November 4, 2013

Marina Rush, Planner III
SANTA CLARA COUNTY
70 West Hedding Street
San Jose, CA 95110

RE: 2013 SMARA MINE INSPECTION DRAFT
CPO FILE 2250-13-66-09PAM (PERMANENTE ROAD)
PERMANENTE QUARRY, 91-43-0004
CUPERTINO, CALIFORNIA

Dear Ms. Rush:

This letter report summarizes the findings of PMC's annual Surface Mining and Reclamation Act (SMARA) site inspection of the Permanente Quarry in Cupertino, CA (Mine ID #91-43-0004) conducted on September 26 and 27, 2013. PMC was retained by Santa Clara County to assist County staff with the annual SMARA mine inspection and to provide written documentation of our observations, issues of concern and recommendations.

The 2013 annual SMARA inspection was conducted for 11 hours; 8 hours on September 26, 2013 and 3 hours in the morning of September 27, 2013. In attendance, along with myself, were Greg Knapp, Dan Zacharisen, Cliff Maddox and Jim Curtis as representative of the Lehigh Southwest Cement Company (Lehigh), and Marina Rush (Planner III), Jim Baker (County Geologist), and Steve Beam (Construction Inspector) from the Santa Clara County Planning and Development Department (County).

The County Board of Supervisors approved a Reclamation Plan Amendment (RPA) for Permanente Quarry on June 26, 2012. Eighty-nine Conditions of Approval (COAs) are applied to the amended reclamation plan that incorporate both SMARA and non-SMARA requirements as well as mitigation and monitoring measures identified under CEQA.

The mine was active during the inspection. The Rock Plant was operating and washout fines were being placed in the North Quarry. Mining was ongoing in the North Quarry mostly along the upper portion of the eastern highwall. Overburden materials were being placed against the toe of the western quarry high wall. Placement of overburden material in the East Material Storage Area was temporarily suspended. The mine's entrance is located near latitude 37.321036^0 and longitude -122.086107^0. The weather during the inspection was clear and warm.

The acreage disturbed by current mining activities during the 2013 inspection was approximately 620 acres out of the 1,268.6 acres included in the RPA. The RPA identifies nine (9) specific areas within the mining boundary: 1) North Quarry, 2) West Material Storage Area (WMSA), 3) East Material Storage Area (EMSA), 4) Crusher/Support area, 5) Surge Pile, 6) Rock Plant, 7) South Quarry Exploration Area, 8) Permanente Creek Restoration Area treatment areas (PCRA), and 9) Buffer Areas. Figure 3.3-1 of the RPA provides a map that shows the general location of each mining area and Table 1 lists the acreage.

One area that was not inspected at this time was the 599.3 acres of the Buffer Areas. The Buffer Areas are no-disturbance areas surrounding the active mining areas.

BACKGROUND

In January 2007, the operator submitted an application for the RPA to the County. A detailed geologic report was required of the mine operator following receipt of the 2007 application. The geology report was completed and a revised application was submitted in July 2011. The 2011 revised application was the basis for the June 26, 2012 RPA. The RPA is designed to address mining activity over the next 19 years with an end date of 2032. The 2012 RPA has three phases of reclamation that coincide with the completion of mining and reclamation of the EMSA in Phase I; backfilling of the North Quarry with WMSA overburden in Phase 2; and final reclamation grading and re-vegetation in Phase 3. Table 2 of the RPA lists the time intervals for each of the three mining phases.

The 2012 RPA changed the final reclamation of the mine from what was approved in the 1985 Reclamation Plan. In some areas, this change is significant. The previous reclamation work done in portions of the north facing slopes of the WMSA will now be removed during Phase 2 as this overburden stockpile is excavated and then material placed as backfill in the North Quarry. The RPA now includes the PCRA. The PCRA reclamation activities approved in the RPA has seven (7) restoration subareas within the creek that have been disturbed by previous mining activities. A recent April 2013 settlement agreement between Lehigh and the Sierra Club requires that the design of the reclamation of Permanente Creek be revised and a new Conceptual Creek Restoration Plan be submitted to all pertinent agencies by October 7, 2013 and submittal of all necessary permit and approval applications to appropriate agencies by August 30, 2014. The settlement requires that creek restoration work be completed within two years of receipt of all necessary permits and approvals.

Reclamation in the PCRA will also be overseen by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) and likely other federal and state agencies, such as the Army Corp of Engineers, and California Department of Fish and Wildlife. Lehigh is working with SFBRWQCB and other agencies on a long-term creek restoration plan. When this plan is approved, along with any refinements made during the permitting process with other agencies, it will be implemented as part of the mine reclamation effort. The final approved reclamation measures for PCRA will not be less stringent than those now contained in RPA.

SITE CONDITIONS

This discussion of the mine's existing conditions is broken into sections based on the nine mining areas defined in the RPA. In addition, issues that apply to all or several parts of the mine site will be discussed under separate topics.

RPA Mining Areas

1. North Quarry.

Quarry operations were apparent during the 2013 inspection. In addition to drilling shot holes and mining excavation, work was being done to place overburden material along the south and western walls within pit (Photo 1). At the end of Phase I, when excavation in the North Quarry ceases, the RPA anticipates that approximately 12 million tons of overburden material generated by the ongoing quarrying will have been placed as backfill in the quarry. An additional 48 million tons of WMSA

overburden will also be placed as quarry backfill. The current maximum depth of the pit was approximately 725 feet mean-sea-level (msl) (personal communication G. Knapp). The final reclaimed, after-backfilling elevation proposed for the quarry will be between 990 and 1,750 feet msl. The maximum angle of the western backfill slopes is proposed at 2.5H:1.0V. The maximum overall angle of the quarry rock slopes is proposed at 1.0H:1.0V. The northeastern highwall will not be regraded as part of reclamation, while the eastern highwall will have final rock slopes from 2H:1V to 1H:1V (see 12-15-11 Engineering Drawing Details sheet 12 of 13). Mining of the upper portion of the eastern quarry was begun in the last year and final slopes have been cut in some areas (Photo 2).

As part of the settlement agreement with the Sierra Club a series of pilot test for treating the quarry groundwater discharge have been conducted this year. At the completion of the pilot tests, Lehigh will construct a treatment plant in the area of the mine office. Water will be pumped from the quarry to the treatment plant and then piped down to Pond 4A where it is discharged. Lehigh submitted a Report of Waste Discharge to the SFBRWQCB on November 30, 2011 for an NPDES Permit that will consolidate the current set of permits and covers all Permanente facility discharges to Permanente Creek. Lehigh anticipates that this NPDES permit will be approved by the SFBRWQCB in November 2013.

As part of the site's stormwater management, numerous rock checkdams have been placed along the haul roads. However, the rock material initially used for these checkdams was limestone. To mitigate the potential for selenium to leach, the operator replaced the limestone check dams with greenstone or other non-limestone rock (Photo 3).

The northern highwall of the North Quarry has had three large rockslides, which are described in the RPA. No major new movement on these rockslides was observed during the 2013 inspection. The Mid-Pen Rockslide that extended approximately halfway down the eastern highwall is being graded out as part of the mining (Photo 4). The Scenic Easement Rockslide has a slope failure that extends down slope approximately as far as the Mid-Pen Rockslide (Photo 5). This rockslide lowered the ridgeline contrary to the 1972 Ridgeline Protection Easement requirement. The largest slide, the Main Rockslide, appears to extend across most of the current height of the northwestern highwall (Photo 6).

A fourth apparent landslide occurs on the western side of the pit. This area of movement was noted by Golder and Associates in their November 2007 Slope Stability Evaluation report and may extend westward below the toe of the eastern slope of the WMSA overburden stockpile (right center of Photo 1). The County's Geologist, Mr. James Baker, referred to this western landslide as the "Haul Road Slide." The placement of overburden backfill against the western toe of the North Quarry is intended to stabilize this slide.

2. West Material Storage Area (WMSA)

During the 2013 inspection, no overburden material was being placed in the WMSA. All overburden is currently being placed in the North Quarry. A new topsoil material storage area was created just east of the existing topsoil storage area to take materials excavated with the eastward expansion of the quarry (Photo 7). Both of the WMSA topsoil stockpile continues to be signed. Beginning around 2021 in Phase 2 of the RPA, approximately 48 million tons of overburden material including wash fines from the WMSA quarry will be placed in the North Quarry to help stabilize the western wall and raise the final floor elevation to approximately 990 feet msl. Revegetation efforts along the northern WMSA was observed (Photo 8).

Prior to the 2012 RPA, the 1985 Reclamation Plan allowed the overburden placed in the WMSA to remain in place with some final grading to create slopes at a gradient of 2.0H:1.0V or shallower. Recent grading and re-vegetation of the lower northern portions of the WMSA have been done to reduce the visual impact and control erosion (Photo 8). Portions of the current southern slopes of the WMSA abut a portion of the mine that had been considered pre-SMARA. The 2012 RPA includes grading of the upper portion of this area to increase final slope stability of the WMSA and allow for proper drainage (see RPA Figure 3.16-14). During Phase 2 of reclamation, the WMSA fill will be excavated down to an elevation that daylights at approximately the current contact between the native vegetation and the revegetated area seen in Photo 8.

Running across the pre-SMARA slopes south of the WMSA is an old unpaved mid-slope road that is not used in the current mining operations and functions like a drainage bench. A low point in this road causes concentrated runoff to discharge over the slope and appears to create a sedimentation problem at Permanente Creek. This condition was noted in the 2008 annual SMARA report, and during the 2009 SMARA inspection a number of large rocks were observed being placed in this outfall with the intention of mitigating the potential erosion and instability. In 2013 straw waddles and bales were added to this drainage outfall and it appears to be performing as intended (Photo 9). In 2012 and 2013 straw waddles and straw bales have been placed along the outer edge of several low points in this mid-slope road to capture potential sedimentation (Photo 10). During the 2013 inspection, deposition of fines on top of rock talus that were continued to be observed as in the 2012 inspection west of the drainage outfall approximately one-third of the way down the slope (Photo 11), suggests that a small surficial slide. The headscarp of this slope failure hasn't extended into the mid-slope road/bench. A series of silt fences has been placed along the toe of the southern WMSA pre-SMARA slope as part of stormwater management (Photos 11 and 12). Hydroseeding of the upper portions of the pre-SMARA slope above the mid-slope road were done in late 2012 (right side of Photo 12). The drainage outfalls along this roadway should continue to be monitored as part of the site's stormwater management. County staff should continue to observe the roadway before the end of November as part of the pre-winter inspection.

3. East Material Storage Area (EMSA)

Overburden material and washout fines were not being placed in the EMSA during the 2013 inspection. (The overburden material and the Rock Plant washout fines were being placed against the toe of the west side of the quarry pit (Photo 1). Signs have been placed at the one active EMSA topsoil storage area storage area (Photo 13). Two newly identified topsoil areas have been designated in the EMSA that lie adjacent to the active one. These areas have not yet been signed; the mine operator indicated that they would be signed. County staff should check to see that these additional EMSA topsoil areas are signed during the pre-winter site inspection.

Past practices for disposing of the overburden material in the EMSA was outside of the 1985 Reclamation Plan boundary. With the approval of the 2012 RPA, the EMSA now lies within the approved mining boundary. The 2012 RPA has specific requirements for the disposal of wash fines in the EMSA. (See RPA Attachment C, Section 4.5.1 and COA #70d.) Wash fines must be covered with a minimum of 25 feet of non-limestone material below the approved final reclamation elevation and be at least 30 feet horizontally from the final reclaimed slope face. This condition also requires that limestone rock not be present within the upper 25 vertical feet and 30 horizontal feet at the head of EMSA canyons.

The operator had the northern and eastern boundaries of the EMSA delineated with flagged surveyor lath. The County Surveyor re-surveyed the EMSA in January 25, 2013 to check that the grades don't

exceed what is permitted in the RPA. The EMSA elevations were found to be in general compliance with the maximum RPA grade of approximately 900 feet msl. Existing grade of an area on the northeastern side of the EMSA are higher than the final reclamation grade, points 737.9 ft and 658.8 feet, but not greater than the maximum 900 feet. This temporary height exceedence was authorized in the 2012 RPA on page 42. No new overburden is being placed in the EMSA. The EMSA will need to be re-contoured as part of final reclamation to create the approved slopes, benches and drainage structures.

The operator has created a network of lined and unlined drainage ditches to convey stormwater runoff from the EMSA into holding ponds. During the 2012-13 rainy season a slope failure occurred in a slope adjacent to the eastern end of the conveyor tunnel that deposited limestone rock in the upper portions of the drainage ditch that runs along the western edge of the EMSA (Photo 14). This material was removed, a series of sediment catch basins were created and the ditch cleaned out and relined with greenstone (Photos 15 and 16). Continued failure of the slope is anticipated, therefore periodic cleanout of the sediment catch basins is now part of the stormwater management plan. The EMSA drainage ditches were all relined with greenstone, a non-limestone rock, and they appeared to be capable of functioning as intended. The lowermost stormwater pond is called Pond 30 (Photo 17), which discharges runoff through a culvert into Permanent Creek. Rock armoring with greenstone was done to mitigate this erosion at the outfall of Pond 30 (Photo 18). County staff should inspect the channels, ponds and culvert outfall as part of the pre-winter site inspection to document that the structures will function properly.

4. Crusher/Support Area

The Crusher and Support area lies east of the North Quarry, and contains the primary and secondary crushers and numerous conveyors that transport limestone rock either to the cement plant or to the Surge Pile/Rock Plant. A new primary and secondary crusher was being constructed during the 2013 inspection (Photos 19 and 20). The new crushers will be connected to the existing conveyor system and the portion of the conveyor to the west will be removed (Photo 21). The drainage in the new crusher area will be directed to a sump and then pumped over to the North Quarry for treatment (personal communication G. Knapp). The slopes surrounding the new crushers will be hydroseeded before this winter. The County staff will inspect the new crusher area slopes and drainage control as part of the pre-winter site inspection.

The mine offices and maintenance support facilities are also part of this area. Reclamation of the Crusher and Support areas will begin in Phase 3, following the completion of mining and backfilling of the North Quarry. No adverse conditions were noted in this area during the site visit. As with other mine areas, the County staff should inspect any drainage channels, ponds, and checkdams in the Crusher/Support area as part of the pre-winter site inspection to document that the structures will function properly.

An upper bench area located north of the mine office had a stockpile of limestone rock that was sufficiently high as to be visible from the Town of Cupertino. County staff noted this material during the 2012 pre-winter site inspections and removal was required. During the 2013 inspection, the area of this limestone stockpile and found that it had been removed (Photo 22).

The conveyors and associated structures will be removed from this area during reclamation Phase 3. One feature that likely will need special consideration is the 500-foot west-to-east conveyor tunnel. Following the removal of the conveyor system, the tunnel should be closed off to prevent public access.

The method of closure isn't specified in the RPA, but consideration should be given to the potential for wildlife inhabiting the tunnel. It is recommended that the wildlife protection and mitigation procedures already specified in the RPA and COAs be applied to the tunnel closure, with adaption as necessary.

5. Surge Pile

The Surge Pile is located between the North Quarry and the Rock Plant and provides a stockpile for aggregate materials processed in the plant (Photo 23). Material is conveyed to the Surge Pile after being partially crushed and transported to the Rock Plant as needed either by truck or conveyor. The Surge Pile partially overlies and buries the historic Permanente Creek bed. Sedimentation off of the Surge Pile is controlled by barrier berms along the now partially channelized creek. At the time of this inspection, no runoff from the Surge Pile or sedimentation from the pile to Permanente Creek was observed. The 2012 RPA requires that the Surge Pile area be reclaimed to pre-mining conditions. This reclamation work will be done during Phase 3.

6. Rock Plant

At the time of the inspection, the Rock Plant was back in limited operation. The Rock Plant area has numerous stockpiles of processed aggregate along with the crushing, sorting and conveying equipment. Runoff from the area is directed to the northeast into Pond 17 located east of the access road in the area of the Rock Plant gate (Photo 24). At the time of this inspection, runoff from the Rock Plant area was collecting in Pond 17 and after flowing through a series of rock baffles discharging by culvert into Permanente Creek (Photo 25). During normal operations, Pond 17 water is pumped to Pond 11 for use at the cement plant, but a tear in the liner of Pond 11 has reduced the pond's water holding capacity (personal communication G. Knapp). Once the liner is repaired cement plant use of Pond 17 water will resume.

7. South Quarry Exploration Area

The South Quarry Exploration Area lies south of Permanente Creek and was disturbed as part of the evaluation of mineral resources for an area Lehigh calls the South Quarry. (No mineral extraction is approved by the County in this area at this time.) Portions of the South Quarry Exploration Area were observed during the 2013 inspection. A more detailed inspection was performed by County staff in 2012. Exploration activities have stopped and the access roads and drill pads have been seeded and erosion control measure put in place (personal communication, R. Chitwood). Areas inspected during 2013 were limited to roadways and drill pad accesses from the upper exploration roadway (see Figure 3.16-13 in RPA). The revegetation has been ongoing for approximately 5 years and appears to be functioning properly (Photos 26 to 29). The mine operator could seek closure of reclamation of the South Quarry Exploration Area after surveys to confirm the revegetation effort meets the RPA performance standard listed in Table 7.

8. Permanente Creek Restoration Area (PCRA)

Permanente Creek flows eastward along the southern edge of the active quarrying area and north of the South Quarry Exploration Area. Disturbance of the creek by mining activities pre-date the 1976 SMARA legislation while some areas of disturbance continued post-1976. The 2012 RPA identifies seven (7) subareas along the creek and provides for area-specific restoration activities (see RPA Section 3.19 and Figure 3.19-10) with the intent that work will be implemented throughout mining Phases 1 to 3 (see

RPA Table 11). A recent April 2013 settlement agreement between Lehigh and the Sierra Club requires that the design of the reclamation of Permanente Creek be revised and a new Conceptual Creek Restoration Plan be submitted to all pertinent agencies by October 7, 2013 and submittal of all necessary permit and approval applications to appropriate agencies by August 30, 2014. The settlement requires that creek restoration work be completed within two years of receipt of all necessary permits and approvals.

In 2013 Lehigh submitted several work products relating to the removal of limestone boulders that impact the creek and it's water quality (COAs #38 and #39), and began the work. Lehigh has selected California Certified Engineering Geologist, Dave Bieber of Geocon Consultants, to identify the boulders for removal. A report was prepared that documents potential the water quality impacts of the boulders in Permanente Creek (Geocon Consulting, August 2012). A supplemental letter from Lehigh, dated July 10, 2013, provided additional information on the potential impacts on sedimentation and hydraulic of the creek from boulder removal. This letter concluded that all but one boulder, #23, could remain in the creek area.

9. Buffer Areas

As discussed above, the Buffer Areas are considered "no disturbance" areas that surround the active mine. The RPA states that the Buffer Areas function to protect the Permanente Quarry from land use encroachment, and also to protect nearby land uses from the potentially adverse sights, sounds and other characteristics of mining. Figure 3.3-1 in the RPA shows the location of the Buffer Areas.

Separate Topics

Topsoil

In order to address the issue of the lack of topsoil for re-vegetation of the site, the operator established topsoil storage areas in both the WMSA and EMSA. The WMSA topsoil storage area occurs at two locations. The older location has stopped receiving material and the slopes have erosion controls inplace. The newer topsoil storage area is actively receiving material and has a silt fence at the toe to control sedimentation. Signs identify both the WMSA topsoil storage areas. In the EMSA three topsoils storage areas have been designated. Only one has received topsoil, the other two are for future storage. Only the active EMSA topsoil storage area is signed, but the operator has indicated that the other two areas will be signed. County staff will inspect to determine that these two topsoil storage areas are properly signed during the pre-winter site inspection.

Mined Land Boundary

In September 2011 and again on January 25, 2013, the County Surveyor surveyed the stockpiled material in the WMSA and EMSA to determine whether the mine operator is in compliance with the maximum height conditions. County staff found that the tops of the stockpiles are in compliance with the maximum allowable height conditions for both areas. The 2012 RPA requires that any limestone washout fines be covered with a minimum of 25 feet of overburden material and offset a minimum of 30 feet from the final reclaimed slope face (COA #70d.) Validation of this condition requires that the elevation of any washout fine deposits be surveyed. Either the operator or the County Surveyor should determine the elevation and location(s) of these fines whenever they are conducting a survey to verify that this condition is being met.

The 2012 RPA approval included a condition that the northern and eastern boundaries of the WMSA and EMSA be clearly staked and flagged (COA #22). Another condition of approval requires that the operator provide to the County every 24 months the surveyed coordinates of the limits of reclamation along with aerial photos (COA #23) to show where mining has occurred in the previous 24 months and what the topography will be at the end of the next 24 months. The aerial photos were flown in June 2013 and copies submitted to the County.

Stormwater and Water Quality

As directed by the SFBRWQCB, the operator has filed several Notice of Intent documents under the Sand and Gravel General NPDES permit, R2-2008-0011, with the intent that this general permit will function as an interim permit until an individual NPDES permit can be approved (see June 24, 2011 memorandum from SFBRWQCB to Lehigh). Non-stormwater discharges identified by the SFBRWQCB included the water collecting in the bottom of the north quarry. The facility is also under a previous Cleanup and Abatement Order No. 99-018 for discharges of concrete and other wastes into Permanente Creek. The SFBRWQCB also issued a Water Code Section 13267 Investigative Order for alleged unauthorized discharges to Permanente Creek, dated June 10, 2011 and issued a revised order on June 27, 2013 (R2-2013-0005-A1). These orders makes a request for the operator to file a Report of Waste Discharge under Water Code Section 13260, and clarifies some outstanding issues identified in the SFBRWQCB's previous letters and order to Lehigh. Lehigh has applied for a NPDES Permit that will consolidate existing permits and cover all Permanente facility discharges to Permanente Creek. The operator is working with the SFBRWQCB to investigate of water quality impacts from mining. Lehigh should inform the County of the results of these investigations and provide written copies of all correspondence, approval letters and permits, as soon as available.

Wildlife and Vegetation

The operator has conducted a series of re-vegetation test plots to evaluate various soil treatments and to determine what soil and seed combinations will be best for successful re-vegetation. One of these test plots is located in a flat area southeast of the WMSA, called the Yeager Site. A second re-vegetation test plot has been established on the north-facing slope in the EMSA to evaluate various soil treatments necessary for re-vegetation of slopes in this area. Test plots of different re-vegetation treatments in the EMSA also appear to be yielding good results. These test plots have run for five years and the mine operator biologist is preparing a final report. The mine operator anticipates that the final test plot report will be submitted to the County by the end of 2013.

The 2012 RPA approval included a number of conditions that cover wildlife and vegetation (COAs # 46 to #61). These conditions require that pre-disturbance surveys and setback buffers be implemented during critical time periods. Qualified biologists must conduct survey work. These survey were conducted prior to the expansion of mining into the eastern wall of the North Quarry. There are also conditions to prevent invasive species and Sudden Oak Death. Evaluation of compliance with wildlife and vegetation protections was not done as part of this inspection effort. Either County staff or their consultant will evaluate compliance with wildlife and vegetation conditions.

VIOLATIONS

With the approval of the RPA by the Santa Clara County Board of Supervisors on June 26, 2012, past SMARA violations were resolved. The operator continues to work with the SFBRWQCB to provide

permit applications, workplans, technical reports and monitoring reports that address water quality requirements for the mine waste rock, stormwater, groundwater and process waters. The SFBRWQCB has a web site where Lehigh Permanente documents can be found, http://www.waterboards.ca.gov/sanfranciscobay/water_issues/hot_topics/lehigh.shtml. During the 2013 inspection no new SMARA violations were noted.

AREAS OF CONCERN AND ISSUES TO MONITOR

1. Continue monitoring the WMSA and EMSA for stability and erosion control. Prior to this winter, condition of check dams, drainage channel armor and drainage outfalls should be inspected by the County. The mid-slope road south of the WMSA should be monitored for erosion control and instability. The drainage on the north side of the WMSA should continue to be monitored and modified, as necessary to prevent erosion.

2. Continue monitoring rockslides in North Quarry and the operator should notify the County if new landslides occur, or the existing rockslides enlarge, particularly further into the RPA. Monitor the western-slide area that may underlie the haul road.

3. The operator should continue to work with the SFBRWQCB and the County to provide information required for compliance with water quality regulations. The operator should provide to the County copies of documents submitted to the SFBRWCB. The County should periodically assess how investigations being conducted for the SFBRWQCB will impact reclamation of the mine.

FINANCIAL ASSURANCE

The operator submitted a revised financial assurance cost estimate (FACE) on September 9, 2013. PMC will provide written comments to the County in a separate letter within 30 days of receipt. When the County certifies the 2013 FACE, it will forward the calculations to OMR for its 45 day review.

CONCLUSIONS AND RECOMMENDATIONS

Permanente Quarry is in compliance with SMARA, and is working with the SFBRWQCB on water quality requirements and discharge permits. The following tasks should be undertaken to control potential erosion and maintain slope stability on the site:

1. The perimeter slopes of the WMSA and EMSA rock storage piles should continue to be monitored for erosion control and modified, as necessary.

2. The mitigation measures implemented to control runoff from the road running mid-slope south of the WMSA should be monitored, and modified, as necessary.

3. The final report of the re-vegetation test plots should be submitted to the County.

4. The drainage ditches and sediment catch basins constructed in the EMSA rock storage area should be monitored, cleaned out, and repaired as necessary.

5. The rock-armored outfall of the stormwater Pond 30 should be monitored and modified, as necessary.

6. The operator's geotechnical consultant should continue to monitor the long-term stability of the highwalls in the North Quarry, and the slope on the south side of the WMSA rock storage pile. The mine operator and geotechnical consultant should report to the County, as soon as possible, any changes in the stability of the mine slopes.

7. The locations of any new deposits of limestone washout fines in the EMSA should be surveyed to demonstrate that they will be buried as required by COA #70d.

8. The County should remain in contact with the SFBRWQCB regarding water quality investigations. The mine operator should inform the County when results of water quality investigations may impact reclamation of the mine.

9. When the PCRA remediation plan is approved by the SFBRWQCB and other permitting agencies, the plan should be incorporated into the RPA. Pending this plan's approval, the County should continue with implementing the PCRA mitigation measures and conditions that are part of the June 26, 2012 RPA approval.

10. The erosion control measure implemented along the slopes draining to Permanente Creek should be monitored and repaired as necessary.

11. The County should inspect the new primary and secondary crusher area for compliance with erosion and drainage requirements as part of the pre-winter inspection.

LIMITATIONS

Our services are limited to providing professional opinions and recommendations made in accordance with generally accepted engineering geology principles and practices. No warranty, expressed or implied, of merchantability or fitness, is made or intended in connection with our work, by our proposal for consulting or other services, or by our oral or written reports or findings. Our services have been limited to review of the Reclamation Plan as provided by the County, review of previous available annual SMARA inspection reports, visual field inspections, discussions with the County and operator staff, and the preparation of this letter report.

If you have any questions, please feel free to contact me at (530) 750-7076 or e-mail me at kcustis@pmcworld.com.

Sincerely,
PMC

PROFESSIONAL GEOLOGIST
KIT H. CUSTIS
CEG #1219
CERTIFIED ENGINEERING GEOLOGIST
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Kit H. Custis, Engineering Geologist – Hydrogeologist
PG 3942, CEG 1219, CHG 254
Expires 2/28/2014

KHC:kc:pa: Final_Permanente_2013_SMARA_Inspection_Report_PMC_11_04_13

2013 SMARA INSPECTION PHOTOS

Photo 1: North Quarry, southwest portion. Waste rock material being placed at toe of western slope. Potential "Haul Road Slide" in eastern slope of WMSA, right of image. Floor elevation of quarry at approximately 725 feet msl. Dated September 26, 2013.

Photo 2: Upper portion of eastern highwall of North Quarry with slopes at final grade. First bench being cut to elevation at right side of photo. Dated September 26, 2013.

Photo 3: Check dams on WMSA haul road that were replaced with non-limestone materials, looking eastward. Dated September 26, 2013.

Photo 4: Looking northeast at the North Quarry. Mid-Pen Rockslide area at in center of image being removed by recent mining. Dated September 26, 2013

Photo 5: Looking northwest at Scenic Easement Rockslide in center of image. Dated September 26, 2013.

Photo 6: Looking west at Main Rockslide and WMSA. Dated September 26, 2013.

Photo 7: New topsoil storage area in WMSA, looking north. Sign and silt fence in foreground. Dated September 26, 2013.

Photo 8: Portion of re-vegetated north-facing slope of WMSA, looking east. A portion of this slope will be removed in Phase 2 to backfill of North Quarry. Dated September 26, 2013.

Photo 9: Rocked outfall in mid-slope bench on southern WMSA slope with straw waddles and bales, looking southwest into Permanente Creek. Dated September 26, 2013.

Photo 10: Straw waddles and bales at outfalls of mid-slope bench on southern slope of WMSA, looking looking west. Dated September 26, 2013.

Photo 11: Silt fencing on southern slope of WMSA below outfall in Photo 9. Note soil mixed with talus adjacent to silt fence may be result of past slide. Dated September 26, 2013.

Photo 12: Southern slope of WMSA with silt fencing, looking west up Permanente Creek. Dated September 26, 2013.

Photo 13: Topsoil storage area EMSA with sign and silt fence, looking west. Abandoned water tank at right side of image. Dated September 26, 2013.

Photo 14: Slope failure north of eastern end of 500-foot long conveyor tunnel in Crusher/Support Area, looking west. Sediment catch basins constructed above western perimeter drainage ditch in foreground. Dated September 26, 2013.

Photo 15: Sediment catch basin, greenstone rock weir and western perimeter drainage ditch in EMSA, looking northeast. Dated September 26, 2013.

Photo 16: Western perimeter drainage ditch in EMSA. Ditch cleaned out and greenstone rock placed in bottom, looking northeast. Dated September 26, 2013.

Photo 17: Pond 30 lowest pond in EMSA and drains into Permanente Creek, looking south at cement plant. Walls of pond and drainage ditch relined with greenstone. Dated September 26, 2013.

Photo 18: Pond 30 outfall to Permanente Creek, relined with greenstone. Dated September 26, 2013.

Photo 19: New primary crusher structure, looking west. Drainage from area will be collected and pumped into North Quarry for treatment before discharge. Dated September 26, 2013.

Photo 20: New secondary crusher pad area, looking northeast. Note straw waddles on slope. Slope will be hydroseeded before this winter. Dated September 26, 2013.

Photo 21: New primary and secondary crusher area, looking northeast. Looking at location where new crushers will tie into existing conveyor. Portion of convey to left of notch will be removed. Dated September 26, 2013.

Photo 22: Previous temporary limestone stockpile area at eastern edge of North Quarry and north of mine office area. Limestone material has been removed, looking southwest. Dated September 26, 2013.

Photo 23: Surge pile, looking northeast from area of Pond 13B. Dated September 26, 2013.

Photo 24: Pond 17 collects runoff from Rock Plant, looking north. Dated September 26, 2013.

Photo 25: Pond 17 outfall to Permanente Creek, looking north. Dated September 26, 2013.

Photo 26: Re-vegetated drill roadway and pad in South Quarry Exploration near N37° 18.898', W122° 06.843', looking north at west side of quarry. Dated September 27 2013.

Photo 27: Re-vegetated drill roadway in South Quarry Exploration area near N37° 18.707', W122° 06.448', looking east. Dated September 27, 2013.

Photo 28: Re-vegetated drill pad in South Quarry Exploration area near N37° 18.670', W122° 06.457', looking south. Dated September 27, 2013.

Photo 29: Re-vegetated drill pad in South Quarry Exploration area near N37° 18.555', W122° 05.731', looking west. Dated September 27, 2013.