POND CHARACTERIZATION, PERMANENTE QUARRY

Santa Clara County, California

Expires 8/31/14

Submitted to:
San Francisco Bay Regional Water Quality Control Board
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February 22, 2013

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1.0 INTRODUCTION

On behalf of Lehigh Southwest Cement Company (Lehigh), Strategic Engineering and Science, Inc. (SES) submits this proposed workplan for further characterization of fluids and sediments associated with certain ponds at the Permanente Facility, located in Cupertino, California (Site). This workplan defines the approach that will be implemented to collect and analyze samples from these areas. These ponds are further described in subsequent sections.

1.1 Project Background

In a letter dated July 20, 2012, the San Francisco Bay Regional Water Quality Control Board (RWQCB) directed Lehigh to submit a Report of Waste Discharge (ROWD) pursuant to Title 27 of the California Code of Regulations and to provide additional information related to ponds 4A, 9, 11, 13A, 13B, 17, 30, 31A, 31B. The Letter requested Lehigh characterize water and solids associated with these ponds for purposes of evaluating whether a discharge from these ponds could affect underlying groundwater. On October 1, 2012, Lehigh provided its response to the RWQCB, and on January 22, 2013, the RWQCB issued a Notice of Violation and requested that a workplan be submitted to characterize the waste (liquid and solid) in pond Nos. 4, 9, 11, 13A, 13B, 17, 30, 31A, and 31B, and that the investigation take place during the 2013 dry season. This workplan satisfies the RWQCB's request, and is intended to inform the overall process of determining whether the requirements of Title 27 are applicable or necessary.

1.2 Site Description

The Site consists of a limestone and aggregate mining operation in the unincorporated foothills of western Santa Clara County, approximately two miles west of the City of Cupertino (Figure 1). It occupies a portion of a 3,510-acre property owned by Hanson Permanente Cement, Inc., and is operated by Lehigh.

The Site comprises approximately 614 acres (Figure 2) of existing and planned operational areas, including an open pit (North Quarry), overburden stockpiles, crushing and processing facilities, exploration areas, access roads, administrative offices, and equipment storage. The Site also includes undisturbed areas located south of the North Quarry, which buffer the operations from adjacent land uses. The main operational areas of the Site include:

- **North Quarry:** The North Quarry is where mineral extraction currently occurs. It consists of an open pit with elevations ranging from approximately 750 to 1,750 feet above mean sea level (amsl). Limestone and other rock types mined from the North Quarry are crushed and either used for cement production at the adjacent cement plant or processed into aggregate products at the Rock Plant. Historically, the North Quarry has filled with a mixture of surface water and groundwater to an approximate elevation of 775 feet amsl, except when it is dewatered for mining.

- **Eastern Materials Storage Area (EMSA):** The EMSA is located east of the North Quarry and is currently the primary storage area for overburden, which includes the rock removed from North Quarry that is not suitable for either cement or aggregate production. Rock Plant fines are also deposited in the EMSA. In addition, historical uses of this area are documented in EMCON (1993), and are described further in Section 1.5.8. Reclamation of this area, consisting of grading and capping, will occur consistent with the 2012 Amended Reclamation Plan. Elevations of the EMSA range from 550 to 920 feet amsl.

- **Western Materials Storage Area (WMSA):** The WMSA is a second overburden storage area, located west of the North Quarry, which no longer receives overburden for storage. Elevations of the WMSA range from 1,500 to 1,975 feet amsl. During future reclamation, most of the materials from the WMSA will be used to backfill the North Quarry, and the remaining materials will be regraded and reclaimed.

- **Rock Plant:** The Rock Plant is located in the southeast portion of the Site, and processes mined material into aggregate products. The Rock Plant occupies gentle slopes and ranges in elevation from 580 to 770 feet amsl. The Rock Plant has not been operational since October 2011.

The overburden materials described above are composed of non-limestone rock materials (i.e., greenstones, metabasalts, and graywacke) and some low-grade limestone not suitable for use as aggregate.

As described in the recently certified Environmental Impact Report (Santa Clara County, 2011) for the Amended Reclamation Plan (ARP) for the North Quarry, EMSA and WMSA, reclamation will occur in three phases. The first phase is the completion of mining in the North Quarry. During this phase, the EMSA will be reclaimed and overburden will be used to backfill and buttress the west wall of the North Quarry. The second phase is the excavation of the WMSA, and backfilling and recontouring of the North Quarry to an elevation of 990 ft amsl, and filling the slopes of the south, southwest and west sides of the quarry using material from the WMSA. The third phase occurs after backfilling and contouring of the slopes is completed, and consists of re-vegetation, maintenance and monitoring in the former mining and overburden storage areas, together with the closure of ancillary mining facilities.

1.3 Summary of Relevant Onsite Ponds

A series of onsite ponds were previously constructed as structural best management practices for management of storm water and flood control. Currently, ponds 13A, 13B, 30, 31A, and 31B are used solely for storm water management. Ponds 4A, 9, 11 receive both storm water and process water. Pond 17 receives storm water, but theoretically has the potential to receive process water under specific conditions. Table 1 contains a summary of the onsite ponds. Figure 2 shows pond locations.

Lehigh has obtained coverage under the General Permit for Discharges from Aggregate Mining, Sand Washing, and Sand Offloading Facilities to Surface Waters (Sand and Gravel Permit) to discharge from ponds 4A, 9, 13B[1], 17 into Permanente Creek. In addition, Lehigh has submitted a ROWD dated November 30, 2011 to obtain an individual NPDES permit for discharges from ponds 4, 9, 11, 13A, 13B, and 17. The individual NPDES permit is currently pending the RWQCB's approval. The remainder of the Site is covered under the Industrial Storm Water General Permit (Order 97-03-DWQ).

Pond 4A: Pond 4A receives groundwater pumped from the North Quarry, and storm water from the slopes of the quarry, surrounding hillsides and the adjacent West Materials Storage Area. The water in Pond 4A is first collected in ponds at the quarry bottom and on upper levels, is filtered through cartridge or sand filters, and is then pumped out of the quarry into Pond 4A. Pond 4A also now receives process water from the Primary Crusher operations (what is not stored in tanks). The water in Pond 4A is allowed to settle and overflow into a standpipe in the center of the pond. The water flows through the standpipe by gravity and discharges into Permanente Creek adjacent to Pond 4A. Pond 4A is fully lined with an impermeable membrane to prevent infiltration.

Pond 9: Pond 9 is located south of the cement plant, on the north bank of Permanente Creek, adjacent to an unpaved road used for hauling fines from the Rock Plant. Pond 9 receives local storm water runoff from upgradient roads and hillsides, pumped water from the Dinky Shed basin, and pumped water from Pond 11. Pond 9 typically discharges to Permanente Creek in response to storm events, or when large quantities of water are pumped into Pond 9 from Pond 11.

As described above, the Dinky Shed Basin can discharge to Pond 9. The Dinky Shed basin is located adjacent to the north bank of the Creek, just east of Pond 9. This basin receives storm water that flows down the Rock Plant access road and flows from below diversions in that road that direct storm water to Pond 17. Although primarily storm water, it is theoretically possible that some storm water previously in contact with Rock Plant fines inadvertently spilled from haul trucks has reached the Dinky Shed Basin.

Pond 11: Pond 11 is partially lined with a synthetic liner and receives storm water flows from surrounding hillsides, process-related water from the Cement Plant Reclaim Water System (excluding any flows from the Sewage Treatment Plant), and may also receive remnants of non-potable water from the facility used for dust suppression. Pond 11 discharges to Pond 9 as described above.

Ponds 13 A/B: Ponds 13A and 13 B are located adjacent to and near the north bank of Permanente Creek. Ponds 13A and 13B receive storm water conveyed by pipeline from a slope below the Quarry main haul road after the storm water flows through a series of

[1] In December 2012, Lehigh submitted a Notice of Termination for coverage under the Sand and Gravel Permit for Pond 13B based on changed characteristics of the discharge and the lack of discharge to Permanente Creek.

settling basins. Pond 13B may also receive remnants of potable water from the facility used for dust suppression. Process water from the Primary Crusher area was previously conveyed to Pond 13A, but currently all process water from the Primary Crusher is now directed away from Ponds 13A and 13B, and is instead either stored in tanks or is conveyed to Pond 4A. Pond 13A is used for settling of suspended solids and is designed to discharge any overflow into Pond 13B as needed. Pond 13B is also used for settling of suspended solids. Pond 13B has an overflow pipe to allow discharge to Permanente Creek. However, no direct discharge from Pond 13B through its overflow pipe has been observed since at least May 2007. Instead, water in Ponds 13A and 13B is retained, evaporates, and/or may infiltrate.

Pond 17: Pond 17 is located above the south bank of Permanente Creek, and adjacent to the Rock Plant access road. Storm water runoff from the Rock Plant road is diverted into Pond 17 through grated channels in the road. Although mainly used for storm water detention, it is remotely possible that Pond 17 could potentially receive storm water that has contacted Rock Plant fines inadvertently spilled from haul trucks. However, no data or other information exists as to whether this has actually occurred. Pond 17 may also receive remnants of non-potable water from the facility used for dust suppression. Pond 17 is designed to discharge any overflows into Permanente Creek via an overflow pipe.

The Rock Plant has been shut down since October 2011. Since that time, and currently, except for the potential of water used for dust suppression reaching Pond 17, this pond receives only local storm water runoff. Lehigh intends to resume Rock Plant operations in the future, and therefore maintains coverage under the Sand and Gravel Permit.

Ponds 30/31A/31B: These ponds are located at the base of the EMSA, and were specifically installed to collect storm water from the EMSA. Although some runoff enters 31A and 30 directly, the majority of EMSA storm water flows into 31B first. Storm water accumulates in 31B, where solids are allowed to settle out. Any overflow from 31B is conveyed down to 31A, where additional settling occurs. Any further overflow is conveyed to Pond 30. Overflow from Pond 30, if any, is conveyed to Permanente Creek.

1.4 Site Geology and Hydrogeology

The Site lies entirely within the Franciscan Terrane (Franciscan) (Golder, 2010b). The Franciscan is an assemblage of rocks, or mélange, comprised primarily of altered meta-volcanic rocks (i.e., greenstone), graywacke and meta-graywacke units separated by zones of highly sheared matrix oftentimes comprised of mudstone or shale (Blake and Jones, 1981). At the Site, the “blocks” in the matrix are primarily composed of limestone (with chert interbeds) and graywacke which are “floating” in the highly sheared greenstone matrix. Most major structural boundaries in the Franciscan are fault boundaries, as contrasted with depositional geologic contacts. Within major blocks, i.e., a limestone block, geologic contacts can be discerned.

The occurrence of groundwater at the Site is almost exclusively within secondary openings such as joints, fractures, shear zones, and faults. In general, groundwater occurs under unconfined conditions; however, the structural complexity also locally creates perched and semi-confined conditions. The hydraulic properties of the Franciscan are highly variable. Most published values for hydraulic conductivity of the Franciscan are low, and in the range of 1×10^{-5} to 1×10^{-6} cm/sec. Well yields are typically low, in the range of a few gallons per minute (gpm) to tens of gpm. Specific yields are very low, and are on the order of less than 3% (DWR Bulletin, 1975).

The depth to groundwater under the EMSA and WMSA varies due to the undulating topography of these areas. Groundwater under the EMSA occurs at depths of between 100 and 160 feet, and under the WMSA at depths of between 700 and 1,000 feet (Golder, 2010b).

The San Francisco Bay Water Quality Control Plan (Basin Plan) indicates that the Site is located within Basin 2.09.02, which is known as the Santa Clara Valley Groundwater Basin. Defined beneficial uses include municipal supply, industrial process supply, industrial service supply, and agricultural.

1.5 Previous Work and Existing Data

Recent site characterization work, such as Golder (2010b) and SES (2011), was performed to address hydrologic aspects of the ARP. A variety of tests were conducted on the geologic materials present in the North Quarry and on the overburden removed as part of previous mining activities. These tests included determining the total metals content and the leachability of general minerals and metals from these materials. Leachability was determined using the Modified California Assessment Manual Waste Extraction Test (CAM WET) and wall washing tests. In addition, North Quarry water runoff from the west wall was analyzed for general minerals and metals. Acid-base accounting testing was done to confirm that the materials do not have acid generating potential (Golder, 2010b). Pre-existing water quality and EMSA characterization data are summarized below.

1.5.1 Total Metals Results

Table 2 provides the total concentrations determined from rock boring samples collected in the North Quarry, the Exploration Area located immediately south of North Quarry, and the EMSA. Because the Exploration Area has similar rock types to those mined from North Quarry, these data are generally applicable to similar material types in the WMSA and EMSA.

These results indicate that the limestone occurrences at the Site are heterogeneous, and that single rock samples of North Quarry limestone (B1-1 and B1-2 in Table 2) have significantly different concentrations of several trace constituents. This is due to the presence of various grades of limestone at the Site. Therefore, the composite samples which consist of a variety of limestone grades, are representative of overall bulk rock composition.

1.5.2 Modified CAM WET Results

CAM WET tests were conducted using de-ionized water on the composite boring samples described above. These tests indicate that the mined material (limestone) contains leachable molybdenum and selenium (Table 3). The overburden materials such as graywacke, fault breccia, greenstone, metabasalt, and chert have lower leachability for molybdenum and very limited selenium leachability.

These data indicate that the leachable fraction of the total concentrations present in mined materials is small. For example, total concentrations of selenium range from 2.4 to 15 mg/kg in mined material, whereas the CAM WET leachate results are significantly lower at <0.38 to 6 µg/l. None of the CAM WET leachate concentrations exceed their respective Total Threshold Limit Concentration (TTLC) or Soluble Threshold Limit Concentration (STLC), indicating that the materials would not be considered a hazardous waste.

1.5.3 Wall Washing Results

Wall washing tests were performed on exposed faces within the North Quarry in 2009 (Golder, 2010b). These tests involved washing an approximately one-meter square area of rock face with a known volume of water. The resultant wash water was analyzed for dissolved and total metal concentrations and general minerals. The results are provided in Table 4.

These wall washing samples provide an indication as to the amount of dissolved constituents that could be potentially leached out during a rainstorm for the various rock types. The amount of wash water added was approximately equivalent to a 0.25 inch rainstorm event. The measured total recoverable concentrations include the metals contained in solid particles washed off the walls as well as dissolved in the wash water, and are therefore higher than the dissolved values which reflect the concentrations in the wash water only.

Similar to the CAM WET results above, the dissolved constituent concentrations from the wall wash tests are very low compared to the bulk rock concentrations in Table 2. The dissolved concentration also is typically less than the total recoverable concentration in the wall wash samples (also shown in Table 4).

1.5.4 Acid Generating Potential

All the major rock types, included graywacke, limestone, chert, fault breccia, greenstone, and metabasalt were found to have no potential for acid generation (Golder, 2010b). The ratio of neutralization potential to acid generation potential ranged from four for fault breccia, to the hundreds and thousands for greenstone and metabasalt. Typically, a ratio of greater than three (Hutchison et. al., 1992) indicates there is no acid generating potential.

Net neutralization capacity consists of the difference between the rock's neutralization capacity and its acid generating capacity. Neutralizing capacities for onsite lithologies range from 58 kg (calcium carbonate equivalent – $CaCO_3$) per ton (/t) for graywacke to 867 kg (calcium carbonate equivalent - $CaCO_3$)/t for metabasalt. Typically, values above 20 kg ($CaCO_3$)/t are considered non-acid generating.

1.5.5 Recent Geotechnical Investigations

Geotechnical investigations were performed on the WMSA and EMSA (Golder, 2008 and 2010a) to evaluate the stability of these areas. During these investigations, five borings were installed in the WMSA and five in the EMSA (Figures 2 and 3). WMSA borings were installed through the overburden material and just into the surface of the underlying bedrock, to a maximum depth of 158 feet. EMSA borings were installed in native soils to a maximum depth of 45 feet. Groundwater was not encountered during these investigations.

1.5.6 Existing and Ongoing Pond Water Quality Sampling Pursuant to the Sand and Gravel Permit

As described in Table 1, discharges from ponds 4A, 9, 13A, 17 and 20 to Permanente Creek are permitted under the Sand and Gravel Permit. The most recent self-monitoring report, dated January 30, 2013 and covering the fourth quarter 2012, was submitted to the RWQCB in compliance with the Sand and Gravel Permit (Appendix A). Samples were collected from ponds 4A, 9, 17, 20, the pipe conveying water from 13A to 13B, and from a sump located at the Rock Plant. Data presented in this report indicated the following.

- pH ranged between 7.01 to 9.60
- Turbidity ranged between 0.7 and 926 NTUs.
- Total settleable matter ranged between nondetect and 1.1 ml/l/hr.
- No detectable concentrations of arsenic, mercury, or oil and grease occurred.
- TDS ranged between 360 and 1,500 mg/L.
- Toxicity tests performed on samples from pond 4A and 9 both resulted in a 100% survival rate.

1.5.7 Previous Comprehensive Pond Water Quality Sampling Pursuant to 2011 13267 Order

Lehigh conducted comprehensive water quality sampling of ponds 4A, 9 and 13B during 2011 and 2012 in compliance with a RWQCB 13267 order dated May 2011 (Lehigh 2011). Samples were analyzed a wide variety of constituents (Table 5). These data indicate the following:

- Polychlorinated biphenyls (PCBs), organochlorine pesticides, organophosphorus pesticides, semi-volatile organic compounds (SVOCs), salinity, hexavalent chromium, tributylin, dibutylin, monobutylin, and total settleable solids were not detected in any of the samples.

- With the exception of an anomalous detection in Pond 4A, purgable organics were not recorded above analytical reporting limits. Similarly, cyanide was not recorded above reporting limits, except for one anomalous detection in pond 4A. Neither of these anomalous detections exceeded agricultural or municipal water quality objectives defined in the Basin Plan for groundwaters.

- Concentrations of TDS, antimony, nickel, and selenium in samples collected from Pond 4A exceeded Basin Plan Water Quality Objectives on one or more sampling events.

1.5.8 Subsurface Investigations, Dry Canyon Storage Area and Former Impoundment Area

Previous subsurface investigations documented by a *June 10, 1993 Environmental Evaluation Report prepared by EMCON for the Kaiser Aluminum & Chemical Corporation* (EMCON 1993) were conducted to investigate subareas within the current footprint of the EMSA, including the Dry Canyon Storage Area (DCSA) and the Former Impoundment Area (FIA). Documented uses of the DCSA include storage of concrete castings, containers, and drums, beginning in 1941. Storage of manufacturing material, overburden, and rock materials from the North Quarry that are not suitable for either cement or aggregate production continues in the EMSA to present day.

The FIA was previously occupied by a surface impoundment, which stored water. Based on aerial photography, the FIA was not present as of 1950, appears earliest in an aerial photos dated 1974, and remains visible as of 1980 photo. The FIA had been backfilled with 20 to 35 feet of cement fill materials as of 1987, when subsurface investigations documented in EMCON (1993) began in that area.

Five borings were drilled into the FIA, and four into the DCSA. Soil samples were collected at regular intervals. Most samples were analyzed for PCBs, petroleum hydrocarbons, volatile organic compounds (VOCs), and SVOCs, and cyanide. SES has compiled and reviewed the data available from these borings (Table 6).

A summary of relevant findings from EMCON (1993) pertaining to the FIA include the following.

- Separate samples of fill material from the FIA contained mercury and cadmium at concentrations exceeding their respective TTLCs.

- Two samples of sludge material from the FIA at depth contained TPH-diesel concentrations of 20,000 and 4,700 mg/kg, exceeding its Environmental

Screening Level for Industrial Soils (published by the RWQCB; ESLs) of 83 mg/kg. One or both of these samples contained concentrations of acetone, toluene, xylenes, 1,2,4-trichlorobenzene, and PCBs exceeding ESLs.

- Three samples of fill and one sample of underlying native sandstone contained soluble selenium at concentrations exceeding its STLC.
- One sludge sample contained an Aroclor-1260 (a PCB) concentration of exceeding its ESL.
- Two fill samples and one native soil sample contained methylene chloride concentrations slightly exceeding the ESL.
- Most of the samples analyzed for cobalt, including both fill and native samples, contained ESL exceedences.

Analyses conducted on soil samples collected from the DCSA include the following:

- One fill sample collected contained a PCB concentration exceeding its ESL.
- Three fill samples contained methylene chloride concentrations slightly exceeding the ESL.
- One fill sample contained a cadmium concentration exceeding its ESL.
- Of three samples analyzed for cobalt, two contained concentrations exceeding its ESL.

1.5.9 ***Storm Water Sampling Results, Pond 30, Winter 2012***

Lehigh conducted sampling of storm water discharge from Pond 30 during November and December 2012. Pursuant to the industrial storm water permit and conditions of approval for the 2012 Reclamation Plan Amendment for the Site, Lehigh conducts sampling of Pond 30 when it discharges to Permanente Creek after a storm having greater than 0.5 inches of rain in a 24-hour period. Samples were collected on November 30, December 5, and December 26, 2012. Results indicate no exceedences relative to Basin Plan water quality objectives, except for TDS and turbidity.

2.0 CONSTITUENTS OF CONCERN

Constituents of concern (COCs) were defined based on an assessment of constituents consistently found onsite at substantial concentrations. Significant materials used or stored in areas tributary to the ponds were also considered. The discussion below summarizes our assessment based on these criteria.

2.1.1 pH Conditions and Acid Generation Potential

Previous rinsate, pond sampling, and acid generating potential analyses indicate that acid mine drainage is not an issue pertaining to the ponds. Available pond monitoring data indicate that pH conditions have been near neutral to slightly alkaline. In general, limestone is the most abundant rock type encountered at the Site. Composed primarily of calcium carbonate, limestone will impart buffering capacity to waters it interacts with.

pH is therefore not considered to be a COC at the Site. However, pH is considered a fundamental water quality parameter, so continued pH measurements are recommended during water quality sampling.

2.1.2 Metals

Available data indicates that some mining and production related materials, such as those stored in the EMSA, may have naturally elevated concentrations of metals such as selenium, especially the limestone. Results of metals analyses indicate that the limestone occurrences at the Site are heterogeneous with respect to metals content, and that single rock samples of North Quarry limestone (B1-1 and B1-2 in Table 1) have significantly different concentrations of several trace constituents. This is due to the presence of various grades of limestone at the Site.

CAM WET data suggest that the mined material (limestone) contains leachable selenium to varying degrees. Similarly, in general, available water quality data from the ponds and other surface waters indicates the presence of selenium, and occasionally elevated concentrations of cadmium, nickel, antimony, or molybdenum.

Based on the available data pertaining to rock materials and surface waters, and ongoing concerns relative to metals at the Site, selenium, cadmium, cobalt, nickel, antimony, and molybdenum will be considered COCs.

2.1.3 Petroleum Hydrocarbons

Petroleum hydrocarbons were found at elevated concentrations in samples collected at depth representing the FIA. It is unlikely that petroleum affected fill materials occurring at depth within the FIA or DCSA would affect surface waters that flow into the ponds, and previous data do not suggest we believe that further characterization of petroleum. However, petroleum hydrocarbons such as gasoline, oil, grease, and diesel fuel are used by vehicles, facilities, and equipment at the Site. Therefore, we will consider petroleum hydrocarbons (as gasoline, diesel, and motor oil) a COC.

2.1.4 Volatile Organic Compounds

VOCs were detected in only two samples collected from the FIA. In addition, the VOCs only occur in sludge material present at a depth that is likely now greater than 30 feet bgs. Therefore it is unlikely that these VOCs have affected surface water flowing into the ponds. Available pond data indicate only one VOC detection; 4-chloro-3 methylphenol at a concentration of 1.6 ug/L.

Although VOCs were likely used and stored in previous onsite laboratories and in the Shop, use and storage of VOCs has been nearly or completely discontinued at the site. Based on the lack of significant previous detections and unlikely use or storage at the Site, no further assessment of VOCs is warranted.

2.1.5 Other Pollutants

Other pollutants such as PCBs, SVOCs, pesticides, and cyanide have previously been investigated at the Site. These constituents are not considered COCs due to lack of consistent or any detections. None of these compounds are currently used at the Site. And except for PCBs, Lehigh believes that these compounds were never used at the Site.

At times, pond samples have exceeded surface water discharge requirements for TDS, TSS, or turbidity. However, the nature of the discharge under consideration in this forum is from the ponds to underlying groundwater. If pond water migrates toward groundwater, solids quantified by the TSS and turbidity concentrations will likely be partitioned into the soil column. TDS represents dissolved constituents which may migrate with pond water, and TDS concentrations exceeded Basin Plan water quality objectives for groundwater on some occasions. Therefore, TDS will be considered a COC.

2.1.6 Constituents of Concern Summary

In summary, the COCs for both pond sediment and pond water at the Site will consist of cobalt, selenium, cadmium, molybdenum, nickel, antimony, TDS, and petroleum hydrocarbons (gasoline, diesel, and motor oil).

3.0 POND CHARACTERIZATION OBJECTIVES AND SCOPE

The objective of the proposed sampling and analysis to characterize the ponds is to generate sufficient data to assist with a determination as to whether the requirements of Title 27 are applicable or necessary.

Data collected to meet the first objective will be suitable for classifying the materials in accordance with Title 27, Section 22480. Each waste classification has its own prescriptive management requirements (Title 27, Section 22490).

This investigation will be focused on characterizing water and sediments within the ponds. Project objectives will be accomplished by collecting samples of sediments underlying each of the ponds, and water samples from each of the ponds.

3.1 Pre-field activities

A Health and Safety Plan (HSP), in compliance with 9 CFR 1910.120 and which describes the basic safety requirements for the fieldwork described below, will be utilized for this work.

The Underground Service Alert of Southern California will be notified as is required by law. Because the sediment borings will be less than 45 feet deep, they are exempt for exploratory boring permits.

In accordance with the site-specific requirements, clearance will also be obtained from the mine's management and the field work will be supervised by Mine Safety and Health Administration (MSHA) certified personnel since the Site is an operating mine.

3.2 Sediment Sampling Locations and Methodology

Sediment samples will be collected from three randomly selected locations within each pond, with the exception of Pond 11. Because Pond 11 is much larger than the other ponds, five sample locations will be sampled.

The specific method of sample collection will depend upon the condition of the ponds at the time of sampling. Depending on the presence or absence of standing water, the geometry of each pond (i.e. the steepness of the banks), and presence or absence of mud, it may or may not be safe or feasible for field staff to enter the pond areas to collect samples.

Ideally, field staff will be able to enter the pond areas to collect samples. Therefore, sample collection will be scheduled to occur during August or September, which are normally the driest months of the year. If field staff can safely enter the pond area to conduct sampling, a hand auger, spade, or slide hammer will be used to obtain sediment samples.

If pond sediments are less than 12 inches thick, one sample will be collected. For greater thicknesses, two samples will be collected; one from the top and one from the bottom of the pond sediment column. Samples will be collected at each change in lithology, or at a minimum frequency of every 12 inches. Field staff will attempt to identify the interface between pond sediments and native geologic materials.

To be prepared for the variety of pond conditions that may be encountered at the time of sampling, we have prepared the following sampling plan contingencies.

- If the ponds contain water, field staff may board a raft to travel to the sampling locations. A hand auger or slide hammer will be used to obtain sediment samples from the raft.

- If the there is no standing water, but the sediments are muddy and not traversable, samples will be collected using a sampling cup affixed to a boom.

- If samples cannot be safely or appropriately collected using a boom and sampling cup, construction equipment such as a wheel loader or front loader may be used.

The lithologies at each location will be logged and described using the United Soil Classification System (USCS). These descriptions will be logged on graphical boring log sheets. In addition, a daily field log will be maintained, which will contain other pertinent information.

A chain-of-custody form will be completed for the samples to document all handlers and for sample control.

3.3 Water Sampling Locations and Methodology

Water samples will be obtained from each pond approximately once per week for up to three weeks, depending on the availability of standing water in each pond. An attempt will be made to conduct sample collection immediately after a rain event, if possible. The objective of sampling over a period of time is to document the possible variability in water quality conditions of each pond, which can be caused by varying weather or facility operating conditions.

Field staff will collect water samples using a sampling cup affixed to a boom. Samples will be collected from near surface and near the center of the pond, if possible. The sampling cup will either be replaced or decontaminated between ponds.

Samples intended for metals analysis (see Section 3.4) will be filtered in the field using a 0.45 micron filter cartridge. This filtration will enable the laboratory to quantify the dissolved concentrations of metals, which is pertinent to evaluation of potential groundwater impacts posed by the ponds.

A chain-of-custody form will be completed for the samples to document all handlers and for sample control.

3.4 Laboratory Analytical Schedule, Data Validation, and Laboratory Quality Control

Sediment and water samples will be submitted to a California certified environmental laboratory for analysis. Water samples will be analyzed for the following:

- Title 22 Metals (EPA method 6010/7470)
- Total Petroleum Hydrocarbons as gasoline, diesel, and motor oil (EPA method 8015)
- pH (field measurements)
- Total Dissolved Solids (SM 2540)

Sediment samples will be analyzed for the following:

- Modified CAM WET – Title 22 Metals
- Total Petroleum Hydrocarbons as gasoline, diesel, and motor oil (EPA method 8015)

The data received from the laboratory will be reviewed for accuracy, precision, and completeness. The data will be checked to verify that all pertinent information is included, all appropriate forms are signed and dated, and holding times and Quality Control sample acceptance criteria have been met.

3.5 Equipment Decontamination

All reusable equipment used during sample collection will be decontaminated. Decontamination will consist of cleaning reusable down-hole tools with laboratory grade detergent and rinsing twice with potable water. Sampling equipment will be decontaminated between each sample location. Equipment used for sample compositing and homogenization will be decontaminated between each sample.

3.6 Investigation Derived Waste

Excess soil cuttings, if any, will be disposed of on the material storage area where they were derived from. Decontamination water, if any, will be collected and containerized pending lawful disposal.

4.0 DATA EVALUATION AND REPORTING

Based upon the results of previous tasks, a report will be prepared. The report will summarize the work completed, including the following elements:

- Description of the field procedures.
- Tables summarizing analytical data.
- Discussion of the analytical results and comparison with relevant regulatory criteria.
- Presentation of flow records for various pipes and ponds at the Site.
- Description of the liner installed in Pond 4A.
- Comparison of water quality and WET test results with waste classification criteria and applicable water quality criteria.
- Conclusions and recommendations.

5.0 REFERENCES

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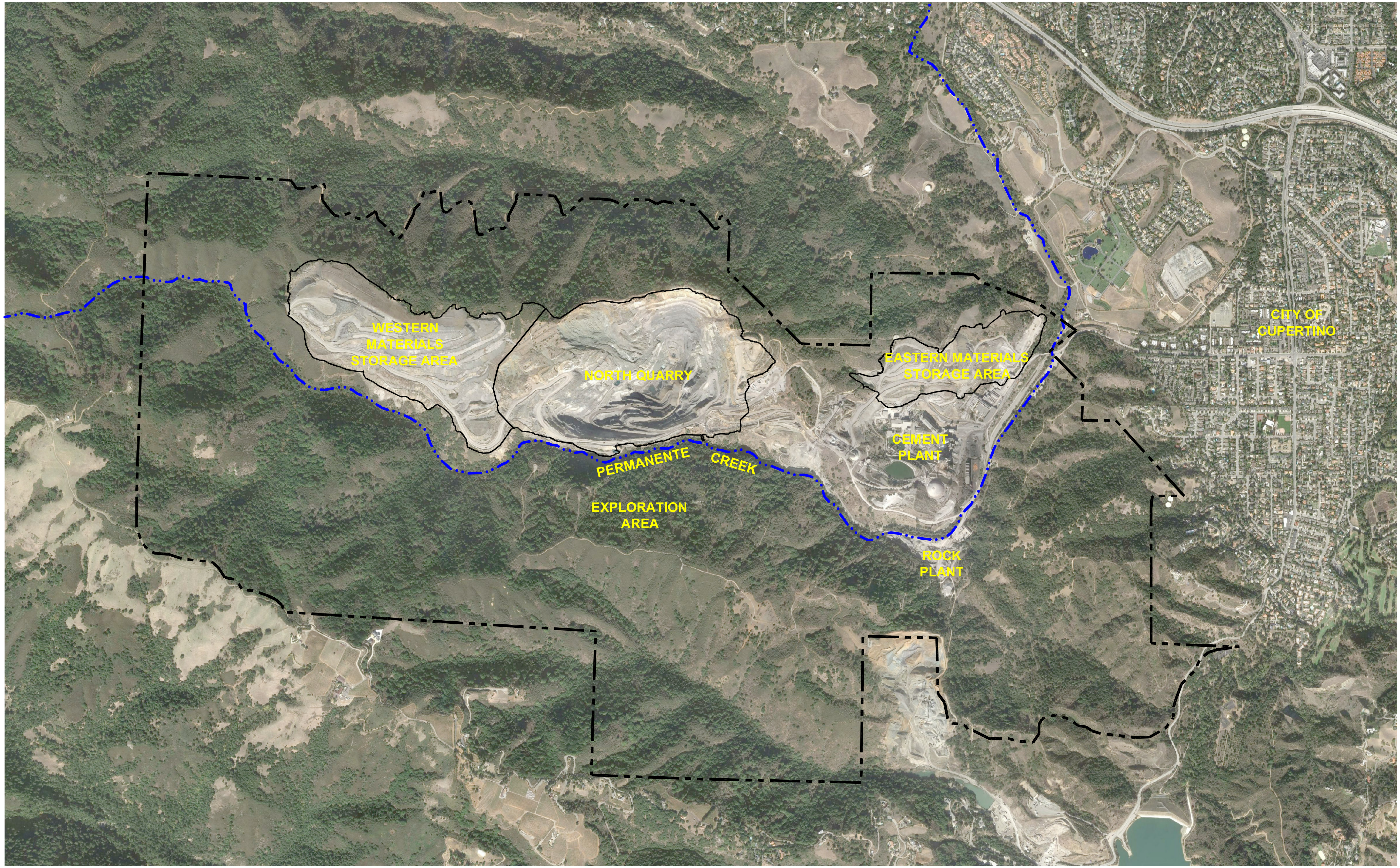
FIGURES



LEGEND

- · · — PROPERTY BOUNDARY

N

0 1,800 3,600

SCALE (FEET)

Site Vicinity Map

Permanente Quarry
Lehigh Southwest Cement Company
Santa Clara County, California

Figure 1	November 2012	SES STRATEGIC ENGINEERING & SCIENCE

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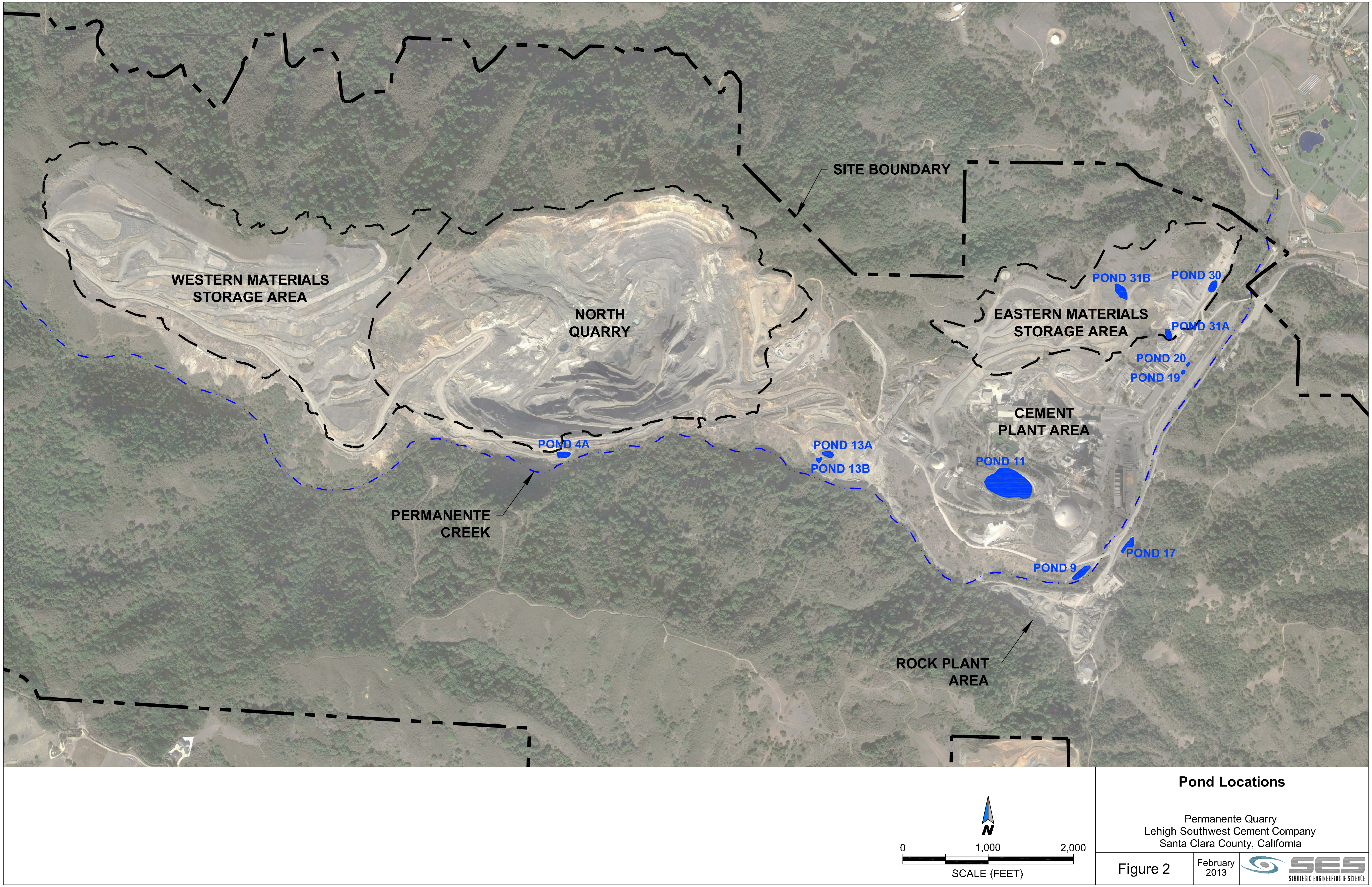
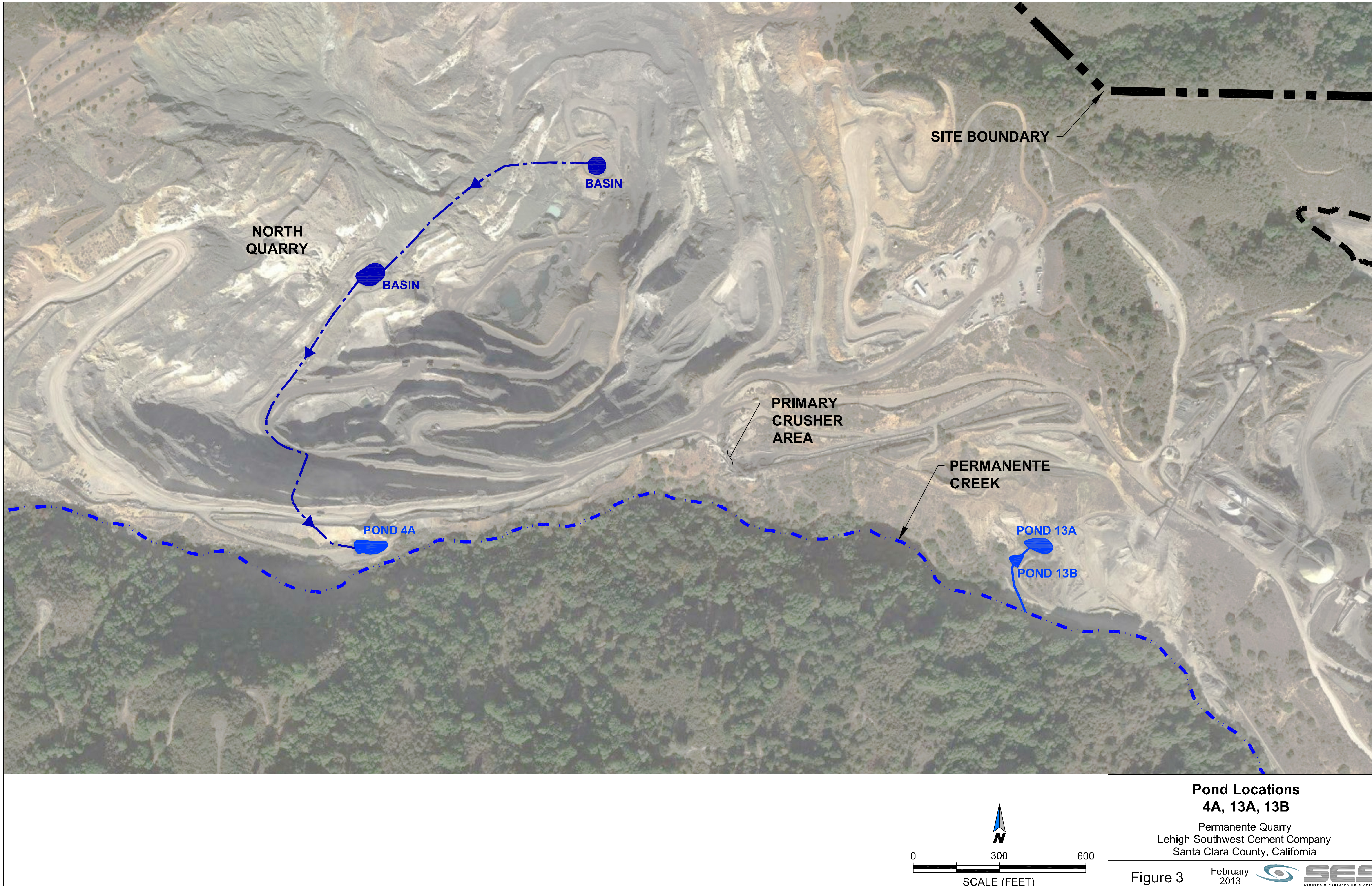


Pond Locations

Permanente Quarry
Lehigh Southwest Cement Company
Santa Clara County, California

Figure 2 | February 2013 | SES STRATEGIC ENGINEERING & SCIENCE



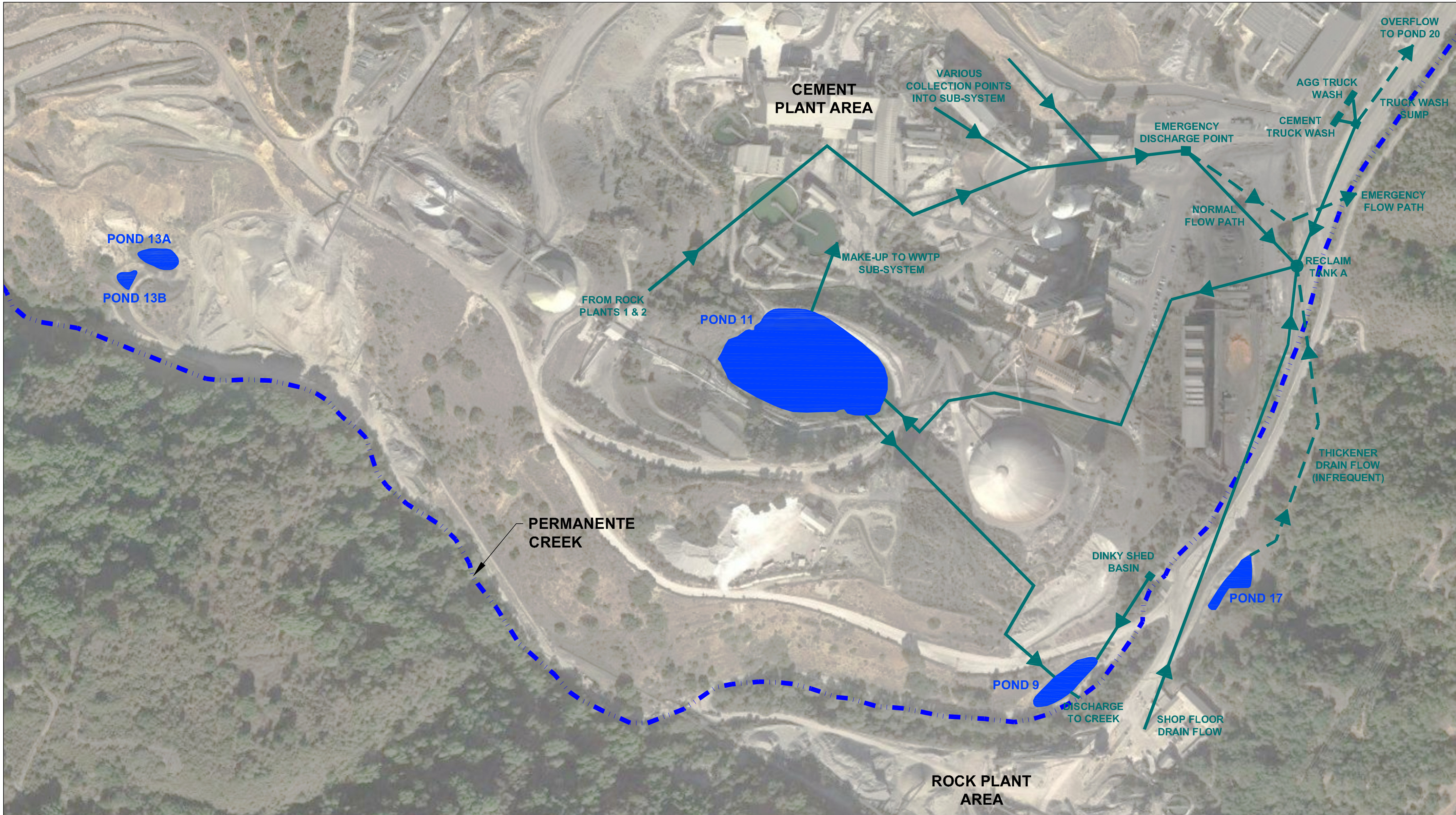
Pond Locations
4A, 13A, 13B

Permanente Quarry
Lehigh Southwest Cement Company
Santa Clara County, California

Figure 3

February 2013

SES STRATEGIC ENGINEERING & SCIENCE



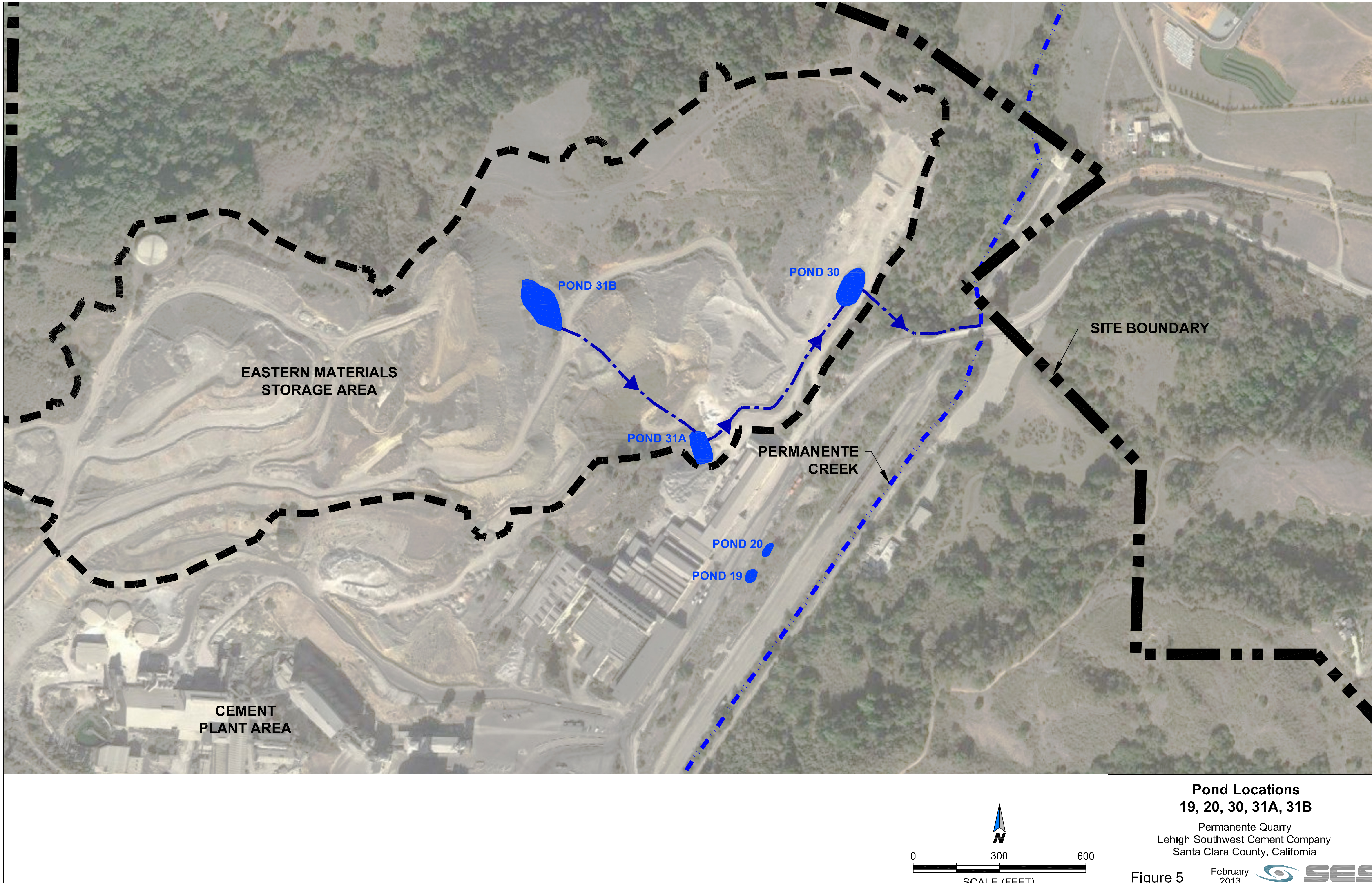
Pond Locations
9, 11, 17

Permanente Quarry
Lehigh Southwest Cement Company
Santa Clara County, California

Figure 4

February 2013

SES STRATEGIC ENGINEERING & SCIENCE



Pond Locations
19, 20, 30, 31A, 31B

Permanente Quarry
Lehigh Southwest Cement Company
Santa Clara County, California

Figure 5 | February 2013 | SES STRATEGIC ENGINEERING & SCIENCE

TABLES

Table 1: Summary of Pond Characteristics

Pond	Contents	Regulatory Status	Tributary Areas	Possible Pollutants	Discharges to
4A	▪ Storm water ▪ Process water ▪ Groundwater ▪ Mine water	Sand and Aggregate Permit Pending individual NPDES permit.	▪ Dust suppression and equipment washdown water from Primary Crusher area. ▪ Ground water seepage pumped from North Quarry via intermediate settling basin. ▪ Storm water pumped from North Quarry via intermediate settling basin ▪ Storm water from WMSA (both direct and via North Quarry)	▪ Metals ▪ Petroleum hydrocarbons	Permanente Cr.
9	▪ Storm water ▪ Process water	Sand and Aggregate Permit Pending individual NPDES permit.	▪ Local storm water runoff ▪ Water pumped from Dinky storage basin ▪ Water from Pond 11. ▪ Soon to receive treated water from Pilot treatment system. ▪ Theoretically could receive runoff affected by Rock Plant silt deposited upgradient from this pond, or via the Dinky storage basin.	▪ Metals ▪ Petroleum Hydrocarbons ▪ Suspended particles	Permanente Cr.
11	▪ Storm water ▪ Process water	Not applicable/no direct discharge Pending individual NPDES permit.	▪ Local storm water runoff ▪ Truck wash, Plant Area storm drains, Shop floor drains, Pond 17 (all via Cement Plant Reclaim Water System)	▪ Metals ▪ Petroleum Hydrocarbons ▪ Suspended particles	▪ Pond 9 ▪ Makeup water for onsite domestic sewage treatment plant
13A	▪ Storm water ▪ Previously contained process water	Sand and Aggregate Permit Pending individual NPDES permit.	▪ Local storm water runoff ▪ Previously received process water associated with Primary Crusher.	▪ Metals ▪ Petroleum Hydrocarbons ▪ Suspended particles	Overflow conveyed to 13B.
13B	▪ Storm water ▪ Previously contained process water	Previously Sand and Aggregate Permit (Notice of Termination 12/10/2012) Pending individual NPDES permit.	▪ Local storm water runoff ▪ Overflow from Pond 13A, which is used as a settling basin. ▪ May receive small amounts of potable dust suppression water. ▪ Previously received process water associated with Primary Crusher (via Pond 13A).	▪ Metals ▪ Suspended particles	Equipped to discharge into Permanente Cr., but no discharge observed since 2007.
17	▪ Storm water ▪ Potentially process water	Sand and Aggregate Permit Pending individual NPDES permit.	▪ Storm water from Rock Plant area via roadway gratings. ▪ May receive small amounts of dust suppression water. ▪ Roadway storm water runoff may be affected by Rock Plant fines inadvertently spilled from trucks onto roadway.	▪ Metals ▪ Petroleum Hydrocarbons ▪ Suspended particles	Permanente Cr.
30	Storm water	Industrial Storm Water General Permit	▪ Stormwater from EMSA ▪ Overflow from Pond ▪ Overflow from Pond 31A	▪ Metals ▪ Petroleum hydrocarbons	Permanente Cr.
31A	Storm water	Industrial Storm Water General Permit	▪ Stormwater from EMSA ▪ Local storm water runoff ▪ Overflow from Pond 31B	▪ Metals ▪ Petroleum hydrocarbons ▪ Suspended particles	Pond 30
31B	Storm water	Industrial Storm Water General Permit	▪ Stormwater from EMSA ▪ Local storm water runoff	▪ Metals ▪ Petroleum hydrocarbons ▪ Suspended particles	Pond 31A

TABLE 2
MINED MATERIAL AND OVERBURDEN CONSTITUENT CONCENTRATIONS

Constituent	units	C-1	C-2	C-3	C-4	C-5	GT1-2-08-213	Average of Detections for SQ	B1-1	B1-2	B1-3	B1-4	B2-1	Average of Detections for NQ	B2-2
		SQ Boring Composite	SQ Boring Composite	SQ Boring Composite	SQ Boring Composite	SQ Boring Composite	SQ Boring Composite		NQ Single Sample	NQ Single Sample	NQ Single Sample	NQ Single Sample	NQ Composite		EMSA OB Composite
		Graywacke	Limestone	Flt. Breccia	Greenstone	Metabasalt	Chert		Limestone	Limestone	Metavolcan.	Graywacke			
		(7/1/09)	(7/1/09)	(7/1/09)	(7/1/09)	(7/1/09)	(7/1/09)	mg/kg	(1/22/10)	(1/22/10)	(1/22/10)	(1/22/10)	(2/10/10)	mg/kg	(2/10/10)
Antimony	mg/kg	ND (<1.7)	6.5	4.2	ND (<1.7)	ND (<1.7)	5.3	3.09	ND (<1.7)	ND (<1.7)	ND (<1.7)	ND (<1.7)	ND (<1.7)	ND (<1.7)	ND (<1.7)
Arsenic	mg/kg	5.1	8.4	2.4	ND (<0.71)	4.8	5.7	4.46	ND (<0.71)	2.7	ND (<0.71)	7.5	2.7	2.7	2.6
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	mg/kg	60	800	180	46	110	560	292.7	940	290	590	49	ND (<0.13)	373.8	750
Beryllium	mg/kg	0.17	0.3	ND (<0.026)	ND (<0.026)	0.032	0.11	0.106	ND (<0.026)	ND (<0.026)	ND (<0.026)	ND (<0.026)	ND (<0.026)	ND (<0.026)	ND (<0.026)
Cadmium	mg/kg	0.071	0.068	ND (<0.033)	ND (<0.033)	ND (<0.033)	0.15	0.056	ND (<0.033)	6.5	ND (<0.033)	ND (<0.033)	ND (<0.033)	1.3	ND (<0.033)
Chromium IV	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium Compounds	mg/kg	95	29	260	400	110	6.6	150.1	ND (<0.045)	30	200	35	130	79.0	110
Cobalt	mg/kg	20	21	34	93	26	8.4	33.7	ND (<0.18)	ND (<0.18)	37	10	27	14.8	23
Copper	mg/kg	50	56	56	45	62	27	49.3	ND (<0.13)	48	47	37	44	35	44
Fluoride Salts	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	mg/kg	9.7	6.8	8.3	ND (<0.59)	11	2	6.3	ND (<0.59)	ND (<0.59)	ND (<0.59)	ND (<0.59)	ND (<0.59)	ND (<0.59)	ND (<0.59)
Mercury	mg/kg	0.033	0.15	0.053	ND (<0.014)	ND (<0.014)	ND (<0.014)	0.043	ND (<0.014)	0.77	0.16	ND (<0.014)	0.12	0.21	0.11
Molybdenum	mg/kg	0.22	2.3	ND (<0.18)	ND (<0.18)	1	0.74	0.74	ND (<0.18)	20	ND (<0.18)	ND (<0.18)	ND (<0.18)	4	ND (<0.18)
Nickel	mg/kg	120	120	250	1,200	100	220	335	ND (<0.12)	59	230	71	180	108	150
Selenium	mg/kg	10	8.5	15	15	13	2.4	10.7	ND (<0.76)	6.6	ND (<0.76)	ND (<0.76)	ND (<0.76)	1.6	ND (<0.76)
Silver	mg/kg	ND (<0.086)	0.63	0.13	ND (<0.086)	0.16	ND (<0.086)	0.17	ND (<0.086)	ND (<0.086)	ND (<0.086)	0.86	ND (<0.086)	0.21	ND (<0.086)
Thallium	mg/kg	ND (<0.94)	ND (<0.94)	0.97	ND (<0.94)	ND (<0.94)	ND (<0.94)	0.55	ND (<0.94)	1.2	ND (<0.94)	ND (<0.94)	ND (<0.94)	0.6	ND (<0.94)
Vanadium	mg/kg	64	15	75	53	70	5.9	47.2	ND (<0.062)	560	80	27	67	146.8	56
Zinc	mg/kg	250	67	75	64	71	150	112.8	14	180	73	51	72	78	75

Notes:
ND = Not detected at the specified detection limit.
When an ND was included in the calculation of an average value, it was assumed to be one half the detection limit.
If all samples were ND, then the lowest detection limit was retained.

TABLE 3
OVERBURDEN LEACHABILITY BY MODIFIED CAM WET

Constituent	units	C-1 SQ Boring Composite Graywacke (7/1/09)	C-2 SQ Boring Composite Limestone (7/1/09)	C-3 SQ Boring Composite Flt. Breccia (7/1/09)	C-4 SQ Boring Composite Greenstone (7/1/09)	C-5 SQ Boring Composite Metabasalt (7/1/09)	GT1-2-08-213 SQ Boring Composite Chert (7/1/09)	Average of Detections for SQ (µg/L)
Antimony	µg/L	7.2	1.5	5.8	0.98	8.5	3.2	4.53
Arsenic	µg/L	3	1.3	6.2	2.7	7.3	1.2	3.6
Asbestos	µg/L	--	--	--	--	--	--	--
Barium	µg/L	59	220	120	37	120	170	121
Beryllium	µg/L	ND (<0.18)	ND (<0.18)	ND (<0.18)	ND (<0.18)	ND (<0.18)	ND (<0.18)	ND (<0.18)
Cadmium	µg/L	ND (<0.13)	ND (<0.13)	ND (<0.13)	ND (<0.13)	ND (<0.13)	ND (<0.13)	ND (<0.13)
Chromium (total)	µg/L	ND (<0.55)	ND (<0.55)	ND (<0.55)	1.9	ND (<0.55)	ND (<0.55)	0.55
Cobalt	µg/L	0.29	0.15	0.13	0.34	0.1	0.25	0.21
Copper	µg/L	1.3	ND (<0.68)	ND (<0.68)	ND (<0.68)	ND (<0.68)	1.2	0.64
Fluoride Salts	µg/L	--	--	--	---	---	--	--
Lead	µg/L	1.2	0.11	ND (<0.054)	ND (<0.054)	0.09	0.12	0.262
Mercury	µg/L	ND (<0.016)	0.21	ND (<0.016)	ND (<0.016)	ND (<0.016)	ND (<0.016)	0.042
Molybdenum	µg/L	11	27	7.3	2.3	28	12	14.6
Nickel	µg/L	1.7	1.7	2	8.1	0.89	3.2	2.93
Selenium	µg/L	ND (<0.38)	6	ND (<0.38)	ND (<0.38)	0.58	ND (<0.38)	1.22
Silver	µg/L	ND (<0.065)	ND (<0.065)	ND (<0.065)	ND (<0.065)	ND (<0.065)	ND (<0.065)	ND (<0.065)
Thallium	µg/L	ND (<0.11)	ND (<0.11)	ND (<0.11)	ND (<0.11)	ND (<0.11)	ND (<0.11)	ND (<0.11)
Vanadium	µg/L	1.5	ND (<1.2)	12	18	4.9	ND (<1.2)	6.27
Zinc	µg/L	22	8.1	11	11	10	37	16.5
Manganese	µg/L	5.2	2.5	7.5	3	3.1	1.2	3.8
Calcium	mg/L	18	16	13	17	11	14	14.8
Magnesium	mg/L	4.3	4.2	6.8	8.3	5.4	14	7.2
Sodium	mg/L	8.8	4.0	7.9	5.9	6.6	2.7	6.0
Potassium	mg/L	3.7	2.8	3.9	0.96	4.1	2.0	2.9
Total Alkalinity	mg/L	37	42	56	76	46	49	51
Chloride	mg/L	1.6	1.1	1.3	2.0	1.3	1.4	1.45
Sulfate	mg/L	22	12	16	3	8.8	29	15.1
pH	number	8.11	8.16	8.24	8.29	8.36	8.27	8.2
EC	µmhos/cm	160	130	160	160	130	190	155

Notes:
ND = Not detected at the specified detection limit.
When an ND was included in the calculation of an average value, it was assumed to be one half the detection limit.
If all samples were ND, then the lowest detection limit was retained.

TABLE 4

MINED MATERIALS AND OVERBURDEN LEACHABILITY

		Wall Washing Results						North Quarry	WMSA Runoff
		Graywacke	Limestone - High Grade	Limestone - Medium to High	Limestone - high and med/low	Chert	Greenstone		
	Sample	GW-01	HG-01	MG-01	HMG-01	CT-01	GS-01		
	Date	11/24/09	11/24/09	11/24/09	11/24/09	11/24/09	11/24/09	01/13/10	01/13/10
	Age	> 5 years	> 5 years	2 months	1 year	< 1 month	< 1 month	NA	NA
Field Parameters									
pH	s.u.	6.94	7.87	7.53	7.32	7.53	8.95	7.94	7.9
Specific Conductance	μS/cm	283	137	42	46	78	94	NA	NA
Temperature	°C	18.6	16.43	13.78	11.91	17.35	18.36	NA	NA
Dissolved Oxygen	mg/L	6.57	7.42	7.95	16.5	8.03	7.4	NA	NA
ORP		70	-32.7	11.4	25.1	92.8	73.7	NA	NA
Lab Parameters - Dissolved									
Aluminum	μg/L	1,800	220	59	220	1400	650	<38	<38
Antimony	μg/L	0.43	0.56	<0.17	0.18	<0.17	<0.17	8.2	0.86
Arsenic	μg/L	33	20	21	22	16	12	4.5	1.3
Barium	μg/L	150	79	83	180	520	660	41	24
Beryllium	μg/L	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Boron	μg/L	28	19	14	24	52	52	69	31
Cadmium	μg/L	<0.13	0.2	<0.13	<0.13	<0.13	<0.13	0.53	<0.13
Chromium	μg/L	<0.55	0.81	<0.55	<0.55	3.6	2.6	<0.55	<0.55
Copper	μg/L	2.1	2.1	<0.68	0.86	<0.68	1.1	1.5	1.2
Iron	μg/L	720	130	11	160	1400	970	<9.3	<9.3
Lead	μg/L	0.29	0.063	<0.054	0.065	<0.054	<0.054	<0.054	<0.054
Manganese	μg/L	8.6	19	2.6	1.2	7.9	11	21	14
Mercury	μg/L	NA	NA	NA	NA	NA	NA	0.0107	NA
Molybdenum	μg/L	2.6	98	6.7	14	1.4	0.37	540	120
Nickel	μg/L	1.7	9.9	0.91	4.9	5.9	3.5	160	3.4
Selenium	μg/L	<0.38	49	14	0.7	<0.38	<0.38	82	29
Silver	μg/L	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
Thallium	μg/L	0.22	<0.11	<0.11	<0.11	<0.11	<0.11	0.39	<0.11
Vanadium	μg/L	2.9	44	<1.2	6.3	7.3	39	400	2.6
Zinc	μg/L	7.5	23	3.6	16	6.6	5.8	120	28
Calcium	mg/L	7.8	46	31	34	17	21	210	160
Magnesium	mg/L	6.1	1.7	2.2	2.6	6.6	3.1	36	42
Sodium	mg/L	4.2	1.6	1.2	2.3	6.1	7.3	22	24
Potassium	mg/L	1.2	0.43	0.21	0.85	1.8	0.86	0.85	2
Lab Parameters - Total Recoverable									
Aluminum	μg/L	77,000	40,000	28,000	1,800,000	960,000	990,000	720	87,000
Antimony	μg/L	<4.0	7.7	6.8	<20	<4.0	<4.0	7.9	1.6
Arsenic	μg/L	80	88	81	290	<22	<22	3.7	21
Barium	μg/L	2,800	7,900	13,000	140,000	12,000	23,000	59	4,200
Beryllium	μg/L	6.7	<4.0	<4.0	92	36	30	<0.20	1.1
Boron	μg/L	33	36	86	650	160	230	70	52
Cadmium	μg/L	14	45	6.6	680	5.7	5.1	1.3	5.8
Chromium	μg/L	120	490	63	4,500	7,000	7,100	6	370
Copper	μg/L	160	420	370	17,000	2,000	3,100	3.3	170
Iron	μg/L	100,000	83,000	69,000	2,400,000	1,100,000	940,000	1,200	160,000
Lead	μg/L	130	25	43	1,300	27	15	0.5	17
Manganese	μg/L	3,000	2,000	7,200	56,000	22,000	44,000	38	3,000
Mercury	μg/L	0.032	<0.016	<0.016	0.032	<0.016	<0.016	<0.016	1.5
Molybdenum	μg/L	16	320	23	<23	<4.6	<4.6	630	140
Nickel	μg/L	210	1,300	1,100	150,000	9,300	5,800	180	460
Selenium	μg/L	<11	230	60	160	<11	<11	73	33

TABLE 4

MINED MATERIALS AND OVERBURDEN LEACHABILITY

		Wall Washing Results						North Quarry	WMSA Runoff
		Graywacke	Limestone - High Grade	Limestone - Medium to High	Limestone - high and med/low	Chert	Greenstone		
Silver	µg/L	2	5.4	3.4	<8.8	<1.8	<1.8	<0.088	0.89
Thallium	µg/L	<2.2	4.3	<2.2	57	<2.2	<2.2	0.24	0.79
Vanadium	µg/L	230	960	220	2100	<100	<52	430	350
Zinc	µg/L	460	3,300	700	390,000	2,800	2,100	140	600
Calcium	mq/L	180	1,000	3,100	33,000	2,300	1,500	230	1,000
Magnesium	mq/L	44	67	68	1,700	1,600	1,700	40	160
Sodium	mq/L	4.2	3.6	3.9	8.5	5.4	5.6	23	25
Potassium	mg/L	13	4.1	4	64	14	4.2	1.0	8.2
General Chemistry									
Ammonia as N	mg/L	0.22	0.038	0.025	0.16	0.84	4.9	<0.025	0.095
Bicarbonate	mg/L	50	25	24	41	68	57	200	71
Carbonate	mg/L	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0
Chloride	mg/L	1.3	0.95	0.97	1.4	1.3	0.44	13	25
Electrical Conductivity	µmhos/cm	101	259	199	222	135	160	1,130	1,090
Fluoride	mg/L	1.3	0.34	0.46	0.86	2.4	1.2	0.14	0.22
Hardness (as $CaCO_3$)	mg/L	45	120	86	96	69	64	673	580
Nitrate as N	mg/L-N	0.31	0.28	1.4	12	0.49	6.7	0.73	7.6
Nitrite as N	mg/L-N	0.015	0.012	<0.0081	<0.0081	0.049	0.12	<0.0081	<0.0081
pH	s.u.	7.89	8.06	7.95	8.09	8.16	8.24	7.94	7.90
Sulfate	mg/L	4.9	100	61	15	2.6	3.3	550	550
Total Alkalinity (as $CaCO_3$)	mg/L	41	20	20	33	56	47	170	58
Total Dissolved Solids	mg/L	61	110	65	91	67	100	790	900
Total Phosphorus	mg/L	2.2	4.1	3.7	140	91	100	<0.016	1.8
Total Suspended Solids	mg/L	3,400	540	4,800	68,000	35,000	50,000	18	3,600
Turbidity	NT Units	1,600	850	2,500	44,000	28,000	23,000	NA	NA

Table 5: Pond Water Quality Results 2011-2012																				**Basin Plan Groundwater Quality Objectives**	
Analyte	**Method**	**Method Detection Limit**	**Method Reporting Limit**	**Units**	**Pond 4A - Quarry water discharge**								**Pond 9**						**Pond 13B**	**Drinking Water Benchmarks**	**Agricultural Benchmarks**
General Water Quality					7/27/2011	8/30/2011	10/31/2011	11/16/2011	12/14/2011	1/10/2012	2/14/2012	3/6/2012	10/31/2011	11/16/2011	12/14/2011	1/10/2012	2/14/2012	3/6/2012	2/14/2012		
Chloride	EPA 300.0	0.15	2.5	mg/l	14	14	13	13	14	13	14	14	120	110	110	68	41	51	33	250 SMCL	142
Hardness, Total	SM2340B	1	5	mg/l	576	578	683	583	737	637	667	676	350	322	414	678	513	660	480		
Salinity	SM2520B	2.0	2.0	g/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Total Dissolved Solids	SM2540C	4.2	10	mg/l	**810**	**740**	**930**	**790**	**900**	**870**	**850**	**950**	**820**	**830**	**770**	**1100**	**780**	**1000**	**690**	500 SMCL	450
Total Suspended Solids	SM2540D	0.30	1.0	mg/l	28	24	1.2	6.0	12	16	10	2.5	26	18	34	1.4	3.9	ND	38		
Total Settleable Solids	SM2540F	0.10	0.10	ml/l/hr	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Chemical Oxygen Demand	SM5220D	3.2	10	mg/l	ND	ND	ND	22	3.4	ND	ND	ND	20	49	24	ND	15	17	13		
Total Organic Carbon	SM5310C	0.0400	0.300	mg/l	0.316	0.508	0.390	0.363	0.393	0.389	0.392	0.418	3.45	3.03	4.04	1.39	1.74	1.45	3.08		
Turbidity	EPA 180.1	0	0.10	NTU	**16**	**15**	2.2	4.0	**11**	**19**	**18**	4.9	**11**	**8.8**	**18**	2.6	**8.3**	1.8	26	5 SMCL	
Metals and Metalloids																					
Calcium	EPA 200.7	0.030	1.0	mg/l	160	170	200	170	230	200	200	200	91	84	110	170	140	160	130		
Magnesium	EPA 200.7	0.020	1.0	mg/l	42	40	44	37	40	35	39	41	30	27	33	61	42	63	36		
Silver	EPA 200.8	0.020	0.10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100 BP	--
Arsenic	EPA 200.8	0.070	0.50	ug/l	1.8	2.7	5.4	5.4	1.7	3.0	4.8	5.7	1.1	1.2	1.8	0.95	1.0	ND	1.5	50 MCL	100
Beryllium	EPA 200.8	0.020	0.10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.041	4 MCL	100
Cadmium	EPA 200.8	0.020	0.10	ug/l	0.21	0.44	0.22	0.33	0.31	0.39	0.50	0.69	ND	0.065	0.057	ND	0.083	ND	0.14	5 MCL	10
Chromium	EPA 200.8	0.080	0.50	ug/l	2.6	1.9	ND	0.90	1.0	2.4	2.4	1.1	9.5	10	11	1.6	2.8	1.2	5.2	50 MCL	100
Chromium, trivalent	Calculation	0.0030	0.010	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.011	ND	ND	ND	0.0052		
Chromium, hexavalent	SM3500-Cr B	0.0050	0.010	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0077	0.0084	ND	ND	ND	ND	--	0.1
Copper	EPA 200.8	0.040	0.50	ug/l	1.8	1.3	1.5	1.3	1.1	1.9	1.7	2.4	3.7	3.2	2.5	1.9	1.9	1.5	3.6	1,000 SMCL	200
Nickel	EPA 200.8	0.60	5.0	ug/l	**100**	92	**190**	**230**	**140**	**180**	**200**	**350**	3.8	5.8	5.2	3.8	3.2	2.3	8.2	100 MCL	200
Lead	EPA 200.8	0.020	0.25	ug/l	ND	ND	ND	ND	0.036	ND	0.13	ND	ND	0.092	0.12	ND	0.14	ND	0.34	15 MCL	5,000
Antimony	EPA 200.8	0.020	0.50	ug/l	**6.2**	**8**	**13**	**12**	**8.9**	**9.3**	**8.9**	**24**	0.66	0.72	0.73	ND	0.46	ND	3.0	6 MCL	
Selenium, dissolved	EPA 200.8	0.070	1.0	ug/l	36	54	60	55	33	48	67	67	9.8	12	12	13	13	13	19		
Selenium	EPA 200.8	0.070	1.0	ug/l	36	**54**	**56**	**55**	34	**51**	**66**	**75**	9.8	11	12	13	14	14	19	50 MCL	20
Thallium	EPA 200.8	0.020	0.10	ug/l	0.36	0.37	0.70	0.50	0.36	0.27	0.30	0.93	0.64	0.36	0.36	ND	0.20	ND	0.034	2 MCL	--
Zinc	EPA 200.8	0.50	5.0	ug/l	43 Total	11	40	80	42	90	120	170	ND	6.0	7.9	7.9	8.4	8.2	21	5,000 SMCL	2,000
Mercury	EPA 1613	0.200	0.500	ng/l	5.55	4.48	0.677	2.70	2.20	8.65	5.47	5.04	4.40	11.4	2.71	3.31	2.66	1.69	18.4	2,000 MCL	--
Other Pollutants																					
Oil & Grease (HEM)	EPA 1664	1.5	5.0	mg/l	ND	ND	ND	1.6	1.6	ND	2.1	ND	ND	ND	1.8	ND	2.0	ND	1.7	--	
Cyanide (total)	10-204-00-1X	0.0020	0.0030	mg/l	ND	ND	ND	ND	ND	ND	ND	0.0035	ND	ND	0.0031	ND	ND	ND	ND	0.15 MCL	
Flow	Pump meter			GPM	667	421															
Tributyltin	GC-FPD		0.05	ug/l	ND	ND				ND	ND	ND				ND	ND	ND	ND		
Dibutyltin	GC-FPD		0.002	ug/l	ND	ND															
Monobutyltin	GC-FPD		0.002	ug/l	ND	ND															
Chrysotile asbestos structures	TEM	0.2		MFL*	4.4	3.4	ND	0.2	0.4	1.7	572	220	ND	ND	ND	ND	22.2	11.4	151		
Amphibole asbestos structures	TEM	0.2		MFL	ND	ND	ND	ND	ND	ND	21.2	12.7	ND	ND	ND	ND	5.3	2.12	15.1		
Methyl Mercury total	EPA 1630	0.02	0.049	ng/l	0.022	ND	ND	ND	ND	ND	0.02 J	ND	0.07	0.1	0.08	0.03 J	0.07	0.04 J	0.06		
Se(IV) dissolved	SOP BR-0061 HPLC	0.4	2	ug/l	1.35		21.7	20	5	ND	16	32	2.26	1.5	1.4	ND	ND	ND	ND		
Se(VI) dissolved	SOP BR-0061 HPLC	2	10	ug/l	42.9		29.3	29	31	38	38	40	7.09	6.9	9.3	11	11	11	16		
Dioxin Furan (25 total cmpnds)	USEPA 1613B	varies	varies	pg/l	21		21	19	22	22	18	24	20	13	21	19	20	20	19		
Dioxin Furan (25 total cmpnds)	USEPA 1613B	varies	varies	pg/l	4		4	6	3	3	7	1	5	12	4	6	5	5	6		
PCBs and Pesticides																					
Aldrin	EPA 608	0.0040	0.0050	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Dieldrin	EPA 608	0.0020	0.010	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Endosulfan I	EPA 608	0.0030	0.010	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Endosulfan II	EPA 608	0.0020	0.010	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Endosulfan sulfate	EPA 608	0.0020	0.050	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Endrin	EPA 608	0.0030	0.010	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2 MCL	
Endrin aldehyde	EPA 608	0.0020	0.010	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Heptachlor	EPA 608	0.0020	0.010	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01 MCL	
Heptachlor epoxide	EPA 608	0.0020	0.010	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01 MCL	
PCB-1016	EPA 608	0.020	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 MCL	
PCB-1221	EPA 608	0.050	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 MCL	
alpha-BHC	EPA 608	0.0020	0.010	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
PCB-1232	EPA 608	0.050	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 MCL	
PCB-1242	EPA 608	0.050	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 MCL	
PCB-1248	EPA 608	0.050	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 MCL	
PCB-1254	EPA 608	0.050	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 MCL	
PCB-1260	EPA 608	0.050	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 MCL	
Toxaphene	EPA 608	0.45	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3 MCL	
beta-BHC	EPA 608	0.0020	0.0050	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
gamma-BHC (Lindane)	EPA 608	0.0020	0.010	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2 MCL	

Table 5: Pond Water Quality Results 2011-2012																				Basin Plan Groundwater Quality Objectives	
Analyte	Method	Method Detection Limit	Method Reporting Limit	Units	Pond 4A - Quarry water discharge								Pond 9						Pond 13B	Drinking Water Benchmarks	Agricultural Benchmarks
General Water Quality					7/27/2011	8/30/2011	10/31/2011	11/16/2011	12/14/2011	1/10/2012	2/14/2012	3/6/2012	10/31/2011	11/16/2011	12/14/2011	1/10/2012	2/14/2012	3/6/2012	2/14/2012		
delta-BHC	EPA 608	0.0010	0.0050	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Chlordane (tech)	EPA 608	0.035	0.050	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 MCL	
4,4´-DDT	EPA 608	0.0050	0.010	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
4,4´-DDE	EPA 608	0.0030	0.020	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
4,4´-DDD	EPA 608	0.0020	0.020	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Chlorpyrifos	EPA 614	0.20	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Diazinon	EPA 614	0.30	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
VOCs																					
Acrolein	EPA 624	0.62	2.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Bromodichloromethane	EPA 624	0.095	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
1,1-Dichloroethane	EPA 624	0.072	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 MCL	
1,2-Dichloroethane	EPA 624	0.17	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 MCL	
1,1-Dichloroethene	EPA 624	0.14	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6 MCL	
1,2-Dichloropropane	EPA 624	0.12	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 MCL	
cis-1,3-Dichloropropene	EPA 624	0.060	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
trans-1,3-Dichloropropene	EPA 624	0.072	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Ethylbenzene	EPA 624	0.080	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	300 MCL	
Bromomethane	EPA 624	0.077	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Chloromethane	EPA 624	0.097	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Acrylonitrile	EPA 624	0.19	2.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Methylene chloride	EPA 624	0.48	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 MCL	
1,1,2,2-Tetrachloroethane	EPA 624	0.086	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 MCL	
Tetrachloroethene	EPA 624	0.092	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 MCL	
Toluene	EPA 624	0.092	0.30	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150 MCL	
trans-1,2-Dichloroethene	EPA 624	0.11	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
1,1,1-Trichloroethane	EPA 624	0.091	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	200 MCL	
1,1,2-Trichloroethane	EPA 624	0.13	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 MCL	
Trichloroethene	EPA 624	0.12	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 MCL	
Trihalomethanes (total)	EPA 624	0.11	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100 BP	
Vinyl chloride	EPA 624	0.060	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 MCL	
1,2-Dichlorobenzene	EPA 624	0.099	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	600 MCL	
Benzene	EPA 624	0.053	0.30	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 MCL	
1,3-Dichlorobenzene	EPA 624	0.069	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
1,4-Dichlorobenzene	EPA 624	0.11	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 MCL	
Bromoform	EPA 624	0.093	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Carbon tetrachloride	EPA 624	0.11	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 MCL	
Chlorobenzene	EPA 624	0.083	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100 MCL	
Dibromochloromethane	EPA 624	0.075	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Chloroethane	EPA 624	0.13	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
2-Chloroethylvinyl ether	EPA 624	0.93	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Chloroform	EPA 624	0.11	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
SVOCs																					
2-Chlorophenol	EPA 625	0.66	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Phenol	EPA 625	0.46	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 BP	
2,4,6-Trichlorophenol	EPA 625	0.74	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Acenaphthene	EPA 625	0.57	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Acenaphthylene	EPA 625	0.48	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Anthracene	EPA 625	0.39	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzidine	EPA 625	3.4	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzo (a) anthracene	EPA 625	0.39	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzo (a) pyrene	EPA 625	0.50	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2 MCL	
Benzo (b) fluoranthene	EPA 625	0.64	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzo (g,h,i) perylene	EPA 625	0.93	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
2,4-Dichlorophenol	EPA 625	0.66	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzo (k) fluoranthene	EPA 625	0.34	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Bis(2-chloroethoxy)methane	EPA 625	0.81	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Bis(2-chloroethyl)ether	EPA 625	0.14	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Bis(2-chloroisopropyl)ether	EPA 625	0.41	2.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Bis(2-ethylhexyl)phthalate	EPA 625	0.83	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
4-Bromophenyl phenyl ether	EPA 625	0.43	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Butyl benzyl phthalate	EPA 625	0.64	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
2-Chloronaphthalene	EPA 625	0.57	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
4-Chlorophenyl phenyl ether	EPA 625	0.93	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Chrysene	EPA 625	0.76	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Dibenz (a,h) anthracene	EPA 625	0.83	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		

Table 5: Pond Water Quality Results 2011-2012																				Basin Plan Groundwater Quality Objectives	
Analyte	Method	Method Detection Limit	Method Reporting Limit	Units	Pond 4A - Quarry water discharge								Pond 9						Pond 13B	Drinking Water Benchmarks	Agricultural Benchmarks
General Water Quality					7/27/2011	8/30/2011	10/31/2011	11/16/2011	12/14/2011	1/10/2012	2/14/2012	3/6/2012	10/31/2011	11/16/2011	12/14/2011	1/10/2012	2/14/2012	3/6/2012	2/14/2012		
2,4-Dimethylphenol	EPA 625	1.2	2.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
1,2-Dichlorobenzene	EPA 625	0.099	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	600 MCL	
1,3-Dichlorobenzene	EPA 625	0.069	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
1,4-Dichlorobenzene	EPA 625	0.11	0.50	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 MCL	
3,3´-Dichlorobenzidine	EPA 625	2.0	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Diethyl phthalate	EPA 625	0.86	2.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Dimethyl phthalate	EPA 625	0.68	2.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Di-n-butyl phthalate	EPA 625	0.91	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
2,4-Dinitrotoluene	EPA 625	0.68	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
2,6-Dinitrotoluene	EPA 625	0.54	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Di-n-octyl phthalate	EPA 625	0.65	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
1,2-Diphenylhydrazine	EPA 625	0.33	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Fluoranthene	EPA 625	0.76	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
4,6-Dinitro-2-methylphenol	EPA 625	0.75	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Fluorene	EPA 625	0.81	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Hexachlorobenzene	EPA 625	0.89	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 MCL	
Hexachlorobutadiene	EPA 625	0.84	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Hexachlorocyclopentadiene	EPA 625	0.45	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 MCL	
Hexachloroethane	EPA 625	0.58	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Indeno (1,2,3-cd) pyrene	EPA 625	0.63	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Isophorone	EPA 625	0.81	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Naphthalene	EPA 625	0.66	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Nitrobenzene	EPA 625	0.74	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
N-Nitrosodimethylamine	EPA 625	1.1	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
2,4-Dinitrophenol	EPA 625	1.3	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
N-Nitrosodi-n-propylamine	EPA 625	0.85	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
N-Nitrosodiphenylamine	EPA 625	0.90	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Phenanthrene	EPA 625	0.65	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Pyrene	EPA 625	0.45	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
1,2,4-Trichlorobenzene	EPA 625	0.59	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 MCL	
2-Nitrophenol	EPA 625	0.90	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
4-Nitrophenol	EPA 625	0.99	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
4-Chloro-3-methylphenol	EPA 625	0.58	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND		
Pentachlorophenol	EPA 625	1.4	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 MCL	
Acenaphthene	EPA 625SIM	0.57	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Acenaphthylene	EPA 625SIM	0.48	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Chrysene	EPA 625SIM	0.76	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Dibenz (a,h) anthracene	EPA 625SIM	0.83	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Anthracene	EPA 625SIM	0.39	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Fluoranthene	EPA 625SIM	0.76	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Fluorene	EPA 625SIM	0.81	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Indeno (1,2,3-cd) pyrene	EPA 625SIM	0.63	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
2-Methylnaphthalene	EPA 625SIM	1.0	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzo (a) anthracene	EPA 625SIM	0.39	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Naphthalene	EPA 625SIM	0.66	1.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzo (a) pyrene	EPA 625SIM	0.50	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2 MCL	
Phenanthrene	EPA 625SIM	0.65	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Pyrene	EPA 625SIM	0.45	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzo (b) fluoranthene	EPA 625SIM	0.64	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzo (g,h,i) perylene	EPA 625SIM	0.93	5.0	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzo (k) fluoranthene	EPA 625SIM	0.34	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		

Notes

MCL = Maximum Contaminant Levels

SMCL = Secondary Maximum Contaminant Levels

BP = Basin Plan

Table 6: Dry Canyon Storage and Former Impoundment Area (EMCON, 1993)

			Former Impoundment Area																			
		Sample ID	**EB-3**				**EB-6**			**EB-7**			**EB-8**					**KC-2**	**KC-14**			
		Date	6/24/1991				3/24/1992			3/23/1992			3/25/1992					7/24/1989	7/17/1990			
		Sample Depth	0.5'-1'	10'-10.5'	20'-20.5'	24'-24.5'	34.5'-35'	36'-36.5'	38.5'-39'	31'-31.5'	35'-35.5'	44'-44.5'	23.5'-24'	25.5'-26'	31'-31.5'	35.5'-36'	41'-41.5'	5'-20'	0'	4'-4.5'	14'-14.5'	24'-24.5'
Material Type	Environmental Screening Levels - Industrial Land Use (Table C)	TTLC or STLC	Fill	Fill	Fill	Native	Cement Fill	Fill	Native	Cement Fill	Sludge	Native	Sludge	Sludge	Native	Native	Native	Fill	Fill	Fill	Fill	Native
Metals (mg/kg)																						
Aluminum, Al	NE	NE					10,200	17,000	11,000	4,870	17,600	12,800	13,100	16,000	5,200	11,300	11,800					
Antimony, Sb	410	500					<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100		<5.0		
Arsenic, As	46	500					1	2	2	2	5	2	2	3	2	1	2	2.8	11.35	5.18	<5.0	<5.0
Barium, Ba	5,000	10,000					223	118	78	468	193	100	206	138	396	165	215	440	400	397	487	220
Beryllium, Be	1,900	75					<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<5.0	<0.5	<0.5	<0.5
Boron, B	200,000	NE					10	13	<10	12	58	13	31	15	11	13	<10					
Cadmium, Cd	1,000	100	75	97	104	<1	<1	3	<1	37	2	<1	<1	<1	83	<1	<1	50	42.2	39.7	71.8	12.9
Calcium, Ca	NE	NE					5,808	14,800	6,090	163,000	152,000	6,530	5,660	1,960	158,000	2,670	4,710					
Chromium, Cr	5,000	2,500					9	17	11	44	16	15	16	16	43	11	11	40	57.2	29.3	51.2	20.6
Colbalt, Co	1.6	8,000					**5**	**6**	**4**	**2**	**2**	**6**	**6**	**8**	**3**	**4**	**6**	<10		**3.75**		
Copper, Cu	5,000	2,500					25	36	14	62	126	11	33	16	45	35	31	60		34.9		
Iron, Fe	NE	NE					10,600	13,700	10,600	7,400	7,690	16,200	12,400	16,600	6,500	10,200	12,000					
Lead, Pb	320	1,000	117	116	127	<20	<20	<20	<20	61	59	<20	<20	<20	131	<20	<20	70	50.5	57.9	103	33.9
Magnesium, Mg		NE					3,070	3,220	2,230	1,140	12,900	3,570	20,300	4,180	1,610	6,720	3,660					
Manganese, Mn		NE					568	211	208	77	104	284	426	398	99	434	446					
Mercury, Hg	87	20	1.2	1.8	1.6	<0.2	<0.2	<0.2	<0.2	2.2	<0.2	<0.2	0.3	<0.2	1.1	<0.2	<0.2	9.4	0.27	0.45	1.47	0.87
Molybdenum, Mo	5,000	3,500					<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<2.0		
Nickel, Ni	5,000	2,000					13	13	<10	20	13	20	19	20	15	11	15	30	63.2	26.8	20.8	14.8
Potassium, K		NE					2,800	12,000	5,200	15,000	11,000	2,800	3,600	4,400	13,000	3,300	3,000					
Selenium, Se	5,000	100	18	33	48	<1	<1	1	<1	16	<1	<1	<1	<1	28	<1	<1	19	5.6	8.62	17.94	<5.0
Silicon, Si		NE					2,780	2,640	2,510	1,100	4,810	967	2,440	2,808	1,940	1,730	2,350					
Silver, Ag	5,000	500					<2	<2	<2	4	<2	<2	<2	<2	8	<2	<2	6		5.3		
Sodium, Na		NE					1,280	1,990	1,920	2,000	4,330	1,640	2,570	2,160	2,190	1,100	1,240					
Thallium, Tl	10	700					<1	<1	<1	<1	<1	<1	<1	<1	**12**	<1	<1	**60**		<7.5		
Tin, Sn		NE					30	39	30	21	31	43	35	46	18	30	34					
Vanadium, V	5,000	2,400					17	28	17	108	29	25	25	24	97	18	20	140		122		
Zinc, Zn	5,000	5,000	167	268	147	48	50	50	33	138	182	48	40	38	172	33	48	250	463	112	187	59.5
WET Metals (mg/L)																						
Cadmium, Cd		1.0	0.43	0.17	0.74					<0.05					0.08							
Lead, Pb		5.0	<0.25	<0.25	<0.25					<0.5	<0.5				<0.5							
Mercury, Hg		0.2								<0.001												
Selenium, Se		1.0	1.04	1.74	1.64					0.68					4.85							
Inorganic Compounds (mg/kg)																						
Cyanide	0.0036	NE					<0.5	<0.5	<0.5	<0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<10	<10	<10
Fluoride		1,800					5.1	15.4	14.6	6.4	120	7.0	13.5	4.0	14.2	13.7	9.2	1,000	0.6	1.5	4.50	4.98
Sulfate		NE					590	6,100	3,900	4,600	4,700	1,000	500	1,100	9,900	410	700					
Total Petroleum Hydrocarbons (mg/kg)																						
Diesel	83	NE					<10	24		36	66		**20,000**	**4,700**								
Petroleum Hydrocarbons (Heavy)	5,000																			380	100	40
Volatile Organic Compounds (mg/kg)																						
Acetone	0.5	NE	0.104	0.096	0.116	<0.050	<1	0.076	<0.050	0.093	0.101	<0.050	<0.45	**1**	<1	<1	<1	<2		<2.5	<2.5	<2.5
Benzene	0.044																	<0.1		<0.125	<0.125	<0.125
Bromodichloromethane	1.8																	<0.1		<0.125	<0.125	<0.125
Bromoform	2.2																	<0.1		<0.125	<0.125	<0.125
Bromomethane	0.35																	<0.2		<0.25	<0.25	<0.25
2-Butanone							<0.5	<0.010	<0.010	<0.010	0.013	<0.010	0.17	<0.5	<0.5	<0.5	<0.5	<0.2		<0.25	<0.25	<0.25
Carbon Disulfide																		<0.1		<0.125	<0.125	<0.125
Carbon Tetrachloride	0.11																	<0.1		<0.125	<0.125	<0.125
Chlorobenzene	1.5																	<0.1		<0.125	<0.125	<0.125
Chloroethane	1.1																	<0.2		<0.25	<0.25	<0.25
2-Chloroethylvinyl Ether																		<0.2		<0.25	<0.25	<0.25
Chloroform	2.1																	<0.1		<0.125	<0.125	<0.125
Chloromethane	24																	<0.2		<0.25	<0.25	<0.25
Dibromochloromethane	8.3																	<0.1		<0.125	<0.125	<0.125
1,1-Dichloroethane	0.2						<0.05	<0.005	<0.005	<0.005	0.047	<0.005	<0.045	<0.05	<0.05	<0.05	<0.05	<0.1		<0.125	<0.125	<0.125
1,2-Dichloroethane	0.0045																	<0.1		<0.125	<0.125	<0.125
1,1-Dichloroethene	1																	<0.1		<0.125	<0.125	<0.125
Trans-1,2-Dichloroethene																		<0.1		<0.125	<0.125	<0.125
1,2-Dichloropropane	0.12																	<0.1		<0.125	<0.125	<0.125
Cis-1,3-Dichloropropene																		<0.1		<0.125	<0.125	<0.125
Trans-1,3-Dichloropropene																		<0.1		<0.125	<0.125	<0.125
Ethyl Benzene	3.3						<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	0.13	0.40	0.35	0.48	0.10	<0.1		<0.125	<0.125	<0.125
2-Hexanone							<0.5	<0.010	<0.010	<0.010	<0.010	<0.010	1.9	0.9	<0.5	<0.5	<0.5	<0.2		<0.25	<0.25	<0.25
Methylene Chloride	0.077						<0.5	<0.010	<0.010	0.022	<0.010	<0.010	<0.090	<0.5	<0.5	<0.5	<0.5	**0.1**		<0.125	**0.183**	**0.2**
4-Methyl-2-Pentanone																		<0.2		<0.25	<0.25	<0.25
Styrene	1.5																	<0.1		<0.125	<0.125	<0.125
1,1,2,2-Tetrachloroethane	0.018																	<0.1		<0.125	<0.125	<0.125
Tetrachloroethene (PCE)	0.7						<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.045	<0.05	0.19	<0.05	<0.05	<0.1		<0.125	<0.125	<0.125
Toluene	2.9						<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	**8.8**	0.45	0.39	0.50	<0.5	<0.1		<0.125	<0.125	<0.125
1,1,1-Trichloroethane	7.8																	<0.1		<0.125	0.539	0.148
1,1,2-Trichloroethane	0.07																	<0.1		<0.125	<0.125	<0.125
Trichloroethene (TCE)	0.46						<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.045	<0.05	0.09	<0.05	<0.05	<0.1		<0.125	<0.125	<0.125
Trichlorofluoromethane																		<0.1		<0.25	<0.25	<0.25
Vinyl Acetate																		<0.2		<0.25	<0.25	<0.25
Vinyl Chloride	0.085																	<0.2		<0.25	<0.25	<0.25
Total Xylenes	2.3						<0.05	<0.005	<0.005	<0.005	0.041	<0.005	2.1	**2.4**	1.0	**3.2**	0.13	<0.1		<0.125	<0.125	<0.125

Table 6: Dry Canyon Storage and Former Impoundment Area (EMCON, 1993)

			Former Impoundment Area																			
		Sample ID	**EB-3**				**EB-6**			**EB-7**			**EB-8**					**KC-2**	**KC-14**			
		Date	6/24/1991				3/24/1992			3/23/1992			3/25/1992					7/24/1989	7/17/1990			
		Sample Depth	0.5'-1'	10'-10.5'	20'-20.5'	24'-24.5'	34.5'-35'	36'-36.5'	38.5'-39'	31'-31.5'	35'-35.5'	44'-44.5'	23.5'-24'	25.5'-26'	31'-31.5'	35.5'-36'	41'-41.5'	5'-20'	0'	4'-4.5'	14'-14.5'	24'-24.5'
Material Type	Environmental Screening Levels - Industrial Land Use (Table C)	TTLC or STLC	Fill	Fill	Fill	Native	Cement Fill	Fill	Native	Cement Fill	Sludge	Native	Sludge	Sludge	Native	Native	Native	Fill	Fill	Fill	Fill	Native
Semivolatile Organic Compounds (mg/kg)																						
Acenaphthene	16																	<0.3				
Acenaphthylene	13																	<0.3				
Anthracene	2.8																	<0.3				
Benzidine																		<0.3				
Benzo(a)anthracene	12						<0.3	<0.3		<0.3	0.9		<4.0	<1.0				<0.3				
Benzo(b)fluoranthene	46						<0.3	<0.3		<0.3	0.8		<4.0	<1.0				<0.3				
Benzo(k)fluoranthene	5.1						<0.3	<0.3		<0.3	0.3		<4.0	<1.0				<0.3				
Benzo(g,h,i)perylene	27						<0.3	<0.3		<0.3	0.5		<4.0	<1.0				<0.3				
Benzo(a)pyrene	5.3						<0.3	<0.3		<0.3	0.6		<4.0	<1.0				<0.3				
Benzoic Acid																		<2				
Benzyl Alcohol																		<0.3				
4-Bromophenyl Phenyl Ether																		<0.3				
Butyl Benzyl Phthalate																		<0.3				
Di-N-Butyl Phthalate																		<0.3				
4-Chloroaniline	0.053																	<0.3				
Bis(2-Chloroethoxy)Methane																		<0.3				
Bis(2-Chloroethyl)Ether	0.00007																	<0.3				
Bis(2-Chloroisopropyl)Ether	0.13																	<0.3				
4-Chloro-3-Methylphenol																		<0.3				
2-Chloronaphthalene																		<0.3				
2-Chlorophenol	0.012																	<0.3				
4-Chlorophenyl Phenyl Ether																		<0.3				
Chrysene	23						<0.3	<0.3		<0.3	1.8		<4.0	<1.0				<0.3				
Dibenzo(a,h)anthracene	9.9																	<0.3				
Dibenzofuran																		<0.3				
1,2-Dichlorobenzene	1.1																	<0.3				
1,3-Dichlorobenzene	7.4																	<0.3				
1,4-Dichlorobenzene	0.59																	<0.3				
3,3'-Dichlorobenzidine	0.015																	<1				
2,4-Dichlorophenol	0.3																	<0.3				
Diethyl Phthalate	0.035																	<0.3				
2,4-Dimethylphenol	0.67																	<0.3				
Dimethyl Phthalate	0.035																	<0.3				
4,6-Dinitro-2-Methylphenol																		<2				
2,4-Dinitrophenol	0.042																	<2				
2,4-Dinitrotoluene	0.00074																	<0.3				
2,6-Dinitrotoluene																		<0.3				
1,2-Diphenylhydrazine																		<0.3				
Bis(2-Ethylhexyl)Phthalate	780																	<0.3				
Fluoranthene	60						<0.3	<0.3		<0.3	0.6		<4.0	<1.0				<0.3				
Fluorene	8.9						<0.3	<0.3		<0.3	<0.3		4.6	3.4				<0.3				
Hexachlorobutadiene	4.3																	<0.3				
Hexachlorobenzene	38																	<0.3				
Hexachlorocyclopentadiene	0.0098																	<0.3				
Hexachloroethane	5.8																	<0.3				
Indeno(1,2,3-Cd)Pyrene	15																	<0.3				
Isophorone																		<0.3				
2-Methylnaphthalene	0.25																	<0.3				
2-Methylphenol																		<0.3				
4-Methylphenol																		<0.3				
N-Nitro Dimethylamine																		<0.3				
Naphthalene	1.2						<0.1	0.5		<0.1	<0.1		<4	<1				<0.3				
2-Nitroaniline																		<2				
3-Nitroaniline																		<2				
4-Nitroaniline																		<2				
Nitrobenzene							<0.3	<0.3		<0.3	<0.3		<4.0	4.0				<0.3				
2-Nitrophenol																		<0.3				
4-Nitrophenol																		<2				
N-Nitrosodiphenylamine																		<0.3				
N-Nitrosodi-N-Propylamine																		<0.3				
Di-N-Octyl Phthalate																		<0.3				
Pentachlorophenol	480																	<2				
Phenanthrene	11						<0.3	<0.3		<0.3	0.5		8.8	4.8				<0.3				
Phenol	0.076						<0.3	<0.3		<0.3	**0.4**		<4.0	<1.0				<0.3				
Pyrene	85						<0.3	<0.3		<0.3	0.9		<4.0	<1.0				<0.3				
1,2,4-Trichlorobenzene	1.5						<0.3	<0.3		<0.3	<0.3		**9.4**	**8.4**				<0.3				
2,4,5-Trichlorophenol	0.18																	<0.3				
2,4,6-Trichlorophenol	1.2																	<0.3				

Table 6: Dry Canyon Storage and Former Impoundment Area (EMCON, 1993)

			Former Impoundment Area																				
		Sample ID	**EB-3**				**EB-6**			**EB-7**			**EB-8**					**KC-2**	**KC-14**				
		Date	6/24/1991				3/24/1992			3/23/1992			3/25/1992					7/24/1989	7/17/1990				
		Sample Depth	0.5'-1'	10'-10.5'	20'-20.5'	24'-24.5'	34.5'-35'	36'-36.5'	38.5'-39'	31'-31.5'	35'-35.5'	44'-44.5'	23.5'-24'	25.5'-26'	31'-31.5'	35.5'-36'	41'-41.5'	5'-20'	0'	4'-4.5'	14'-14.5'	24'-24.5'
Material Type	Environmental Screening Levels - Industrial Land Use (Table C)	TTLC or STLC	Fill	Fill	Fill	Native	Cement Fill	Fill	Native	Cement Fill	Sludge	Native	Sludge	Sludge	Native	Native	Native	Fill	Fill	Fill	Fill	Native
Polychlorinated Biphenyls (ug/kg)																							
Aroclor 1260							<1,000	<1,000		<1,000	<1,000		31,000	<1,000								
Aldrin	4,000																	<10		<10	<20	<1.65
a-BHC																		<10		<10	<20	<1.65
b-BHC																		<10		<10	<20	<1.65
d-BHC																		<10		<10	<20	<1.65
g-BHC																		<10		<10	<20	<1.65
Chlordane	15,000																	<250		<250	<500	<50
4,4'-DDD	290,000																	<10		<10	<20	<1.65
4,4'-DDE	200,000																	<10		<10	<20	<1.65
4,4'-DDT	4,300																	<10		<10	<20	<1.65
Dieldrin	2.3																	<10		<10	<20	<1.65
Endosulfan I	4.6																	<10		<10	<20	<1.65
Endosulfan II	4.6																	<10		<10	<20	<1.65
Endosulfan Sulfate																		<10		<10	<20	<1.65
Endrin	0.65																	<10		<10	<20	<1.65
Endrin Aldehyde																		<10		<10	<20	<1.65
Heptachlor	13																	<10		<10	<20	<1.65
Heptachlor Epoxide	14																	<10		<10	<20	<1.65
Methoxychlor	19,000																	<250		<10	<20	<1.65
Toxaphene	0.42																	<250		<250	<500	<50
PCB-1016	6,300																	<200		<80	<200	<20
PCB-1221	6,300																	<200		<80	<200	<20
PCB-1232	6,300																	<200		<80	<200	<20
PCB-1242	6,300																	<200		<80	<200	<20
PCB-1248	6,300																	<200		<80	<200	<20
PCB-1254	6,300																	<200		<80	<200	<20
PCB-1260	6,300																	<200		<80	<200	<20

Notes

ND or "<"- Not detected above laboratory reporting limits

Bold - Exceedence relative to environmental screening levels, Summary Table C Deep Soils Groundwater is a Current or Potential Source of Drinking Water, Commercial/industrial land use

Gray Cell - Not analyzed

Table 6: Dry Canyon Storage and Former Impoundment Area (EMCON, 1993)

			Dry Canyon Storage Area																								
		Sample ID	A-12	A-13	EB-1				KC-1	KC-15								KC-16									
		Date	7/25/1989	7/25/1989	6/28/1991				7/19/1989	7/26/1990								7/26/1990									
		Sample Depth	5'-20'	5'-15'	0'-0.5'	14.5'-15'	24.5'-25'	29'-29.5'	5'-20'	0'	4.5'	15'-15.5'	25'-25.5'	35'-35.5'	45'-45.5'	55'-55.5'	65'-65.5'	0'	4.5'	14'-14.5'	24'-24.5'	34.5'-35'	44'-45.5'	54'-54.5'	64'-64.5'	73.5'-74.5'	84'-84.5'
Material Type	Environmental Screening Levels - Industrial Land Use (Table C)	TTLC or STLC	Fill	Fill	Fill	Fill	Native	Native	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Native	Native	Fill	Fill	Fill	Fill	Fill	Fill	Native	Native	Native	Native
Metals (mg/kg)																											
Aluminum, Al	NE	NE																									
Antimony, Sb	410	500	<100	<100					<100																		
Arsenic, As	46	500	3.0	0.5					2.8	<5.0		<5.0	7.4	6.0	9.5	9.7	<5.0	5.4	<5.0	5.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7.3
Barium, Ba	5,000	10,000	490	510					410	648		678	617	236	625	132	660	851	134	560	907	408	378	361	767	307	362
Beryllium, Be	1,900	75	<1	<1					<1	<0.5		<0.5	0.599	0.664	0.954	0.736	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron, B	200,000	NE																									
Cadmium, Cd	1,000	100	80	<10	3	<1	<1	<1	**50**	<1.00		1.27	1.00	1.42	<1.00	1.33	1.60	<10	1.92	21.2	2.01	1.88	2.53	6.32	68.6	12.7	90.0
Calcium, Ca	NE	NE																									
Chromium, Cr	5,000	2,500	50	30	266	19	19	24	50	66.5		29.8	25.5	27.3	25.4	40.1	32.1	58.3	40.3	69.1	29.0	152	29.2	113	28.7	65.3	47.3
Colbalt, Co	1.6	8,000	<10	**10**					**10**																		
Copper, Cu	5,000	2,500	40	60					90																		
Iron, Fe	NE	NE																									
Lead, Pb	320	1,000	120	20	23	<20	<20	<20	80	5.70		5.57	19.6	43.1	15.1	12.9	6.68	<5.00	79.6	56.3	9.61	7.50	8.35	19.7	68.8	13.7	60.2
Magnesium, Mg		NE																									
Manganese, Mn		NE																									
Mercury, Hg	87	20	9.2	2.1	<0.2	<0.2	<0.2	<0.2	3.1	0.57		0.30	0.24	<0.1	<0.1	0.27	0.30	3.23	<0.1	0.56	0.81	2.20	12.6	0.51	<0.1	0.11	0.16
Molybdenum, Mo	5,000	3,500	<10	<10					<10																		
Nickel, Ni	5,000	2,000	40	30					40	52.0		50.0	27.6	25.8	58.6	43.2	37.9	85.3	16.0	36.9	28.0	34.1	15.4	55.2	8.75	10.8	11.3
Potassium, K		NE																									
Selenium, Se	5,000	100	17	0.3	<1	<1	<1	<1	9.8	<5.0		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	17.3	<5.0	<5.0	<5.0	<5.0	11.1	<5.0	6.0
Silicon, Si		NE																									
Silver, Ag	5,000	500	16	<5					10																		
Sodium, Na		NE																									
Thallium, Tl	10	700	**50**	<50					<50																		
Tin, Sn		NE																									
Vanadium, V	5,000	2,400	90	40					110																		
Zinc, Zn	5,000	5,000	150	140	357	40	50	68	160	115		53.9	121	69.7	91.9	64.0	46.7	92.3	123	140	77.9	47.6	53.5	83.1	243	296	446
WET Metals (mg/L)																											
Cadmium, Cd		1.0							0.1																		
Lead, Pb		5.0							<0.1																		
Mercury, Hg		0.2							<0.01																		
Selenium, Se		1.0																									
Inorganic Compounds (mg/kg)																											
Cyanide	0.0036	NE	<0.5								<10	<10	<10	<10	<10	<10	<10			<10	<10	<10	<10	<10	<10	<10	<10
Fluoride		1,800	880						570	0.5		0.94	1.60	8.13	5.77	2.20	0.82	0.4	0.46	1.29	0.37	0.34	0.39	3.89	1.23	0.99	1.04
Sulfate		NE																									
Total Petroleum Hydrocarbons (mg/kg)																											
Diesel	83	NE																									
Petroleum Hydrocarbons (Heavy)	5,000											27	32	2,900	3,100	<10	40		120	190	530	1,200	50	40	60	<10	<10
Volatile Organic Compounds (mg/kg)																											
Acetone	0.5	NE	<2	<2	0.193	<0.05	<0.05	<0.05			<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5			<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Benzene	0.044		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Bromodichloromethane	1.8		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Bromoform	2.2		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Bromomethane	0.35		<0.2	<0.2	<0.005	<0.005	<0.005	<0.005			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2-Butanone			<0.2	<0.2	<0.01	<0.01	<0.01	<0.01			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Carbon Disulfide			<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Carbon Tetrachloride	0.11		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Chlorobenzene	1.5		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Chloroethane	1.1		<0.2	<0.2	<0.005	<0.005	<0.005	<0.005			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2-Chloroethylvinyl Ether			<0.2	<0.2	<0.01	<0.01	<0.01	<0.01			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Chloroform	2.1		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Chloromethane	24		<0.2	<0.2	<0.005	<0.005	<0.005	<0.005			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	8.3		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
1,1-Dichloroethane	0.2		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
1,2-Dichloroethane	0.0045		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
1,1-Dichloroethene	1		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Trans-1,2-Dichloroethene			<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
1,2-Dichloropropane	0.12		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Cis-1,3-Dichloropropene			<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Trans-1,3-Dichloropropene			<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Ethyl Benzene	3.3		<0.1	0.3	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
2-Hexanone			<0.2	<0.2	<0.01	<0.01	<0.01	<0.01			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Methylene Chloride	0.077		**0.2**	**0.2**	<0.025	<0.025	<0.025	<0.025			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			**0.147**	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
4-Methyl-2-Pentanone			<0.2	<0.2	<0.01	<0.01	<0.01	<0.01			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Styrene	1.5		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
1,1,2,2-Tetrachloroethane	0.018		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Tetrachloroethene (PCE)	0.7		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Toluene	2.9		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
1,1,1-Trichloroethane	7.8		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
1,1,2-Trichloroethane	0.07		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Trichloroethene (TCE)	0.46		<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125
Trichlorofluoromethane			<0.1	<0.1	<0.005	<0.005	<0.005	<0.005			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Vinyl Acetate			<0.2	<0.2	<0.01	<0.01	<0.01	<0.01			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Vinyl Chloride	0.085		<0.2	<0.2	<0.005	<0.005	<0.005	<0.005			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Total Xylenes	2.3		<0.1	2	<0.005	<0.005	<0.005	<0.005			<0.125	<0.125	<0.125	0.212	<0.125	<0.125	<0.125			<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125

Table 6: Dry Canyon Storage and Former Impoundment Area (EMCON, 1993)

			Dry Canyon Storage Area																								
		Sample ID	A-12	A-13	EB-1				KC-1	KC-15								KC-16									
		Date	7/25/1989	7/25/1989	6/28/1991				7/19/1989	7/26/1990								7/26/1990									
		Sample Depth	5'-20'	5'-15'	0'-0.5'	14.5'-15'	24.5'-25'	29'-29.5'	5'-20'	0'	4.5'	15'-15.5'	25'-25.5'	35'-35.5'	45'-45.5'	55'-55.5'	65'-65.5'	0'	4.5'	14'-14.5'	24'-24.5'	34.5'-35'	44'-45.5'	54'-54.5'	64'-64.5'	73.5'-74.5'	84'-84.5'
Material Type	Environmental Screening Levels - Industrial Land Use (Table C)	TTLC or STLC	Fill	Fill	Fill	Fill	Native	Native	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Native	Native	Fill	Fill	Fill	Fill	Fill	Fill	Native	Native	Native	Native
Semivolatile Organic Compounds (mg/kg)																											
Acenaphthene	16			<0.3																							
Acenaphthylene	13			<0.3																							
Anthracene	2.8			<0.3																							
Benzidine				<0.3																							
Benzo(a)anthracene	12			<0.3																							
Benzo(b)fluoranthene	46			<0.3																							
Benzo(k)fluoranthene	5.1			<0.3																							
Benzo(g,h,i)perylene	27			<0.3																							
Benzo(a)pyrene	5.3			<0.3																							
Benzoic Acid				<2																							
Benzyl Alcohol				<0.3																							
4-Bromophenyl Phenyl Ether				<0.3																							
Butyl Benzyl Phthalate				<0.3																							
Di-N-Butyl Phthalate				<0.3																							
4-Chloroaniline	0.053			<0.3																							
Bis(2-Chloroethoxy)Methane				<0.3																							
Bis(2-Chloroethyl)Ether	0.00007			<0.3																							
Bis(2-Chloroisopropyl)Ether	0.13			<0.3																							
4-Chloro-3-Methylphenol				<0.3																							
2-Chloronaphthalene				<0.3																							
2-Chlorophenol	0.012			<0.3																							
4-Chlorophenyl Phenyl Ether				<0.3																							
Chrysene	23			<0.3																							
Dibenzo(a,h)anthracene	9.9			<0.3																							
Dibenzofuran				<0.3																							
1,2-Dichlorobenzene	1.1			<0.3																							
1,3-Dichlorobenzene	7.4			<0.3																							
1,4-Dichlorobenzene	0.59			<0.3																							
3,3'-Dichlorobenzidine	0.015			<1																							
2,4-Dichlorophenol	0.3			<0.3																							
Diethyl Phthalate	0.035			<0.3																							
2,4-Dimethylphenol	0.67			<0.3																							
Dimethyl Phthalate	0.035			<0.3																							
4,6-Dinitro-2-Methylphenol				<2																							
2,4-Dinitrophenol	0.042			<2																							
2,4-Dinitrotoluene	0.00074			<0.3																							
2,6-Dinitrotoluene				<0.3																							
1,2-Diphenylhydrazine				<0.3																							
Bis(2-Ethylhexyl)Phthalate	780			<0.3																							
Fluoranthene	60			<0.3																							
Fluorene	8.9			<0.3																							
Hexachlorobutadiene	4.3			<0.3																							
Hexachlorobenzene	38			<0.3																							
Hexachlorocyclopentadiene	0.0098			<0.3																							
Hexachloroethane	5.8			<0.3																							
Indeno(1,2,3-Cd)Pyrene	15			<0.3																							
Isophorone				<0.3																							
2-Methylnaphthalene	0.25			<0.3																							
2-Methylphenol				<0.3																							
4-Methylphenol				<0.3																							
N-Nitro Dimethylamine				<0.3																							
Naphthalene	1.2			<0.3																							
2-Nitroaniline				<2																							
3-Nitroaniline				<2																							
4-Nitroaniline				<2																							
Nitrobenzene				<0.3																							
2-Nitrophenol				<0.3																							
4-Nitrophenol				<2																							
N-Nitrosodiphenylamine				<0.3																							
N-Nitrosodi-N-Propylamine				<0.3																							
Di-N-Octyl Phthalate				<0.3																							
Pentachlorophenol	480			<2																							
Phenanthrene	11			<0.3																							
Phenol	0.076			<0.3																							
Pyrene	85			<0.3																							
1,2,4-Trichlorobenzene	1.5			<0.3																							
2,4,5-Trichlorophenol	0.18			<0.3																							
2,4,6-Trichlorophenol	1.2			<0.3																							

Table 6: Dry Canyon Storage and Former Impoundment Area (EMCON, 1993)

			Dry Canyon Storage Area																								
		Sample ID	**A-12**	**A-13**	**EB-1**				**KC-1**	**KC-15**								**KC-16**									
		Date	7/25/1989	7/25/1989	6/28/1991				7/19/1989	7/26/1990								7/26/1990									
		Sample Depth	5'-20'	5'-15'	0'-0.5'	14.5'-15'	24.5'-25'	29'-29.5'	5'-20'	0'	4.5'	15'-15.5'	25'-25.5'	35'-35.5'	45'-45.5'	55'-55.5'	65'-65.5'	0'	4.5'	14'-14.5'	24'-24.5'	34.5'-35'	44'-45.5'	54'-54.5'	64'-64.5'	73.5'-74.5'	84'-84.5'
Material Type	Environmental Screening Levels - Industrial Land Use (Table C)	TTLC or STLC	Fill	Fill	Fill	Fill	Native	Native	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Native	Native	Fill	Fill	Fill	Fill	Fill	Fill	Native	Native	Native	Native
Polychlorinated Biphenyls (ug/kg)																											
Aroclor 1260																											
Aldrin	4,000		<10	<10	<8	<8	<8	<8			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
a-BHC			<10	<10	<8	<8	<8	<8			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
b-BHC			<10	<10	<8	<8	<8	<8			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
d-BHC			<10	<10	<8	<8	<8	<8			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
g-BHC			<10	<10	<8	<8	<8	<8			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Chlordane	15,000		<250	<250							<200	<200	<33	<330	<170	<67	<170			<200	<200	<200	<200	<200	<200	<40	<40
4,4'-DDD	290,000		<10	<10	<16	<16	<16	<16			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
4,4'-DDE	200,000		<10	<10	<16	<16	<16	<16			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
4,4'-DDT	4,300		<10	<10	<16	<16	<16	<16			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Dieldrin	2.3		<10	<10	<16	<16	<16	<16			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Endosulfan I	4.6		<10	<10	<8	<8	<8	<8			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Endosulfan II	4.6		<10	<10	<16	<16	<16	<16			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Endosulfan Sulfate			<10	<10	<16	<16	<16	<16			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Endrin	0.65		<10	<10	<16	<16	<16	<16			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Endrin Aldehyde			<10	<10	<16	<16	<16	<16			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Heptachlor	13		<10	<10	<8	<8	<8	<8			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Heptachlor Epoxide	14		<10	<10	<8	<8	<8	<8			<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Methoxychlor	19,000		<25	<25							<10	<10	<1.67	<16.6	<8.29	<3.34	<8.28			<10	<10	<10	<10	<10	<10	<2	<2
Toxaphene	0.42		<250	<250	<160	<160	<160	<160			<200	<200	<33	<330	<170	<67	<170			<200	<200	<200	<200	<200	<200	<40	<40
PCB-1016	6,300		<200	<200	<80	<80	<80	<80			<20	<20	<10	<500	<50	<10	<50			<10	<10	<10	<10	<10	<10	<20	<20
PCB-1221	6,300		<200	<200	<80	<80	<80	<80			<100	<100	<10	<500	<50	<10	<50			<10	<10	<10	<10	<10	<10	<100	<100
PCB-1232	6,300		<200	<200	<80	<80	<80	<80			<20	<20	<10	<500	<50	<10	<50			<10	<10	<10	<10	<10	<10	<20	<20
PCB-1242	6,300		<200	<200	<80	<80	<80	<80			<20	<20	<10	<500	<50	<10	<50			<10	<10	<10	<10	<10	<10	<20	<20
PCB-1248	6,300		<200	<200	<80	<80	<80	<80			<20	<20	<10	<500	<50	<10	<50			<10	<10	<10	<10	<10	<10	<20	<20
PCB-1254	6,300		<200	<200	<160	<160	<160	<160			<20	<20	<10	<500	<50	<10	<50			<10	<10	<10	<10	<10	<10	<20	<20
PCB-1260	6,300		<200	400	<160	<160	<160	<160			<10	<10	40	**8,100**	<50	<10	<50			<10	<10	<10	<10	<10	<10	<10	<10

Notes

ND or "<"- Not detected above laboratory reporting limits

Bold - Exceedence relative to environmental screening levels, Summary Table C Deep Soils Groundwater is a Current or Potential Source of Drinking Water, Commercial/industrial land use

Gray Cell - Not analyzed

APPENDIX A

Gregory Knapp
Director Environmental Affairs, Region West
12667 Alcosta Blvd , San Ramon, CA 94583
(925) 244-6570

February 21, 2013

Rob Eastwood, AICP
Principal Planner, County of Santa Clara

Condition of Approval Update
RE: Lehigh Permanente Reclamation Plan

Dear Rob

Pursuant to Lehigh's continuing compliance with the Conditions of Approval (COAs) for the 2012 Reclamation Plan Amendment (RPA) for the Permanente Quarry, please find updated information below.

Conditions of Approval 71, 72, and 73

On October 1, 2012, Lehigh submitted information to Santa Clara County regarding these COAs. Supplementing this submittal, Lehigh clarifies that the California Climate Action Registry (CCAR) only accepts membership for Greenhouse Gas (GHG) emission reporting for organizations, not on a project-by-project basis. In this situation, Lehigh would have to include GHG emission reports for all three of its cement plants in California, none of which are under the jurisdiction of this RPA, in order into include reclamation-related GHG emissions. Since this is outside the scope of the RPA, registration with the CCAR is thus not achievable. A sister organization of the CCAR is the California Climate Action Reserve. This organization is an carbon offset registry, which, allows developers of carbon offset projects to create tradable GHG offsets. This is not applicable to the RPA either.

Lehigh will prepare annual GHG emission inventories for reclamation-related activities pursuant to the RPA for the July 1 through June 30 period. These annual inventories will then be verified by a third-party GHG verifier, certified by the California Air Resources Board (CARB) for AB32. The annual emissions inventory and verification report will be submitted to the County by October 1 annually.

Conditions of Approval 79

Pursuant to COA 79, Lehigh conducted sampling of stormwater discharges from Pond 30 which receives stormwater drainage from the EMSA. Those result are summarized below.

Lehigh Permanente Quarry
Stormwater Sampling Results
2012-2013 Wet Season
Pond 30

			Sample Date	Sample Date	Sample Date		
Analyte	Method	Units	11/30/2012	12/5/2012	12/26/2012	Method Detection Limit	Method Reporting Limit
Oil & Grease (HEM)	EPA 1664	mg/l	ND	ND	ND	0.80	5.0
Silver	EPA 200.7	mg/l		ND	ND	0.0020	0.010
Barium	EPA 200.7	mg/l		0.089	0.11	0.00050	0.010
Beryllium	EPA 200.7	mg/l		ND	ND	0.00020	0.0010
Cadmium	EPA 200.7	mg/l		ND	ND	0.00050	0.010
Cobalt	EPA 200.7	mg/l		ND	ND	0.0010	0.010
Chromium	EPA 200.7	mg/l		ND	0.018	0.0010	0.010
Copper	EPA 200.7	mg/l		ND	ND	0.0040	0.020
Molybdenum	EPA 200.7	mg/l		ND	ND	0.0010	0.50
Nickel	EPA 200.7	mg/l		ND	0.021	0.0030	0.010
Lead	EPA 200.7	mg/l		ND	ND	0.0020	0.050
Antimony	EPA 200.7	mg/l		ND	ND	0.0050	0.020
Thallium	EPA 200.7	mg/l		ND	ND	0.010	0.20
Vanadium	EPA 200.7	mg/l		ND	ND	0.0010	0.020
Zinc	EPA 200.7	mg/l		0.027	ND	0.0080	0.020
Arsenic	EPA 200.9	mg/l		ND	ND	0.00070	0.0020
Selenium	EPA 200.9	mg/l		0.0059	ND	0.0010	0.0050
Mercury	EPA 245.1	mg/l		ND	ND	0.00010	0.0010
Specific Conductance (EC)	SM2510B	umhos/cm	1300	1400	2400	1.0	20
Total Dissolved Solids	SM2540C	mg/l	900	1200		4.2	10
Total Suspended Solids	SM2540D	mg/l	82	4.4	63	0.30	1.0
Total Settleable Solids	SM2540F	ml/l/hr	0.10	ND		0.10	0.10
pH	SM4500-H+ B	pH Units	8.25	7.92	7.99	1.68	1.68
Total Organic Carbon	SM5310C	mg/l	3.33	6.53	1.93	0.0400	1.00

ND = Below Method Detection Limit

Pursuant to COA 79, Lehigh samples Pond 30 when it discharges to Permanente Creek after a significant storm event which is defined as greater than or equal to 0.5 inches of rain in a 24-hour period. Pond 30 is the final BMP for stormwater runoff from the EMSA prior to discharge. If selenium concentrations measured in a Pond 30 discharge exceed the applicable stream standard of 5 micrograms/liter, Lehigh will investigate BMPs upgradient of Pond 30 and look for sources of selenium that could be removed or treated in a manner to reduce concentrations in Pond 30.

The laboratory sheets for these values were previously provided to the County. Please note that any sheet that contains the words “Quality Control” on them are internal QA/QC checks the laboratory performs to ensure the accuracy of their report. These values do not represent in any way actual concentrations measured in the sample.

Please call me at the letterhead address with any questions.

Gregory Knapp
Director Environmental Affairs
Lehigh Hanson Region West