SAN FRANCISCO BAYKEEPER®

February 21, 2012

Rob Eastwood, Principal Planner
Santa Clara County Planning Office
70 West Hedding Street, 7th Floor
San Jose, CA 95110
Rob.eastwood@pln.sccgov.org
Submitted via electronic mail

RE: Comments on the Draft Environmental Impact Report for the Lehigh Permanente Quarry Reclamation Plan

Dear Mr. Eastwood:

Thank you for the opportunity to comment on the Draft Environmental Impact Report ("DEIR") for Lehigh Southwest Cement Company's ("Lehigh") Permanente Quarry Reclamation Plan Amendment ("RPA" or "Project"). San Francisco Baykeeper ("Baykeeper") submits these comments on behalf of our 2,300 members that live and recreate in and around the San Francisco Bay. Baykeeper is a 501(c)(3) nonprofit organization with the mission to protect and enhance the water quality of the San Francisco Bay for the benefit of its ecosystems and surrounding communities.

Baykeeper believes that the DEIR is fundamentally flawed in several regards. The project description, environmental impact analysis, and cumulative impacts analysis are vague and incomplete, leaving the public in the dark as to the true consequences of the proposed Project. Since this does not satisfy the purposes of the California Environmental Quality Act ("CEQA"), the DEIR must be revised and recirculated to provide the public with a meaningful opportunity to comment on a complete environmental impact report ("EIR").

1. The DEIR Fails to Support Any Assertion of a Vested Right.

The DEIR fails to provide any discussion of the legal underpinnings supporting the claim that Lehigh has a vested right to mine the entirety of the Project Area, rendering any CEQA analysis of the environmental impacts of mining operations moot. Instead, the DEIR baldly states that Lehigh has a vested right to mine and no county permits are necessary. However, this issue was not decided at the time the DEIR was circulated for public review, and is currently the subject of legal controversy that significantly implicates the scope and adequacy of environmental review in this DEIR.

A vested right under the Surface Mining and Reclamation Act ("SMARA") only exists to the scope and extent of mining activities that were occurring before SMARA was enacted, so long as those rights have been continuously exercised and not abandoned. The DEIR contains no evidence showing the scope of mining undertaken at each of the Project sub-areas prior to SMARA, no evaluation of whether ongoing and planned activities are consistent with such a scope, and no evidence showing that the exercise of that right has been continuous and not

abandoned. Without such a discussion, the DEIR provides the public with no meaningful way to evaluate the DEIR's fundamental assertion that no environmental analysis of ongoing and future mining activities is needed under this DEIR.

2. The Project Description is Flawed Because it Does Not Sufficiently Describe Future Mining Activities in the Project Area.

The DEIR is incomplete because it fails to discuss how much mining will occur in the Project Area during the length of the Reclamation Plan. CEQA requires all EIRs to include project descriptions that provide the public with an "accurate, stable and finite project description," which courts have stated "is the *sine qua non* of an informative and legally sufficient EIR." *County of Inyo* v. *City of Los Angeles* (1977) 71 Cal. App. 3d 185, 199. The DEIR briefly mentions that the proposed RPA includes "approximately 1,238.7 acres, consisting of approximately 636.8 acres of *existing or planned* surface mining operation-related disturbance and approximately 599.3 acres of open space." DEIR 2-1 (emphasis added). However, this description leaves the reader guessing as to (1) how many acres Lehigh plans to use for additional mining operations in the future and (2) how much limestone will be extracted from these areas. The DEIR's Project Description must specifically address both of these issues to satisfy CEQA.

3. The Three Phases of Reclamation Described in the Project Description Are Too Flexible.

The DEIR fails to describe a concrete plan for reclamation in the Project Area. According to Table 2-2, the Project will be implemented in three phases that all end by 2030, but the DEIR renders this phased plan defective by leaving the implementation deadlines open to interpretation: "The actual timing of each phase of reclamation would depend on the rate of extraction and the availability of overburden for use in backfilling the Quarry pit, which could vary based on market conditions and the quality of mineral resources encountered during the mining process. Additional time could be required for one or more of the proposed phases to allow for maintenance and monitoring of revegetation efforts until reclamation goals standards are met." DEIR 2-14. This ambiguous qualification does not constitute an "accurate, stable and finite project description," as required by the California Supreme Court. *County of Inyo*, 71 Cal. App. 3d at 199. Also, the DEIR should clearly state that Lehigh must obtain approval to amend its Reclamation Plan in the event of any "substantial deviations" from the phased plan. Cal. Pub. Res. Code § 2777.

4. The Scope of the Environmental Impacts Analysis Is Unlawfully Narrow.

The DEIR's analysis of water quality impacts is faulty because it only analyzes the impacts to one waterbody, Permanente Creek. To evaluate the significance of a project's environmental impacts, CEQA requires the lead agency to consider both "direct physical changes in the environment which may be caused by the project" and "reasonably foreseeable indirect physical changes in the environment which may be caused by the project." CEQA Guidelines § 15064(d). As stated by the Project DEIR, Permanente Creek flows into the southern portion of San Francisco Bay and is diverted to Stevens Creek by way of the Permanente Creek Diversion.

DEIR 4.10-1. However, despite this clear hydrologic connection, the DEIR does not discuss how the Project will impact Stevens Creek or the San Francisco Bay. *See* DEIR 4.10-29 to 4.10-51. Since all of these waterbodies are listed as impaired by pollutants found in the Project Area, it is "reasonably foreseeable" that the Project will have significant environmental impacts on Stevens Creek and the San Francisco Bay. These impacts must be fully analyzed in the DEIR to satisfy CEQA.

5. <u>The DEIR Fails to Fully Analyze How Post-Reclamation Activities Will Impact Water Resources.</u>

The DEIR ignores how post-reclamation activities could potentially impact local waterways with mercury contamination. In order to fulfill the fundamental purpose of an EIR, which is "to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment," an EIR "shall include a detailed statement setting forth . . . [a]ll significant effects on the environment of the proposed project." CEQA §§ 21061, 21100(b)(1). CEQA does not have an "ironclad definition" for what constitutes a significant effect because "the significance of an activity may vary with the setting." CEQA Guidelines § 15064(b). The DEIR's discussion of Impact 4.10-1, "Post-reclamation conditions in the EMSA, WMSA, and Quarry pit would increase selenium concentrations in Permanente Creek to levels exceeding baseline conditions and RWQCB Basin Plan objectives," mentions that "mercury is being mobilized and transported in surface runoff at levels that sometimes exceed the (4-day average) Basin Plan objective," but concludes that mercury contamination is an insignificant impact because "the concentrations of mercury measured in runoff from the EMSA and within Permanente Creek cannot be reliably distinguished from background (or natural) concentrations based on the best available information." DEIR 4.10-30 to 4.10-31. This contradictory and superficial analysis of mercury-related impacts is not sufficient to satisfy CEQA. Both the San Francisco Bay and the Stevens Creek Reservoir are listed as impaired by mercury under section 303(d) of the Clean Water Act ("CWA"), increasing the harmfulness of mercury discharges from the Project Area. It is clear that Project activities, including mining and cement production, introduce mercury into surface waters and through aerial deposition, which must be accounted for as a direct and cumulative impact of the Project.

The DEIR mentions that elevated mercury concentrations were found at "several locations" within the Project Area and Permanente Creek, but does not analyze this parameter as extensively as selenium. *See* DEIR 4.10-6, 4.10-8. For example, the SES water quality sensitivity analysis was only performed for selenium because the DEIR considers it the "key constituent of concern," and the parameters measured in the Quarry Pit's water quality did not include mercury. DEIR 4.10-36, Table 4.10-6. Since it is clear that there is an abundance of mercury located in the Project Area, there must be more analysis before the DEIR can conclude that post-reclamation conditions would not significantly impair water quality with mercury contamination.

Even the analysis for selenium impacts is insufficient. According to the DEIR, "studies have not been performed to determine whether selenium concentrations in fish located in portions of Permanente Creek downstream from the Quarry differ from than those in fish located upstream

from the Quarry." DEIR 4.10-5. Since selenium is the DEIR's key constituent of concern and the Regional Board recently proposed listing Permanente Creek as impaired by water toxicity under section 303(d) of the CWA, the DEIR must analyze whether the Project will significantly impact fish populations to satisfy CEQA.

6. The Proposed Mitigation Measures for Impact 4.10-1 Are Inadequate.

The two mitigation measures selected for reducing selenium pollution caused by post-reclamation activities are insufficient because they will not fully mitigate this significant impact of the proposed Project. CEQA requires EIRs to fully describe all "feasible measures" that could minimize significant adverse impacts. CEQA Guidelines § 15126.4(a)(1). If there is more than one mitigation measure available, the EIR must discuss each measure and identify the basis for selecting a particular measure. CEQA Guidelines § 15126.4(a)(1)(B). The DEIR contains two mitigation measures – hiring a professional geologist to verify the use of materials containing no limestone, and implementing a water quality and mitigation verification program. While these mitigation measures are a good starting point, they do not completely address all feasible options. There is no discussion of the best management practices that Lehigh could use to reduce selenium and mercury in stormwater runoff and from aerial deposition. *See* DEIR 4.10-41 to 4.10-42. Also, the water quality monitoring and verification program requires Lehigh to reduce only one parameter to a level below all applicable water quality standards, selenium. DEIR 4.10-42. The reduction program should also target additional parameters since the waterways surrounding the Project Area are impaired by several constituents, including, but not limited to, mercury (San Francisco Bay and Stevens Creek Reservoir), water toxicity (Permanente Creek and Stevens Creek), and diazinon (Stevens Creek), all of which may be discharged from the Project activities.

7. The DEIR Fails to Fully Analyze How Reclamation and Mining Activities Will Impact Water Resources.

The DEIR's analysis of the impacts caused by reclamation activities ignores any potential contamination of waterbodies with metals. Under CEQA, an EIR "shall include a detailed statement setting forth . . . [a]ll significant effects on the environment of the proposed project." CEQA § 21100(b)(1). The DEIR discusses how reclamation activities in the Project Area and the Permanente Creek Reclamation Area would contribute to selenium, total dissolved solids, and sediment in Permanente Creek (Impacts 4.10-2 and 4.10-3), but this discussion is incomplete because it does not analyze whether Permanente Creek or other surrounding waterbodies will be impacted by metals. DEIR 4.10-42 to 4.10-47. It is widely known that there is a high presence of mercury and other metals in the Project Area. Since these metals will be disturbed by mining and reclamation activities, the DEIR must address any potential impacts that this disturbance will have on water quality in the Bay Area to satisfy CEQA.

8. The DEIR's Discussion of the Cumulative Impacts on Biological Resources is Incomplete.

The DEIR is inadequate because it fails to fully discuss how all related past, present, and future projects, including the operation of the Lehigh Cement Plant and surface mining at the Lehigh

Quarry, will impact aquatic habitats in Permanente Creek, Stevens Creek, and the San Francisco Bay. CEQA mandates that an EIR discuss a project's cumulative impacts when the project`s incremental effect is "cumulatively considerable," meaning that "the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." CEQA Guidelines §§ 15130(a), 15065(a)(3). The DEIR lists "potential secondary effects to aquatic habitat associated with selenium runoff to Permanente Creek" as a significant cumulative impact. DEIR 6-17. However, this discussion is incomplete for three reasons.

First, like the environmental impacts analysis, the DEIR's cumulative impacts analysis must also discuss the impacts to aquatic habitats in Stevens Creek and the San Francisco Bay, not just Permanente Creek. CEQA requires lead agencies to "provide a reasonable explanation for the geographic limitation used" in its cumulative impacts analysis, yet the DEIR does not provide any explanation for why it only discusses impacts to Permanente Creek alone. CEQA Guidelines § 15130(b)(3). Since Permanente Creek is hydrologically connected to both Stevens Creek and the San Francisco Bay, these important waterbodies should also be included in this analysis.

Second, the DEIR unlawfully limits its discussion of impacts on aquatic habitats to just selenium. Since CEQA requires an EIR to discuss any impact that is "cumulatively considerable," the DEIR should have discussed how *all* pollutants resulting from mining and cement plant operations impact aquatic habitats in the Bay Area. CEQA Guidelines §§ 15130(a). There are many studies showing that Permanente Creek, Stevens Creek, and the San Francisco Bay are all adversely impacted by several contaminants, such as mercury, metals, and suspended sediments. Therefore, the DEIR must fully assess how these pollutants, among others, impact the relevant aquatic habitats.

Third, the DEIR only discusses "short-term impacts from selenium runoff to Permanente Creek" without any explanation of long-term impacts. DEIR 6-18. The DEIR must include an assessment of long-term impacts to aquatic habitats to satisfy CEQA.

9. <u>The DEIR's Discussion of the Cumulative Impacts on Hydrology and Water Quality is Incomplete.</u>

Like the discussion of cumulative impacts on biological resources, the scope of potential cumulative water quality impacts is unlawfully limited to just Permanente Creek. The DEIR states that the geographic scope "includes Stevens Creek and Permanente Creek out to the San Francisco Bay," but the actual discussion of cumulative impacts in this section does not mention either Stevens Creek or the San Francisco Bay. DEIR 6-23, *see generally* § 6.2.10. The DEIR must complete a full analysis of cumulative water quality impacts with an appropriate geographic scope to satisfy CEQA.

In addition, the DEIR completely fails to discuss the cumulative impacts of the mercury contamination caused by mining and cement plant operations. According to the DEIR, there would be "ongoing discharges from the Quarry pit from groundwater intrusion and stormwater runoff (including from a portion of the WMSA) and stormwater runoff from the EMSA and

other portions of the Project Area" that would contain "selenium, total dissolved solids (TDS), and other constituents" and flow into Permanente Creek. DEIR 6-23. This limited analysis does not account for the massive amount of mercury that the Lehigh Mine and Leigh Cement Plant release into the San Francisco Bay through both stormwater and aerial deposition of mercury-laden air emissions.

10. Conclusion

Due to the many inadequacies discussed in this comment letter, the County of Santa Clara must recirculate the DEIR. CEQA mandates recirculation of an EIR to the responsible agencies for consultation whenever "significant new information" has been added after the draft EIR has been available for review but prior to certification of the final EIR. CEQA § 21092.1; CEQA Guidelines § 15088.5. The issues discussed in this comment letter constitute new information that must be considered by the responsible agencies and the public.

Thank you for considering Baykeeper's comments. If you have any questions, please feel free to contact Abigail at (415) 856-0444, extension 109.

Sincerely,

Abigail Blodgett
Legal Fellow, San Francisco Baykeeper

Jason Flanders
Program Director, San Francisco Baykeeper

Mr. Rob Eastwood:

Dear Sir:

You asked for opinions? Here's mine, with no scientifi c adornments.

My husband and I moved here to Cupertino 52 years ago and have never had any
quarrel with the operation of Kaiser Permanente/ Hansen/ Lehigh Cement
Plant. If Lehigh drew up the EIR and is okay with it, that's good enough in
my opinion. I myself know little about EIR's except to wonder if they are
really necessary to anyone except environmentalists. I seriously doubt if
the Johnny-come-lately Lehigh complainers will accept it. They want Lehigh
gone. I want the complainers gone. Or quiet, at least.

Sincerely,
Rowena Bell
21361 Columbus Avenue
Cupertino, CA 95014

------ End of Forwarded Message

From: Tim Brand <tkbrand@sbcglobal.net>
Date: Tue, 21 Feb 2012 16:13:13 -0800
To: "rob.eastwood@pln.sccgov.org" <rob.eastwood@pln.sccgov.org>
Subject: comment to Lehigh DEIR

1) The Health Risk Assessment fi gures in the DEIR do not consider synergistic effects from toxins. This is a well known mechanism, exploited in medicine for treatment of both cancer and AIDS. On February 6, 2012, at the Los Altos/Los Altos Hills forum, Brian Bateman,
BAAQMD responded to a question about this by saying that the data for
these synergistic effects at low dose concentrations were not available like they were for the high level doses used in medicine. He did not deny their applicability to our health; he merely said they did not have rules on how to quantify the effects at this time.
The EIR should present the "whole record" so that the public and SCC can
assess the impact honestly, not merely the part of the record that has been blessed by our regulatory agencies. Please consider the synergistic effects of the toxins from the increased air and water pollution as well as how they add to the cumulative effects.

2) I am also attaching a 2/18/2012 article in the NYTimes which states a
similar problem in the way our regulatory agencies have been assessing
the dangers from particulate matter. This article is particularly applicable to the diesel exhaust. Please make sure to include this NYTimes article and include the findings from the study in the Proceedings of the National Journal of Science which will be published shortly, and consider the mechanisms it shows when calculating the health impact.

Timothy Brand
10161 Lebanon Drive
Cupertino, CA 95014

February 18, 2012

Scientists Find New Dangers in Tiny but Pervasive Particles in Air Pollution

By FELICITY BARRINGER

Fine atmospheric particles — smaller than one-thirtieth of the diameter of a human hair — were identified more than 20 years ago as the most lethal of the widely dispersed air pollutants in the United States. Linked to both heart and lung disease, they kill an estimated 50,000 Americans each year. But more recently, scientists have been puzzled to learn that a subset of these particles, called secondary organic aerosols, has a greater total mass, and is thus more dangerous, than previously understood.

A batch of new scientific findings is helping sort out the discrepancy, including, most recently, a study led by scientists at the University of California, Irvine, and the Pacific Northwest National Laboratory in Richland, Wash., that is scheduled to be released on Tuesday. It indicates that the compounds' persistence in the atmosphere was under-represented in older scientific models.

"If the authors' analysis is correct, the public is now facing a false sense of security in knowing whether the air they breathe is indeed safe," said Bill Becker, of the National Association of Clean Air Agencies.

Taken together, the findings of the new study and of a handful of others published in the past two years could mean that two decades' worth of pollution-control strategies — focused on keeping tiny particles from escaping into the atmosphere — have addressed only part of the problem.

Scientists and regulators say that new models, strategies and technologies would be needed to address the secondary organic aerosol particles, which are formed not during combustion but later, in the wake of interactions between pollutants and natural chemical compounds.

Paul Shepson, a professor of analytical and atmospheric chemistry at Purdue University and one of the reviewers of the Irvine paper, called it "highly significant in scientific terms," adding that current models of fine particulates "grossly underpredict" their density, "sometimes by as much as a factor of 10."

A former regulator agreed. "There's no doubt this is important stuff," said Jeffrey R. Holmstead, who ran the Environmental Protection Agency's air and radiation program during the administration of President George W. Bush. "It may be harder than we thought" to clean the fine particles out of the air and protect public health, he said, "but if we really know what's causing it, we can focus our efforts more."

Mr. Holmstead added that the findings could significantly affect the future design and implementation of air-pollution control strategies and that regulators would have to rethink the models that inform air quality rules.

This new information has scientists questioning whether climate change modeling should be adjusted as well.

The E.P.A. has announced that it is reassessing the national ambient air quality standards for fine particulates, which were last set in 2006 at levels higher than the agency's staff and scientific advisers had recommended. The agency's most recent data show that airborne particles decreased 27 percent from 2000 to 2010.

A spokeswoman for the E.P.A. said the agency usually declined to comment on individual studies, preferring to incorporate them into its larger analyses during the rulemaking process.

The Irvine study of the formation of secondary compounds in the atmosphere, which will be published in the Proceedings of the National Academy of Science, upends previous assumptions about the fate of the byproducts of the pollution from internal-combustion engines. These gaseous byproducts were thought to incorporate themselves into tiny airborne drops of liquid that would then dissipate quickly as the drops evaporated.

The new study finds instead that they attach themselves more tightly to airborne organic particles, creating tiny tar balls that evaporate more slowly and persist longer than anyone had thought. E.P.A. models built on these assumptions now appear to understate the total amount of fine particles, according to Barbara J. Finlayson-Pitts, a professor at Irvine and one of the study's authors.

"If you're going to use models in a predictive sense, you need to make sure they are getting the right answer for the right reasons," she said. "Right now most models are not getting the right answer."

Allen Robinson, a professor of engineering and public policy at Carnegie Mellon University, focuses his work on fine particulates and their regulation. "We haven't been trying to control a lot of the organics," he said of the subset of particles that is the subject of the new findings.

Emissions of coal-fired power plants do not play a role in the formation of these organic particles, several scientists said, but they do come into play in the formation of sulfide-based particles.

January27 2012

Rob Eastwood, Principal Planner
County of Santa Clara Planning Office
70 West Hedding Street, East Wing 7th floor
San Jose, CA 95110

Mr. Eastwood

This communication is in response to your request of December 23, 2011for comment regarding an application for a Reclamation Plan Amendment for the Lehigh Permanente Quarry above Cupertino, DEIR. My wife and are long term (since 1973) residents of Cupertino:

John and Marilyn Buenz
22115 Dean Ct
Cupertino CA 95014 phone 408 343 0655/ e-mail jbuenz0835@att.net

We understand that the quarry operates under an arrangement with the county going back many years. However it is high time to recognize that the valley, and especially the area immediately surrounding the quarry site, has changed and developed dramatically since the time of the original arrangement. How the County Planning Office could fail to realize that times and circumstances have changed over this time is beyond me and most others in Cupertino.

Let me cite the obvious rationale for that statement:
1. Homes now surround the quarry which has been out of compliance with environmental obligations unheard of when the quarry was founded. Just now quarry ownership seems to be considering these obligations long after they were enacted while the Sierra Club and a local organization have struggled for years to force environmental regulators

to enforce these obligations, and without a serious hearing, let alone compliance.

2. Trucks carrying cement and other materials produced by the quarry fill and pollute (with noise, traffic and dust) Foothill Expressway at least five days a week. Many residences line this freeway, constructed long after the quarry began operations. Nose from the cement producing operations can be heard as far away as my home which is located in the Steven Creek Canyon. Dust from these operations covers our area, including my home, to say nothing about homes just above the quarry
.

3. The visual scar from quarry operations can be seen from far down Hwy 85, and this makes a farce of county restrictions on unobtrusive grading all over the county. Even many years ago, I had to request and defend my request of a grading permit for a small area on property on Shannon Road, Los Gatos. That minor grading could not be seen from any location beyond the site itself. The quarry scar is a major visual feature for the entire county, for which you are responsible.

The "specific environmental impacts" which your report is to address includes all of the "significant impacts" which your "Notice of Availability" includes in the paragraph "Significant Environmental Effects". This should not be rocket science for you; and we, and I am sure many others you may or may not hear from, urge, in the strongest terms, a negative declaration on this application. What on earth is your office for but to protect the county from issues obviously raised by the Leigh Quarry Permanente Quarry and its application to amend its existing arrangement?

John F. Buenz

Marilyn A. Buenz

John F. Buenz Marilyn A. Buenz

California Regional Water Quality Control Board
San Francisco Bay Region

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Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

February 21, 2012

Sent via electronic email: No hardcopy to follow

Santa Clara County Planning Office, County Government Center
70 W. Hedding Street, 7th Floor, East Wing
San Jose, CA 95110
Rob.Eastwood@pln.sccgov.org

Attention: Rob Eastwood

Re: Comments on the Draft Environmental Impact Report for the Lehigh Permanente Quarry Reclamation Plan Amendment

San Francisco Bay Regional Water Quality Control Board ("Water Board") staff appreciate the opportunity to review the Draft Environmental Impact Report for the Lehigh Permanent Quarry Reclamation Plan Amendment December 2011 ("dEIR") and submit comments for consideration. The dEIR assesses anticipated environmental impacts resulting from the proposed reclamation activities, which are of serious concern to Water Board staff. In general, the Water Board's comments are:

- The environmental impacts have been significantly underestimated and under-identified.
- The standards of work required under the dEIR are not consistent with level required by the Surface Mining and Reclamation Act ("SMARA"), Title 27 of the California Code of Regulations ("CCR27"), the Federal Clean Water Act and the Porter-Cologne Water Cologne Water Quality Control Act, (at Water Code Sections 13000 et seq.).
- The analysis is based on data not capable of statistical analysis to support the conclusions drawn.
- It is premature to approve the dEIR as it is currently written. To do so would ignore the better practical alternatives and the reclamation activities' real threats to water quality or human health.

We structure our detailed comments to provide guidance as to how to resolve inconsistencies and how to collect critical information before the County proceeds with approving the Reclamation Plan Amendment.

Introduction

The Lehigh Permanente Quarry Reclamation Plan Amendment ("Project") proposes to reclaim approximately 637 acres of existing and planned surface mining disturbance area. The Project components include the reclamation of the East Materials Storage Area (EMSA, 75 acres), Quarry Pit (265 acres), West Materials Storage Area (WMSA, 173 acres), Crusher/Quarry Office Support Area (53 acres), Surge Pile (8.8 acres), Rock Plant (19 acres), an area adjacent to and within the Permanente Creek corridor (Permanente Creek Restoration Area or PCRA, 49 acres), and an area south of Permanente Creek that has been disturbed by prior surface mining-related exploratory activities (Exploration Area, 20 acres). The purpose of the reclamation is to make the Project area suitable for future open space use.

The Project would be implemented in three phases over an approximately 20-year period and completed by 2030. During Phase I, mining activities will continue at the Quarry Pit, which has been mined for over 80 years, until 2025. Overburden materials generated from future mining will be disposed against the west wall of the Quarry Pit, namely the WMSA, while reclamation of the EMSA starts immediately after the Project approval. The restoration of EMSA will be completed in Phase I.

After mining is completed in Phase II, overburden materials currently stored at WMSA will be excavated and used to backfill the Quarry Pit. During Phase III, WMSA and Quarry Pit will be graded and revegetated and final reclamation is achieved. Reclamation of other components of the Project will occur during the three phases of the Project.

As an agency charged with water quality and beneficial uses protection, the following are our main concerns of the dEIR:

- The significant water quality impacts, including from the discharge of selenium and sediment-laden water to Permanente Creek during and after reclamation (Impacts 4.4-5, 4.10-1, and 4.10-2).
- The significant impacts on changes to drainage patterns that may cause increased storm water ponding, accumulation of selenium concentrations, on-site, off-site, and downstream flooding (Impacts 4.10-4, 4.10-6, and 6.2).
- Analysis of surface water flow changes in Permanente Creek (groundwater extraction from the creek during continued mining and groundwater recharge back to the creek after reclamation), and asserts the impact to be insignificant (Page 4.4-44 and Impact 4.4-5).
- Mitigation measure proposals for the significant impacts. Among the impacts, the water quality impacts from discharging selenium and sediment-laden water during the reclamation period cannot be mitigated to less than significant levels.

Interaction of CEQA Selection of Baseline and Enforcement

The baseline chosen by the County is June 2007. Water Board policy is typically to choose the current environmental setting. However, the Water Board recognizes the County has significant discretion in selecting the baseline if there is substantial evidence to support the selected baseline. While there is a single comment *infra* regarding baseline and instability, the comments submitted by the Water Board are for the purposes of commenting on the sufficiency and propriety of the dEIR and not for pursuing direct enforcement of Lehigh. Such enforcement,

whether through the administrative or legal process, is separate and distinct from the CEQA process, consistent with *Fat v. County of Sacramento* (2002) 97 Cal.App.4th 1270, 1280; *Riverwatch v. County of San Diego* (1999) 76 Cal.App.4th 1428, 1453. However, it is the Water Board's position that comments submitted by staff about the potential for environmental harm gathered through whatever means, whether it be review of the dEIR, interaction with Lehigh personnel, or personal observations at the site, are all appropriate.

List of Water Quality/Hydrology Related Impacts Analysis (Section 4.10)

This chart is excerpted from the dEIR Table ES-3, Summary of Impacts and Mitigation Measures for the Permanente Quarry Reclamation Plan Amendment, Hydrology and Water Quality Section. Water Board Staff does not agree in all regards with the dEIR's assessment of viability compiled from the Executive Summary and Table ES-3. The Water Board often disagrees with the dEIR's assessment of viability of mitigation measures and the significance of impact after mitigation. Our comments, presented below, explain our concerns and how our conclusions differ with the dEIR's.

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.4-5: Project activities could result in selenium burdened runoff reaching aquatic habitats and, thereby, in deleterious effects to aquatic organisms and their prey base.	Significant	**4.4-5:** Selenium-related Impacts to Aquatic Habitat (to implement **4.10-2a** and **4.10-2b**).	Significant and unavoidable
4.10-1: Post-reclamation conditions in the EMSA, WMSA, and Quarry pit would increase selenium concentrations in Permanente Creek to levels exceeding baseline conditions and RWQCB Basin Plan objectives.	Significant	**4.10-1a:** Professional geologist Verification of Non-Limestone-Containing Material Use. **4.10-1b:** Verification Water Quality Monitoring.	Less than significant
4.10-2: Interim reclamation activities within the Project Area would contribute concentrations of selenium, Total Dissolved Solids (TDS), and sediment in Permanente Creek.	Significant	**4.10-2a:** Interim Stormwater Control and Sediment Management. **4.10-2b:** EMSA Interim Stormwater Monitoring Plan.	Significant and unavoidable
4.10-3: The Permanente Creek Reclamation Area (PCRA) reclamation activities would contribute concentrations of selenium, Total Dissolved Solids (TDS), and sediment in Permanente Creek.	Less than significant	None required	Less than significant
4.10-4: The Project would alter the existing drainage pattern of the site, which could result increased storm water runoff rates and on- or offsite flooding.	Significant	**4.10-4:** Construction of Onsite Detention Facility.	Significant and unavoidable

4.10-5: Groundwater discharge from the Quarry pit after backfilling and reclamation is complete would adversely alter surface water flows to Permanente Creek.	Less than significant	None required	Less than significant
4.10-6: The Project would alter the existing drainage pattern of the site, which could result in increased stormwater ponding, accumulation of selenium, and flooding.	Significant	**4.10-6:** Stormwater Control to Avoid Ponded Water and Selenium Accumulation.	Less than significant
Impact 6-2: Incremental Project-specific activities could contribute to downstream flooding.	Significant	**6-2:** Construction of Onsite Detention Facility.	Significant and unavoidable

I. WATER BOARD STAFF COMMENTS RELATED TO WATER QUALTITY STANDARDS AND REGULATIONS

A. California Code of Regulations – Title 27

Comment #1: The dEIR is Inconsistent with the Standards Set Forth in SMARA

As described throughout this letter, the Water Board's comments articulate the deficiencies in the dEIR, in the analysis done prior to issuing the dEIR, in the planned 20 years of reclamation activities, and the inadequate mitigation. The Water Board's initial concern is that the dEIR must hold Lehigh to the performance standards in the governing regulation, SMARA. Most notably, the following SMARA provisions, in the Water Board's opinion, are not met:

> 3704.1 Performance Standards for Backfilling Excavations and Recontouring Lands Disturbed by Open Pit Surface Mining Operations for Metallic Minerals.
>
> …
> (b) Backfilling shall be engineered, and backfilled materials shall be treated, if necessary, to meet all of the provisions of **Title 27, California Code of Regulations**, Division 2, Chapter 7, Subchapter 1, Mining Waste Management, commencing with Section 22740, and the applicable Regional Water Quality Control Board's Water Quality Control Plan. (emphasis added)
>
> …
> (d) … All fills and slopes shall be designed to protect groundwater quality, to prevent surface water ponding, to facilitate revegetation, to convey runoff in a non-erosive manner, and to account for long term settlement.
>
> 3706. Performance Standards for Drainage, Diversion Structures, Waterways, and Erosion Control.
> (a) Surface mining and reclamation activities shall be conducted to protect on-site and downstream beneficial uses of water in accordance with the Porter-Cologne

> Water Quality Control Act, Water Code section 13000, et seq., and the Federal Clean Water Act, 33 U.S.C. section 1251, et seq.
> (b) The quality of water, recharge potential, and storage capacity of ground water aquifers which are the source of water for domestic, agricultural, or other uses dependent on water, shall not be diminished, except as allowed in the approved reclamation plan.
> (c) Erosion and sedimentation shall be controlled during all phases of construction, operation, reclamation, and closure of a surface mining operation to minimize siltation of lakes and watercourses, as required by the Regional Water Quality Control Board or the State Water Resources Control Board.
>
> 3710. Performance Standards for Stream Protection, Including Surface and Groundwater.
> (a) Surface and groundwater shall be protected from siltation and pollutants which may diminish water quality as required by the Federal Clean Water Act, sections 301 se seq. (33 U.S.C. section 1311), 404 et seq. (33 U.S.C. section 1344), the Porter-Cologne Act, section 13000 et seq., County anti-siltation ordinances, the Regional Water Quality Control Board or the State Water Resources Control Board.
>
> 3712. Performance Standards for Tailing and Mine Waste Management.
> State Water Resources Control Board mine waste disposal regulations in Article 1, Subchapter 1, Chapter 7 of Title 27, California Code of Regulations, shall govern mine waste and tailings, and mine waste disposal units shall be reclaimed in conformance with this article.

Comments throughout this letter relate to these performance standards.

Comment #2: The dEIR is Incomplete Due to No Data or Insufficient Data

Water Board staff have been informed that the County is in a severe time crunch, with little room for maneuvering. The Water Board does not find an onerous schedule a valid reason for minimizing impacts to the environment. Specifically, Terry Seward of the Water Board provided information to the County **on November 21, 2011**, along with a pdf of the Title 27 regulations and the statement that the "[Water Board] will need to evaluate your proposed plan to make sure it is consistent with the closure requirement for mine sites contained in Title 27 (section 22510)." The dEIR refers to Title 27 on 4.10-22 as part of the Regulatory Setting.[1] The dEIR concludes that the materials in the waste piles would <u>likely be characterized</u> as Group B mining waste as defined in Title 27, but can offer no support for such a conclusion, because adequate testing has never been completed. Nor has a Report of Waste Discharge for either the WMSA or the EMSA been submitted to the Water Board. The dEIR states, correctly, that under Title 27, Lehigh "would be required to implement certain siting and construction standards,

[1] The dEIR also refers to Title 27 on 2-50, noting that it requires that threats to water quality be addressed during mine closure and reclamation. The comment on page 2-50 addresses sediment transport, which is raised in Comments 27 and 28.

including peak stream flow protection, precipitation and drainage controls, and a leachate collection and removal system (LCRS)." Yet none of these items are included as required mitigation in the dEIR, even though the SMARA regulations require the Project to conform to Title 27 standards.

Comment #3: The dEIR Has Not Conclusively Determined that Hazardous Materials Are Not Present in the Waste Piles

The dEIR has presented no evidence to supports the conclusion that there are not hazardous materials in either waste pile, yet Water Board staff have observed the disposal of such materials to the waste piles.

Title 27 governs the disposal of non-hazardous, but potentially deleterious waste to land. This includes solid and liquid; municipal, construction, industrial, and mining waste. Section 20164 of CCR 27 defines "mining waste" as: all waste materials (solid, semi-solid, and liquid) from the mining and processing of ores and minerals including soil, waste rock, and other forms of overburden as well as tailings, slag, and other processed mining wastes. The known potential wastes generated by Lehigh that could be regulated pursuant to CCR 27 include mining waste (overburden mine material; waste rock mine material; liquids, solids, and sludges produced from the processing of mined ores, including contact groundwater and surface water from the Quarry Pit) and industrial waste (cement kiln bricks --which have been observed in the EMSA and photographed by Water Board staff--and dust used in the industrial processing of mined material; chemical waste materials; waste liquids, solids, and sludges produced in manufacturing industrial products such as aluminum, cement and sand and gravel).

Furthermore, while this EIR creates a distinction between the mining activities and the cement plant activities, the presence of kiln bricks in the EMSA and rock plant mud cake indicates that waste materials from all three operations are being deposited into one or both the EMSA and WMSA. So, not only must the EIR fully characterize the mining waste deposited in the storage areas, it must characterize ALL waste deposited in the storage areas. The Water Board has information that hazardous waste from the decommissioning of the Kaiser Aluminum facility has also been deposited in the vicinity of the EMSA.

Notwithstanding Title 27 and its predecessor regulations, Lehigh and/or the County should have characterized the WMSA and EMSA **for the purposes of the dEIR**. Instead, there has been a complete lack of characterization of the waste piles and the effect of the reclamation activities on the chemical constituents within the piles. While buried, rocks in the piles are in reducing conditions and are not labile (reactive), do not readily leach (dissolve) into surrounding water, and are relatively immobile in the ground. Once exposed to oxygen or oxygenated water, the surface of the rocks become oxidized. Selenium and metals also become oxidized into a labile form, such that they readily leach into surrounding water.

Characterization of waste is required to implement the appropriate level of protective measures to ensure adequate isolation of waste from groundwater and surface water.

Because the EMSA and WMSA have not been adequately characterized, and given historic records from the facility and knowledge of the geology of the area, mining waste (solid and liquid) from the site is likely to contain elevated levels of metals and metalloids such as mercury, chromium, and selenium, which can be harmful to humans and wildlife. Mercury and selenium are bioaccumulative (concentrations increase exponentially up the food chain). Water Board records indicate very limited sampling has been done of the mine related materials and wastes for these contaminants.

Comment #4: Insufficient Search To Draw Conclusions (Hazards and Hazardous Materials (4.9))

The dEIR designates impacts as less than significant based on existing use of hazardous chemicals, based on a search of regulatory databases. It is insufficient to use regulatory databases to identify known spills; historical site records must be used. Information in regulatory databases is primarily sourced from Reports of Waste Discharge, which Lehigh failed to submit with respect to mining waste. As noted above, the Water Board has personally observed hazardous materials in the waste piles.

Comment #5: Like Mining Waste, Industrial Waste Has not Been Properly Characterized

Industrial waste has not been characterized at the site. The following is a list of wastes likely present:

a) Industrial process water from crushing rock, washing rock and washing equipment may contain metals and metalloids, acrolein and acrylonitrile, and petroleum products.

b) Chemicals used to maintain equipment (fuel oils, lubricants, solvents, paints, etc.).

c) Sludges, dust, and other solid waste materials produced during the processing or manufacturing of industrial products, including waste generated at the co-located cement factory.

The petroleum and solvent chemicals contain volatile and semi-volatile organic compounds (e.g., benzene, toluene, TCE), which can be carcinogenic, mutagenic, teratogenic, or otherwise harmful to humans and wildlife. The dEIR lacks the characterization of the waste piles and of these potential harms to human health. Furthermore, the waste piles represent a real and continued threat to groundwater that, even if the dEIR were approved and the Project were to proceed, the waste piles would remain on site for at least seven additional years. Furthermore, the ultimate goal of the proposed Project is to store the same waste in the current Quarry Pit into perpetuity. Without testing, no agency or entity, including the County of Santa Clara or Lehigh, can confidently state that there are not hazardous materials in the waste piles and that the WMSA and EMSA pose no threat to groundwater.

Comment #6: The Reclamation Activities Do Not Comply with Title 27's Siting, Design, and Construction Requirements (Chapter 3, Subchapter 2)

While the reclamation plan ultimately – over the next 20 years – sorts, reuses, and relocates the EMSA and WMSA (summarized at 2-14 and 2-16), because the dEIR did not fully address Title 27, the Project is subject to the water quality risks that Title 27 is aimed at preventing. For example, Title 27 Chapter 3, Subchapter 2 requires proper siting and design, which is intended to ensure adequate isolation of waste from groundwater and surface water. Such protections may include liners separating waste from the ground surface to prohibit migration of waste and leachate to soil, groundwater, or surface water or a cap to minimize percolation of liquids through the waste, and thus leachate production.

By the term "cap" (interchangeable with the term "cover"), what is understood in the context of Title 27 compliance is an impermeable layer such as clay - not the loose, unconsolidated waste material referred to in the dEIR as "cover." Failure to comply with these requirements can result in a failure to isolate wastes from groundwater and surface water. Instead, the "cap" proposed in the dEIR is insufficient to function as intended (to minimize percolation of rain through the waste pile), and does not meet Title 27 regulations.

For example, the WMSA and EMSA have no such protections, and the dEIR proposes none **for at least the next 7 years**.[2] Staff have personally observed dry kiln bricks in the EMSA, which are hazardous. Neither of the waste piles is covered, exposing them to stormwater. The EMSA and WMSA are not small waste piles; they are vast waste impoundments: approximately 75 acres for the EMSA and approximately 175 acres for the WMSA. Neither of the waste piles is believed to be on a concrete liner. Lehigh has not submitted a Report of Waste Discharge pursuant to Water Code 13260 for either of the waste piles. The groundwater samples contained in the dEIR were collected from the wrong locations for determining if there is any contamination.

Because of Lehigh's failure to submit information under existing regulatory structures, the County may have little information about the characterization of the waste piles. However, it should have required it as part of completing the dEIR. Staff inspections indicate little to no containment structures are employed at the Project site. It is possible leachate has migrated to groundwater and surface water, and therefore possible contaminants from the waste have discharged to groundwater and Permanente Creek.

Comment #7: Inadequate Monitoring Plan Pursuant to Title 27, Subchapter 3, Article 1

[2] As is discussed *infra*, the Water Board feels the ultimate resolution – proposed mitigation – is insufficient, and the dEIR sets forth no schedule for establishing mitigation measures during Phase I, which lasts for seven years. Refer to Comment #25.

Because the dEIR is inconsistent with the requirements of Title 27, both retrospectively and prospectively, it also fails to describe or require a water quality monitoring plan during the removal and re-location of the waste piles. The purpose of this requirement is to detect, at the earliest possible time, any release from a Waste Management Unit ("WMU"), such as the EMSA or WMSA, as well as to monitor remediation of known releases. A release of leachate or waste from a WMU to groundwater, surface water, or soil where it might reach groundwater or surface water, constitutes an unauthorized discharge to waters of the state. CCR 27 requires a groundwater monitoring program for WMUs to ensure they are not leaking. Pursuant to CCR27, a hydrogeologic investigation is performed to develop a monitoring program, and typically groundwater upgradient and downgradient of the WMU are compared, or analysis of trends is used to identify a potential release. Monitoring of receiving waters, in this case at least Permanente Creek, is also required to identify impacts. The above described investigations need to be performed, fully and accurately described in this dEIR, and form the basis for project alternatives analyses and impact considerations.

It is unknown if any WMU at Lehigh is leaking, (i.e., if waste or leachate from waste piles, landfills, surface impoundments, etc., is in contact with groundwater at the site). Given historic records, Staff's knowledge of the geology and hydrogeology of the area, and evidence that the WMUs are unconfined and unlined; it is likely that waste and leachate are in contact with or have impacted groundwater quality. The geology of the area consists of fractured bedrock (fault brecciated Franciscan) and alluvium and colluvium, both of which are permeable deposits that could allow migration of leachate to groundwater. Therefore, groundwater and surface water could be impacted by pollutants from WMUs.

Comment #8: Closure and Post-Closure Maintenance Plans, Title 27, Subchapter 5

The purpose of this requirement is to ensure plans are in place to properly close WMUs to ensure continued isolation from waters of the state. It includes criteria for cover, maintenance, drainage controls, erosion controls, and financial assurances. Failure to comply means the State cannot be assured Lehigh has the plans in place, and the financial ability, to adequately close and maintain the facility during the 20-year reclamation plan to protect human and environmental health.

The Project defined in the dEIR, and all proposed alternatives, fail to address requirements of CCR27 for mining waste, and industrial waste (if disposed of onsite). These requirements include:

1. Waste and leachate characterization in the WMSA, EMSA, backfilled quarry, and surface impoundments.

2. Structural standards. Specifically, the Project and alternatives proposes to leave in place the EMSA, or move it to CMSA; however there is no proposal to meet the structural standards required by CCR 27. In addition, the Project and alternatives propose to backfill the Quarry pit with mining waste (overburden and waste rock), which has not been characterized. This waste would be in contact with groundwater (approximately **18 million gallons of groundwater** was pumped out of the pit in 2010), and may leach

contaminants from the waste and **migrate offsite, potentially discharging to Permanente Creek or downgradient drinking water aquifers**.

3. Submittal of Report of Waste Discharge and subsequent coverage under a permit (Waste Discharge Requirements) for discharge of mining waste to land will be required, which was not included in the list of required permits.

4. Proposed final contours of the Quarry do not meet CCR 27 requirements. The proposal is to backfill the pit partially, to create a swale with a lowest elevation in the quarry pit. Surface water runoff would therefore be directed to the Quarry Pit. CCR 27 requires drainage away from waste to minimize percolation and production of leachate.

B. Selenium

Comment #9: Conclusions in dEIR regarding Selenium are Not Supported by Data Presented in dEIR; Overall, dEIR Lacks Pertinent and Correct Sampling and Evaluation

Monitoring conducted by the Water Board's Surface Water Ambient Monitoring Program (SWAMP) in 2002 and by Santa Clara Valley Urban Runoff Pollution Prevention or SCVURPPP during 2005-2007 indicated selenium WQOs were exceeded at the downstream reach of the Creek (at a location near the Rancho San Antonio Park). The applicable water quality objectives (WQOs) for selenium are from the National Toxics Rule (NTR), which are 5 µg/L for chronic aquatic life protection and 20 µg/L for acute protection, expressed in total recoverable metal.

The dEIR used additional water quality data collected in 2009, 2010, and 2011 at five new locations in the Creek (Table 4.10-2). Among which, two locations, SW-1 (upstream of quarry dewatering discharge point) and SW-2 (downstream of quarry dewatering discharge) are located within the Project area, the other three are next to the Project area. These locations are further upstream of the site used in the SWAMP/SCVURPPP monitoring programs; therefore, these data more closely reflect the impacts from the mining activities.

However, selenium concentrations cited in the dEIR appeared to be all in the dissolved form, and the dEIR compared these dissolved concentrations with the selenium total recoverable WQOs (Table 4.10-2). In fact, total selenium concentrations may be more relevant to evaluate the severity of the problem. Dissolved selenium determines the phase transformation (from dissolved to particulate), but particulate selenium is the bioavailable form of toxicology importance (*Metal Contamination in Aquatic Environments, Science and Lateral Management, Samuel N. Luoma and Philip S. Rainbow, Cambridge University Press, 2008*). The dEIR at Page 4.10-6 states that selenium in the discharges are mostly in dissolved form, however, this statement needs to be supported by the data. Therefore, the analysis needs to be based on total selenium concentrations.

Even with the dissolved concentrations, all five locations in the Creek had selenium concentrations well above the WQOs, with the maximum concentration observed immediately downstream of the Quarry Pit dewatering point (81 µg/L as dissolved selenium versus the chronic objective of 5 µg/L). The Creek at this location is dominated by the Quarry dewatering

discharged from Pond 4A during dry season. Pond 4A had a sample with a selenium concentration of 100 µg/L. Besides, monitoring of the storm water runoff of the two waste materials storage areas (EMSA and WMSA) also indicated elevated selenium concentrations (ranging from 7.1 – 36 µg/L). Monitoring data of the groundwater in the Project area (0.27 to 3.9 µg/L) and in an adjacent reference creek, Monte Bello Creek (from non-detect to 0.71 µg/L), on the other hand, showed very low selenium concentrations. It is important to note that the groundwater samples were taken from the exploratory borings on the other side of Permanente Creek in an area that has not been disturbed by mining. Also, the dEIR needs to confirm that the Monte Bello Creek sampling location is eligible to be a "background" sample location.[3] Our comment here assumes that it is an appropriate background location.

Comment #10; Limestone as Potential Source of Selenium

The dEIR also identified limestone to be the rock that leaches the most selenium into the groundwater and surface runoff that has been in contact with the limestone. Groundwater that seeps into the Quarry Pit and storm water runoff that flows into the Quarry Pit, which is high in selenium, are constantly pumped to the Creek. Both WMSA and EMSA contain wasted limestone, portions of the WMSA contain dense quality limestone and aggregates; the Project proposes to separate these limestone during the reclamation (while excavating and backfilling the Quarry Pit using materials from WMSA) for subsequent processing. In the dEIR, it is noted that the EMSA also contains a fine-grade byproduct from limestone washing at the Rock Plant wash plant. Water Board staff have personally observed this same material, referred to by Lehigh staff as "mud cake", deposited in large quantities in the WMSA as well. Lehigh further documented that Rock Plant "mud cake" is deposited in the WMSA in its application materials for coverage under the Sand and Gravel Permit.

This mud cake material may contain high-grade limestone and is considered potential sources of selenium if exposed to storm water and remobilized by runoff (pg. 4.10-32). Surface runoff in contact with these waste materials will bring high concentrations and mass loading of selenium into the discharge. It is unclear how Lehigh deals with the wash water that may be very high in selenium.

Therefore, the Water Board finds that the Quarry Pit dewatering and surface runoff from the waste material areas are significant sources of selenium. Furthermore, the crusher operation area and the surge pile contain significant quantities of fines as has been personally observed by Water Board staff.

The dEIR does not mention the full range of pollutants present in mud cake: as personally observed by Water Board staff, petroleum-based lubricants are used in large quantities in the rock crushing operations, and that waste accumulates in the crusher basin area and must be removed to either the WMSA or the EMSA. The Rock Plant uses chemical agents for flocculation, and those chemicals are also present in the "mud cake" that is deposited in the WMSA and EMSA. When the Water Board required Lehigh (per June 2011 13267 order) to propose which chemicals to sample for that would indicate presence of the proprietary chemicals

[3] Refer to Comment #33, *infra*.

used at the Rock Plant, they answered, "acrylonitrile and acrolein," both of which are regulated priority pollutants in the California Toxics Rule. The dEIR needs to contain sampling data for all priority pollutants in all waste streams on site.

Comment #11: The Water Board Is Not Confident, Based on Current Analysis, that Selenium will not be Mobilized by Project Activities

The impact of selenium and metals contained in the WMSA, EMSA, and Quarry Pit has not been evaluated sufficiently to assume a less than significant impact with mitigation. The Quarry, and materials stored/disposed of in the waste piles (WMSA and EMSA) contain limestone, known to contain selenium. The overburden and waste rock is known to contain metals such as mercury, nickel, cobalt, manganese, and chromium. In elevated concentrations, these elements pose a risk to human and environmental health. While buried, these rocks are in reducing conditions and are not labile (reactive), such that metals on the surface do not readily leach (dissolve) into surrounding water, and are relatively immobile in the ground. Once exposed to oxygen or oxygenated water, as during the mining process, the surface of the rocks become oxidized. Selenium and metals also become oxidized into a labile form, such that they readily leach into surrounding water.

In the WMSA and EMSA, this Project's process of moving waste materials to the final storage location increases the concentration of selenium and metals in surface water and likely groundwater. The materials in these waste piles contain rocks, including fines (small particle size), with selenium and metals whose surfaces are oxidized, and therefore labile. Rain water will percolate through the proposed "cap" (which consists of a foot of permeable, coarse grained, non-limestone rock; under a six-inch layer of top soil) and into the material, dissolving selenium and metals. This water can seep from the waste piles contaminating stormwater, or percolate to the water table, contaminating groundwater. We note that the use of the word "cap" is misleading in the dEIR because the proposed layer of waste rock will not act as a cap as that term is used by geologists and others in the field.

Furthermore, the dEIR does not have sufficient information to demonstrate that mercury concentrations are similar to background. Furthermore, staff disagree with the assumption that the mercury concentrations above water quality objectives are necessarily attributable to atmospheric deposition. The contribution of atmospheric mercury to soil is likely negligible as it is primarily present in the atmosphere in the non-reactive elemental form.

An oxidation process similar to that described for the WMSA and EMSA has occurred in the rocks from the WMSA that will be used to backfill the Quarry Pit during reclamation, thereby further contaminating groundwater with selenium and metals if it is backfilled with mining waste. The dEIR does not adequately demonstrate that the mitigation efforts Lehigh proposes (amending the top 25 to 50 feet with organic matter) will adequately immobilize contaminants for the following reasons:

The Water Board staff disagree with the water quality projections for subsurface flow out of the Quarry (Table 4.10-7). The leachable concentrations of selenium and metals used for this projection were taken from the quarried samples rather than samples from the backfill source, the

WMSA. The rocks in the WMSA are presumably smaller sized, and therefore have greater leachable surface area than the quarried rocks. Furthermore, they have been exposed to oxygen longer and are further oxidized.

Staff concurs that the backfilled Quarry Pit will equilibrate to reducing conditions, and that amending the backfill with organic matter will enhance this process. However, the dEIR County has not sufficiently demonstrated that selenium and metals will be immobilized. Furthermore, the dEIR does not propose verification monitoring of groundwater to ensure groundwater is or remains uncontaminated. Specifically:

We cannot accept the assertion on page 4.10-39 that "case histories at other mines in the United States and Canada indicate that backfilling a mine pit and saturating the material causes chemically reducing (i.e., anoxic or anaerobic) conditions that result in very low mobility of selenium."

The references to support this statement are not appropriate. The single case history provided (BLM 2007) was a study creating reducing conditions to precipitate selenium in a quarry pit lake, not a backfilled pit. The water was treated directly, which is not analogous to the dEIR's proposal. The remainder of the "case histories" listed in the citation are proposals or plans, without a demonstration of results.

While we agree that reducing conditions reduce the lability of selenium and mercury, we cannot concur that this will necessarily result in sufficient sequestration of selenium and mercury (immobility) in the backfilled pit. Abiotic removal of selenate [Se (VI)] from solution is slow, and biotic anaerobic reduction typically results in selenite or elemental selenium, but further reduction to selenide is necessary to strongly bind selenium. Selenite reduction can result in colloids (very small particles) that remain mobile in groundwater. Mercury can be reduced to its elemental form, which though not reactive can be dissolved in groundwater, and is therefore also mobile. The potential therefore exists that selenium and mercury may continue to contaminate groundwater within and downgradient of the Quarry Pit.

The dEIR must demonstrate that mobility of selenium and metals is sufficiently retarded in order to demonstrate that the proposed Project can go forward. Furthermore, pursuant to Title 27, we will require Lehigh to monitor groundwater to ensure it is not impacted by mining or reclamation activities.

Finally, staff disagree with the analysis performed and conclusion that groundwater has not been impacted. Insufficient samples were taken (five) to make this determination. Moreover, the few samples that were taken were collected across Permanente Creek, which acts as a groundwater divide, and therefore are not representative of site groundwater (Figure 4.10-2). In sum, samples were taken in an inappropriate location and, even if they had been taken in an appropriate location, the number of samples taken is too low to provide statistical assurance of data quality.

Comment #12: Selenium Discharge to the Creek Causing Further Degradation is Likely to be Prohibited and Concerns with Effectiveness of Mitigation Measures

During the 20-year reclamation period, there would be lots of disturbances of the waste materials in the Project area, including excavating, hauling, grading, backfilling that may expose new limestone materials in the waste material storage areas to air and rain; this would exacerbate selenium discharge to the Creek during the interim reclamation period and cause a significant adverse impact to water quality and aquatic habitat. Although the dEIR proposed mitigation measures 4.10-2a: Interim Storm water Control and Sediment Management, and 4.10-2b: EMSA Interim Storm water Monitoring Plan; the dEIR states that "these measures would reduce the potential for storm water runoff to deliver sediment and selenium to Permanente Creek during the Project activities, but would not be sufficient to fully eliminate the possibility"; therefore, the dEIR categorizes the water quality impact from selenium discharge as "significant and unavoidable" after mitigation.

Federal and state Antidegradation Policies prohibit further degradation of impaired water bodies and groundwater. The discharge of elevated selenium or even worse, with potentially higher selenium concentrations associated with reclamation activities, will likely be prohibited. 40 CFR 131.12 states:

> Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

Therefore, in order to continue to discharge selenium-laden water into the Creek, either associated with future mining activities or reclamation activities, the dEIR must address the Antidegration Policy requirements.

The dEIR also must include additional data, including, but not limited to, pollutants in sediment, aquatic plant, fish tissue, bird eggs, toxicity and cause of toxicity, to evaluate whether beneficial uses are being achieved or whether the discharge is the cause of the impairment.

For Impact 4.10-1, "Post-reclamation conditions in the EMSA, WMSA, and Quarry Pit would increase selenium concentrations in Permanente Creek to levels exceeding baseline conditions and Water Board Basin Plan objectives", the dEIR's proposed mitigation strategies to reduce selenium concentrations in the surface runoff from WMSA, EMSA, and Quarry Pit, after the reclamation is complete. These include the use of 1-foot non-limestone cover, 6-inch topsoil, and water monitoring to verify selenium concentrations in the runoff being below WQOs. Additional measures to lower selenium discharge in the groundwater that will recharge back to the Creek from the Quarry Pit include backfilling with organic material (to a 25-50 feet depth). The dEIR claims that this conditioning may produce an anaerobic condition in the backfilled

materials that will help transform dissolved selenium to solid forms of selenium. We are concerned about: (1) whether the 1-foot non-limestone cover will be enough to prevent storm water infiltrating into the materials underneath it; (2) how well the 1-foot non-limestone cover is implemented; (3) what else will be done if water quality monitoring indicates exceedance of water quality objectives in the surface runoff besides improving best management practices (BMPs).

Comment #13: No Mention of Federal or State Antidegradation Policies in Regulatory Setting (4.10-17-4.10-26)

Permanente Creek is listed as impaired for selenium on the federal Clean Water Act Section 303(d) List for Impaired Waters. The dEIR identifies that mining activities contribute significant loads of selenium to Permanente Creek via surface runoff and Quarry Pit dewatering. The proposed reclamation activities (the Project) could exacerbate selenium discharge during the 20-year reclamation period. The dEIR does not provide effective mitigation measures to reduce selenium discharges to Permanente Creek during the reclamation period. The federal Antidegradation Policy at 40 CFR 131.12 and the California policy embodied in State Water Resources Control Board Resolution 68-16, prohibit further degradation of the water quality in impaired water bodies and groundwater; therefore the discharge of potentially higher selenium concentrations associated with reclamation activities **may be prohibited.**

Comment #14: Wastewater Discharge NPDES Permit Requirements

Some of the constituents in the discharge from the Quarry are currently covered under the Water Board's General permit for Aggregate Mining and Sand Washing Facilities (Order No. R2-2008-0011). The Water Board staff is in the process of drafting an individual permit for this discharge due to the complexity of the operations at the site. Future discharges associated with mining and reclamation activities will be covered under the new NPDES permit. The future individual permit may include water quality-based effluent limits for selenium, and effluent limits for other pollutants with reasonable potential to cause WQO exceedance. Since the discharge is into an impaired water body, relaxed effluent limits might not be available for the discharge, as prohibited by the Clean Water Act and the Porter Cologne Water Quality Control Act. There is high risk that the discharge will require significant treatment to prevent WQO exceedances. The EIR does not address how the discharge will comply with expected NPDES permit requirements, especially since, as discussed *infra*, the dEIR concludes without much analysis that no selenium treatment is feasible while the reclamation activities cause significant yet unavoidable environmental impacts.

C. Other Issues

Comment #15: Consistency/Comparability between WQOs and dEIR

The applicable Water Quality Objectives (WQOs) for selenium in the National Toxics Rule (NTR) and mercury in the Water Quality Control Plan for San Francisco Bay (Basin Plan) are reported in the total recoverable form. The dEIR analysis mistakenly compares dissolved concentrations with the total objectives.

Comment #16: Beneficial Uses Include Groundwater Recharge

The beneficial uses of groundwater in the area (Santa Clara Valley Groundwater Basin, Santa Clara Sub-basin) include: (a) Municipal and domestic water supply; (b) Industrial process supply; (c) Industrial service supply; and (d) Agricultural supply. Groundwater in this area is used for recharge of aquifers used for drinking water, by the Santa Clara Valley Water District. *See* the Basin Plan Amendment at (http://www.waterboards.ca.gov/sanfranciscobay/board_info/agendas/2010/July/6/Appx_A.pdf)

Given the geology outlined in the dEIR, it is expected that groundwater flow would follow topography (flow from high to low points, the lowest being the creeks). Therefore, it is likely that potentially contaminated groundwater at the site discharges to Permanente and other creeks. The beneficial uses of Permanente Creek are (a) Cold freshwater habitat; (b) Fish spawning; (c) Wildlife habitat; (d) Water contact recreation; and (e) Noncontact water recreation. It should be noted that Permanente Creek is listed as impaired by selenium and toxicity on Clean Water Act Section 303(d) List (in addition to trash and diazinon).

The hydrology section of the dEIR states that there is insufficient data to understand the hydraulic connection between groundwater and surface water, or to compare background to site groundwater (for TDS and sulfate). There is almost no data provided on site hydrogeochemistry, which is imperative to understanding whether groundwater is contaminated, and can in turn contaminate surface water and drinking water aquifers.

The dEIR suggests that groundwater quality will not be impacted by reclamation; however there is inadequate analysis to make such a conclusion. Furthermore, given the Water Board staff's experience and knowledge of the geology of the area, we are concerned that groundwater is currently contaminated with selenium, and possibly metals.

Comment #17: Contradictory Analysis Related to Mercury and Nickel

The data used in the dEIR suggest that mercury and nickel WQOs are exceeded in Permanente Creek. However, the dEIR asserts that concentrations of these pollutants are either below the WQOs or at natural background levels. This statement appears to contradict the data and needs to be modified.

Comment #18; Other Water Quality Concerns – Nickel

Table 4.10-2 summarizes monitoring results for other metals, including mercury and nickel. These monitoring data are either for total or dissolved metals, while the objectives used to compare with are total for mercury and dissolved for nickel. The dEIR needs to be consistent and clear in using either the total or dissolved, when comparing with the same form of WQOs. This comment also applies to other metals like iron, manganese, and molybdenum.

The dEIR claims that nickel concentrations in the Creek and in surface runoff were mostly below the WQO calculated using a hardness value of 100 mg/L as $CaCO_3$. However, concentrations in EMSA surface runoff, Pond 4A water, and in the Creek below the Quarry Pit discharge point mostly exceeded this WQO value. Observed concentrations were also much higher than those of the background (groundwater and reference creek). If the dEIR wishes to use a different WQO value based on actual observed hardness (the higher the hardness, the higher the objective), it needs to provide all hardness data, and uses the minimum observed hardness value for WQO calculation. It is also important to have hardness data collected during rainy season when the Creek is not dominated by Quarry Pit dewatering discharge and when hardness is lower. Such data collection may not be possible this winter as we have had an abnormally dry year.

Since the dEIR does not identify nickel as a problematic pollutant, there is no impact analysis to address the high levels of nickel in surface runoff (maximum average of 115 µg/L in one of the runoffs) and in the Quarry Pit water (100 µg/L). The projected nickel in runoff from reclaimed Quarry area, as provided in Table 4.10-8, is 2-3 µg/L. It is not clear how this low concentration is achieved without any measures to address nickel release from rocks. From the leachability test (Table 4.10-4), greenstone seems to leach the highest nickel. This is a different source than selenium (from limestone). It is also one of the rock types proposed to be used as "cover", which would create a higher risk for leaching of nickel into storm water runoff. Therefore, mitigation measures regarding selenium will not work for nickel.

Comment #19: Other Water Quality Concerns – Mercury

Mercury concentrations in four of the five creek monitoring locations were above the applicable WQO, surface water runoff concentrations were also higher than WQOs. The reference site at Monte Bello Creek has lower mercury concentrations than WQOs. Therefore, it appears that mercury might be a concern in the discharge as well in the Creek within and near the Project area. The dEIR asserts that mercury measured in runoff and in the Creek cannot be reliably distinguished from background. However, it is not clear how the conclusions were drawn. If available data are limited, more monitoring data is necessary to provide data for a robust statistical analysis.

Comment #20: Stabilization – Affected by Choice of Baseline

Geology, Soils, and Seismicity: Staff disagrees with the choice the baseline of June 2007 . 4.7.1 and 2 Seismic impacts to structures and ground - It is true that the Reclamation Plan will stabilize slopes in the Quarry Pit and waste storage areas, but they are sliding and slumping due to disturbance resulting in a factor of safety around 1 according to the 2011 Terraphase Engineering Report cited in the dEIR (pg. 4.7-18), not due to inherent instability, as suggested in

the dEIR. This disturbance occurred prior to June 2007; therefore that data is an unacceptable baseline.

II. WATER BOARD STAFF COMMENTS RELATED TO SELENIUM TREATMENT, PROPOSED MITIGATION, AND BEST MANAGEMENT PRACTICES

Comment # 21: Selenium treatment – Inadequate Alternative Analysis (Flow)

While the Water Board expects the County of Santa Clara to have prepared the dEIR independently and reviewed the conclusions of its consultants, geologists and engineers with objectivity, the lack of discussion of alternative treatments makes it difficult for the Water Board to review and comment. By simply stating the largest possible flow and therefore assuming the highest possible cost for any treatment, the County has determined selenium treatment to be infeasible (4.10-47). Based on our cursory analysis, more work needs to be done before a conclusion on selenium treatment feasibility can be drawn. For example:

- The dEIR at footnote 14 (4.10-47) concludes that flow is approximately 8 cubic feet per second (cfs), which is based on a maximum pumping rate. There is no discussion, at least in the analysis of the cost of treatment, of Lehigh's reported flows at different outfalls.
- If Lehigh were to treat Quarry Pit water before combining it with other sources of water for discharge via 001, then the amount of water to treat for selenium would be about half of what the County used in the treatment cost estimate.
- No analysis of the economic benefit to Lehigh is conducted, despite regulatory mandates for such economic benefit to be assessed. The dEIR concludes that "approximately $86 million," plus "approximately $2.8 million per year to operate and maintain" is infeasible, and therefore the significant and unavoidable impacts are acceptable, subject to the mitigation proposed in the dEIR. However, such impacts come with consequences. Those selenium discharges are byproducts of Lehigh's operations, and by not being required to pay for treatment, Lehigh is receiving a significant economic benefit.
- Furthermore, **the County contacted the Water Board almost a year ago,** and had a meeting about various selenium treatment options. None of the information exchanged or discussed at the meeting is reflected in the dEIR.

Comment #22: Selenium treatment – Inadequate Alternative Analysis (Cost)

The dEIR provided the Water Board with a single study supporting the estimate of $86 million for selenium treatment, with little discussion of alternative current available technologies. While not directly applicable (analysis was in coal mining rather than mineral mining), a quick search revealed other data readily available, including the following study: *Evaluation of Treatment Options to Reduce Water-Borne Selenium at Coal Mines in West-Central Alberta*, located at http://environment.gov.ab.ca/info/library/7766.pdf. In that study, eleven technologies were reviewed

in detail. These include physically-based technologies (reverse osmosis, nanofiltration, and ion exchange), chemically-based technologies (iron precipitation and catalyzed cementation), and biologically-based technologies (algal volatilization, biological treatment plant, in-situ treatment, Biopass and other passive treatment systems, treatment wetlands, and evaporation ponds). Several of these technologies have been tested at a pilot-scale or implemented as treatment facilities.

The above technologies varied considerably with regards to their ability to remove selenate from solution cost-effectively. Several of them could not meet a treatment objective of 5 µg/L. Treatment costs ranged from less than USD $1.00/1,000 gallons for in-situ treatment to over $10.00/1,000 gallons for reverse osmosis and iron precipitation. Some technologies employ very straightforward processes, with simple process flowsheets (e.g., in-situ treatment or constructed wetlands), whereas others rely on more complex processes (e.g., iron precipitation). The County presented none of the benefits or drawbacks, or resulting increase in costs, when discussing selenium treatment.

See also Comment 14, *supra*.

Comment # 23: Selenium treatment – Inadequate Alternative Analysis (Regulatory Guidelines)

In water quality regulations, there are specific steps that must be taken in order for a cost of a particular treatment to merit a change in effluent limitations. The dEIR must at least include two alternatives on the opposite side of the spectrum: a costly treatment on the one hand and significant environmental harm on the other. Determining the treatment to be infeasible, the County essentially deemed the harm acceptable, despite the need for a more rigorous analysis whenever such decisions are made by a permitting authority. For example, the federal and state Antidegradation Policies require an analysis of whether the economic and social benefits for discharging selenium into an impaired water body outweigh environmental costs. If not, the discharge will be prohibited. <u>This necessarily requires a calculation of the environmental cost.</u> The dEIR provided no such analysis. EPA has defined the "best conventional pollutant control technology" and "best available economically achievable technology" ("BCT"; "BAT"), both of which take cost-effectiveness into account.

Comment #24: BMPs – General Understanding of Term (4.10-44-45)

For the Water Board's purposes, a BMP (Best Management Practice) is an erosion control, a sediment control, a self-monitoring schedule and program, and an iterative repair and maintenance program for erosion and sediment controls, followed by permanent vegetative stabilization.

The appropriate level of BMP implementation is a formal "bar"--Best Available Technology (BAT)--driven by the Clean Water Act and the Water Board's Basin Plan. The Water Board will spell out the requirements for BMP implementation in the individual NPDES permit in conjunction with numeric effluent limits (both technology and water quality based). The BAT

bar for Lehigh in the above categories (erosion, sediment, self-monitoring, and repair and maintenance, permanent vegetative stabilization) is set, at a minimum, by the permits issued to Lehigh.
A BMP is **not** an effective method of treating dissolved pollutants, such as selenium.

Comment #25: BMPs – No Schedule for Implementing (4.10-44-45)

The Water Board does not generally proscribe manner and method of BMPs; instead, the discharger or permittee submits a proposed BMP plan for the project at issue. In addition to the comments made throughout this letter, this comment address three major caveats regarding the BMPs suggested by the dEIR. One, the dEIR does not address bringing the Project site into compliance with the current permitting structure, both BMPs for stormwater and effluent limits for process wastewater. As noted throughout these comments, the Project site poses a number of regulatory challenges that the dEIR did not address: the EMSA and WMSA being unlined and uncovered; the placement of in-stream sediment ponds as alleged sediment-reduction BMPs; etc. The Water Board did not object to the County's selection of the baseline date; however, the County must recognize what must occur for Lehigh to be brought into compliance. Second, there is no schedule for implementing the list of BMPs set forth in the dEIR. Although Phase I of the Project is scheduled to take place over **7 years**, the Water Board would propose such a time period by which to implement BMPs is not protective of water quality. Lastly, BMPs are preventative in nature, and dischargers/permittees can be held responsible for not selecting, installing, replacing, or maintaining proper BMPs. However, dischargers/permittees can also be held responsible for discharges that occur **notwithstanding** the installation of BMPs.

Comment #26: BMPs – No Discussion of Interaction with Lehigh and Discussion of Current Conditions and Plan for Correction

While the Water Board, through consultation on Storm Water Pollution Prevention Plans and other related documents and enforcement of Water Code violations, may be involved more directly on a going forward basis with the development of BMPs on the Lehigh site, **for the purposes of the dEIR**, more analysis and stronger mitigation should have been done with regard to the status of the BMPs currently in place and their inadequacy and potential for environmental harm. For example, there is a lack of large scale erosion control BMPs; inadequately sized and inadequately maintained sediment control BMPs; there have been discharges of industrial process water, which is prohibited under the Industrial Storm Water Permit (publicly noticed and subject of current enforcement) as a result of current business practices.

Comment #27: Erosion vs. Sediment

Best Available Technology BMPs for keeping sediment out of the Creek must be predominantly erosion control and secondarily sediment control. Sediment BMPs are likely to increase the level of dissolved pollutants; erosion control BMPs keep sediment in place and are the most effective and important in keeping sediment out of the Creek. Erosion control BMPs include

covering disturbed areas with cover such as erosion blankets, bonded fiber matrix, spread and tackified straw, and vegetative cover. Erosion control BMPs are not "one size fits all"--they must be selected based on parameters such as slope, length of time they will be left in place, the particle size distribution of the material being covered, weather, and other factors. A Best Available Technology approach to keeping sediment out of the Creek relies predominantly on erosion control and uses sediment control as a redundant protection.

At Lehigh currently, there are no erosion control BMPs being used, and the only BMPs being used to keep sediment out of the creek are sediment controls: check dams on Quarry roads and detention basins. In the dEIR, the majority of BMPs mentioned are sediment controls, such as - silt fences, straw waddles and silt removal from the toe of slopes.

Comment #28: More Specificity Related to Sediment Control Needed

The dEIR needs more specificity in the suite of erosion control practices, techniques, materials, schedules, and operation and maintenance procedures. As currently described, the Project will not be in compliance with the BAT standard for BMPs that keep sediment from the Creek.

Sediment controls remove solids but they increase concentration of dissolved pollutants in discharges to the Creek. The basic concept in sediment control is to create barriers to flowing water so it loses its energy and therefore drops the sediments suspended in it. The sediments remain behind (or in) the BMP feature and the water continues on its way to the Creek. The finer the suspended sediment (along the continuum of gravel, sand, silt, clay), the longer the time required for the water to be slowed down in order to drop the suspended sediments. In the case of silts and clays, the water must be completely ponded still for hours up to days in order to remove the sediments. The "residence time" of a sediment treatment pond is maximized in order to maximize sediment removal.

The problem with maximization of residence time is that it increases the time in which solid pollutants are able to dissolve into the water. So, while the solid load going to the Creek decreases, the dissolved pollutant load to the creek increases. At Lehigh, where (with the limited characterization available) we know that dissolved pollutants are an issue, sediment controls are insufficient and actually increasing the pollutant load unless combined in sequence with other pollutant removal technologies.

Comment #29: Mitigation Measure of Professional Geologist; Undefinable amounts of limestone still acceptable under the dEIR

The mitigation measure of a professional geologist to verify the use of non-limestone material being used in the cover is insufficient (refer to mitigation measure 4.10-1a). First, the geologist mainly relies on visual observations for large-scale operations and random spot sampling. Keep in mind that the areas to be reclaimed are vast – tens if not hundreds of acres each. A halt to operations is called for only when “significant” amounts of limestone are “intermixed with the supposed non-limestone cover material.” Because “significant” is not a defined term, it is

unclear how much limestone material is acceptable to the professional geologist or the County. As described herein, limestone will be exposed to rain and oxidation, and the runoff that comes in contact with these materials will continuously risk discharging to the Creek. These discharges are violations of existing permits, federal and state antidegredation policies, and no in-depth analysis has been performed to justify the economic issues that outweigh the known environmental and potential health impacts.

Comment #30: The "cap" does not provide sufficient erosion control

The end goal of the reclamation activities is to reclaim the EMSA and WMSA and end up with a covered area that has a covered area that can be re-vegetated. When the Water Board uses the word "cover," it typically refers to an area that provides adequate erosion control. What the dEIR proposes as "cover," using run of the mine non-limestone materials, does not rise to the level of being a management practice for the following reasons: (1) it does not provide erosion control; it is, itself, loose, unconsolidated material that is subject to erosion; (2) it does not prevent surface water from picking up dissolved or suspended pollutants. The "run of mine" rock may itself be a source of such pollutants; the waste piles have not been adequately characterized to determine what the full range of potential pollutants are; (3) the current state of waste materials in the WMSA and EMSA (as personally observed on multiple inspection dates by Water Board staff) is not organized and segregated into different types of rock; the dEIR has not described a procedure for sorting and verifying material placement that the Water Board finds to be feasible or reasonable to expect to be carried out. Such protections may include liners separating waste from the ground surface to prohibit migration of waste and leachate to soil, groundwater, or surface water or a cap or cover to minimize percolation of liquids through the waste, and thus leachate production. By "cap" or "cover," what is understood in the context of Title 27 compliance is an impermeable layer such as clay—not the loose, unconsolidated waste material referred to in the dEIR as "cover." Failure to comply with these requirements can result in a failure to isolate wastes from groundwater and surface water.

Comment #31: Other "cap" issues

The proposed 6 inches of soil on top of rock is not likely to support revegetation. This is further exacerbated by fact that most of site is sloped (and will be, even after "reclamation"). Furthermore, the proposed mitigation revegetation period is much shorter than what is considered necessary and standard. Without revegetation, erosion is inevitable.

Comment #32: Sedimentation Basins In Pond Are Not Proper BMPs and Are in Fact Improper

Existing improperly created instream ponds cannot be used for sediment control now or for the proposed Project. It is improper to use a water of the state to treat discharges to waters of the state. However, this process is in effect at the Lehigh facility. It is not acceptable for the dEIR to propose the continued use of these instream ponds as sediment reduction BMPs.

III. WATER BOARD STAFF COMMENTS RELATED TO THE WATER BOARD'S JURISDICATION, FUTURE PERMITS REQUIRED AND SPECIFIC COMMENTS

Comment #33: Monte Bello Has not Been Established as a Proper Background Source

Lehigh has not established an approved "background" sample location for comparison to the impacts of the facility to Permanente Creek. Prior to review of the draft EIR, Water Board staff had not been informed of the "Monte Bello" creek sample as a surrogate background sample for Permanente Creek. In order for a background sample to be legitimate, it must be outside of the zone of influence of pollutant sources (in this case, quarrying activities), and it must flow over the same geologic formation as the Creek. Lehigh has proposed background sample locations to the Water Board that are on Permanente Creek but still downstream of the WMSA. Lehigh and Water Board staff hiked up to the confluence of a tributary entering Permanente Creek and Lehigh sampled there. That location has not been confirmed as acceptable because the Water Board has not reviewed the geology and the access is not safe. A background sample location needs to be proposed with full documentation of surrounding land uses and geologic formation through which it flows.

Comment #34: Key water quality concepts and requirements are misrepresented in the dEIR

The term "benchmarks" when referring to the Basin Plan is used in the dEIR. The correct term is Basin Plan Water Quality Objectives. A benchmark is a value that indicates a protective level and to which test results can be compared to get an idea of whether BMP changes need to be made. A water quality objective is a standard, which, if not attained, the designated beneficial uses are adversely affected. A benchmark implies a goal; the Basin Plan sets forth enforceable standards. From Chapter 3 of the Basin Plan:

> Together, the narrative and numerical objectives define the level of water quality that shall be maintained within the region.
>
> The Regional Board establishes and enforces waste discharge requirements for point and nonpoint source of pollutants at levels necessary to meet numerical and narrative water quality objectives. In setting waste discharge requirements, the Regional Board will consider, among other things, the potential impact on beneficial uses within the area of influence of the discharge, the existing quality of receiving waters, and the appropriate water quality objectives.

Comment #35: Species Issues #1
Section 2.7.11.5, Utilities, Stormwater and Erosion Control.

Text in this section proposes to use the three existing in-channel ponds, Ponds 13, 14, and 22, to accommodate some Project-related stormwater flows. Ponds 14 and 22 provide breeding habitat for the endangered California red-legged frog (CRLF), and CRLF were identified in Pond 13 in 2006 (2006 *California Red-Legged Frog (Rana draytonii) Surveys at the Hanson Permanente*

Cement Facility, Cupertino California, Mark R. Jennings, Rana Resources, December 30, 2006). Because of the potential for impacts (i.e., take) to CRLF, these in-channel ponds should not be relied upon to provide sediment management for closure activities.

Comment #36, Species Issues #2 (4.4-44)

4.4-44 mentions that Pond 17 supports California Red Legged Frog (CRLF). This is significant information that Pond 17, an off-stream sediment BMP that receives flow from the Rock Plant area, supports Red Legged Frog habitat. While inspecting in May 2010, the Water Board staff observed tadpoles in Pond 17 and were verbally assured that they were "Pacific Tree Frog, absolutely not California Red Legged Frog" by Lehigh staff Scott Renfrew. Pond 17 is actively dredged, as it should be to perform as a sediment BMP. However, the presence of CRLF in Pond 17 suggests that ANY retention pond on site would be vulnerable to inhabitation by CRLF and therefore cannot be dredged and therefore cannot be functional as a sediment BMP. This further supports the concern that detention basins should not be considered as tools for water quality treatment.

Comment #37: Species Issues #3

Section 4.4.2.1, Biological Communities and Wildlife Habitat Types, Aquatic Habitat, Streams and Ponds.

Text in this section states that "CRLF had been found to inhabit four off-stream sediment ponds, including Pond 13, and portions of the Permanente Creek." Pond 13 is actually an in-channel pond, in which CRLF were identified in 2006 (2006 *California Red-Legged Frog (Rana draytonii) Surveys at the Hanson Permanente Cement Facility, Cupertino California*, Mark R. Jennings, Rana Resources, December 30, 2006).

The text in this section concludes that, "the creek does not support aquatic or upland dispersal habitat for CRLF in this region." Since CRLF have been found in four ponds in the Project area, including one in-channel pond, some level of habitat for CRLF appears to be present in the Project area.

Comment #38: Species Issues #4

Section 4.4.1.3, Regulatory Setting, Wetlands and Jurisdictional Waters, San Francisco Bay Regional Water Quality Control Board.

The discussion of RWQCB regulatory activity should be expanded to clarify the way in which permits are issued for projects that include impacts to both federal jurisdictional waters, which are always subject to state jurisdiction, and waters that are only subject to state jurisdiction. When a project will impact waters of the State that are outside of federal jurisdiction, it is the Water Boards' practice to cover all impacts to the waters of the state (including those impacts not subject to federal jurisdiction) in a single permit that includes both CWA Section 401 certification and WDRs issued pursuant to the State's Porter-Cologne Act authority. Water Board staff evaluate the extent of impacts to federal and non-federal State waters in the context of reviewing the application for certification and/or WDRs and set the appropriate level of mitigation on the basis of impacts to all waters of the State.

Comment #39: Species Issues #5

Chapter 4, Environmental Analysis.
Section 4.4.1.2, Local Setting, Special Status Species.
The discussion of special status species does not include Water Board jurisdiction over activities that may affect special status species. The *Water Quality Control Plan for the San Francisco Bay Region* (*Basin Plan*) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. The beneficial uses that have been identified for Permanente Creek in the *Basin Plan* include: preservation of rare and endangered species; fish spawning; and wildlife habitat. Any activities in Permanente Creek and its tributaries that could impact these beneficial uses are subject to Water Board jurisdiction.

Comment #40: Water Board Permits

Chapter 1, Introduction.
Table 1.1, Expected Permits, Approvals and Consultations.
In the row with "San Francisco Bay Regional Water Quality Control Board (RWQCB)" in the 'agency column", there is no discussion of the need to obtain Waste Discharge Requirements (WDRs) in the "permit/approval required" column. The table should be revised to include the Water Board's Porter-Cologne Act Authority, including the need to obtain Water Board permits for actions that are not regulated under Clean Water Act (CWA) authority, such as dredging in waters subject to federal jurisdiction, or actions that occur in areas outside of federal jurisdiction, such as isolated wetlands or creek banks above the ordinary high water mark (OHW).

The State has jurisdiction over streams above the ordinary high water mark (OHW) and over isolated wetlands, as well as over seasonal, intermittent, and ephemeral streams that lack a hydrologic nexus to navigable waters. When a project that is applying for water quality certification will impact waters of the State that are outside of federal jurisdiction, it is the Water Board's practice to cover all impacts to the waters of the state (including those impacts not subject to federal jurisdiction) in a single permit that includes both CWA Section 401 certification and WDRs issued pursuant to the State's Porter-Cologne Act authority. Water Board staff evaluate the extent of impacts to federal and non-federal State waters in the context of reviewing the application for certification and set the appropriate level of mitigation on the basis of impacts to all waters of the State.

Comment #41: Workplan Information

Chapter 2, Project Description.
Section 2.3.1, Existing Land Use in the Project Area.
The fourth paragraph of this section discusses a "test plot program" that was initiated at the facility in 2007. In Provision C.7 of Cleanup and Abatement Order No. 99-018, the Water Board required that the facility prepare a technical report containing a work plan for slope stabilization and re-vegetation of the former overburden stockpile area. In response to this provision the

Hanson Permanente Cement Former Overburden Stockpile Work Plan and Implementation Schedule (Response to RWQCB CAO No. 99-018, Item C.7) was submitted to the Water Board on December 15, 1999. Water Board staff would like to know if the implementation of this workplan provided any information that was used in the development of the *Revegetation Plan, Permanente Quarry, Santa Clara County, California* (*Revegetation Plan*) (WRA Environmental Consultants, December 2011).

Comment #42: Restoration Plan Cross-Referencing

Section 2.7.8, Permanente Creek Reclamation Area.
The facility is in the process of finalizing the *Permanente Creek Long-Term Restoration Plan* (URS Corporation, March 11, 2011), which divides Permanente Creek into 21 reaches in the assessment of restoration opportunities. The *Revegetation Plan* for the Quarry proposes restoration measures for the Permanente Creek Reclamation Area in terms of seven subareas. It would be useful to cross-reference the 7 subareas in the *Revegetation Plan* with the reaches in the *Permanente Creek Long-Term Restoration Plan*. Water Board staff can provide County staff with a copy of the most recent version of the *Permanente Creek Long-Term Restoration Plan.* Even if some details of the plan are revised, the reach numbering system is not anticipated to change.

Comment #43: Sloping/Runoff

Table 2-3, PCRA Subarea 1 Reclamation Treatments
For road treatment, the proposed reclamation treatment is to regrade the roads to inslope them and collect runoff on the inboard edge of the road. It is not clear from the description how water collected along the inboard side of the road would be conveyed to Permanente Creek. Concentrating flow along the inboard side of roads can create more focused, erosive flows at the eventual discharge point. In some cases, it is preferable to outslope roads to prevent concentrating runoff on the inboard edge. The closure plan should provide a more detailed discussion of optimum sloping for post-closure road surfaces.

Comment #44: Grouted Riprap Inappropriate

Table 2-4, PCRA Subarea 2 Reclamation Treatments
The description of basin outlets and flow controls includes new outfalls from sedimentation basins at the southern edge of the WMSA to tributaries to Permanente Creek. Water Board staff would like to clarify that these tributaries are regulated as waters of the State and permits will be required from the Water Board for the construction of these outfalls. Grouted riprap pads are proposed as energy dissipaters at the outlets to the tributary channels. Grouted riprap is incapable of adjusting to changes in channel morphology that occur naturally over time. Grout should be removed from the proposed design. Ungrouted riprap, which can adjust to changes in channel morphology, should be used to construct energy dissipaters.

Comment #45: Armoring/Possible Permit Needed

Section 2.7.8.6, PCRA Subarea 6 and Table 2-8.
Proposed actions in PCRA 6 include, "one ravine would be armored during Phase 2 to accept flows from RPA Basin 40A." More detail is needed for this proposed armoring, which may include the placement of armoring in a jurisdictional tributary to Permanente Creek. Any armoring placed in a tributary channel will require a permit from the Water Board and mitigation for the placement of fill in a jurisdictional water. Basin outlets should be designed to minimize the need for extensive armoring at outfalls to tributary channels.

Comment #46: Armoring/Possible Permit Needed

Section 2.7.8.7, PCRA Subarea 7.
Proposed actions in PCRA 7 also include armoring a ravine to accept flows from the reclaimed Quarry Pit. More detail is needed for this proposed armoring, which may include the placement of armoring in a jurisdictional tributary to Permanente Creek. Any armoring placed in a tributary channel will require a permit from the Water Board and mitigation for the placement of fill in a jurisdictional water.

Comment #47: State Jurisdiction

Chapter 4, Environmental Analysis.
Section 4.4.1.2, Local Setting, Jurisdictional Waters and Wetlands.
The discussion of jurisdictional waters and wetlands is limited to waters subject to federal jurisdiction. This section should be expanded to include state jurisdiction under the Porter-Cologne Act.

As was noted in the comment on Table 1.1, *Expected Permits, Approvals and Consultations*, the State has jurisdiction over streams above the ordinary high water mark (OHW) and over isolated wetlands, as well as over seasonal, intermittent, and ephemeral streams that lack a hydrologic nexus to navigable waters.

Comment #48: Wetlands

Section 4.4.3, Significance Criteria.
Criteria (c) should be revised to replace "adverse effect on any federally protected wetlands" with "adverse effect on any state or federally protected wetlands." The CEQA Guidelines were developed prior to the Supreme Court decisions that limited the extent of federal jurisdiction over wetlands.

Comment#49: Wetlands/Other Waters

Impact 4.4-8: Project activities could result in substantial adverse effects on wetlands and jurisdictional waters associated with Permanente Creek through direct removal, filing, hydrological interruption, or other means.
This discussion of potential impacts to jurisdictional waters at the Basin Outlets and Flow Controls in PCRA 2 and the discussions of Mitigation Measures 4.4-8a and 4.4-8b are somewhat confusing. In some paragraphs, impacts are described for impacts to both wetlands and other waters. In other paragraphs, only impacts to wetlands are addressed. For clarity, all impacts to state jurisdictional wetlands and other waters should be described and mitigation should be proposed for all impacts to jurisdictional wetlands and other waters.

Mitigation Measure 4.4-8a should be revised to include identification of all wetlands and other waters subject to state jurisdiction.

Mitigation Measure 4.4-8b should be revised to include mitigation plans for impacts to other waters (e.g., stream channels that are impacted by the placement of new armoring or energy dissipaters). Proposed mitigation plans should include performance criteria that would be used to evaluate the success of the proposed creation and/or enhancement of other waters. The discussion of potential mitigation measures for impacts to wetlands and other waters should also evaluate onsite locations at which the creation or enhancement of wetlands and other waters are hydrologically feasible.

Comment #50: Beneficial Uses

Section 4.10.1.4, Regulatory Setting, Table 4.10-5, Designated Beneficial Uses of Water Bodies in the Project Area.
The footnote to the table should note that on July 14, 2010, the Water Board adopted Resolution No. R2-2010-0100, which amended the designated beneficial uses in the Basin Plan. This resolution added the beneficial uses of groundwater recharge, the preservation of rare and endangered species, and warm freshwater habitat to Permanente Creek. The resolution has been submitted to the Office of Administrative Law and the U.S. EPA for review and approval. It is likely that the additional beneficial uses designated for Permanente Creek will be approved before the Project is implemented.

Comment#51: Incomplete Jurisdictional Description

Section 4.10.1.4, Regulatory Setting, Waste Discharge Requirements
In the first paragraph of this section, the text, "discharges to waters of the State (such as isolated wetlands)," should be replaced with "discharges to waters of the State (such as isolated wetlands, creek banks above OHW, or seasonal, intermittent, and ephemeral streams that lack a hydrologic nexus to navigable waters).

Summary of Comments and Conclusion

Water Board staff met with both County of Santa Clara staff and Lehigh consultants prior to submitting these public comments. Additional documentation was submitted by Lehigh and the County immediately prior to the public comment deadline that was not included in the dEIR or the Appendices. However, none of that information changes the conclusions drawn by the Water Board staff about the overall lack of data regarding the waste piles which are the subject of the reclamation plan.

Instead, the Water Board recommends additional sampling, characterization and analysis prior to approval of a final EIR. At a minimum, the dEIR should be re-circulated. Preferably, adequate characterization should be done so as to satisfy the Water Board, the public, and the County as the approving agency that there are no hazardous materials in the waste piles and there have been no groundwater impacts by the waste piles.

Water Board staff would be willing to meet with Lehigh and Santa Clara further to discuss the improvement of the dEIR and permit applications described in the Water Board's comments. Lehigh is the subject of active enforcement actions and permit development with Water Board staff.

The dEIR has been reviewed by staff in several of the Water Board's program areas because the impacts are broad ranging. If you have any questions, please direct them to Project Manager Christine Boschen of my staff at (510) 622-2346, or via email at <cboschen@waterboards.ca.gov> , who will disseminate them to the appropriate staff.

Sincerely,

Shin-Roei Lee, Chief

Watershed Management Division

COMMITTEE FOR
GREEN FOOTHILLS

February 21, 2012

Gary Rudholm
Santa Clara County Planning Department
70 W. Hedding St.
East Wing, 7th floor
San Jose, CA 95110

Re: Lehigh-Hanson Permanente Quarry Draft Environmental Impact Report
State Clearinghouse No. 2010042063

Dear Mr. Rudholm:

The Committee for Green Foothills ("CGF") submits these comments in response to the Lehigh-Hanson Permanente Quarry Reclamation Plan Amendment ("RPA") Draft Environmental Impact Report ("EIR").

Aesthetics, Visual Quality, and Light and Glare:

According to the timeline described in the RPA and the EIR, although the WMSA will eventually be removed and the material used to backfill the Quarry pit, those activities will not commence until approximately 2021, when mining in the Quarry pit ceases. That means that for about the next 9 years, the WMSA will remain as it is currently. Since the EIR acknowledges that the WMSA is visible from public viewing areas, including scenic viewpoints, the visual quality impacts would be reduced if interim revegetation were implemented on the WMSA during those 9 years. CGF understands that Lehigh has already begun this revegetation process, but it should be included in the EIR as part of the mitigation measures for aesthetics and visual impacts.

The EIR states that lights in the WSMA are visible at night from the valley floor and from as far away as Interstate 680 (EIR at 4.1-8). However, the only mitigation measure proposed for light and glare impacts is Mitigation Measure 4.1-7, which states that no night lighting shall be allowed on the EMSA where it would be visible from public locations on the valley floor. EIR at 4.1-49. Since the EIR acknowledges that lights elsewhere in the Project area, including the WMSA, are also visible from the valley floor, the EIR should include mitigation for those impacts as well.

Hydrology and Water Quality:

The impacts to water quality in the Project area may be divided into two categories: interim impacts that would occur during the period of reclamation, and post-reclamation impacts. Since reclamation is not projected to be completed until 2030, this means that the interim impacts could continue for nearly 20 years. Thus, interim impacts may be significant even if relatively minor in scope, due to their prolonged duration.

Water quality testing has shown that current levels of selenium in Permanente Creek have exceeded the RWQCB benchmark level of 5 µg/l. Specifically, selenium concentrations upstream of the Project area ranged from 1.7 to 11 µg/l, while concentrations downstream of the Project area ranged from 13 to 81 µg/l. In addition, monitoring of the runoff from the EMSA demonstrated selenium concentrations ranging from 7.1 to 38 µg/l; from the WMSA, of 29 µg/l, and from "wall washing" in the Quarry pit, of 14 µg/l. EIR at 4.10-9 (Table 4.10-2). In the Quarry pit itself, the water collected in the bottom of the pit demonstrated selenium concentrations of 82 µg/l (EIR at 4.10-34). The runoff from the EMSA and WMSA discharges into Permanente Creek, and the Quarry pit

COMMITTEE FOR
GREEN FOOTHILLS
3921 E. Bayshore Road 650.968.7243 PHONE info@GreenFoothills.org
Palo Alto, CA 94303 650.968.8431 FAX www.GreenFoothills.org

water is pumped into the creek during dewatering. (Although the dewatering operations are not part of the RPA project, they should be considered as part of the cumulative impacts analysis, as discussed below.)

These current selenium levels can reasonably be expected to continue during part of the Project timeline. According to the EIR, the reclamation process on the EMSA, as part of which the limestone material that creates the selenium runoff will be covered over with non-limestone material and with topsoil and vegetation, will begin in 2015; the final reclamation on the WMSA (after the materials are processed to remove remaining limestone and the non-limestone materials are used to backfill the pit) will not begin until approximately 2026. This means that the runoff from these areas can be expected to continue to contain high levels of selenium for years to come.

The EIR acknowledges that interim Project activities will contribute selenium, total dissolved solids (TDS), and sediment to Permanente Creek. EIR at 4.10-42. However, the mitigation measures proposed for this impact relate primarily to sediment management (e.g., silt fencing, erosion control blankets, fiber rolls, etc.; see EIR at 4.10-45), which may be effective in mitigating TDS and sediment impacts, but will not mitigate dissolved selenium in the runoff water. Some measures may be expected to address selenium impacts, including covering limestone with non-limestone materials in temporary stockpiles and on haul roads; however, impacts from selenium runoff are still expected to remain significant. The impacts of selenium on wildlife are well-documented and include severe fetal deformities as well as increased mortality.

The EIR mentions the availability of technologies that can effectively and consistently reduce selenium levels to below the RWQCB benchmark of 5 µg/l, but states that implementing such technologies would be infeasible because "a water treatment system sized to handle the flows from the WMSA, Quarry pit, and EMSA" was estimated to have a total installed cost of $86 million, with additional yearly operating and maintenance costs of $2.8 million. EIR at 4.10-46. However, apparently no analysis was made of whether a smaller or less extensive selenium-reducing water treatment system might be feasible. Such a system, although it obviously would not completely mitigate all selenium-laden discharges to below 5 µg/l, might very well have a significant mitigating effect. Considering the potentially serious consequences of selenium contamination of the creek, and the nearly 20-year period during which Project-related selenium impacts are expected to be significant, any mitigation is better than none. The final EIR should contain an analysis of whether a smaller-scale water treatment system designed to partially reduce selenium concentrations in Project runoff, Quarry pit water, and other discharges into Permanente Creek, would be feasible.

Cumulative Impacts:

The EIR's analysis of cumulative impacts to water quality is inadequate. Because the greatest impact to the water quality of Permanente Creek comes not from the RPA activities but from the actual mining activities, especially the dewatering of the quarry pit, this means that the cumulative impacts to water quality are severe and should be addressed in the EIR. Instead, the cumulative impacts section of the EIR contains only one mitigation measure related to hydrology or water quality, and that one addresses only potential downstream flooding (EIR at 6-25).

Although the EIR acknowledges that the ongoing discharges to the creek from the Quarry pit contain selenium, TDS and other constituents, and that this constitutes a significant and unavoidable impact, the EIR merely asserts that once reclamation is complete (i.e, once mining activities have ceased and the pit has been backfilled), benchmark standards are expected to be met. EIR at 6-23 and 6-24. However, significant impacts occurring during the timeline of the Project (a period of 20 years) must still be addressed. The final EIR should include mitigation measures specifically addressed to the cumulative impacts to water quality in Permanente Creek from the selenium, TDS and sediment due to the combined effect of the Project and the other uses in the area, particularly the ongoing mining.

Thank you for the opportunity to comment on the EIR. Please let us know if you have any questions on this matter.

Sincerely,

Alice Kaufman
Legislative Advocate, Committee for Green Foothills

Hi Marina & Gary,

The Selenium discharges into Permanente Creek from the Hanson/ Permanente Quarry pit is 60 - 80 ug/l according to the DEIR. It is way over the Federal Clean Water Act of 5 ug/l. Lehigh is in violation of Federal Clean Water Act. You can not approve this Reclamation Plan Amendment. If you do , you are in violation of State Surface Mine and Reclamation Act (SMARA).

Barry Chang, Chairman of the Board
Bay Area for Clean Environment, Inc.

My name is Rhoda Chung and my address is 1501 Ben Roe Drive, Los Altos, CA 94024.
I believe I live quite close to Lehigh Cement Plant.

I am writing in support of the cement plant. Our county needs the cement plant for employment and also for economic reasons.
The City of Los Altos and Los Altos Hills held a meeting recently and reported that the emission has very low health risk.

The people who protest are those people whose back yard has a view of the plant and some doesn't like the noise of the truck that went by their houses every day.
The cement plant was here way before those houses were here. If they don't like the cement plant, they have a choice to move away. They bought their houses for cheap because the cement plant was there, and now they tried to get rid of it so that their property value can increase.

Thank you for your kind attention,
Rhoda Chung

------ End of Forwarded Message

From: Barry Chang <barry.bace@gmail.com>
Date: February 21, 2012 5:01:46 PM PST
To: Marina Rush <marina.rush@pln.sccgov.org>, Gary Rudholm <Gary.Rudholm@pln.sccgov.org>
Subject: Comments for DEIR for Lehigh Southwest Cement Plant, Hanson/Permanente Quarry

Hi Marina & Gary,

The attorney for Bay Area for Clean Environment, Inc.(BACE), Mr. Stuart Flashman, asked me to send the comments from Cotton, Shire and Associates regarding Lehigh Southwest Cement Plant, Hanson/ Permanente Quarry's (Lehigh's) Draft Environmental Impact Report. Please see attached.

BACE has filed a lawsuit regarding the vested rights issues. You can not approve the Reclamation Plan Amendment (the Plan) based on Lehigh has vested rights.

The SMARA requires that any reclamation plan or amendment needs to meet Federal Clean Water act. Lehigh will continue to discharge selenium polluted water into Permanente Creek in this Reclamation Plan Amendment. It is a clear violation of Federal Clean Water Act. You can not approve this plan in violation of federal law. The Plan provides many wrongful information. Please DO NOT APPROVE this plan. Thanks.

Barry Chang, Chairman of the Board
Bay area for Clean Environment, Inc.

COTTON, SHIRES AND ASSOCIATES, INC.
CONSULTING ENGINEERS AND GEOLOGISTS

February 20, 2012
G5032

Mr. Stuart Flashman
5626 Ocean View Drive
Oakland, California 94618

SUBJECT: **Preliminary Geotechnical Peer Review of Reclamation Plan Amendment**
RE: Lehigh Permanente Quarry
Santa Clara County, California

Dear Mr. Flashman:

At your request, Cotton, Shires and Associates, Inc. (CSA) is providing you with this preliminary peer review letter concerning geotechnical aspects of the Reclamation Plan Amendment for the Lehigh Permanente Quarry and the Geotechnical Evaluations and Design Recommendations report that accompanies the Reclamation Plan Amendment.

We completed our preliminary geotechnical peer review of the proposed reclamation plan amendment using:

- Geotechnical Evaluations and Design Recommendations (Revised), Permanente Quarry Reclamation Plan Update, Santa Clara County, California (report), prepared by Golder Associates for Lehigh Southwest Cement Company, dated November, 2011; and

- Reclamation Plan Amendment for Permanente Quarry (Report), prepared by Enviro Mine, Inc. for Lehigh Southwest Cement Company, dated December 13, 2011.

SCOPE OF WORK

Our scope of work included review of the above reports, preliminary evaluation of the impact of slope instability on the quarry property and adjacent properties, and preparing this letter report.

Task 1. **Review of Geotechnical Evaluations and Recommendations Report** - We reviewed the slope stability aspects of the Geotechnical Evaluations and Design Recommendations report that accompanied the Reclamation Plan Amendment for the Lehigh Permanente Quarry. Our peer review evaluation focused on slope stability issues concerning the quarry pit, adjacent slopes, and stockpile areas.

Task 2. **Letter Report** - We prepared this letter report summarizing the results of our preliminary peer review of the slope stability issues concerning the reclamation of the quarry property and the findings of the Geotechnical Evaluations and Design Recommendations report and Reclamation Plan Amendment.

BACKGROUND

Lehigh Permanente Quarry is located along a sinuous, roughly east-west trending ridge within the Santa Cruz Mountains, west of Cupertino. The mine has a single pit, known as the North Quarry, where limestone is quarried for cement products. The quarry operator has been excavating the North Quarry pit for many years, and has not achieved the final planned pit floor elevation of 500 feet that is specified in the approved reclamation plan. The amended reclamation plan provides for a final pit floor elevation of 440 feet. West of the mine pit is an overburden stockpile area known as the West Materials Storage Area (WMSA). East of the mine pit is another overburden stockpile area known as the East Materials Storage Area (EMSA). Permanente Creek flows through the subject property south of the WMSA and the North Quarry pit.

During 2006 and 2007, we inspected the quarry site along with personnel from Santa Clara County as part of the County's SMARA quarry inspection team. We took the field observations from that inspection into account as part of our peer review of the referenced reports.

SITE CONDITIONS

The slopes within the North Quarry pit have experienced several notable failures that are discussed in the referenced report by Golder Associates. The largest landslide within the quarry pit is the Main Landslide (also known as the 1987 landslide) located in the northwest quadrant of the quarry pit. On the north wall of the quarry, the smaller Scenic Easement Landslide is named for the Scenic Easement that was impacted by the upper portion of the landslide. On the east wall of the pit, the Mid-Peninsula Landslide previously failed and encroached upon property owned by the Mid-Peninsula Regional Open Space District (MROSD). Subsequently, we understand that the quarry operator negotiated a land exchange with MROSD to take possession of the area at the head of the landslide.

During our previous inspections of the quarry pit, we observed thick fans of talus across many of the quarry benches, except where cleared to allow equipment access (Photo 1 of the eastern portion of the quarry pit). These talus fans apparently accumulate from many smaller rockfalls and rockslides on the intervening slopes outside of the areas of the named landslides. These isolated slope failures vary in size.

West of the North Quarry pit is a cut slope with several deep-seated landslides that are labeled "West Area Slides" in the referenced report by Golder Associates. One of these landslides is large enough in areal extent that it extends into the haul road leading to the WMSA. Based upon previous review of historical aerial photographs, these failures have enlarged laterally and upslope over time.

The WMSA is located west of the North Quarry pit. It contains overburden materials that have been stockpiled during excavation of the pit. A review of historical aerial photographs shows that by 1960, some material had already been stockpiled there. Continued excavation of the North Quarry pit has led to accumulation of additional overburden materials in the WMSA.

The channel of Permanente Creek flows eastward through the site, south of the WMSA, North Quarry, and rock crusher areas. In these areas, loose fill was historically

dumped on the slope that descends to the creek channel. Locally, loose fill materials extend into the creek channel. Several historical failures have been noted within the loose fill on this slope. In the Surge Pile area, crushed rock materials are stockpiled adjacent to the stream channel before removal for processing elsewhere on the site.

East of the North Quarry pit, overburden materials have been stockpiled in the EMSA. A review of a published geologic map by Sorg and McLaughlin (1975) shows that several landslides were previously mapped in the EMSA area. In addition, the Monte Vista fault is also mapped through the easternmost portion of the EMSA.

MAIN LANDSLIDE

The recent investigation of the Main Landslide area by Golder Associates consisted of a compilation of previous mapping and investigation by others, additional field mapping, air photo interpretation, field reconnaissance, and drilling and logging of two exploratory borings west of the landslide. Golder Associates proposes a geologic model that depicts the Main Landslide failing along a thrust fault that separates limestone in the hanging wall from greenstone in the footwall. In this model, the upper portion of the landslide area is a headscarp and the evacuated debris has come to rest lower on the quarry slope. Though some material clearly has been evacuated from the upper slope, it is clear from the landslide geomorphology of the "headscarp" area, that active scarps are present in the uppermost portion of the landslide area (Photo 2) and that the "headscarp" is part of the active landslide. This is also clearly illustrated by Figure 5.3 in the Golder Associates report, though much of the upper landslide is labeled "headscarp". Though the upslope extent of the landslide is clear from surface reconnaissance, the cross sections analyzed by Golder Associates show this upper landslide area as a stable headscarp area.

The characterization of large, deep-seated landslides, such as the Main Landslide, typically involves extensive subsurface investigation using many borings within the landslide mass. These investigations could also potentially involve downhole logging of large-diameter borings, drilling deep core borings to install slope inclinometers, and installation of vibrating wire piezometers at multiple depths and locations within the landslide. The geologic data from borings within a large landslide (especially large-diameter borings, if appropriate for site conditions) can be used to identify the basal shear zone of the landslide. Subsurface investigation within the landslide typically includes sampling of sheared gouge materials from basal shear zones (preferably sampled during downhole logging of large-diameter borings or possibly by using continuous core small-diameter borings) for torsional ring shear strength testing. Additionally, landslide debris and intact rock below the landslide are sampled and tested for triaxial compression undrained shear strength testing with pore pressure measurements.

The investigation conducted by Golder Associates did not include subsurface investigation within the landslide. It would be very useful to have slope inclinometers within the "headscarp" area and long-term monitoring data from those slope inclinometers to evaluate the level of activity and depth of movement within the "headscarp" region. It would also be useful to have geologic data from either continuously cored small-diameter boreholes or downhole logging of multiple large-diameter borings within the landslide to help further develop the geologic model. In addition, the laboratory testing data provided in the referenced Golder Associates report did not include torsional ring shear strength testing to evaluate the shear strength of the basal rupture surface of the landslide. The limited extent of piezometer data, and the location of these data points outside of the

landslide, likely makes it difficult to accurately model the groundwater table within the landslide, which could result in inaccuracies in the slope stability analyses.

SCENIC EASEMENT AND MID-PENINSULA LANDSLIDES AND EAST PIT SLOPE

The Golder Associates investigation of the Scenic Easement and Mid-Peninsula Landslides and East Pit Slope was based upon mapping by Fouria (2004), exploratory boring data from previous investigations by others, field reconnaissance and mapping by Golder Associates, and logging of two test pits located about 25 feet behind the headscarp of the Mid-Peninsula Landslide. It is our understanding that Golder Associates was not involved in the drilling or logging of exploratory borings in this area, though they reference a previous investigation by others that appears to have included borings. The previous mapping by Fouria shows the rock mass in this area to be complexly faulted and tectonically deformed. This type of tectonic deformation could result in shearing that could impact slope stability. It is our opinion that updated subsurface data and laboratory testing should help refine the geologic model (subsurface structure, rock mass strength, groundwater, etc.) in this area. The analyses reported by Golder Associates appear to indicate that the factors of safety of the reclaimed slopes would locally be less than 1.5 under static conditions and less than 1.1 under pseudo static conditions for the East Pit Slope and Mid-Peninsula Landslide under reclaimed conditions.

"WEST SLIDES" AREA AND WMSA

As noted above, several landslides were identified in the "West Slides" area west of the North Quarry pit and southeast of the WMSA. In the report section on the WMSA, the referenced Golder Associates report mentions these landslides; however, no additional characterization of the landslides appears to have been conducted. One of the cross sections for the WMSA (Cross Section W1) goes through the largest of the "West Slides" and Golder Associates calculated slope stability analysis results based upon that cross section, but they acknowledge that they have no subsurface data for this landslide and that the geologic conditions have not been characterized in this area. Given that these landslides have enlarged over time and progressively undermined a portion of the slope southeast of the WMSA, it is recommended that Golder Associates characterize these landslides before analyzing the stability of these slopes.

PERMANENTE CREEK

As noted above, during quarry operations, loose fill material was dumped over the slope that descends to the channel of Permanente Creek, resulting in much of the slope below the WMSA, North Quarry pit, and Crusher areas being covered with loose fill material. The referenced reclamation plan amendment calls for removal of some of the loose fill material in seven Permanente Creek Reclamation Areas; however, it appears that some of the loose material will be left in place. Given that this loose fill is likely to be unstable in the long term, leaving this material in place could result in slope debris failing into Permanente Creek. It is our understanding that the quarry operator considers this portion of the slope to pre-date enactment of SMARA, and thus, would not be subject to reclamation standards outlined in SMARA. This issue should be resolved, and if SMARA jusrisdiction governs this area, then appropriate mitigation of the slopes should be included in the reclamation plan. Additionally, based upon our review of historical aerial photographs, it appears that a deep-seated landslide may extend down the south-facing slope to Permanente Creek in the approximate area of the Surge Pile. Additional

investigation would be necessary to confirm or deny the existence of this feature, and to evaluate the stability of this slope and possible landslide for reclamation purposes.

EMSA

In an appendix to the referenced report, there is a 2009 report by Golder Associates regarding the stability of proposed fill in the EMSA. In this report, Golder Associates references a geologic map by Sorg and McLaughlin (1975). Though several landslides are shown on the published map in the area of proposed fill for the EMSA, the Golder Associates report does not confirm or preclude the existence of these landslides, or the accuracy of the Sorg and McLaughlin landslide mapping. Subsurface investigation was performed in this area, and consisted of hollow stem auger borings with intermittent sampling, but this type of investigation is typically not useful for characterization of landslides. The Golder Associates investigation appears to show placement of fill directly over the native soil without apparent keying and benching into bedrock. Golder Associates calculated static factors of safety for portions of the proposed fill slopes to be less than 1.5. It would appear prudent to evaluate this area for the possible presence of older landslides, and provide recommendations for fill placement keyed into competent bedrock material.

The U.S. Geological Survey Quaternary Fault and Fold Database shows a Quaternary active trace of the Monte Vista fault system passing through the easternmost portion of the EMSA. Though this fault is not considered to be Holocene active, the last rupture event is unknown; thus, Golder Associates should consider evaluating the potential impact, if any, from fault rupture on the stability of the proposed slopes.

CONCLUSIONS

Based upon our review of the referenced geotechnical report, it is our opinion that additional geologic subsurface characterization and laboratory testing would help refine the geologic model of the Main Landslide and other areas of the North Quarry pit slopes. Refinement of the geologic model would aid in the design of appropriate slope mitigation for mine reclamation. The proposed plan to fill the pit with overburden material appears to be a feasible means to buttress the Main Landslide; however, the final reclamation design should be based upon the refined geologic model. It may be necessary to buttress other portions of the quarry pit, such as the eastern slope, in order to prevent long-term instability and to achieve an industry-standard static factor of safety of 1.5. Stockpiled material from sources outside of the WMSA, such as EMSA, may be useful to build buttresses that extend over most or all of the pit slopes. However, much more detailed characterization of the pit slope geology and material strengths appears warranted before a buttress design can be justified. In addition, the reclamation plan describes compaction of the buttress fill by hauling and grading equipment. The geotechnical consultant should provide recommendations for compaction and testing of the fill that will be placed during reclamation to current engineering standards.

The proposed grading in the "West Slides" area cannot be accurately evaluated from a slope stability standpoint without additional characterization of the landslides and geologic conditions in that area. Currently, it remains unclear whether the proposed remedial measures would be effective in stabilizing these slope failures.

The slopes adjacent to Permanente Creek are mantled with unstable, loose fill materials. The reclamation plan amendment should include recommendations for removal of all loose fill materials on those slopes, should these fall within the SMARA jurisdiction.

The geologic and geotechnical characterization of the EMSA site would benefit from an evaluation of the geologic mapping by the U.S. Geological Survey, with particular reference to the mapped landslides. Additionally, Golder Associates should provide recommendations for keying and benching of fill into bedrock and compaction of fill.

LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted engineering geology and geotechnical engineering principles and practices. No warranty, expressed or implied, of merchantability or fitness, is made or intended in connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings. Our services have been limited to review of the referenced reports, review of historical aerial photographs, and preparation of this peer review letter.

Our scope of work was limited to a preliminary review of the referenced report, and did not include detailed review of the slope stability analyses. In addition, we did not have the opportunity to meet with Golder Associates to discuss their methodologies and findings, which could provide additional information and clarity.

We trust that this provides you with the information that you need at this time. If you have any questions, please call.

Very truly yours,

COTTON, SHIRES AND ASSOCIATES, INC.

Philip L. Johnson
Supervising Engineering Geologist
PG 6196, CEG 2019

John M. Wallace
Principal Engineering Geologist
PG 6151, CEG 1923

Patrick O. Shires
Senior Principal Geotechnical Engineer
GE 770

POS:JW:PJ:st

Attachments: Photos 1 and 2

Photo 1. Quarry benches that have not been cleared have accumulated debris from local slope failures.

Photo 2. The Main Landslide showing well-defined scarps above the "headscarp" area, indicating ongoing deep-seated failure of the upper portion of the landslide.

Received from: Rhoda Fry 2/2/12

The draft EIR has ignores NOP comments and communications from previous events such as vested rights (including documents written by staff).

Due to regulation, we pay more for building products which subsidize government jobs. But we're not getting our return on investment.

Rather, we're getting the illusion of effective regulation. This is not okay.

According to the OMR, Lehigh has been out of compliance for over a decade for numerous infractions. During this time, a mountain of mining waste grew and grew without review for visual or health impacts.

Certainly you would not allow 30 acres of skyscrapers to pop up without review.

Lehigh has managed to sidestep the simplest of regulations – like -getting permits for building structures or getting rid of them or inspections for those that did receive permits. This is particularly troublesome at the EMSA site – the former headquarters of Kaiser Aluminum which manufactured: munitions during WWII, ferrosilicon, phosphate fertilizer with imported serpentine and pressed aluminum products. The company was fined by the county and got attention from the EPA among other agencies.

Which leads me to the history section of the draft EIR:

It ain't history, its fiction.

Failing to mention the toxic history or the historic 50-year-old headquarters and laboratory burnt by arson, and more, is a major oversight.

Yet all this data resides in county coffers.

Considering there is a plan to move a bunch of dirt up there – we have to ask – what's in it?

There are also unpermitted ponds – what are the cumulative impacts of running more – or less – water through them.

I implore you to set aside this EIR and launch a full investigation so we can understand why the county has not regulated this facility.

DO YOU REALLY WANT YOUR NAMES ON THIS?

Please, let's get to the bottom of this debacle.

EXHIBIT A

County of Santa Clara

Department of Planning and Development
County Government Center, East Wing
70 West Hedding Street, 7th Floor
San Jose, California 95110

	Administration	Development Services	Fire Marshal	Planning
Phone:	(408) 299-6740	(408) 299-5700	(408) 299-5760	(408) 299-5770
Fax:	(408) 299-6757	(408) 279-8537	(408) 287-9308	(408) 288-9198

February 10, 2011

RE: **Public records request for demolition permit for:**

Site Address: 0 Stevens Creek Blvd./24001 Stevens Creek Blvd., Cupertino

Assessor Parcel No.: 351-10-005

Present Jurisdiction: County

Bldg. Permit #	Date	Description	Status
19658	06/25/74	Demolish	Incomplete
76991	02/27/98	Demolish Storage Bldg.	Incomplete
76992	02/27/98	Demolish Office Bldg.	Incomplete
76993	02/27/98	Demolish Office Bldg.	Incomplete
76994	02/27/98	Demolish Office Bldg.	Incomplete
76995	02/27/98	Demolish Storage Bldg.	Incomplete
76996	02/27/98	Demolish Storage Bldg.	Incomplete
76997	02/27/98	Demolish Office Bldg.	Incomplete
76998	02/27/98	Demolish Office Bldg.	Incomplete
76999	02/27/98	Demolish Office Bldg.	Incomplete

Respectfully,

Michael L. Harrison,
Acting Building Official

Attachment

*Please see other side

EXHIBIT A

COMPLETED:	The project has received a final inspection by office.
INCOMPLETE:	The project has not received a final inspection by this office. If the last inspection was made more than six months, ago, the building permit will have to be renewed by the owner or agent.
JURISDICTION:	If the parcel was annexed to a city, information regarding construction will have to be obtained from the noted city.
NO PERMIT:	A building permit has not been issued by this office, for work at this address. In order to legalize construction, the owner or his agent has to apply for a building permit. For more information, please ask for a building permit information handout.
PRIOR TO: 1947	Buildings constructed prior to 1947 were not required to have a permit.

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA, COLUSA, CONTRA COSTA, LAKE, MARIN, MENDOCINO, MONTEREY, NAPA, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO, SONOMA, YOLO

Northwest Information Center
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
Email: leigh.jordan@sonoma.edu
http://www.sonoma.edu/nwic

August 15, 2011

File No.: 11-0143

RECEIVED
2011 AUG 23 AM 8:41
PLANNING OFFICE

Marina Rush, Project Planner
Santa Clara County
Environmental Resources Agency, Planning Office
County Government Center, East Wing, 7th Floor
70 West Hedding Street
San Jose, CA 95110-1705

re: 2250-13-66-10P M1/ 24001 Stevens Creek Blvd./ Hanson Permanente Cement, Inc.

Ms. Rush,

Records at this office were reviewed to determine if this project could adversely affect cultural resources. **Please note that use of the term cultural resources includes both archaeological sites and historical buildings and/or structures. The review for possible historic-era building/structures, however, was limited to references currently in our office and should not be considered comprehensive.**

Previous Studies:

XX Studies covering approximately 100% of the proposed project area, identified one or more cultural resources *(see below)*.

Study #	Author: Year	Title
S-10471	Holman 1988:	An Archaeological Inspection of the Kaiser Cement Property, Cupertino, Santa Clara County, California.
S-36633	Jensen: 2009	Archaeological Inventory Survey: Proposed Permanente Quarry Project, c. 1, 105 Acres, Santa Clara County, California.
S-38058	Jensen: 2009	Archaeological Inventory Survey, Proposed Permanente Development Project, c. 1, 105 Acres, Santa Clara County, California.

Archaeological and Native American Resources Recommendations:

XX The proposed project area contains or is adjacent to the archaeological site(s):

P-43-001867	Kaiser Permanente Quarry District
P-43-001868	Permanente Creek Road
P-43-001870	Hanson Permanente Quarry Pumphouse (Remains)
P-43-001833	Railroad (adjacent to the project area)

XX Due to the nature of the previous surveys, which studied the project area in its entirety, no study is recommended prior to commencement of proposed project activities. However, the following recommendations noted on page 16-17 in Jenson:2009 should be followed in regards to cultural materials:

1) Consultation in the event of inadvertent discovery of human remains: In the event that human remains are inadvertently encountered during any ground-disturbing activities or at any time subsequently, State law shall be followed, which includes, but is not limited to, immediately contacting the County Coroner's office upon any discovery of human remains.

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2) Consultation in the event of inadvertent discovery of cultural material: The present evaluation and recommendations are based on the findings of an inventory-level surface survey only. There is always the possibility that important unidentified cultural materials could be encountered on or below the surface during the course of future construction or other activities. This possibility is particularly relevant considering the constraints generally to archaeological field survey, and particularly where extensive past disturbance has occurred, as in the present case. In the event of inadvertent discovery of previously unidentified cultural material, archaeological consultation should be sought immediately.

XX We recommend you contact the local Native American tribe(s) regarding traditional, cultural, and religious heritage values. For a complete listing of tribes in the vicinity of the project, please contact the Native American Heritage Commission at 916/653-4082.

Built Environment Recommendations:

XX The 1961 USGS Cupertino 7.5-minute topographic quadrangle indicated approximately 40 buildings and 11 water tower/tanks within the project area. Since the Office of Historic Preservation has determined that any building or structure 45 years or older may be of historical value, if the project area contains such properties, it is recommended that prior to commencement of project activities, a qualified professional familiar with the architecture and history of Santa Clara County conduct a formal CEQA evaluation.

For your reference, a list of qualified professionals in California that meet the Secretary of the Interior's Standards can be found at http://www.chrisinfo.org. If archaeological resources are encountered during the project, work in the immediate vicinity of the finds should be halted until a qualified archaeologist has evaluated the situation. If you have any questions please give us a call (707) 664-0880.

Sincerely,

Jillian Guldenbrein
NWIC Researcher

cc: Lehigh Southwest Cement Company
24001 Stevens Creek Blvd.
Cupertino, CA 95014

Failure to Include Known Data:

The draft EIR ignores NOP comments and communications from previous events such as vested rights (including documents written by staff). The result is that this draft EIR is incomplete and inaccurate. All NOP comments and vested rights comments and staff documents must be included as commentary to this Draft EIR. In addition, some comments sent in regarding vested rights, were not made available to the public, such as a letter from Cupertino City Manager David Knapp. While I have added my vested rights commentary from last year, I expect staff to leverage their previous research and public commentary and include it in the EIR. Due to regulation, we pay more for building products which subsidize government jobs. But we're not getting our return on investment. Rather, we're getting the illusion of effective regulation. This is not okay.

The County has demonstrated its inability to be an effective lead agency with the applicant having submitted 5 RPAs in as many years and to be seriously overdue with the 1985 RPA sunset of 2005. Furthermore, the WMSA should have been revegetated by now according to the 1985 plan. How can we trust the county to ensure the next plan is properly implemented? The latest RPA does not have a list of changes making it difficult for the public to participate in what is supposed to be an open process. This creates a challenge for this writer to provide coherent input as well. We can fully anticipate yet another RPA for new mining operations, given previous applications and exploration, as had previously been proposed – the county should not allow this piecemeal approach that is counter to CEQA law.

Baseline and what is in and what is out:

When convenient, the Quarry, Cement Plant and Rock Plant are considered as separate entities. When convenient they are all glued together. In the case of the EIR, the quarry and rock plant are considered as one and the cement plant is not considered. The cement plant is located where it is because the limestone is there. Now we know that the local limestone is unusually high in mercury and it is not appropriate to be mining it or cooking it. However, this continues because the grandfathered rights of the facility (when the health impacts were unknown) trump the health and welfare of the county's residents. Interestingly, as of October, the cement plant has been imported large quantities of limestone and shut down the aggregate business. Thus the statement in the EIR that mining has been continuous is not correct. By importing limestone, the company has demonstrated that it is being disingenuous when it comes to the relative

importance of this quarry in obtaining exceptions from the State and from the County. Note that the history of the rock crusher and volume output is not disclosed in the EIR.

The County has the discretion to determine when the baseline time should be for the EIR. The baseline should be BEFORE the facility started dumping mining waste outside of the 1985 RPA. The county was slow to respond, in spite of resident complaints. Two wrongs don't make a right. Show some level of integrity and set the baseline to be pre-EMSA.

One choice that should be considered is to stop mining. We now know that the limestone is unusually high in mercury. The facility is currently importing limestone – so we know that local limestone is NOT required (and it brings into question whether a local cement plant is required as well). The document appears to be nearly doubling production with a 16 year project vs. a 9 year project. Other options must be provided. We know that county and other agencies have been unable to regulate the facility. The facility has had challenges with nearly every agency that regulates it. The company has had fatal incidents locally in October, in January 2010 at Tehachapi, and in February 2012 on the east coast. There is quite a bit of theory in the EIR. While in theory, the mitigations measures should work, with many years of history, the practice shows otherwise and it is troubling that the Draft EIR does not mention it – because we know that past history can be a reasonable predictor of future behavior.

EMSA:

According to the OMR, Lehigh has been out of compliance for over a decade for many infractions. During this time, a mountain of mining waste grew and grew without review for visual or health impacts, this is called the EMSA. Now we learn of the high Selenium levels of water exiting the EMSA. I am surprised to learn that the EMSA contains Rock Plant waste, while we had been led to believe that it contained quarry pit waste, not processed waste, which is potentially more toxic due to increased surface area. The basis for allowing continued use of the EMSA was for obtaining limestone for cement, not the ancillary business to selling aggregate. It also brings into question on how the county managed the EMSA NOV and the justification for continuing to use it.

Certainly the county would not allow 30 acres of skyscrapers to pop up without review. Lehigh has managed to sidestep the simplest of regulations – like -getting permits for building structures or getting rid of them or inspections for those that did receive permits. The county has not adhered to the CALIFORNIA BUILDING CODES when it comes to issuing and inspecting demolition and building permits. Therefore, it can

reasonably be assumed that this shall not happen in the future and would add significantly to the environmental cumulative impacts. It is particularly troublesome at the EMSA site – the former headquarters of Kaiser Aluminum which manufactured: munitions during WWII, ferrosilicon, phosphate fertilizer with imported serpentine and pressed aluminum products. The company was fined by the county and got attention from the EPA among other agencies. This must be mentioned and investigated. Why are there not height restrictions on the EMSA?

The EIR fails to mention that the county supervisors voted that the vast majority facility did not need a county permit. This appears to have been a political decision rather than a factual one and should weigh heavily upon the conscience of those who made this decision. This was counter to staff recommendation, MROSD recommendation, and there is pending litigation. It got the county out of a bit if a pickle when it came to the EMSA violation – how could a publicly traded company that engaged in manufacturing for over 50 years be logically considered as part of a vested mining operation?

History section of the draft EIR:

Failing to mention the toxic history or the historic 50-year-old headquarters and laboratory burnt by arson, and more, is a major oversight. Yet all this data resides in county coffers. Considering there is a plan to move a bunch of dirt up there – we have to ask – what's in it? The history section also fails to mention that there had been a plan to terminate quarrying in 2010 and building housing (see my vested rights report which follows).

Hazardous Waste:
It appears to me that the samples taken have been arbitrary – especially when considering the history of the property has not been taken into account. Note that the manufacturing facility that had been under the EMSA had previously imported serpentine from New Almaden in the production of phosphate fertilizer. More on this is in my vested rights commentary below. A concerted effort must be made to determine all the hazardous materials that had been onsite and determine whether they are present today. The company had been fined by the county for hazmat and had been under scrutiny by the EPA. Structures had been removed without permit. Some structures with a hazardous legacy were removed with permit but without inspection. This known information has been omitted from the EIR and is available in the NOP comments. According to the County, the owner or agent would need to RE-APPLY for building permits to have those un-inspected structures removed. How can we possibly consider moving the stuff in the EMSA and WMSA and elsewhere without documenting what truly happened?

Recently, BAAQMD has proposed including synthetic gypsum into the cement product after it has been cooked. It would be carried on new conveyor belts. Synthetic gypsum is a power plant waste product, potentially containing large quantities of mercury. The fugitive dust and spill potential must be considered.

HRA:
The EIR must use an appropriate HRA. The draft used an old one. The current one is known to be deficient. The EIR must be put off until a true and correct HRA is available.

PERMANENTE CREEK:
Permanente Creek has experienced unpermitted and excessive flows into Los Altos. The plan contains only reclamation of the creek within a portion of the property boundary. Damage to the creek outside of the property boundary must also be considered for repair.

According to a water boards report, the drainage systems onsite were not mapped. There were a number of "mystery pipes" and no one knew where they were going or where they came from. This mapping must be complete and shared with the public before an EIR is approved.

PONDS:
The property has unpermitted ponds as outlined by the water violations. What are the cumulative impacts of running more – or less – water through them? What are the anticipated effects of change of use of these ponds for water quality and slope stability?

PG&E:
What is the status of the PG&E gas line into the facility and how will it be affected during reclamation?

Slope Stability:
The draft EIR makes excuses for failing slopes, such as rain. However, under SMARA, there are no excuses. The planned slope angles are not adequate to ensure future slope stability and must be reconsidered. While the document choses arbitrary baseline conditions, what is the slope stability of the EMSA in 2012? According to MRSOD, emergency repairs to slides have not occurred as promised. According to an OMR (office of mine reclamation) report, the quarry has been out of compliance with SMARA for at least 10 years. This should be mentioned in the EIR. The county should seriously consider whether it has the skills to manage this surface mine as should the state.

How do we know that the San Francisco Garter Snake habitat is not impacted?

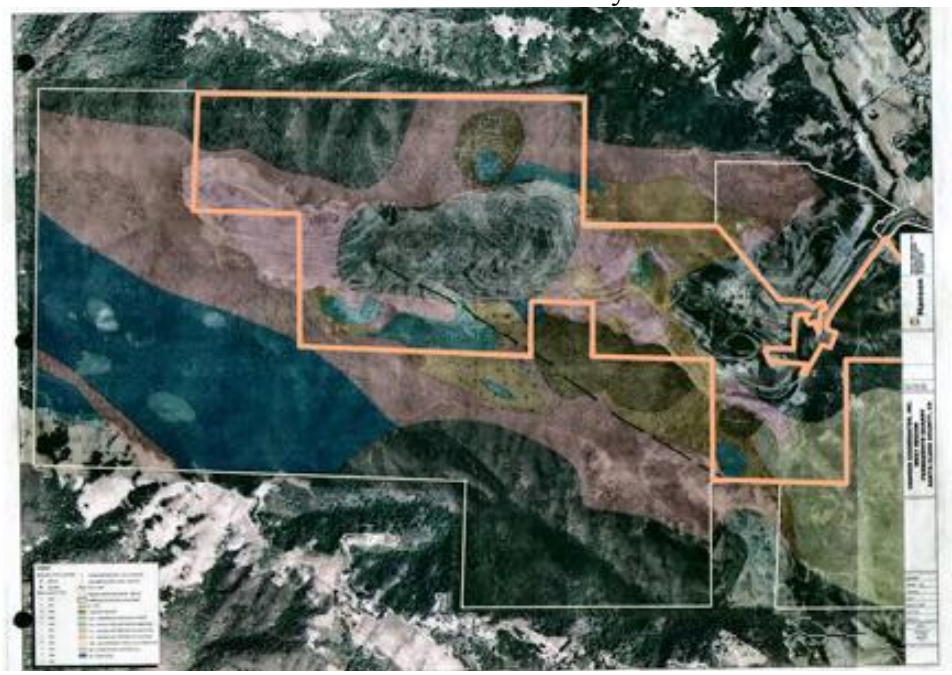
--- my vested rights input, I expect County Staff to include ALL previous commentary and research in the subsequent edition of the EIR ---

To: County of Santa Clara Department of Planning and Development Planning Office, the Santa Clara County Board of Supervisors & the Clerk of the Board
From: Rhoda Fry, Cupertino

Permanente Quarry/Lehigh Southwest Cement Company Legal Non-Conforming Use Determination: No Vested Rights

Introduction: This document augments the comprehensive report by the Santa Clara County Planning Department and demonstrates that the Permanente Quarry does not have a vested right to the Morris, Crocker, or "EMSA" parcels using the claimant's information and other factual data.

Hanson Map with Vested Boundary: The claimant's 2007 map[1] clearly demonstrates that the established "vested boundary" does not include Morris or "EMSA." (Crocker inclusion would need to be determined by an expert). Note that this is not a reclamation boundary which would be well inside the vested boundary line. The "approximate property boundary" line has been enhanced in thin white and the "vested boundary" line has been enhanced with thick orange.



Diepenbrock Harrison declares that the properties were acquired for mining[2],

> There is no doubt that, in acquiring these parcels, Kaiser intended to devote them to mining.

however, Kaiser Board Meeting Minutes state that Morris was acquired for legal reasons: [3]

> Vice President, E.E. Trefethen, Jr., explained that certain property adjacent to the property owned by this corporation in Santa Clara County, known as the Morris property, consisting of

[1] 1/4/2011 Diepenbrock Harrison letter, Appendix C last page emphasis added, document date on first page
[2] 1/4/2011 Diepenbrock Harrison letter, page 4
[3] 1/4/2011 Diepenbrock Harrison letter, Appendix D, minutes from April 24, 1942 pages 27, 28

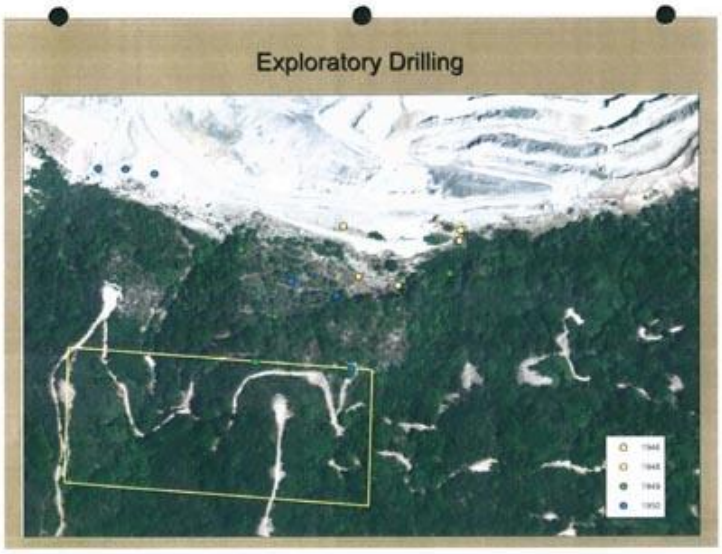
approximately 500 acres lying adjacent to the property of this corporation on the south, was for sale and that due to certain conditions which had developed on this property that could lead to legal involvements, it seemed advisable that this corporation should proceed to purchase the said Morris property for its own use.

Morris & Crocker: Indeed, the Morris property contained an essential segment of road between portions of the operation; a hostile neighbor could have been disastrous to the operation. The intent to purchase for access-only is affirmed by the fact that in nearly seventy years of ownership, the only land improvement, which preceded the purchase date, is that road segment. Recall, "There must be evidence that the owner or operator at the time the use became nonconforming had exhibited an intent to extend the use to the entire property owned at the time."[4] There are only two exploratory drilling holes on the very edge of the Crocker parcel and these occurred too late for vesting consideration (1949 and 1950).

Morris Parcel with road segment is the key to access within facility[5]

[4] Hansen, State Supreme Court
[5] 1/4/2011 Diepenbrock Harrison Appendix A page 53

Crocker Parcel exploratory holes don't qualify for vesting cut-off date[6]



It is to be expected that a corporation with such a disruptive operation, in an area with a growing population, would whenever possible purchase adjacent property to serve the dual purpose of avoiding a hostile neighbor from moving in while creating a buffer from their neighbors. The concept of creating a buffer is well-documented in the reclamation plans. Again, we know from the company's board meeting minutes that the Morris parcel was purchased for legal reasons. The board minutes surrounding the Crocker purchase do not appear to be in the claimant's Appendices. Finally, the claimant has failed to demonstrate that the paths on these parcels were intended for mining and it is equally plausible that these were logging roads.[7]

Public/Private Permanente Road Determination: When making the determination of the public or private Permanent road the decision makers should also examine the claimant's view of ownership below.[8] This excerpt of an ownership map clearly shows a portion of Stevens Creek Blvd (Permanente Road) along with the rail spur as not being within the lines of ownership. This could be used as one measure as to where the public portion of the road would end.

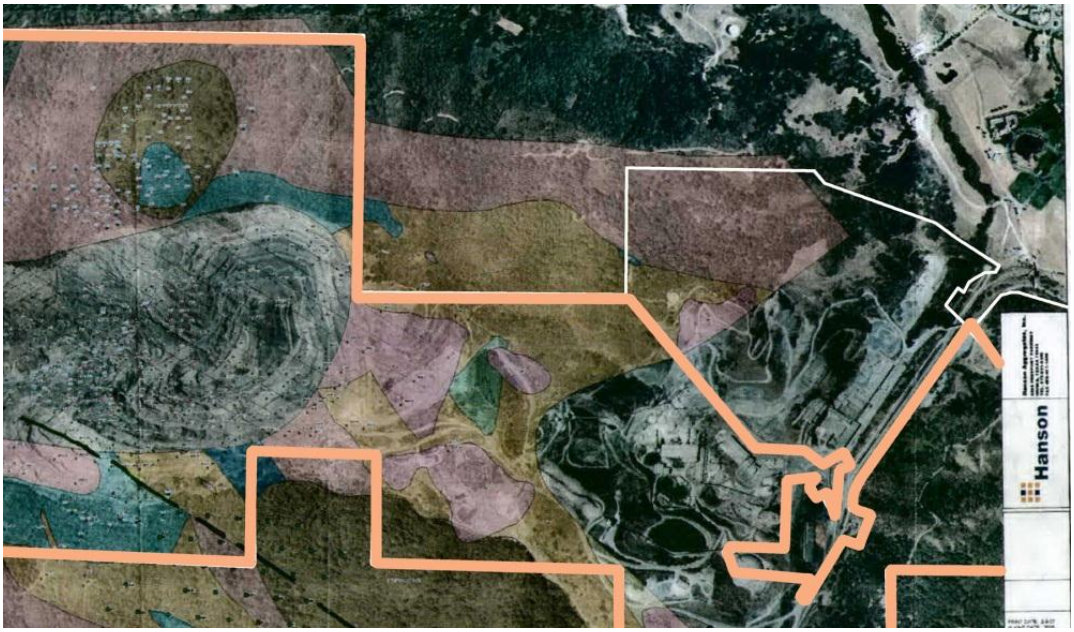
[6] 1/4/2011 Diepenbrock Harrison Appendix A page 56
[7] http://en.wikipedia.org/wiki/Black_Mountain_(near_Los_Altos,_California
[8] 11/05/2010 Diepenbrock Harrison letter EXHIBIT 9, excerpt

Area referred to as the East Materials Storage Area (EMSA): The Permanente Quarry does not have a vested right to an area referred to as the East Materials Storage Area (EMSA). The false claim that the area is vested because "it has always been an integrated part of the Facility" [9] is most succinctly refuted by the claimant's own letter, which affirms non-integration:[10]

> Next to the cement plant is the former Aluminum plant site, which covers approximately 153 acres. The site was under completely separate ownership from the quarry until 1995, when the owners sold the defunct plant to Kaiser Cement. The aluminum plant is not used, nor has it ever been used, to process mined material from the Permanente Quarry.

The independence of these two publicly traded companies is further affirmed:
1. By 1951, Kaiser Aluminum had 9 plants none of which required a quarry for a neighbor.
2. When Cupertino cement workers went on strike, the Cupertino foil plant continued to operate.
3. Conversely, when the Cupertino foil plant sold in 1990, the "facility" continued to operate.
4. The companies that occupied these sites were sold to different investors at different times.

Hanson Map with Vested Boundary: The claimant's 2007 map[11] showing their <u>established "vested boundary" does NOT include the area referred to as EMSA</u> (see enhanced excerpt below). Thus the claimant has no right to threaten equitable estoppel for halting use of this property. The "approximate property boundary" line has been enhanced in thin white and the "vested boundary" line has been enhanced with thick orange. The EMSA area is outlined in thin white on the top right along with part of Permanente Road. The EMSA area is also outlined in thick orange on the bottom showing the beginning of the facility's vested area.



[9] 1/4/2011 Diepenbrock Harrison letter, page 5
[10] 1/4/2011 Diepenbrock Harrison letter, Appendix C pages 285,286 contains 1/10/2006 letter
[11] 1/4/2011 Diepenbrock Harrison letter, Appendix C last page with document date on the first page

Company identifiers demonstrate these companies are in very different industries:

Corporate Identity	Lehigh Hanson	Kaiser Aluminum
Address	24001 Stevens Creek Blvd, Cupertino, CA 95014	23333 Stevens Creek Blvd, Cupertino, CA 95014
Stock	privately owned under HEIG.DE (Germany) also KCG, HAN, …	KALU (NASDAQ) also KACC, KLU, MXM, …
NAICS Code	327310 Cement Manufacturing	331316 Aluminum Extruded Product Manufacturing
DUNS NUMBER	103037458	177762192 (one of several)
EPA Registry ID	110000484039	110011654584

Permanente Metals History: The recently named "East Materials Storage Area"[12] is located on the original site of the publicly traded Permanente Metals Corporation (later Kaiser Aluminum), which started acquiring land adjacent to the Permanente Company (later Lehigh Hanson) in 1941.

In his lifetime American industrialist Henry J. Kaiser created many companies including Kaiser Shipyards, Kaiser Steel, Kaiser Motors, Kaiser Healthcare, Kaiser Aluminum (preceded by Kaiser Aluminum and Chemical Corporation and Permanente Metals), and Kaiser Cement (preceded by Permanente Cement and Permanente Company). WWII created a strategic inflection point for the industrialist who capitalized on abundant government opportunities. One was Permanente Metals which was launched using the United States government's Reconstruction Finance Corporation.

At this site, Permanente Metals had a state of the art campus for magnesium production for incendiary bombs and ferrosilicon in WWII, fused phosphate fertilizer from New Almaden serpentine and phosphate rock from Idaho, [13] and for aluminum extruded products until 1990. Diepenbrock Harrison has led the reader to believe that grading performed to build the company campus was a mining activity and that material storage is equivalent to dumping mining waste. Adding to this confusion, the claimant states:

> Both companies performed mining and mining related operations. The cement plant was the end process that began with limestone mining in the adjacent quarry. The magnesium plant, similarly, processed dolomite mined from off-site Kaiser facilities including the Natividad quarry in Monterey County and was simply the last stop before mined material was processed before distribution to customers.[14]

Until the recent impermissible dumping of mining waste, "EMSA" has neither been used for mining nor has there been a plan to mine there prior to applicable vesting dates and therefore has no vested rights for mining. Even if there had been vested rights, the substantial changes in operations by both Permanente Metals and its successor, Kaiser Aluminum would confirm an abandonment or waiver of vested rights for mining.

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[12] Note that although the same name was used in a previous reclamation plan, it referred to a different location that has since been renamed to "CMSA," Central Materials Storage Area

[13] Geology and quicksilver deposits of the New Almaden District, Santa Clara County

[14] 1/4/2011 Diepenbrock Harrison letter, page 29

Unpermitted Surface Mining Operation & Impermissible Intensification thereof: The overburden area was first officially recognized by the county in a 2006 Notice of Violation and again in 2008 as an intensification of the previous Notice of Violation.[15] In April 2009, county staff and Lehigh came to a provisional agreement until the timely delivery of a reclamation plan.[16]

1948: Permanente Metals state of the art campus

2009: same site under new ownership used for mining overburden

[15] 2006 Lehigh NOV and 2008 Lehigh NOV
[16] 2009 Agreement regarding EMSA and Associated Correspondence

Kaiser Cement Plans to Close Quarry and Abandon Vested Mining Right: In 1992, Kaiser Cement, then owned by British Hanson Industries, pre-announced its exit plan from the quarry business, a clear intent by the facility to waive, abandon, or otherwise forgo its vested right in its operation. As Kaiser anticipated about 20 more years of remaining material in the quarry, they hired a consulting firm to plan "the City of the 21st Century" upon their 3600 acres. This plan was presented at the City of Cupertino Planning Commission.[17]

Around this time, former Kaiser employee Barbara Koppel served on the Cupertino City Council and Kaiser manager Tom Legan served on the County Board of Supervisors. Recognizing a conflict of interest and reversing county counsel opinion, the State of California Fair Political Practices Commission ruled unanimously that Supervisor Legan could not vote on his proposal to loosen hillside development restrictions as it could financially benefit his employer.[18]

Abandonment is further affirmed by the company's lack of investment and disregard of regulators. The Diebenbrock Harrison letter dated January 4, 2011 touts the most recent cement plant investment was made around 1980, over thirty years ago (by now fully depreciated). The abundance of violations is well-known.

Considerations Regarding Vested Rights Determination by the County: We urge the County Board of Supervisors to consider the facts and not provide vested rights to the applicant.

Kaiser Aluminum and Chemical & Lehigh Hanson History and News: Below are some interesting stories about political connections, Permanente Metals, and cement and quarry[19].

Political Connections	
1982	Kaiser Cement executive Tom Legan is appointed to fill Dan McCorquodale's vacant seat on the Santa Clara County Board of Supervisors. (SJ 11/25/87) He serves on the board from 1982 – 1989. In 1986, he lost a bid for state senator against McCorquodale.
1985	Kaiser Cement executive and Santa Clara County Supervisor Tom Legan shows conflict of interest by seeking to increase housing densities on hillsides in unincorporated areas of the county which would substantially increase the value of Kaiser property. (SJ 7/13/85)
1987	Former Kaiser Cement employee, Barbara Koppel elected to Cupertino City Council (elected twice and serves 8 years) and also serves on the Bay Area Air Quality Management District BAAQMD. (SJ 11/21/90)
1992	Kaiser **Cement** Corp., owned by British Hanson, unveils plan to build 1,100 homes and a golf course in the hills west of **Cupertino.** (SJ 2/19/92)
1996	Supervisorial candidate and longtime Cupertino council member Barbara Koppel fined for accepting too much money from Hanson and fails to accurately report $500 from Assemblyman Jim Cunneen – who is now an adviser to Lehigh Hanson. (SJ 10/3/96)
2008	Sandra James, former Cupertino mayor (serving 8 years on Cupertino City Council) is hired as the company's community affairs and public relations manager. (SJ 10/29/2008)
2010	Supervisor Liz Kniss proposes Resolution No. 2010-162 commending Cupertino Citizen of the Year (& Lehigh Hanson PR manager) Sandy L. James. It is adopted unanimously.

[17] APPENDIX A San Jose Mercury News 2/20/1992: DEVELOPER'S VISION OF 'CITY OF 21ST CENTURY'
[18] APPENDIX B Two San Jose Mercury News Articles Santa Clara County Board of Supervisors and FPPC
[19] (NYT = New York Times, SJ = San Jose Mercury News)

Permanente Metals	
1941	Permanente Metals Corporation becomes a neighbor of the Permanente Company.[20]
1943	The two companies make sure to be separate: "The Permanente Corporation, former official name of the cement plant, has been changed to the Permanente Cement Company. The change will prevent confusion between the cement and magnesium operations." [21]
1947	Permanente Metals Corporation closes the magnesium plant. (NYT 11/1/47)
1947	Permanente Metals Corporation hires San Francisco advertising company for national campaign of Kaiser Aluminum – [cement is not mentioned at all]. (NYT 3/4/47)
1948	NYT earnings reports of several companies including: Permanente Metals Corporation (for the year, $2.67 a share) and Permanente Cement Company (for the quarter, $1.09 a share). (NYT 6/17/48).
1950	Economic Changes Affect Aluminum: Permanente Metals Corporation purchases previously rented aluminum mill from the War Assets Administration. In late 1949 government adds aluminum to the list of strategic metals to be stockpiled. (NYT 1/3/50)
1950	Kaiser Aluminum and Chemical Corporation (the new name for Permanente Metals) announces stock split and supplies 30% of the nation's aluminum. (NYT 4/7/55)
1951	Kaiser Aluminum expands to nine plants. (NYT 8/21/51)
1956	Company sponsors "Kaiser Aluminum Hour" drama series on NBC. (NYT 11/19/56)
1980	Some Kaiser Aluminum land is sold to the facility.[22]
1980	Claimant's historical record states that "around 1980, the facility's primary office, previously abandoned for a number of years, was vandalized and destroyed by arson. Following the fire, the structure and several associated buildings and features were razed."[23] These statements are not supported by the photographic record, demolition permits, or newspaper reports. This description more accurately matches a fire under Hanson ownership in 1993.
1983	Kaiser Aluminum correspondence with EPA: the company is separate from Kaiser Cement and the location of the latter is at the terminus of Stevens Creek Blvd.[24]
1983	Kaiser Aluminum obtains a building permit for a 5000 square foot storage facility and loading dock at the Cupertino plant. (Santa Clara County permit: 1983-39739-00)
1984	Kaiser Aluminum obtains a permit to re-roof. (permit: 1984-40550-00)
1987	British investor Alan Clore purchases Kaiser Aluminum and Chemical Corporation and reorganizes into a company called Kaisertech, LTD. (NYT 5/2/87)
1987	"Twenty workers at the Kaiser Aluminum & Chemical Corp. plant in Cupertino have complained about a mysterious skin rash during the past two weeks, a company official said." (SJ 1/24/87)
1988	"kerosene fire Wednesday at the Kaiser Aluminum and Chemical Corp. in Cupertino. Central Fire District spokesman Angelo Chancellor said the fire broke out about 9:30 a.m. in two kerosene tanks." (SJ 3/24/88)
1988	Kaiser Aluminum signs letter of intent to sell California, Ohio foil plants to TXL private investment group. (PRNEWSWIRE 6/2/88)

[20] 1/4/2011 Diepenbrock Harrison letter, Appendix E, page 2
[21] 1/4/2011 Diepenbrock Harrison letter, Appends D, page 42
[22] 1/4/2011 Diepenbrock Harrison letter, Appendix E, page 2
[23] Santa Clara County Historic Reference Public Access Binder page 126
[24] See APPENDIX C of this document

1988	Kaisertech agrees to be acquired by Maxxam group (NYT 5/24/88) owned by Texas wheeler dealer Charles Hurwitz and financed with Drexel Burnham Lambert junk bonds.
1989	Santa Clara County fines Kaiser Aluminum and Chemical Corp. $79,392 for improper storage and handling of hazardous materials (SJ 6/27/89). See also the Santa Clara County Department of Environmental Health[25] and the only EPA Kaiser Aluminum (0903175) document that is approved for release to the public. More information is unavailable due to litigation. Site is under consideration for the National Priorities List.
1990	**"**Kaiser expects to shut down the foil plant at the end of May. It will sell the entire operation to Coastal Aluminum Rolling Mills Inc. which plans to dismantle the plant and move the rolling mills and associated processing equipment to Williamsport, Penn…. The Kaiser foil operation is wedged into a gouged-out portion of the Cupertino foothills, behind a dusty Kaiser cement facility, and is in an old munitions plant dating back to at least World War II. Simon said about 100 employees work at the foil plant and the company hasn't decided how many employees, if any, that Kaiser will move into other operations… Coastal will offer to transfer some of Kaiser's foil mill employees to Pennsylvania with the equipment, " (San Francisco Business Times 3/12/90)
1993	A fire at the Kaiser Cement Corp. plant in the hills behind Cupertino and Los Altos destroyed a storage building and sent a huge plume of smoke into the air … Kaiser operations faltered briefly when phone lines went out, … The building was at the northern edge of Kaiser 's property. It formerly held the company's administration and engineering offices, but since 1989 had been used for storage … The fire was reported at 4:42 p.m. and contained about 6 p.m. Firefighters were hampered by inadequate water supplies, said Teresa Meisenbach, senior deputy fire marshal with Central Fire . The cause remained under investigation, she said. (SJ 4/27/93)
1995	The remainder of Cupertino Kaiser Aluminum land is sold to the facility.[26]
Cement and Quarry	
1943	The two companies make sure to be separate: "The Permanente Corporation, former official name of the cement plant, has been changed to the Permanente Cement Company. The change will prevent confusion between the cement and magnesium operations." [27]
1947	Permanente Cement Company offers 150,000 shares of common stock. (NYT 12//18/47)
1958	Permanente Cement announces earnings with record high sales. (3/14/58)
1980	Some Kaiser Aluminum land is sold to the facility.[28]
1980	Claimant's historical record states that "around 1980, the facility's primary office, previously abandoned for a number of years, was vandalized and destroyed by arson. Following the fire, the structure and several associated buildings and features were razed."[29] These statements are not supported by the photographic record, demolition permits, or newspaper reports. This description more accurately matches a fire under Hanson ownership in 1993.

[25] Santa Clara County Department of Environmental Health File 07S2W16L01f
[26] 1/4/2011 Diepenbrock Harrison letter, Appendix E, page 2
[27] 1/4/2011 Diepenbrock Harrison letter, Appends D, page 42
[28] 1/4/2011 Diepenbrock Harrison letter, Appendix E, page 2
[29] Santa Clara County Historic Reference Public Access Binder page 126

1985	Striking Cupertino Kaiser Cement Corp. workers mark second month anniversary off the job Friday with a rally and little hope of a settlement in the near future. (SJ 8/31/85)
1985	EPA report identifies only one major air pollution site in the area -- the coal-and-coke burning Kaiser Cement plant in the hills above Cupertino. The disclosure that Kaiser Cement Corp. may be the single largest source of cancer-causing air pollution in Santa Clara County did not come as a great surprise to neighbors of the plant. (SJ 10/12/85)
1985	Air Board plans tests at Kaiser will measure metals that may cause cancer. (SJ 11/1/85)
1986	Hanson Industries agrees to acquire Oakland- based Kaiser Cement Corp. (SJ 11/28/86)
1987	A group of Cupertino and Los Altos residents will appear Tuesday before the Santa Clara County Board of Supervisors to object to the Kaiser Cement Corp.'s proposal to lower the hilltop ridge line near Monta Vista because of a landslide. (SJ 9/21/87)
1990	Bay Area Air Quality Management District ranks Kaiser Cement as top Santa Clara County polluter for arsenic, cadmium, chromium, mercury and nickel. (SJ 8/2/90)
1991	Nine South Bay companies, including Kaiser Cement & Gypsum, are told to warn nearby residents of potential cancer risks from their emissions, under a sweeping new regional program to reduce toxic air pollutants. (SJ 8/8/91)
1992	The British company that owns Kaiser **Cement** Corp. tonight is expected to unveil a plan to build 1,100 homes and a golf course in the hills west of **Cupertino.** (SJ 2/19/92)
1993	A fire at the Kaiser Cement Corp. plant in the hills behind Cupertino and Los Altos destroyed a storage building and sent a huge plume of smoke into the air … Kaiser operations faltered briefly when phone lines went out, … The building was at the northern edge of Kaiser 's property. It formerly held the company's administration and engineering offices, but since 1989 had been used for storage … The fire was reported at 4:42 p.m. and contained about 6 p.m. Firefighters were hampered by inadequate water supplies, said Teresa Meisenbach, senior deputy fire marshal with Central Fire. The cause remained under investigation, she said. (SJ 4/27/93)
1993	Kaiser Cement agrees to pay $685,933 for faulty cement (contaminated with dolomite in 1980) at Alameda County Jail. (SJ 3/6/91)
1995	The rest of the Kaiser Aluminum land in Cupertino is sold to the facility.[30]
1996	Kaiser Cement tire 45-day burning experiment raises health concerns. The Bay Area Air Quality Management District, which declared 25 Spare the Air days the same year, had quietly issued Kaiser its experimental permit in November 1995. (Metro 10/17-23/96)
2005	The dumping of quarry rock along a ridgeline in the Cupertino hillsides -- which created a jarring visual contrast to an otherwise natural setting -- will end this summer. The Palo Alto-based Committee for Green Foothills announced last week that the Hanson Quarry has agreed to end the dumping. (SJ 3/17/2005)
2007	HeidelbergCement buys Hanson.[31]
2008	The largest emitter of greenhouse gases in Santa Clara County is the Hanson Permanente Cement Plant in Cupertino. (SJ 2/9/08)

[30] 1/4/2011 Diepenbrock Harrison letter, Appendix E, page 2
[31] http://www.aggregateresearch.com/article.aspx?ID=11020

APPENDIX A: Kaiser Cement Plans Housing Development

DEVELOPER'S VISION OF 'CITY OF 21ST CENTURY'

San Jose Mercury News (CA) - Thursday, February 20, 1992

Author: *BERNARD BAUER, Mercury News Staff Writer*

A spokesman for the owner of the Kaiser Cement Corp. unveiled a plan Wednesday night for a high-tech "city of the 21st and 22nd century" on 3,600 acres in the foothills west of Interstate 280 adjacent to Cupertino.

The community of homes, office parks, golf courses and open space would link up with mass transit and Highway 85 via a 17- mile Southern Pacific railroad line that now serves the Kaiser quarry and cement factory, said Los Angeles-based consultant John Janneck, who represents Hanson Trust PLC, the British holding company that bought Kaiser Cement in 1986.

Janneck, in making an informational presentation to the Cupertino Planning Commission, said the first phase of development could begin as soon as 1997. "It's reasonable to assume it will be developed by someone, so why not take advantage of it now?" Janneck said.

The dramatic proposal comes as Cupertino appears poised to enact strict limits on hillside development. Earlier this month, a majority of the city council endorsed a proposed ordinance that would effectively block significant development in the hills west of I-280, including the Kaiser property. While most of the Kaiser land is under Santa Clara County's jurisdiction, county regulations would require annexation to Cupertino before development could occur.

"In order to protect those hills, we need that ordinance in -- period," said Phil Zeitman, co-chairman of CURB, a slow-growth citizens group in Cupertino . "What (Janneck) is proposing is mind-boggling." The hillside protection ordinance would require minimum lot sizes of five to 20 acres per home, effectively ending large- scale development in that area.

While Janneck did not specify the size of the proposed Kaiser development at Wednesday's meeting, city officials say he has suggested building up to 3,200 homes.

"We don't want to make this a rich man's enclave," Janneck said. "We must make this property available to everybody." Janneck said that the community could be served entirely by public transportation, eliminating the need for cars. He said the community should be built with Silicon Valley's cutting- edge technology.

About 20 percent of the Kaiser land is used for quarry and cement operations. The rest is woods. Janneck said that under one scenario, only 10 percent of the land -- 360 acres -- would be developed, with the rest remaining open space. By comparison, the adjacent hillside land owned by the Roman Catholic Diocese of San Jose, which also wants to build hundreds of homes, is 208 acres.

Kaiser officials estimate that the quarry has about 20 more years of material. The cement operation, which underwent a major modernization in 1984, is one of the worst air polluters in Santa Clara County.

Caption: Map
MAP: CARL NEIBURGER -- MERCURY NEWS (**Kaiser Cement** Property)
Memo: Shorter version ran on page 1B of the Morning Final edition.
Edition: *Peninsula/Am*
Section: *Local*
Page: *1B*
Index Terms: *CONSTRUCTION PRODUCT COMPANY PLANNING DEVELOPMENT ; CUPERTINO*
Record Number: *9201130287*

APPENDIX B: Santa Clara County Board of Supervisors and FPPC

FPPC STAFF RULES IN LEGAN CASE SUPERVISOR URGED NOT TO VOTE ON HILLSIDE DEVELOPMENT ISSUES

San Jose Mercury News (CA) - Thursday, July 4, 1985

Author: *MICHAEL REZENDES, Mercury News Staff Writer*

In a long-awaited opinion, the state Fair Political Practices Commission staff suggests that Santa Clara County Supervisor Tom Legan disqualify himself from further votes on a measure that would increase the value of property owned by his employer, Kaiser Cement Corp.

The opinion, which has been referred to the five FPPC commissioners, strongly contradicts the arguments of County Counsel Don Clark, who has said Legan acted properly when he proposed a general plan amendment that would nearly double the allowable density of development on county hillsides.

The commissioners are scheduled July 12 to hear opinions for and against Legan's position, and are expected to make a final decision on the matter. Lynn Montgomery, a spokeswoman for the FPPC, said the commission will not rule on whether Legan violated state conflict-of-interest laws on actions he has already taken. "The decision will simply set up guidelines for him to follow from now on," she said.

Legan said he intends to challenge the FPPC staff opinion before the commission. "I don't think that opinion is the last word," he said. Although he declined to be specific, he also said, "There are some areas (in the opinion) that were not appropriately addressed, and we'll be addressing (them) before the commission." Clark said he'll represent Legan at the commission's meeting in Sacramento. "I'm maintaining our initial position," he said.

Legan requested an opinion from the FPPC after newspaper articles raised the possibility that he had violated conflict laws. Since the articles have appeared, he has refrained from voting on all hillside matters while awaiting the FPPC ruling.

Legan's employer operates a mineral quarry in part of its 3,260 acres of hillside property in the northwestern part of the county. Parts of the property are in the cities of Cupertino and Palo Alto. About two-thirds of the Kaiser property is in a hillside zone under county jurisdiction. Legan is rock products manager at Kaiser and owns more than $1,000 in company stock.

In July 1984, he suggested that the county loosen development restrictions on the 180,000 acres of land in its hillside zone. And in December, he was part of a 3-2 board majority that voted to proceed with an environmental study of the effect of his proposed general plan amendment.

State conflict-of-interest law says no public official "shall make, participate in the making, or in any way attempt to use his official position to influence a governmental decision in which he knows or has reason to know he has a financial interest." The law says an official has a financial interest in a decision if "the decision will have a financial effect, distinguishable from its effect on the public generally," on a source of income for the official.

After questions about the propriety of Legan's actions were raised, Clark said Legan acted properly because the effect of Legan's proposal "is not distinguishable from its effect upon all owners of hillside property in the county" -- arguing that hillside property owners make up a "significant segment" of the general public.

But the FPPC staff disagreed. After determining that Legan's proposal would have increased the fair market value of Kaiser property by approximately $2.9 million, the opinion says "the effect on Kaiser will clearly be distinguishable from the effect upon the general public, most of whom will not be affected at all."

With Legan not voting on hillside development, the board seemed deadlocked 2-2 on the issue. In the December vote to study Legan's proposal, Legan was joined by Supervisors Susanne Wilson and Zoe Lofgren. Supervisors Rod Diridon and Dianne McKenna opposed the study. The board never gave final approval to the study, and in March voted to drop the study from its agenda until the FPPC issued its opinion. On June 25, McKenna persuaded the

board to set up a task force to study preserving open space on the hillsides. The vote was 4-0, with Legan abstaining. On Wednesday, McKenna said she was not surprised by the FPPC staff opinion. "I've anticipated that opinion," she said. "That's why I went ahead with my proposal."

Caption: Photo
Supervisor Tom Legan . . . Employed by Kaiser Cement
Edition: *Morning Final*
Section: *Local*
Page: *1B*
Index Terms: *CITY COUNCIL ETHICS ZONING DEVELOPMENT OFFICIAL SAN-JOSE*
Record Number: *8501090639*

LEGAN CAN'T VOTE ON LAND-USE ISSUE, STATE PANEL RULES

San Jose Mercury News (CA) - Saturday, July 13, 1985

Author: *ARMANDO ACUNA, Mercury News Sacramento Bureau*

The state Fair Political Practices Commission ruled unanimously Friday that Santa Clara County Supervisor Tom Legan can't vote on a land-use issue that could financially affect his employer, Kaiser Cement Corp.

On a 4-0 vote, the commission upheld the legal opinion of its staff, which said efforts by Legan to increase housing densities on hillsides in the unincorporated areas of the county would substantially increase the value of Kaiser property.

. . .

County Counsel Donald L. Clark, who represented Legan at the hearing, said there was no conflict of interest because allowing more housing on the hillsides would have affected all owners of hillside property, who they claimed represented a "significant segment" of the public.

But the FPPC staff said a change in the county's general plan allowing higher hillside densities would increase the value of Kaiser's undeveloped land by $2.9 million, a result the staff said "will clearly be distinguishable from the effect upon the general public."

Clark argued that Kaiser had no plans to develop any of its land for housing, stressing the "unity of use and unity of ownership" based on the quarry operation.

Commissioner Michael B. Montgomery was skeptical. He said that if Kaiser really didn't want to develop its land, then why hadn't the company made an effort to say, "We don't want to be part of the higher density." Later in the hearing Montgomery said Kaiser's reluctance to "to take everyone off the hook . . . sort of bothers me a little bit." Montgomery noted, for example, that Kaiser could sell its undeveloped property to residential builders and keep the quarry. And Commissioner Lim P. Lee, noting the clamor for more housing in the South Bay, said, "If the price is right, Kaiser will sell that land."

Caption: Photojump page hed
Supervisor Tom Legan . . . Kaiser rock products manager
Edition: *Morning Final*
Section: *Local*
Page: *1B*
Index Terms: *POLITICS SANTA-CLARA-CO.*
Dateline: *Sacramento*
Record Number: *8501110813*

APPENDIX C: 1983 Letter from Kaiser Aluminum to EPA stating that the company is separate. This also supports the end of Stevens Creek Blvd. Source: Page 19 of the only EPA Kaiser Aluminum (0903175) document in the database that is approved for release to the public from Stevens.Shelley@epamail.epa.

KAISER
ALUMINUM

KAISER ALUMINUM & CHEMICAL CORPORATION

September 15, 1983

Ms. Vera Brady
Environmental Protection Agency
Mail T-2-2
215 Fremont Street
San Francisco, CA 94105

Dear Ms. Brady:

This is your notification that our address has changed from:

RCRA 1. Kaiser Aluminum, Stevens Creek Road, Permanente, California } CAD009155

to: Kaiser Aluminum, Foil Plant, 23333 Stevens Creek Boulevard, Cupertino, CA 95014.

2. Kaiser Cement is still located at the west terminus of Stevens Creek Boulevard, Permanente, California. CAD009109

Super-Fund CA Docket

We are two separate companies who are located next to each other.

Very truly yours,

George McGee

G. A. McGee
Plant Engineer

itk

23333 STEVENS CREEK BLVD., CUPERTINO, CALIFORNIA (408) 252-3780

Dear Sir/Mam,

I am a long time resident of Cupertino and am concerned that not enough is being incorporated into the present Reclamation Plan to completely pay for the reclamation when Lehigh decided to vacate their mining operations and cement plant. According to the Reclamation Plan Amendment amendment draft dated 12/7/2011 (see attachment) the Financial Assurance (FA) funds Lehigh submitted to the County are as follows (last page of report):

2010 August : $11,439,992 which included EMSA and Disturbed areas
2011 April : $13,438,624

Then according to Gary Rudholm the FA jumped to $47.7 million on February 8, 2012.

I cannot understand why the sudden jump in FA of more than 4 times in a 2 year period of time. According to the 2010 FA that amount included the EMSA and Disturbed Area. Even if there was an error and the EMSA and Disturbed areas were actually part of the 2012 FA how can the amount increase by 4 times? Is the disturbed areas and EMSA 4 time larger than the mining area of the current Reclamation Plan?

How accurate are your methods of estimating the FA? If you are underestimating the FA then more than likely taxpayers will be picking up the balance. Is this correct or is Lehigh obliged to pick up the tab if not enough money is in the FA?

I am very concerned that even $47.7 million is inadequate to pay for the reclamation of a surface mine almost 3 miles long and half a mile wide. This is almost the distance from Foothill Expressway and Lawrence Expressway. I am very concerned that we taxpayers will end up with the tab for much of the reclamation. If you have been underestimating the reclamation costs from 2011 and earlier then what assurance do we have that you current amount of $47.7 million is accurate? Is there enough money for unforeseen reclamations?

I also learned that the Cement Plan and all its facilities are not covered by the reclamation plan. Does this mean that after the completion of the reclamation we will still be stuck with all the cement plant structures and disturbed property not included in the Reclamation Plan? It may end up more expansive to demolish these hazardous structures and clean up any toxic wast manufacturing facilities such as this are famous for abandoning. Who will pick up the tab? So even if the surface mine were to be successfully restored we would end up with an abandoned cement plant which will pose a danger to anyone curious enough to explorer the abandon facility. This is totally unacceptable. An abandoned cement plant surrounded by a vegetated mine will still be a hazard and an eyesore. There are rock crushers and other structures connected by long conveyor belts scattered throughout the property which will pose significant hazard to the curious. Who is liable if someones child were to be injured or worst?

I strongly urge the County to look more seriously at the true cost of the reclamation and FA to make sure it is conservative enough to cover unforeseen contingencies. I would also urge that the Cement plant and all disturbed properties not specified in the reclamation plan be included or somehow accounted for. Once the mine and facilities are abandoned what remains will remain forever.

Best Regards,
Frank Geefay
7961 Sunderland Dr.,
Cupertino Ca. 95014
Phone: 408-996-7013

------ End of Forwarded Message

3.23 Financial Assurances (§3702)

Financial assurances will be required to ensure that reclamation is performed in accordance with this Amendment. The financial assurance may be in the form of surety bonds, irrevocable letter of credit, trust funds, or other forms of financial assurances approved by the Lead Agency. The financial assurance is reviewed annually by the operator, the lead agency and the Office of Mine Reclamation to determine if adjustments to the estimate are necessary.

The County approved the financial assurance estimate dated August 2010 totaling $11,439,992. This estimate covers existing disturbed lands within the Permanente ownership as well as activities scheduled under the Permanente Quarry Reclamation Plan Amendment dated March 2007 and the 2009 EMSA Amendment. An updated estimate, totaling $13,438,624 was provided to the County in April 2011. Upon approval of this Amendment, the financial assurances will be adjusted as necessary.

3.24 Administrative Requirements

Lead Agency Information:

Lead Agency:	County of Santa Clara Planning Office
Staff Contact:	Gary Rudholm, Senior Planner
Telephone:	(408) 299-5770
Address:	70 West Hedding Street East Wing 7th Floor San Jose, CA 95110

3.25 Statement of Responsibility

Lehigh Southwest Cement Company accepts responsibility for reclamation as set forth in this Amendment.

Marvin E. Howell, Director of Land Use and Planning

Dated: December 7th, 2011

From Cathy Helgerson

County of Santa Clara Planning Commission and Board of Zoning Adjustments

Addressed to Commissioners – Jack Bohan, Dennis Chiu, Michael Franzino, Scott Lefaver, MaryAnn Ruiz, Kathy Schmidt and John Vodovich

Meeting Schedule: February 2, 2012 at 1:30 PM, 1st floor, Board of Superviosrs' Chambers

Item 7 - 2250-10P(M1)-10EIR Lehigh Southwest Cement Company

Comments related to the public hearing to receive public comments on Permanente Quarry Reclamation Plan Amendment Draft Environmental Impact Report (DEIR). Address 24001 Stevens Creek Blvd. Cupertino, Ca. 95014; Zoning District: HS; Parcel Size: 627.97 acres; Supervisorial District 4; APN: 351-09-011,012,013.

Public Comments verbally stated and written preliminary by: Cathy Helgerson, 20697 Dunbar Drive, Cupertino, Ca. 95014 resident and citizen of Cupertino for 30 years. Note: Citizen will also follow up with a more detailed comment report by February 21st 2012 to the Planning SCC Planning Commission, the SCC Board of Supervisors and the SCC Planning Department.

The Reclamation Plan for the WMSA and the EMSA can not be approved at this time can not be implemented due to a Super Fund Cleanup. I filed a formal request for an investigation to be conducted by the EPA Region 9 Superfund Site Division at the Lehigh Southwest Cement Plant and Quarry and also the Stevens Creek Quarry in Cupertino, this Preliminary Assessment is still under way and I am waiting for the results. When the EPA decides to elect a Super Fund Site these sites will need a massive cleanup they will need to be closed down in order to conduct a full investigation. There will need to be testing of the site and pollution levels determined so that a formal cleanup can begin there can be no delay in this process in order to protect the public from further contamination. Superfund Sites are imposed to clean up a site and to also make sure that there is no further contamination in the future.

The EPA Region 9 Super Fund Division can set a 15 mile perimeter around the site due to the contamination of the water in our creeks, reservoir, wells and aquifer. The air, water and soil has been highly contaminated with Selenium, Mercury, Arsenic, Dixon, Nitrogen Oxide, Sulfur Dioxide, CO2, Chromium 6, Vanadium, Lead and many more chemicals, metals and gases. The Dust that is emitted due to this pollution is everywhere and we are eating and breathing in this dust 24/7. The powers that be have not issued any real strong opposition to the many notices of violations no one has used any form of real enforcement to stop the serious continued polluting of our communities that have resulted in many health problems including death. The fact that cancer is at epidemic levels and that one out of two people are getting cancer seems to be overlooked by the agencies that have been formed to protect us.

The public has been deceived and the dangers are played down by the agencies and the news media which brings many people to believe that there is no way to protect ourselves and families. There are many children born with autism which is also now at epidemic levels again the continued overlooking of

the pollution and contamination that has affected our children's health the question now is how will we protect our children?

The spare the air days have increased steadily as the pollution has changed our climate and we must accept this climate disaster realization that can not longer be overlooked by any of us. The weather is dryer and as each emission of pollution that is released in the air or falls on the ground has subjected us to cumulative effects that are taking a terrible toll. The planet's weather is changed continually and we sit by and wonder why earth quakes and other catastrophes are happening when we can see all of the signs around us that should be an indicator of what is causing such a great threats to human and animal life as we know it on this planet. The San Andres fault is about two miles from the site as so stated in the EIR and could be a major problem with any new pit mined which would even be closer that would cause the next major earth quake in California. I must insist that no new pit of 200 acres and the destroying of 10,000 thousand trees be allowed which would only be the beginning of the continued mining of this area that would reach up to 600 acres or more and the destruction of 30,000 thousand trees. These trees have acted as a buffer for decades and if they are removed there will be no way that we can go on living in the Silicone Valley and in our community homes.

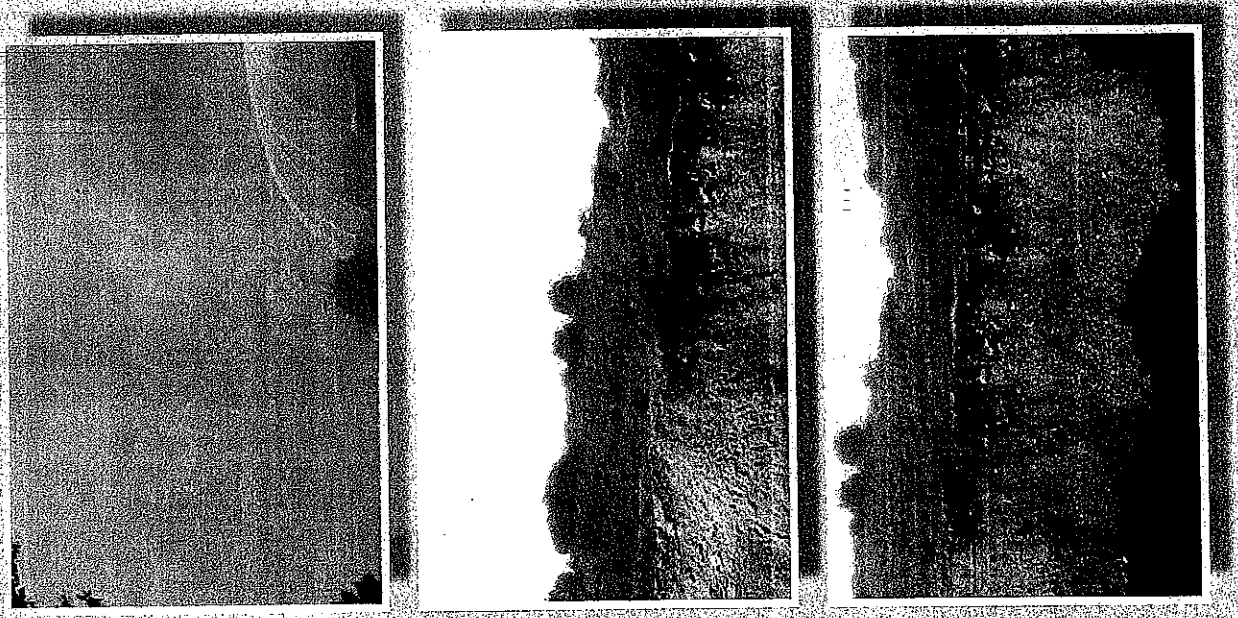
The fact that under the EMSA there was once an aluminum plant and an ammunitions factory that are suspect to high levels of contamination that has never been cleaned up this seems to be completely overlooked by the SCC Planning Department. I have continually asked that soil samples under the ground be tested this information should have been part of EIR. The EMSA is ugly and the height is completely out of control. The destruction of the calm scenic view has been disrupted without any consideration for the citizens in Santa Clara County and what they feel is important to the community. Why has this been allowed to continue and who will correct this injustice has yet to be determined.

I ask that each member of the commission take into full consideration the seriousness of my concerns with the EIR and the proposed Reclamation Plan and do the right thing and work with the EPA to insure the safety to the citizens of Santa Clara County and the surrounding areas.

Thank you

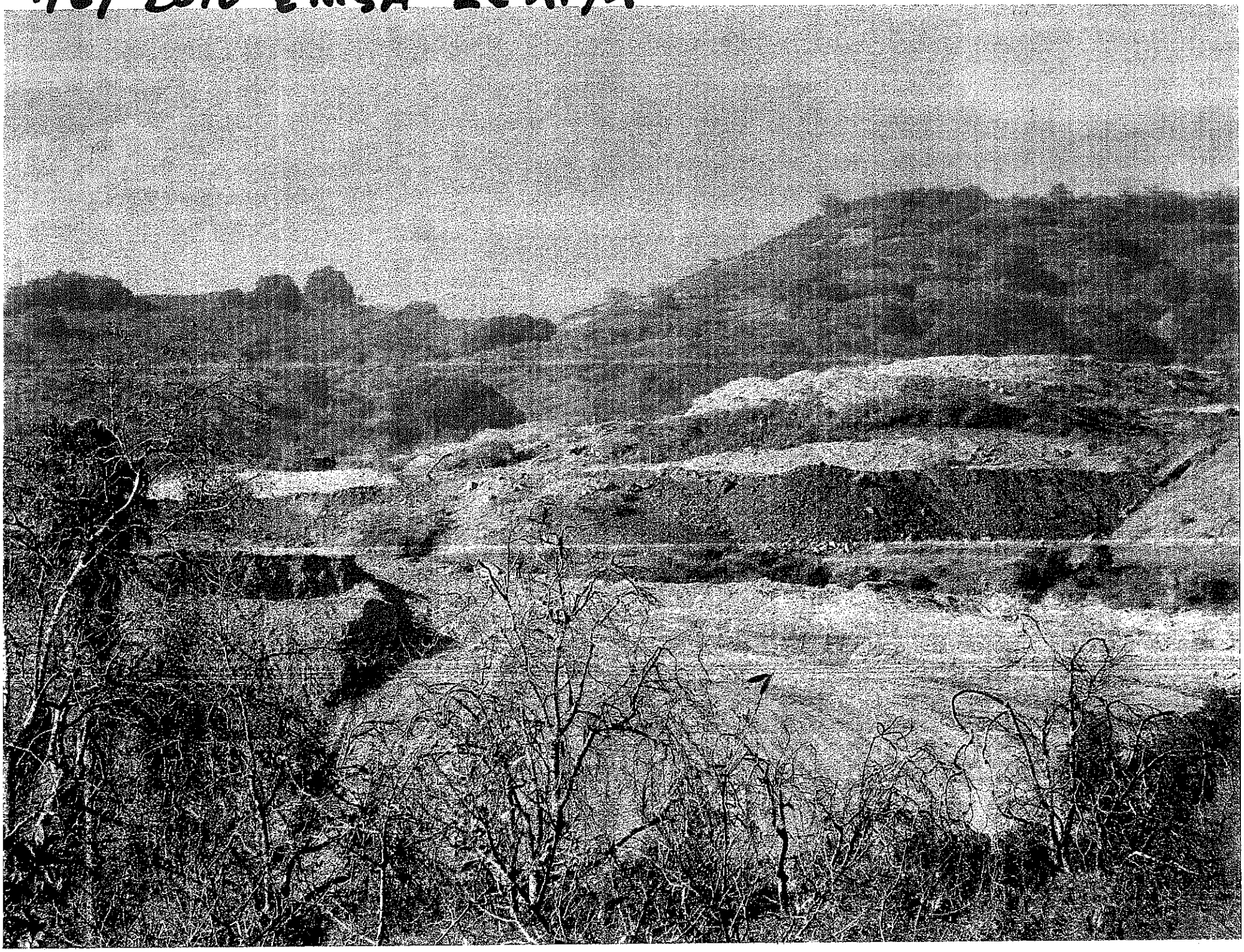
4 attachments + 3 blow ups

ph: 408-253-0490




02/01/2012 19:45

1/6/2010 EMSA Lehigh




N Stelling Rd
S Stelling
02/01/2012 20:25

County of Santa Clara Planning Commission
Written Comments continuation from the Public on Permanente Quarry Reclamation Plan Amendment Drift Environmental Impact Report (DEIR), address 24001 Stevens Creek Blvd., Cupertino, Ca. 95014; Zoning District: HS; Parcel Size: 627.97 acres; Supervisorial District4; APN: 351-09-011,012,013.

This is a continuation of the public comments verbally and written at the Santa Clara County Planning Commission and Board of Zoning Adjustments on February 2, 2012. Please add extended comments to the original paperwork submitted that included photographs of the EMSA and Lehigh Cement Plant.

Comments Submitted by: Cathy Helgerson, 20697 Dunbar Drive, Cupertino, Ca. 95014, Phone No: 408-253-0490.

I Cathy Helgerson have been a citizen of Cupertino, Ca. and Santa Clara County for over 30 years I would like to submit further comments at this time pertaining to the DEIR as follows:

The EIR should have included the Lehigh Southwest Cement Plant and does not we the citizens are upset about that. The pollution from the Cement plant has a great deal to do with the continued pollution of the surrounding areas air, water and soil which needs to be included in the proposed Reclamation Plan. How can there be any reclamation of any kind without assurance that there will be no further pollution allowed on to any reclaimed areas? The Mid Regional Peninsula Open Space District has written and also make it very clear that the pollution at the Lehigh Cement and Quarry is destructive to the vegetation and to the wildlife that inhabit the region so how can Santa Clara County leave out these important facts in their DEIR.

I will mention again that there needs to be a complete cleanup under a Government EPA Region 9 Directed Super Fund Site Authorization and this needs to begin immediately in order to protect the public from any further exposure from the pollution being emitted 24/7 by the Lehigh Southwest Cement and Quarry and the Steven Creek Quarry. I am still waiting to hear from the EPA they are in the process of a Preliminary Assessment the results of their inquiry should be available any day now.

There is a perfect example of pollution to an area that the City of Cupertino first thought of putting senior housing on property owned by them next to highway 85 this prospect was shot down because of public uproar against it due to the pollution that would have come from the highway and the Lehigh Cement Plant that would harm the senior residences. They then decided that they wanted to put in a fancy dog park that would cost the city hundreds of thousands of dollars but first they decided to do a soil sample test and soon found out that the property was full of lead and that the clean up would cost over $100,000.00 thousands dollars this soon squelched this idea. I myself mentioned at a meeting about this that what are they going to do when the pollution comes back will they need to clean up the site again and the pollution would come back. I now see nothing being done with this property and that there are no senior cottages or dog park being put

in so I presume that they have decided to leave the property as is. I myself think there should be a clean up especially because this property is right next to apartments that people with small children live in so my question is what is this lead pollution and other pollutants doing to the young and old alike? This is a perfect example of the pollution in Cupertino but what really bugs me is that the City of Cupertino will not do any tests of the air, water and soil pertaining to Lehigh Cement or the Quarry and I still have to ask why? I hope this is a good example of the pollution that is being emitted by the Cement Plant and the Quarry and I would like to also add that the Steven Creek Quarry is also a contributor to the pollution and is also being looked at by the EPA Superfund Division. Lehigh is only a few miles away from the Steven Creek Quarry and the Dust and Pollution from Lehigh is also going over the Stevens Creek Quarry the Steven Creek Reservoir and the Mid Peninsula District open space areas the EPA Superfund Site work will clean the land but the work needs to be started right away.

The Reclamation Plan item 4.10.1.3 Groundwater Hydrology page 4.10-16 mentions that within the Project Area, groundwater flows through two general formations (or mediums): bedrock, and a small portion of the Santa Clara valley aquifer that intersects the Quarry site. It is stated that ground water discharges to the Quarry pit. Adjacent to the Project Area, the typically perennial reaches of Permanente Creek (i.e., upstream and downstream of the Quarry Pit) are maintained primarily by groundwater discharging directly to the stream channel during the dry season, as well as by dewatering discharges from the Quarry pit. The water discharging from the Quarry pit has high levels of selenium pollution and is subject to waste water violations which have not been addressed by the State Water Resource Board with any real enforcement and this will need to be addressed in this Reclamation plan.

It is extremely evident that the WMSA, EMSA, Quarry and other parts of the project areas construction have destroyed trees, landscape grasses, plants, shrubs and harmed animals and their habitat initially and for generations without anyone seeming to care. The past history of the old Reclamation Plan went for years without implementation and Santa Clara County did nothing to make sure that what was supposed to take place took place. The massive trees that were destroyed will never return in any way for they depended on the limestone rock formations to secure the strong roots that held them up and not any old or new reclamation plan will do very little to return this land to it’s original beauty. The animals that made this beautiful property home are dead or displaced without again much concern for their well being this is a violation of regulations that should have been enforced again why was this not enforced?

Table 4.10-4 page 4.10-15 Overburden Leach Ability by Modified CAM Wet shows Arsenic, Lead, Mercury, Selenium, Vanadium, and other pollutants levels taken back in 7/1/09 which need to be updated. These pollutants are serious and can not be overlooked and the cumulative effect will need to be taken into consideration if not the public will suffer. Who decides what levels are acceptable and how much pollution can the public take into their bodies we are all sick or will become ill and still they say we can tolerate whatever level they decide not acceptable and this must stop the public demands it. The pollution turns into a chemical cocktail of gases, metal and chemicals and becomes even

more lethal and still we are told it is ok below the limits without even taken into account that people are getting sicker and sicker who will stop this injustice the public wants to know? The EIR overlooks all of the real dangers to the public and we are supposed to decide what Project or Project Alternatives are best without a EPA Declared Superfund Site there is no good Reclamation Plan.

ES.1, ES.2, ES.3, ES.4 Proposed Project Description – ES.4.1 Overview Applicant states that the 1985 Reclamation plan is amended under this new Project Proposal but we must view the past history of the original plan that was not adhered to how can we expect Lehigh to honor their agreements in the future can anyone tell me? The Santa Clara County who should have been the overseer was away far from taking charge and until the public contacted them about the EMSA did not even know what was going on so how can we even trust that a Reclamation will ever take place what is the public supposed to do? This seems very strange to me because they are supposed to inspect yearly so it seems someone looked the other way this is not acceptable to the public and should not take place again. There are and have been all kinds of violations at the Lehigh Southwest Cement and Quarry and the Stevens Creek Quarry and Santa Clara County does not impose fines and site them why is that?

ES.2 Project Objectives – Note: We must not allow the continued mining of Limestone at the Lehigh Southwest Cement and Quarry. The mining of limestone and cement processing has been allowed to continue since 1903 this continued mining has destroyed the Cupertino Foothills, the open space areas at the sight and around it and contaminated the air, water and soil in all of the Silicone Valley and the surrounding areas including the San Francisco Bay which is a serious violation of many laws. There can not be any Project or an alternative at all that includes the continued mining and making of cement this must be a requirement in any Proposed Reclamation Plan. I ask instead that the EPA Region 9 Superfund Site Division decide to make Lehigh Southwest Cement and Quarry and the Stevens Creek Quarry and the surrounding areas affected by the pollution a Major Superfund site with cleanup to commence immediately before any Reclamation can even be considered. My dream is that the land the Lehigh Southwest Cement Plant and grounds, the Quarry and the Stevens Creek Quarry should be turned into a State or Federal Park for all the people to enjoy for all time this would benefit many generations to come. There are many ways that this could be done and the public would be more than happen to help with that project.

They state what " Reclamation" means the combined process of land treatment that minimizes water degradation lets start with that there are multiple NOVs sited against them with the State Water Resource Board 17 or more and none of these have been resolved no fees or fines have been paid and the public waits to see justice done. The State Water Board has mentioned high levels of selenium waste water coming from the existing pit continually and the Permanente Creek being used for a dumping ground for this pollution again no one is sited fees or fines are not imposed or paid and the pollution continues. There is all kinds of pollution going into our water but the State Water Board stated at a meeting with the Los Altos Hills and the public that they are only concerned with selenium and that the water companies are responsible for the quality of our water

this is absurd and something needs to be done right away. The ponds at Lehigh are full of pollution that is emptying into the Permanente Creek and our water shed. Their sanitation process is polluted and filthy they do their own sanitation and are not part of the San Jose Sanitation Department the pictures taken by the State Water Board can testify to the pollution on the sites so why is this not stopped? It is time to stop allowing companies like Lehigh to pollute and get away with it we need the EPA Superfund Site declared and the clean up needs to begin immediately.

There is nothing being done to control the dust coming off of the sites via the EMSA , WMSA or with the piles of Petrolium coke, the kiln emissions and other locations at the cement factory and at the quarry the public wants to know why? Sprinkling of any piles that promote dust and pollution needs to be contained and are not this should be part of the Proposed Reclamation plan there should be no continued pollution allowed and how can there be a Reclamation if the land is continually allowed to be polluted the public would like this matter addressed?

The Air Pollution at the Quarry, EMSA, WMSA, Kiln and the Cement plant is a great health hazard to the public Lehigh has an NOV filed against them with the Federal EPA and this is still pending which stated they have no legal Title V Permit in operation and that they are not operating under the Best Available Technologies and that they are in violation of the PSD's so why are they still open? Santa Clara County stating that the Title V Permit has nothing to do with the Reclamation is again ridiculous and foolish both should tie into one another and the public demands that is does. Mercury emissions coming from the plant are high and the BAAQM District does nothing to make the public fee that it is protected we are still waiting to see what the truth is about the Mercury levels that are being spewed all over the valley who will find out the truth? The NOX, SO2 and CO2 levels are high and I have questioned the drying of the Petrolium coke with the NOX and SO2 gases this should not be allowed because there is no monitor on the Petrolium coke pipes and it is suspected that the levels of these emissions registering low because of this process so the public is lied to. The gases are transporting the dust and pollution all over the valley and no one seems to want to take care of this problem. The Reclamation plan can not be implemented at all without the stopping of the ongoing pollution from the Cement Plant and the Quarry how could it be? There are many pollutants being released from the Cement Plant and also in the air from the Quarry and the storage areas so why is nothing being done? Arsenic has also been detected and we are sure that Chromium 6, Vanadium and Lead is also being into the air, water and soil but we need to find out from the EPA Superfund Site declaration what on because it seems the other agencies will not do their jobs. The EPA labs are well equipped to determine any pollution and can test for all of the pollutants we need to demand that they do and there should be no suspect of any kind of tampering with any reports or records of any kind from anyone.

There is definitely damage to the aquatic or wildlife habitat and the Mid Peninsula District can testify to that they have sent letters addressing the pollution problem to the BAAQMD and to the Santa Clara County without much success it would seem no one wants to correct the problems why is that? How can their letters and concerns be

overlooked by anyone and they will be responsible in the future for determining if Lehigh or anyone else has access to any more open space for mine drilling we the public hope they never do.

The dangerous flooding , erosion and other adverse effects from surface mining operations is ongoing and is a health and safety issue the applicant has been in violation continually but again no one is doing anything about it why not? There is supposed to be a suitable Reclamation imposed in order to allow the land to be used for future open space functions this can not be so if the areas is not free of dangerous pollution. The EMSA and the WMSA contains pollution that has been tested by Santa Clara County but they refuse to do anything about it why not? Under the EMSA there was once an aluminum plant and an ammunitions factory that polluted the area and I have asked Santa Clara County to test the soil they refused continually why is that are they not concerned about the safety of the water going into the Permanente Creek and our water shed it would seem not why not?

The vested rights have been an issue and the public fought and lost the pleading with Santa Clara County this was a terrible injustice and should be rectified but who will impose justice? This included the Permanente Road that was given to Lehigh without any real consideration again the public resisted and wanted the road to remain public and we were turned down and the citizens lost the revenue that could have been earned by the sale of the road to Lehigh this again was an injustice who will stop this ongoing lack of consideration for what the public asks for? The bridge also remains to be a safety hazard and is old and with cracks in the concrete and there has been not inspection by Santa Clara County to make sure that the trucks, cars and people going over the bridge are safe who will do something about this continued lack of consideration for the publics safety certainly not Lehigh the public wants to know why? This should also be part of the Proposed Reclamation plan and it is not so when will that be considered? There are many buildings on the site that are old rundown and dilapidated again nothing is being done even thou Lehigh and Heildelberg are very rich and can upgrade or build a new Cement Plant that would help control the pollution why are they not doing so? The public does not want a Cement Plant and wants the quarry shut down in order to stop the continued ongoing pollution of our cities and towns. The Cement plant should be looked at with the same high pollutions restrictions as a new plant so as to keep the public safe how can they be allowed to pollute more because they are an old plant? This makes no sense if they state that the levels are unattainable then they need to shut down the plant and the Quarry.

ES.4.1 Overview - It is stated that the proposed reclamation would not preclude future extraction activities within the Project Area but does not foreclose the possibility of future mining in the other unincorporated areas of the Applicant’s 3,510 acre ownership. This would include the exploration area south of the new pit with many trees that would be cut down 10,000 to begin with and 30,000 trees after they mine 600 acres as was the case in with the old pit. Lehigh needs to mine a new pit and we as the public can not be so blind as to see what will happen if they are given that right no one will be able to live here in the valley the buffer of trees that has keep the pollution from climbing will be

gone for ever we need to stop this disaster.

ES.4.2 Project Components (bullet 1) states that the existing pit would be backfilled with the WMSA overburden material which does not include the EMSA this is not acceptable to the public both the WMSA and the EMSA should be used to fill the existing Quarry and mining should stop. The material overburden and whatever should be tested to make sure that there is no pollution it would seriously seem there is and if so there needs to be more top soil added to the top of the land in order to make sure that the public is not contaminated with pollution. The land can only be used for certain things after that and can not be used for buildings of homes and schools which would result in contamination of the public. My hope is the EPA Superfund Department will make this all known and clear to all concerned how the clean up will take place.

(bullet 2) Reclamation of the approximately 172.6 acre WMSA, which is an existing overburden storage area located west of the Quarry pit. Final WMSA elevation and contours would be returned roughly to pre-mining contours by transporting most of the materials currently stored in the WMSA into the Quarry pit and by processing the remaining materials for commercial use.

Note: It states that the contours would be returned roughly to pre-mining conditions this just does not seem correct to me there needs to be specifications how will that work? What does roughly mean I suspect not very good and we are subject to an ugly landscape which will be used for nothing at all this would be a terrible shame.
(bullet 3) Inclusion of the approximately 75.2 –acres EMSA within the reclamation plan boundary and reclamation of the area, including the creation of a permanent overburden storage area imposed.

Note: What is this permanent overburden storage area it was stated in a program that the EMSA would be moved west of the area new but it does not look like this will be at all what is going on? The public does not want the EMSA permanent or otherwise the EMSA needs to be put into the old pit and the mining needs to end so that the public is protected from the pollution. The area needs to be returned to the natural state that will be appreciated by the people looking at the scenic view from miles away and at the site.

(bullet 4, 5 & 6) Crusher, Surge Pile and Rock Plant – These areas need to be cleaned up and dismantled and removed right away and I hope the EPA Super Fund District can start the clean up that will be needed to clean up these areas of pollution.

(bullet 7) Reclamation of approx. 19.5-acres Exploration Area located south of Permanente Creek that has been subject to mining-related exploratory activities but not mineral extraction. Note: I believe this area is the area that was tested in order to purpose a new mine to be mined looking at the limestone in the ground for future use. This application was pulled back as noted earlier in my comments and is illegal it should have been part of the EIR. I would like to add that there was also going to be a bridge over the Permanente Creek in the new pit application this bridge would allow a great deal of pollution to be discharged into the Permanente Creek and should not be allowed.

(bullet 8) Note: Reclamation here of approx. 49.2 acres of disturbance within the PCRA would also have to be considered for testing by the EPA Superfund Dept. to make sure that there is no pollution from the limestone mining. The Permanente Creek would have to be cleaned due to the pollution from selenium and other contamination that has continued over many decades.

(bullet9) Designation of approximately 599.3 acres of vegetated buffer area where no mining operations would occur Note: This area has been contaminated by the dust from the mining at and around the pit by the quarry and the cement plant this needs to be examined and determined again by the EPA Superfund Site Division prior to any reclamation of any kind see (bullet8).

The time frame mentioned on page ES-5 under Table ES-1 Reclamation Phasing and Related Activities is alarming extending out to the year 2030. Footnote mentions dates could be subject to market demand which leads us to vision another quarry in the making nothing leads us to believe in any way that it should take till the year 2030 to complete the 3 phases why would it? The public demands that the Reclamation be started after the EPA Superfund Division completed the clean up and that all the regulations pertaining to a Superfund Site have been implemented. This should all be coordinated with the State Mining Board and State and Federal Funds used for the clean up as well as Lehigh Southwest Cement and Quarry money. This does not exclude Santa Clara County from paying for the clean up as well. The cleanup will change many if not all of the design of the Proposed Reclamation plans and alternatives and it is foolish to think that a plan can be approved at this time as we wait for the EPA Superfund Division to finish their Preliminary Assessment and provide a report to the public.

ES.5 Alternatives
ES.5.1 Alternative 1: Complete Backfill Alternative – under Executive Summary ES-4 the problem with this Alternative is that the EMSA would be backfilled into the Quarry upon the conclusion of mineral extraction activities which has not been determined. Lehigh refuses to divulge how much limestone is left in the existing quarry stating that it will reveal information to their competitors this is ridiculous the public wants to know how much limestone is left to mine? It states that the EMSA was designed to accept total overburden placement of approximately 6.5 million tons (approximately 4.8 million cubic yards) and to provide overburden storage for the surface mining operation until approximately 2015, when contouring and revegetation would occur . Under Alternative 1, the approximately 4.8 million cubic yards of overburden stored in the EMSA would be returned to the Quarry Pit during reclamation Phase 2. Note: Table ES-1 states that Phase 2 will not take place until the year 2021 THIS IS NOT ACCEPTABLE the EMSA needs to be moved as soon as possible it is stated further in the next paragraph that removal of mining overburden from the EMSA would abate the notice of violation related to mining related use of this area, remove an existing source of selenium and thereby preclude its mobilization into downstream waterways, and return views from the valley floor and beyond to pre-mining conditions. ES-5 goes on to say that removing the EMSA also would not meet an objective of the Project, which is the screening of view of and noises associated with the industrial uses occurring at the Cement Plant from the valley floor

and recreational area in the vicinity of the Project Area.

Note: This is totally absurd there has never been any such objective it is an excuse so as not to move the EMSA which is causing a great deal of pollution to the community in the air, water and with the soil. We must also consider what pollution is under the EMSA as stated in the beginning of my original comments. The view from Stevens Creek Blvd. example at Stelling Blvd. and Stevens Creek Blvd. is in the picture I gave you with my original comments the EMSA can be seen for miles even further out on highway 280 as we come up the freeway as far back as Wolf Rd. The original view was a small hill covered with grass and it blended in with the hillsides this is not the case now I mentioned this to Santa Clara County when Lehigh started to destroy the hill and I also contacted the State Conservation Department who would do absolutely nothing about what was taking place at Lehigh to stop the destruction. Santa Clara County was not even aware of what was taken place until I called and complained and even then they allowed Lehigh to put up the EMSA with my complaints and with the complaints of the community which went unheard. We now have to look at a monstrosity a disaster that has taken place and destroyed the view it's is illegal and no one will do anything about it can anyone tell me why?

ES.5.2 Alternative 2: Central Materials Storage Area Alternative – Page ES-6 - This seems to be more of a problem it is stated that the overburden will be moved to the west edge of the EMSA further removed approximately 52.2 acres from the closest viewers and air quality - noise-sensitive receptors I am very concerned that they will cut down more trees to move the EMSA to the west and it does not look as if there will be enough room for all of the overburden. It is stated that this would accommodate overburden generated by mining of the Quarry pit during reclamation Phase 1 and then would be reclaimed. Well this is again upsetting another area to be reclaimed seems like we need another Reclamation plan for this area if this should be included now. The moving of the EMSA is a good thing but not like this we do not need another problem. The real issue is that dumping on the EMSA no matter where it is should be stopped immediately without delay. The overburden should only be put into the quarry and the mining stopped so that the total clean up can begin with the EPA Superfund Site movement which will be the most beneficial to the community that will save lives now and in the years to come.
ES.5.3 No Project Alternative: There again can not be a Reclamation plan without a full clean up of all lands in the Project and surrounding the Project including the Lehigh Southwest Cement Plant. The SMARA requirements mandate that the Project Area be reclaimed in compliance with all regulatory criteria Lehigh has been out of compliance continually with issues related to Orders to Comply/Notices of Violations (NOV's) issued by the County in 2006 and 2008 related to deviations from the 1985 Reclamation Plan (i.e., engaging in mining activities outside the approved reclamation boundary) with no penalties or fines paid to the county this is illegal. Under the No Project Alternative, the proposed Reclamation Plan would not be approved, these NOVs would not be abated, and the Applicant would remain in violation of SMARA and County requirements because an approved reclamation plan would not encompass all mining-related operations and disturbances. This would result in no additional placement of overburden at the

EMSA.

It is stated that in order to address the existing NOVs, a SMARA-compliant reclamation plan would have to be developed, approved following its evaluation under CEQA, and implemented by the Applicant. This plan would be similar to the proposed reclamation plan which would include the EMSA overburden. The issue again that needs to be addressed is the probability of an EPA imposed Super Fund Site which needs to take place in order to clean up the polluted lands that have been allowed to continue for over 70 years. It is stated that under the No Project Alternative, the principal difference compared to the Project is not whether reclamation would begin, but rather when reclamation would begin. There can be no delay with the reclamation after the EPA Super Fund Site clean up has been done and no one right now can possibly know how long that will take. The State Mining Board should be included in the decision making and Santa Clara County should be under the limitations set by them and the EPA Superfund Site plan.

The baseline (11-year average) annual limestone production rate for the Quarry is reported by the Applicant to be 2,600,000 metric tons (ALG, 2011), the total limestone production under reclamation Phase 1 is estimated by the Applicant to be 42,300,000 metric tons (ALG, 2011). This, under the No Project scenario in which mining would continue at the baseline rate, it would continue at the baseline rate, it would take approximately 16 years to reach the same total production as would be reached in 9 years . Note: The problem here and should be noted is how much limestone is left in the existing quarry to mine we the public need to know? The other issue is that the application for a new pit was pulled back and it is suspected that the Santa Clara County board instructed Lehigh to retract the permit and submit it at a later date this is unacceptable and probably illegal. The new pit has everything to do with the continued mining of the Lehigh Cement and Quarry operations and should be included in the Proposed Reclamation plan. This is a deliberate plot to keep the citizens in the dark as to the new pit and its danger to the community which is illegal. The calculations above more then imply that there will be limestone production and mining continued whether it be 16 years or 9 years really does not matter what matters is where is this limestone coming from and the public needs to know. If as in the past I have been told by Santa Clara County that Lehigh has mentioned they have hardly any limestone of any quality left in the old pit and then they changed their story and stated they had 5 to 10 years left it is very difficult for anyone to really know what is left in the old pit to mine. The baseline average of 11-years which it is stated in foot notes at bottom of ES-7 states that baseline production average over the 11-year period from January 1, 2000, to December 31, 2010, which includes periods of relatively high production as well as relatively low production at the Permanente Quarry is in response to changing market demands is not based on any projections into the future and can not be used to say that this will be on average of 2,600,000 metric tons annually. Even with these calculations how can we presume that this is what will be coming from the existing pit and not the new pit application that has yet to be submitted by Lehigh. The Phase 1 estimated use 42,300,000 metric tones is more implications of the new pit and not limestone being pulled from the old pit and I suspect that the new pit which is estimated at 200 acres will be eventually elevated to 600

acres and more over 26 years if not longer there can not be a new pit mined this would truly be devastating.

The new pit application prospect should have been added to the now Proposed Reclamation plan and there should have been a Proposed Reclamation plan for that new pit submitted as well at this time so that the public can take all of the details into account at once. To leave this out of the EIR report is failure on the part of Santa Clara County to again meet the needs of the citizens of Santa Clara County especially the health, safety and well being of the public this should not be overlooked by anyone including the State Mining Board and the EPA. The public opposes a new pit and that is why the Santa Clara County instructed Lehigh to pull the application because they thought it would hold up the Proposed Reclamation Plan. This information could have held up the now Proposed Reclamation plan but maybe it should have we do not want a new pit and we want the Lehigh Cement Plant and Quarry to be shut down and the pollution of our communities stopped immediately. I want to know what is left in the old quarry to be mined what are the calculations and how long does Lehigh think it will take to mine it? I also want to know about the new application for the new pit how many acres will it be for and its projection for future expansion? I need to know how many trees will be cut down for the 200 acres and what ever the future holds for expansion and how does that affect the trees that will be destroyed at that time? I want answers and so does the public and to hold back information is illegal.

Similar to the Project table on page ES8 table ES-2 “No Project” Phasing and Related Activities cover 25 from 2012 to 2037 this is to long the public can not wait that long and that is why we need the EPA and a Super Fund declared in order to clean up the mess and start the Reclamation immediately. The new Proposed Reclamation should take very little time if the quarry and the cement plant are shut down the EPA can escalate clean up and so could those in charge of the Reclamation which would be a wonderful thing it would stop the pollution and also save lives of humans and animals alike. The property could be used for open space activities and the public could enjoy the possibility of a State or Federal Park that could be used by generations to come this is what the public wants and this needs to happen.

ES.6 Environmentally Superior Alternative – mentions that the Proposed Project is the best alternative and I disagree completely because of what was mentioned originally regarding a major Super Fund Site needs to be declared and clean up must begin immediately. I have also stated that no Project Proposal of any can be allowed that does not include the complete shutdown of the Lehigh Southwest Cement and Quarry the public demands it.

ES.7 Areas of Controversy and issues to be Resolved – (bullets 16) The comments of the public on these topics must be taken into serious consideration especially when over 200 people have submitted these complaints and comments in order for any solution to take place. The topics describe the seriousness of the issues and each and every issued should not be overlooked.

(Bullet 1) The Project Description needs to address the new proposed pit and it does not. Timeframes are to far out and extended. The Reclamation can not proceed without the declaration of the EPA Superfund Site Clean up there is nothing in the Proposed initial Project or the alternatives that mentions any clean up of the pollution and this is unacceptable. The Limestone alone has a great deal of Mercury in it and this location for mining should have never been allowed the public continues to suffer.

(Bullet 2) Alternatives – The alternatives need to be looked at with regard to full impact and they are not again no mention of the clean up of the pollution and contamination to the Lehigh Southwest Cement Plant, the Quarry and the surrounding grounds. There is not even any full clean up of the Permanente Creek which has been so highly polluted by not only selenium but other contaminants this is not acceptable. CEQA will need to do their job and work with the EPA to stop the pollution of our communities this must be added to any plan.
(Bullet 3) Aesthetics and Visual Resources etc. – The ridgeline views have been violated as stated in the comments and the scenic view has been completely destroyed without any fees or fines paid the public needs to know why can anyone tell us? The continued violations that take place at night are completely overlooked and there is no nighttime surveillance of any kind by the BAAQMD, Santa Clara County or anyone else this is and has been completely over looked even after I have asked for night time surveillance to take place. The plant can not operate without nighttime lighting and noise this is a disturbance to the people that live around the plant this goes completely overlooked. There has not even been any testing of any kind to determine if Lehigh is over the allowed noise level restrictions this has yet to be determined and should be. The lights that are a problem must also be shielded so as to not harm the residence homes with the night time lights this is not being done why not?

(Bullet 4) Air Quality etc. – There has been ongoing problems with air pollution of all kinds and this includes odors of all kinds especially a smell of cement in the air continually that includes a taste in a person's mouth with the problem of breathing that no one seems to take into account and do anything about why not? The diesel truck and the truck trips over 100,000 thousand per year from Lehigh alone which does not include the diesel truck trips from the Stevens Creek Quarry down the Stevens Canyon Rd. that intersects Stevens Creek Blvd. going to Foothill Blvd. The pollution is not even registered from these trucks daily and it could be the monitor at the Monta Vista Park that the diesel trucks drive by has not even been a benefit to anyone at all why is that? It seems it is to hard to determine what pollution is what is it the trucks or the cement plant is anyone's guess but who will look into this funny situation I would like to know? Health related issues of course are played down and cancer is on the rise one person out of 2 is getting cancer no one seems to care where is the pollution coming from the public is soon to find out. The dust is everywhere all over our homes, cars and we are eating it and breathing it in and still the BAAQMD will do nothing to protect the public why not? The most serious of pollutants is Mercury and the levels are high Lehigh Cement and Quarry are unable to control their emission and yet they are still allowed to continue their dirty work why is that? The Health Risk Assessment is a lie and should be an embarrassment to the BAAQMD but it is not it has been stated by many that there needs

to be an updated correct risk assessment done and no one seems to be able to enforce that requirement why not? There is no way that 1 out of 1 million persons is getting cancer and dying from it here in the valley it is a lot more than that and lets not leave out the fact that many are getting sick an suffering as well all of this is played down by the BAAQMD and the State Cancer Registry as well. The fact that cancer is at epidemic levels is stated and noted by the EPA is evident so why is the CDC not doing anything about it I am trying to find out?

(Bullet 5) Biological Resources including Permanente Creek we should not leave out the Stevens Creek Reservoir, Stevens Creek Creek, recharge ponds and our aquifer which is full of Mercury and other pollution. Young people are eating the fish that the catch out of the Stevens Creek Reservoir that is being polluted by the Stevens Creek quarry and the Lehigh Southwest Cement and Quarry no one seems to care or want to clean up the mess why not? The Santa Clara Water District is dishonest and knows about the high levels of Mercury and Selenium in the Steven Creek Reservoir but will do nothing to clean it up why? The impact on the fish, amphibians, etc. is evident and no one will do anything about it even after I complain to the universe no agency will stop the pollution I can only hope now that the EPA Region 9 Superfund Division will declare Lehigh and the Stevens Creek Quarry a Superfund Site and help to stop the pollution by getting the clean up started.

The cutting down of over 10 thousand trees initially and later probably up to 30 thousand later after the new pit has been mined that will probably go up to 600 acres is again overlook and the fact that these trees have been a buffer against the pollution seems again to be over looked. The Mid Peninsula Regional Open Space District has complained about the pollution for years to Santa Clara County and the County has done nothing to stop it why not? The animals that have been displaced by this pollution and mining seems not to matter to anyone why not?

(Bullet 6) Cultural Resources – The limestone is historical and dates back to the prehistoric era it is a historical land mark but no one seems to care why not? Once the limestone is mined and gone it will never be there again and the trees that used this rock to secure their roots will not be able to do so this is a terrible shame. The Reclamation can not replace these magnificent trees that have been their for decades providing clean air to breath and providing a forest for the animals that inhabit this land it is foolish to think it can ever be returned to it's natural state Lehigh has shown us no progress in the past so why should we believe them now? The human remains must be left alone and this should be honored and is not why not?

(Bullet 7) Geology and Soils- The San Andres Fault is 2 miles away from the Lehigh Cement Plant and Quarry and there are other Fault lines around and intersecting the areas it is foolish to think that mining can not effect and cause the next major earth quake in Cupertino and in the surrounding areas including San Francisco this would be a major disaster. The Quarry itself is a risk to the workers that work there land slides and other problems have been evident why is no one doing anything about it? There was even a shooting up at the Quarry the man who shot the people that worked there was ill he had

lung problems and had throat surgery I suppose he felt he had nothing to loose especially if he was ill and dying. The workers wear no masks or respirators of any kind and the trucks they work on have no closed in compartments to secure them from the dust that they must inhale each day at work so they are ill. The question is who will find out what is really going on and help these workers so they do not become ill from the pollution can anyone tell me?

(Bullet 8) Greenhouse Gas Emissions – Lehigh Southwest Cement and Quarry is a strong contributor to with CO2 emissions Greenhouse Gas Emissions along with Sulfur Dioxide and Nitrogen Dioxide gas emissions which is the cause of the global warming we are now experiencing each year. Lehigh should not be allowed in any way to take part in the Cap and Trade system it would be a disaster to our community and the public would be up in arms especially once they truly understood what is Cap and Trade not a good system. We need to close down Lehigh Southwest Cement and Quarry and the Stevens Creek Quarry in order to stop the pollution that is killing us and it has to be done now.

(Bullet 9) Hazards and Hazardous Materials – The public is subjected to the ongoing release of pollution which is not limited to asbestos, selenium, mercury, petroleum coke, radioactive materials, toxic materials we must also take into consideration Vanadium which is not regulated by the EPA and get Vanadium regulated so the pollution will stop. There has also been not mention here of Chromium 6 which is very dangerous and I have found out is very similar to Vanadium so why is Vanadium not regulated can anyone tell me? The NOX and SO2 emissions need to be looked at as well has I have stated the problems with them who sets the regulation levels and who says we can tolerated the levels they set this is crazy to believe that there is no cumulative effect and that the gases are not killing us. The dust hooks onto the gases from the kiln, plant and quarry and is spread all over the Silicone Valley polluting our air, water and soil who will stop the pollution I want to know? The BAAQMD can not be trusted to do their job it is evident and I ask again who will help the people who are suffering? The EPA need to be a true enforcement agency and also make sure the agencies like the BAAQMD and the State Regional Water Board are doing their jobs and if they are not something needs to be done about it. The paying of fines is not enough the companies that pollute are rich and paying fines does not seem to bother them at all they just go out and pollute over and over again this need to stop. They need to stop the pollution and if they do not then the people responsible should be put in jail and the enforcement agency needs to make sure that the laws and rules that govern our land are enforced so that the public is protected.

(Bullet 10) Hydrology and Water Quality, including toxic releases etc. – The State of California Water Resource Board has sited Lehigh for over 16 water violations with a NOV and this has been going on for over 2 years with anything being done and the public wants to know why? The health risks to the public are played down by the agencies and this should be a crime. The State Water Resource Regional Board seems now to think that they are not responsible for our water quality and have mentioned at a meeting with the Los Altos Hills council members and the public that the water companies are the only ones responsible for the water quality and that they are only concerned now of the selenium in the water I was totally alarmed and shocked by this information. I have been

talking to their representative over and over again and this was never relayed to me I can not tell you how alarming this is for me and the public and I will be investigating this on my own. Lehigh so far has paid no fees or fines and no one has been put in jail and the public wants to know why? The SCWRB is dragging their feet and this needs to stop my only hope now is in the EPA but only time can tell.

(Bullet 11) Land Use and Planning etc. – Who will protect the land and the open space around the now owned property by Lehigh I can not leave this up to any agency or the Mid Peninsula Regional Open Space District and neither should the public because the land can be turned over to Lehigh at any time. They can apply and then who decides if they will get more land to use for their mining this could go on for hundreds of years until finally there is no beautiful open space and the trees will be chopped down and the air, water and soil will be polluted beyond repair we can not let this happen.

(Bullet 12) Noise and Vibration, etc. – The diesel trucks coming in and out of Lehigh Cement Plant and also the dump trucks and other earth moving vehicles are a great problem to the public and the workers who work at the plant. The diesel trucks are polluting in to the air and they are leaking cement, dust, dirt rocks from the trucks that are causing all kinds of pollution onto the streets and into the air around the condos next door and into the neighborhoods this needs to stop. The noise and vibration can no longer be ignored as it has been and the EPA needs to do their job and stop this violation and so far has not the public wants to know why? The public would also like to know why Santa Clara County continues to do nothing at all about this problem are they not concerned about the health and wellbeing of the citizens in Santa Clara County it sure would seem like they are more concerned about the tax revenue and that is not acceptable.

(Bullet 13) Recreation, etc. – The Mid Peninsula Regional Open Space District has written letters and complained continually about the pollution coming from the Lehigh Southwest Cement and Quarry and the Steven Creek Quarry and Santa Clara County has done nothing to stop the pollution the public would like to know why? The pollution is evident the trees and land is covered with the dust and the people trying to enjoy the land are continually polluted by the pollution coming from these polluters and no one is doing anything about it why not?

(Bullet 14) Transportation and Traffic etc. – The Lehigh Southwest Cement and the Quarry including Steven Creek Quarry do not seem to care about the hours of operation they can operate when ever they please and no one is stopping them. They can spew dust all over the roads and into the air and no one cares about that it is evident anyone can see the pollution on the roads and along the road way and on the trees as well again nothing is being done about that. I call and complain and it does no good the BAAQMD will not site them any more what is the public to do? If they were to site them they would pay a fee or fine and go off and pollute again no one can stop these criminal polluters I know I have tried over and over again. They say they sprinkle the roads but only if they are told to and if they are caught not doing it the roads and trees can testify to the pollution you can see it all around. We are told that California needs cement processing which seems to be more important than human and animal life how can that be this must end.

(Bullet15) Utilities and Service Systems etc. – The Lehigh Cement plant can not operate without releasing waste water from the quarry and the ponds this is evident and the selenium and other pollutants should not be allowed to contaminate the Permanente Creek and our water shed this must stop immediately. The dispose of their own sewage another problem and who know how much pollution they are releasing because of that we have counted on the State Water Resource Board to monitor that but they are not doing their job and neither is Santa Clara County. The sewage from Lehigh is not monitored by the San Jose Sewage Department either no pipe is coming from Lehigh that is going down to San Jose and so who really knows if they are dumping into the Permanente Creek who will find out the public wants to know?

(Bullet16) Cumulative Effects, including with respect to the cement plant and the Permanente Creek Flood Protection Project Cumulative Effects page 6-8 under 6.Cumulative Impacts mentions NOV's and the failure of Lehigh Cement Plant to comply on March 26, 2010 with storm water protection requirements nothing has been done to correct this problem to this date. A subsequent notice of violation was issued by the Regional Board on February 18, 2011, related to non-storm water discharges at the Cement Plant again nothing has been done to correct the problem. On April 29, 2011, the Regional Board issued a complaint alleging that a pipe outfall (discharge) to Permanente Creek had not been disclosed despite a requirement to have done so, and, on June 10, 2011, the Cement Plant become subject to a Porter-Cologne Water Quality Control Act Section 13267 Investigative Order related to water quality concerns (RWQCB, 2011). Note: These problems have never been corrected and the public would like to know why can anyone tell me? The State Water Regional Control Board representative at a Los Alto Hill city meeting mentioned that they taking 18 more months to work on issues pertaining to Lehigh the public would like to know why? I am extremely concerned that while the agencies are dragging their feet and giving all kinds of excuses and allowing Lehigh to be in criminal violations of laws and regulations we the public are suffering continued contamination from pollution of our air, water and soil and nothing seems to be done about it. The public can and should not allow any more time to pass and the EPA Region 9 Superfund Site Division should be coming in to declare Lehigh Southwest Cement and Quarry and the Stevens Creek Quarry as Declared Superfund Sites and begin to shut down these facilities in order to start a complete clean up of the sites. This clean up would include the Steven Creek Reservoir, Stevens Creek Creek, Permanente Creek, Recharge Pond behind the 7/11 on Bubb Rd., and the wells in Cupertino operating and on operational about 15 miles around the declared Super Fund Sites.

Page 6-9 under 6. Cumulative Impacts – Air Quality the Lehigh Cement Plant has been operating without a legal Title V Permit and the Federal EPA has issued a NOV against the plant this NOV has still to be enforced and the public wants to know why nothing is being done? I have made many phone calls to the local EPA Region 9 and to the Federal EPA and all I get is this NOV is in litigation and is confidential and they can not give me any information about it this is unacceptable but what can I or the public do about this can anyone tell me? The emissions from the Lehigh Cement Plant are a major health problem to the community and lies are being told by Lehigh and the Bay Area Air Quality Management District and no one seems to want to do anything about it can

anyone tell me why? The monitor for Mercury the carbon injection systems is not providing any real time information that should be delivered directly to the BAAQMD and to the EPA Region 9 District the report is just e-mailed to the BAAQMD and they take Lehigh's word for it. Lehigh calibrates it's own equipment not only for the Mercury monitor but also the monitors for the NOX and SO2 emissions coming from the kiln this is like the fox watching the chicken coup soon to eat the chickens. We can not trust them to report the truth especially when it would prove they are telling lies about the amount of Mercury they are releasing into the air on to the poor people that must be subject to this pollution 24/7 hrs. a day. They have heard them lie and say they are reducing the Mercury emissions 90% and the news papers and news media has reported it without any proof seems no one wants the truth to be told and it should be. The carbon injection system is not lowering the Mercury emissions and is also responsible for more Mercury going into the finished product of cement and finally concrete. The concrete will eventually be recycled as it is now at the Stevens Creek Quarry with more Mercury in it which will be ground up into a power and distributed to the companies that will buy it and the public will be subjected to more Mercury contamination. The pollution from the Quarry is washing into the Steven Creek Reservoir and eventually ends up in the aquifer which in turn is pulled up by the water companies and sold to the public. The water is not cleaned by any process and is not tested for everything that could be in it that is harming the public.

There is no way that that Lehigh can reduce the Mercury 90% and whatever they are disbursing out into the air will have a cumulative effect on the population which is causing cancer and other health afflictions this must stop and so closing down the Lehigh Cement Plant and Quarry and the Stevens Creek Quarry is the only way to stop the pollution.

The hexavalent Chromium 6 emissions at the Steven Creek School which were 2 miles from the Permanente Cement Plant where done North East of the Cement Plant and the wind was not directly blowing in that direction so the levels I believe were below levels of concern. The BAAQMD installed the monitoring equipment at the school and they also calibrated the machine themselves this is unacceptable to the public the EPA should have been in complete control of the testing and was not it is hard to believe that the levels were below concern. I spoke to the EPA Region 9 staff and asked if they could do the testing at the Monta Vista HS in Cupertino this school is Southwest of the Cement Plant which could have brought in a more accurate reading but the EPA refused. I thought this was strange because in other states that did testing they did it with multiple school locations so why did they allow it in other places this was not done in Cupertino. My son Jason attended Monta Vista HS and would come home telling me that during football practice the pollution was so bad that he and the other boys could not even breath so I determined that the best place for the monitor should have been Monta Vista HS. The Monta Vista Park monitor that has been installed to monitor the pollution is a joke and it is not even monitoring Mercury which they should be. There has been no real determination of what is going on at Monta Vista Park and I can only hope the EPA will eventually find out what is really happening in Cupertino and stop the pollution.
Note: The PM 2.5 particulate levels of pollution coming from Lehigh Cement and Quarry

and the Steven Creek Quarry have not been looked at by the BAAQMD who should have been monitoring this all along this is a strong Significant level of impact to take into account See pg. ES-14 Table ES 3. I can only hope that the EPA will do their own testing to find out what is really going on here in Cupertino and the surrounding areas. Table ES-3 – 4.10-5 Groundwater discharge form the Quarry pit after backfilling and reclamation is complete would adversely alter surface water flows to Permanente Creek – it is stated that this is less than significant and that Mitigation Measures are not required I beg to argue this and this needs to be changed. 4.10-6 -The Project would alter the existing drainage pattern of the site, which could result in increased stormwater ponding, accumulation of selenium, and flooding. Stated this is Significant – Note: the pollution from selenium and other pollutants need to be stated as Highly Significant and needs to be controls set in motion to keep the pollution in check. This should be across the board no matter what program is established.

Table ES-4 Resource Area Hazards and Hazardous Materials states that there is No Preferences with the Project or all the Alternatives why is that can anyone tell me? This seems to be a serious matter and it is not being seriously considered why not? I have brought up especially under the EMSA that the pollution from the ammunitions plant and the aluminum plant be tested and cleaned up so why is this whole matter being left out of the programs all together can anyone tell me? Santa Clara County must take this area and the whole of the Lehigh Southwest Cement and Quarry and the Stevens Creek quarry into consideration for the complete investigation into Hazards and Hazardous Materials that exist it is what the public feels is a necessity and it should happen right away.

Conclusion: It is difficult for any person to really know what the total impact of the EIR and the Proposed Reclamation will at this time accomplish because there needs to be a full investigation and a EPA Superfund Site declared at the Lehigh Southwest Cement and Quarry and the grounds which needs to take place immediately. I can not understand and I am sure the public can not understand how all the problems surrounding the facilities have been allowed to continue and still are allowed to continue and so the question remains what will the Governments do about controlling the pollution in our communities?
I ask that the Santa Clara County Representatives and the Board review my comments and work with the EPA to establish a Super Fund Site at the Lehigh Southwest Cement and Quarry and the Stevens Creek Quarry so as to insure the future health and wellbeing of the generations to come.
Thank you

From: terry hertel <waxman@pacbell.net>
Date: Thu, 9 Feb 2012 08:34:27 -0800 (PST)
To: <rob.eastwood@pln.sccgov.org>
Subject: MSDS

YOU FOLKS NEED TO DO MORE HOMEWORK.

Material safety data sheets or health hazards are attached.

It is funny but Leigh will not release MSDA and this is a violation.

I am demanding MSDS for every product they handle be published to the community.

Your county rangers are suffering from it. The people in Monta Vista and Los Altos Hills are suffering from it.

The Rapid cure cement collects on vehicle windshields and you can't get it off.
When it rains, the cement gets on the under part and sides of your car and you cant get it off.
When we sleep it bonds our lips, eyes and anything with moisture. Our homes are filled with cement dust. Daily I meet with random people at the Starbucks at Homestead and Foothill. Every women complains about the issue but due to the suppression of health information to the community, they do not know about there slow death caused by the count of Santa Clara.

I live 1.5 miles from this operation and have witnessed it turning our valley into a dangerous PM pit.
I can see Cement spewing in the air every day from my home, I can here it every day at 4:20 in the am. Then I have vibrations that comes with the sound wrecking items in my home.
I just happen to live on the ridge facing the plant with many others who have a nice home overlooking the gulf course and Black Mountain that is now turning white.
We purchased our homes for the views and tranquility that comes with a beautiful mountain over thirty year ago. we have pictures of Black mountain when it was clear every day. Look at it now

In a meeting last week at the city, we all observed the disinterest in the city council.
We all feel a pay off is coming to people in the county.

Terry Hertel

waxman@pacbell.net

------ Forwarded Message
From: terry hertel <waxman@pacbell.net>
Date: Tue, 14 Feb 2012 19:04:07 -0800 (PST)
To: <rob.eastwood@pln.sccgov.org>, <waxman@pacbell.net>
Subject: Re: Test

Hi Rob,
I am forwarding you MSDS data sheets for Cement, Concrete, Lime and the fast cure additives. I tried to download them from Leigh and they will not give access to them. This is against the law. I can't believe all of you are allowing this to happen.

I hope you understand this nasty powder floats in the air. At night as we breath, we inhale it ,it cures or hardens, Causing decreased lung function that leads to cardiovascular failure. It is funny, out of a family of thirty or so, I am the only one with heart disease. They live in the mid west.

As I write I feel the dust between my fingers. As I sleep at night I have to use a Cpap machine to filter the air. When I wake up I have cement crust in my eyes, mouth and nose. I have lived a healthy life with three or four days in Tahoe weekly during the winter, breathing fresh air. I have a place in Seattle and the air is so clean. Then I visit Florida and Missouri. Believe me I have something to compare to.

As I get ready for my sixth heart operation, My doctor and I are connecting the dots on why I am having these problems. I understand there have been over one hundred more cases of heart disease in Santa Clara in a recent study presented to the Cupertino council.

I was in a discussion with friends about the cement dust and the County. They brought up the new football stadium stating all the county is interested in is getting this project on the book. Nothing else matters.

At the reclamation hearing, I felt all the council members were on death ears and all they wanted to do is get out of there. The report is just a waist of tax payer money. I feel it is just another stall while lehigh forges ahead. Lehigh, a German company, would not allow this process in there country.

I hope you are not sacrificing the community health for the big pay off of the new stadium.

Last, we were allowed 2 minutes to vent our evidence that the council member don't pay attention to weather it is in writing or in print. do you think one member read that study? funny, we paid over $15,000.00 in

property taxes and we the public only get 15 minutes.

As a planner, how can you sleep at night knowing the damage this fiasco is causing. If the Forty Niners new the health hazards, I don't think they would have wanted the team here. How does one play good football with decreased lung capacity?

Terry Hertel

Dear Neighbors,

As I reach the boiling point of frustration, I find it necessary to speak out on an issue that affects all of us in Cupertino, Monta Vista, Los Altos, Saratoga and Los Gatos: the LeHigh Cement Plant. Do any of you every look up at Black Mountain? If not, it is time you did -- and see what the plant is doing to our community. Stop for a moment and listen. Only this morning I was awakened by the plant's noise and vibration. Now it is just past 3 p.m. and the plume of white dust has started -- all but destroying the crisp beautiful view of the hills. To see it for yourself, drive down Granada Ave. around 3:30 p.m. and look up. Then, if you dare, take a deep breath.

If you look one way towards Los Gatos you see the dust following the hills around and filling up the valley. Some call it smog. If you look north towards Los Altos, it is the same. The dust is insidious -- I am forced to replace my filters on my furnace monthly, and I installed new double pane windows. But gray dust still rapidly accumulates on the shirts in my closet. I have to breath this dust every day -- but my sinuses seem to clear if I get on a flight to Seattle, Saint Louis or Florida.

I have a nice wooden deck on my home looking at the view -- but there's a constant accumulation of dust that needs to be blown or swept off. When I park my black car out in front of my home, it's covered with dust within five minutes. But when I park outside at work next to 237 and Lawrence, there's no dust buildup.

Even on "no burn" nights when we are instructed not to use our fireplaces or get a $400 fine, the smoke and dust continues to billow out into the atmosphere from the cement plant. I have also noticed the system always runs at full bore on rainy or foggy nights. The disguise is apparent -- if you can't see it, you don't know about it.

We live in an area of million and even multi-million homes, and all of you with the big bucks to afford these homes are getting the brunt of the crap. Why don't you use some of that cash to help shut this down? Think about how much it may take off the value of your home if new permits are allowed. Not to mention your failing health.

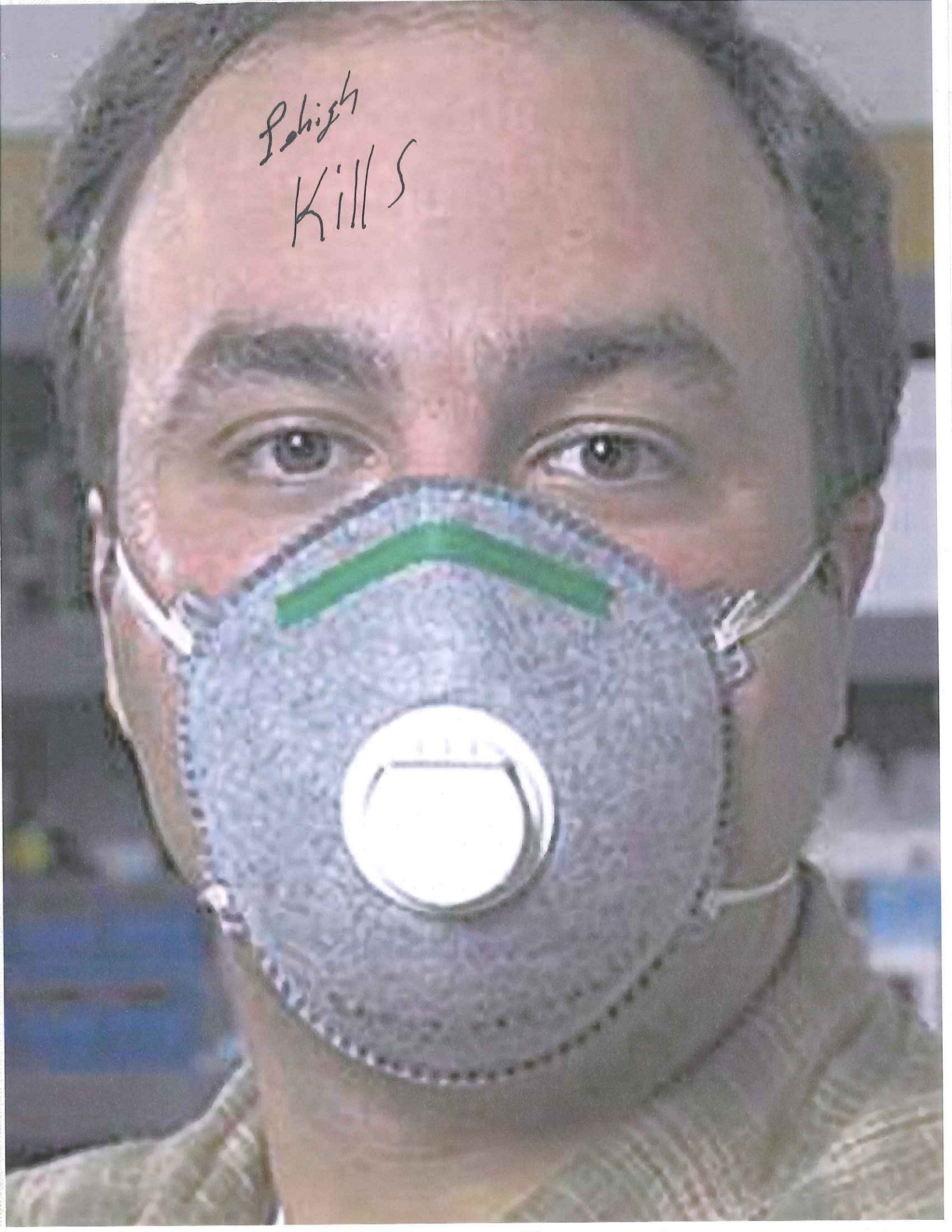
When this issue is addressed at city meetings, polished presentations by expensive lawyers seem to drown out the legitimate concerns being voiced by individual homeowners. Could it be that the cities are handed cash under the table to say it is out of their control? Come on City, you work for us. Do your job!
I am a concerned citizen who has lived in Monta Vista since 1976. The plant was then under control. I think it was in 1989 when expansion began behind our backs. Do you remember when the valley was clear? Since then, the plant has tripled production and plans to go further, cutting up your mountain, leaving you with a gaping hole and white spattered hillside, never to be the same gorgeous green vista that nature installed.

In a recent study I got my hands on, they did not study the trucks traveling from the plant to 280 and 280/85 to the plant. They are going to increase this equaling the traffic over 500 cars a day and I bet it will be more like several thousand. A truck equals five cars. Consider the dust and cement splashed all over your car on a wet day.

If you have an iphone download vr mobile and take measurement on the sound and vibration in your area.

Get a grip, Santa Clara County -- shut this mess down!

Terry Hertel
waxman@pacbell.net


Lehigh
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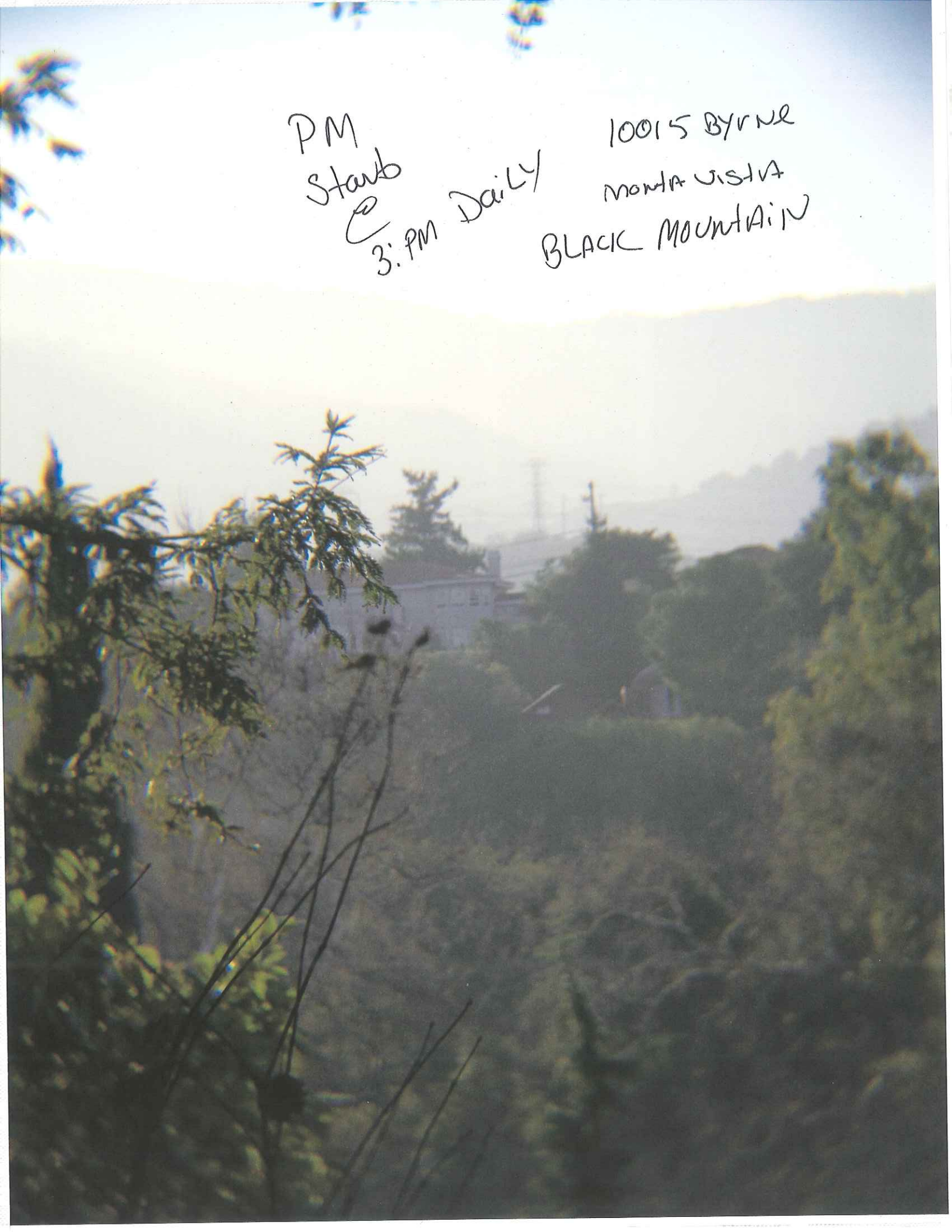
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Or a clear Day

Leigh will Not Supply MSDS. ?

MATERIAL SAFETY DATA SHEET

For

CONCRETE/CONCRETE PRODUCTS

(Wet unhardened concrete and dry hardened concrete products such as block, pipe, and precast concrete)

Chandler Concrete Company, Inc.

Section 1: PRODUCT AND COMPANY INFORMATION

Product Name(s):	Ready Mixed Concrete (Concrete)
Product Identifiers:	Ready Mixed Concrete, Concrete Ready Mix, Portland Cement Concrete, Ready Mix Grout, Permeable Concrete, Shotcrete, Gunite, Colored Concrete, Flowable Fill, Roller-Compacted Concrete, Fiber Reinforced Concrete
Manufacturer:	**Information Telephone Number:**
Chandler Concrete Company, Inc.	336-226-1181 (8am to 5pm EST)
1006 S Church St.	**Emergency Telephone Number:**
Burlington, NC 27216	336-260-2416
Product Use:	Concrete is widely used as a structural component in construction applications.
Note:	This MSDS covers many types of Concrete. Individual composition of hazardous constituents may vary between types of Concrete.

Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components (Chemical Identity / Common Names)	CAS No.	OSHA PEL	ACGIH TLV	MSHA PEL	%
Portland Cement	65997-15-1	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10mg/m^3 (Total)	10mg/m^3 (Total)	10-30%
Granite *North Carolina Product*	None	N/A	N/A	N/A	0-65%
Limestone – *Virginia Product* (CaCo3) (Calcium carbonate, present, if limestone aggregates are used)	1317-653	15 mg/m^3 (Total)	10 mg/m^3 (Total)	10 mg/m^3	0-65%
Crystalline Silica (Quartz) (Concrete aggregates may contain silica)	14808-60-7	$\frac{30}{(\%SiO^2+2)}$mg/m^3 (Total Particulate) 10/(%SiO^2+2)mg/m^3 (Respirable Particulate)	0.1mg/m^3 (Total) (Respirable quartz)	$\frac{30}{(\%SiO^2+2)}$mg/m^3 (Total) 10/(%SiO^2+2)mg/m^3 (Respirable)	0.5-80%
Water	N/A	N/A	N/A	N/A	15-25%
Fly Ash which contains:	68131-74-8	N/A	N/A	N/A	1-4%
Aluminum Oxide (Al_2O_3)	1344-28-1	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10mg/m^3	10mg/m^3	0.1-2%
Amorphous Silica	61790-53-2	80mg/m^3 /(%SiO^2)	10mg/m^3 (Total) 3mg/m^3 (Respirable)	20mppcf	0.01-3%
Calcium Oxide (CaO)	1305-78-8	5mg/m^3	2mg/m^3	5mg/m^3	0-1%
Iron Oxide (as Fe_2O_3)	1309-37-1	10mg/m^3	10mg/m^3	10mg/m^3	0.1-2%

Note: Chemical admixtures may be present in quantities less than 1%. Information on specific aggregates, cementitious materials and admixtures will be provided by the supplier upon request.

Section 3: HAZARD IDENTIFICATION

WARNING

Corrosive-Causes severe burns.
Toxic-Harmful by inhalation.
(Contains crystalline silica)

Use proper engineering controls, work practices, and personal protective equipment to prevent exposure to wet or dry product.
Read MSDS for details.

Emergency Overview:	Unhardened concrete is an odorless semi-fluid, flowable, granular paste of varying color and texture. It is not combustible or explosive. Exposure of sufficient duration to wet concrete can cause serious, potentially irreversible tissue (skin, eye, respiratory tract) damage due to chemical (caustic) burns, including third degree burns.
Potential Health Effects:	
Eye Contact (acute):	Concrete may cause immediate or delayed irritation or inflammation. Eye contact with wet concrete can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first ad and medical attention to prevent significant damage to the eye. Direct contact can cause irritation before mechanical abrasion.
Skin contact (acute):	Wet unhardened concrete and concrete dust may cause dry skin, discomfort, irritation, severe burns, and dermatitis.
Burns:	Exposure of sufficient duration to wet unhardened concrete can cause serious, potential irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort.
Dermatitis:	Wet unhardened concrete is capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as redness, itching, rash, scaling, and cracking.
Sensitization:	Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in concrete. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with wet unhardened concrete. Others may develop allergic dermatitis after years of repeated contact with wet concrete.
Ingestion:	Expected to be practically non-toxic. Ingestion of large amounts may cause gastrointestinal irritation and blockage.
Inhalation (general):	May result, depending on the degree of the exposure, from exposure to dust generated from cutting, grinding, crushing, or driving hardened concrete.
Inhalation (acute):	Breathing dust may cause nose, throat lung or mucous membrane irritation, including choking. Inhalation of high levels of dist can cause chemical burns to the nose, throat and lungs.
Inhalation (chronic):	Risk of injury depends on duration and level of exposure.
Silicosis:	This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, and other seriously disabling and fatal diseases.
Carcinogenicity:	Concrete is not listed as a carcinogen by IARC or NTP; however, concrete contains trace amounts of crystalline silica and hexavalent chromium which are classified by IARC and NTP as known human carcinogens.
Autoimmune Disease:	Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys.
Medical conditions Aggravated by Exposure:	Individuals with lung disease (e. g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure to concrete dust.

Section 4: FIRST AID MEASURES

Eye Contact:	Rinse eyes thoroughly with water for at least 15 minutes, including under lids, to remove all particles. Seek medical attention for abrasions and burns.
Skin Contact:	Wash with cool water and a pH neutral soap or a mild skin detergent. Seek medical attention for rash, burns, irritation, dermatitis, and prolonged unprotected exposures to wet concrete.
Inhalation:	Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside.
Ingestion:	Do not induce vomiting. If conscious, have person drink plenty of water. Seek medical attention or contact poison control center immediately.

Section 5: FIREFIGHTING MEASURES

Flashpoint & Method:	Non-combustible, concrete poses no fire related hazard.
Combustion Products:	None.

Section 6: ACCIDENTAL RELEASE MEASURES

General:	Place spilled material into a contained area and then allow material to dry or solidify before disposal. Avoid contact with skin. Wear appropriate protective equipment as described in Section 8. Do not wash concrete down sewage and drainage systems or into bodies of water (e.g. lakes, streams, wetlands, etc.).
Waste Disposal Method:	Dispose of concrete according to Federal, State, Provincial and Local regulations.

Section 7: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Handling:	When cutting, grinding, crushing or drilling hardened concrete, use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits.
Engineering Controls:	Supplemental controls are not required when working with wet/unhardened concrete.
Personal Protective Equipment (PPE):	
Respiratory Protection:	When working with wet, unhardened concrete under ordinary conditions, no respiratory protection is required. When working with hardened concrete, wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.
Eye Protection:	Wear ANSI approved glasses with side shields or safety goggles when handling concrete to prevent contact with eyes. Wearing contact lenses is not recommended.
Skin Protection:	Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves.
Clothing:	Remove clothing and protective equipment that becomes saturated with wet concrete and immediately wash exposed areas.

Section 8: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Semi-fluid, Flowable, granular substance	**Evaporation Rate:**	NA.
Appearance:	Variety of Color (usually gray)	**PH (in water):**	12-13
Odor:	Slight to none	**Boiling Point:**	NA
Vapor Pressure:	NA.	**Freezing Point:**	<32°F (unhardened)
Vapor Density:	NA.	**Viscosity:**	Varies.
Specific Gravity:	1.9-2.4	**Solubility in Water:**	Slightly (0.1-1.0%)

Section 9: STABILITY AND REACTIVITY

Stability:	Hardened concrete is stable. Wet unhardened concrete is alkaline
Incompatibility:	Wet unhardened concrete is alkaline and is incompatible with acids, ammonium salts and aluminum, copper and some other metals (verify compatibility prior to incorporating with product). Concrete dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement in concrete reacts with water to form silicates and calcium hydroxide. These silicates react with powerful oxidizers.
Hazardous Polymerization:	**Hazardous Decomposition**: None.

Section 10 and 11: TOXICALOGICAL AND ECOLOGICAL INFORMATION

For questions regarding toxicological and ecological information refer to contact information in Section 1.

Section 12: DISPOSAL CONSIDERATIONS

Dispose of excess material in compliance with applicable Federal, State, Provincial and Local regulations.

Section 13: TRANSPORT INFORMATION

This product is not classified as a Hazardous Material under U.S. DOT or Canadian TDG regulations.

Section 14: REGULATORY INFORMATION

OSHA/MSHA Hazard Communication:	This product is considered by OSHA/MSHA to be a hazardous material and should be included in the employer's hazard communication program.
CERCLA/SUPERFUND:	This product is not listed as a CERCLA hazardous substance.
EPCRA SARA Title III:	This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 and is considered a hazardous and a delayed health hazard.
EPCRA SARA Section 313:	This product contains none of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
RCRA	If discarded in its hardened form, this product would not be a hazardous waste either by listing characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.
TSCA:	Portland Cement and crystalline silica are exempt from reporting under the inventory update rule.
California Proposition 65:	Crystalline silica (airborne particulates of respirable size) and Chromium (hexavalent compounds) are substances known by the State of California to cause cancer.
WHMIS/DSL:	Products containing crystalline silica and calcium carbonate are classified as D2A, E and are subject to WHMIS requirements.

Section 15: OTHER INFORMATION

Abbreviations:

<	Less than	NFPA	National Fire Protection Association
ACGIH	American Conference of Governmental Industrial Hygienists	NIOSH	National Institute for Occupational Safety and Health
CAS no	Chemical Abstract Service number	NTP	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	OSHA	Occupational Safety and Health Administration
CFR	Code for Federal Regulations	PEL	Permissible Exposure Limit
CL	Ceiling Limit	pH	Negative log of hydrogen ion
DOT	US Department of Transportation	PPE	Personal Protective Equipment
EST	Eastern Standard Time	RCRA	Resource Conservation and Recovery Act
HEPA	High-Efficiency Particulate Air	SARA	Superfund Amendments and Reauthorization Act
HMIS	Hazardous Materials Identification System	TDG	Transportation of Dangerous Goods
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
MG/M^3	Milligrams per cubic meter	TWA	Time Weighted Average (8 hour)
MSHA	Mine Safety and Health Administration	WHMIS	Workplace Hazardous Materials Information System
NA	Not Applicable		

This MSDS (Sections 1-15) was revised on June 10, 2008.

An electronic version of this MSDS is available at: www.chandlerconcrete.com under the MSDS Section.

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The information set forth herein is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside the concrete/concrete products producer CCCI control, the producer makes no warranties, expressed or implied, and assumes no liability in connection with any use of this information.

Google searches on (1)concrete, (2) Cement, (3)Lime, and (4)rapid drying cements.
The Killer Particulate Material (PM) you (Dust) breath daily.

MATERIAL SAFETY DATA SHEET (MSDS)
FOR PORTLAND CEMENT

(Complies with OSHA and MSHA Hazard Communication Standards,
29 CFR 1910.1200and 30 CFR Part 47)

Trace Ingredients

Trace amounts of naturally occurring chemicals might be detected during chemical analysis. Trace constituents may include up to
0.75% insoluble residue, some of which may be free crystalline silica, calcium oxide (Also known as lime or quick lime),
magnesium oxide, potassium sulfate, sodium sulfate, chromium compounds, and nickel compounds.

Effects Resulting from Inhalation:

Portland cement may contain trace amounts of free crystalline silica. Prolonged exposure to respirable free silica can aggravate
other lung conditions and cause silicosis, a disabling and potentially fatal lung disease.

MATERIAL SAFETY DATA SHEET

ProductName: CalciumOxide(LimeKilnDust)

. HEALTH HAZARD DATA

Inhalation: Extremely high concentrations of dust are typically self-eliminated due to the nuisance conditions they create. Over exposure may produce irritation of the mucous membranes, nose, throat, coughing and shortness of breath. In addition it may contain small amounts of silica particles less than 5 mm in diameter. These silica particles are capable of causing silicosis if inhaled in high enough concentrations over an extended period of time. The principal manifestation of silicosis if difficulty in breathing. This condition can progress to dry cough, shortness of breath on exertion, **decreased lung function and pulmonaryfibrosis.**

Signs and Symptoms of Exposure: Symptoms of excessive exposure to the dust include shortness of breath and reduced pulmonary function. Excessive exposure to skin and eyes especially when mixed with water can cause caustic burns as severe as third degree.

Medical Conditions Generally Aggravated by Exposure: Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure. Exposure to crystalline silica or the disease silicosis is associated with increased incidence of scleroderma, Tuberculosis and possibly increased incidence of kidney lesions.

Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis. (May contain trace (<0.05 %) amounts of chromium salts or compounds including hexavalent chromium, or other metals found to be hazardous or toxic in some chemical forms. These metals are mostly present as trace substitutions within the principal minerals)

HAZARDOUS INFORMATION

Primary Route(s) of Entry: Inhalation, Skin, Eye, Ingestion

Inhalation Hazards: May cause respiratory tract, nose, throat, and lung irritation and inflammation

Skin Hazards: May irritate skin causing drying, redness, rash, and blistering. When mixed with water, a high alkali material is produced which can cause severe skin burns. Individuals may develop allergic dermatitis.

Eye Hazards: May severely irritate eyes. May develop inflammation of the cornea.

Ingestion Hazards: May be caustic to mucus tissue.

Chronic Exposure: Individuals may develop allergic dermatitis, inflammation of the cornea, and inflammation of the nose, throat, and lungs. May cause carcinogenic effects.

Carcinogenic Effects: During manufacturing of a Hydraulic Cement small traces of insoluble residues will form. These traces may have crystalline silica, a known

Human Carcinogen (Group 1), that can cause silicosis and cancer. Exposure to crystalline silica may also increase the risk of Scleroderma, tuberculosis, and kidney disorders. May contain traces of chemicals on the California Proposition 65 list.

Threshold Limit Value: 5 mg/m3 (respirable dust), 10 mg/m3 (total dust), 30 million particles per cubic footHazardous Components, CAS No., PEL (OSHA)[mg/m3], TLV (ACGIH)[mg/m3]

Calcium Sulfoaluminate, 960375-09-1, 15, 10

Crystalline Silica (Quartz), 14808-60-7, 10/(%SiO2+2), 0.05(respirable)

Amorphous Silica, 7631-86-9, 80/(%SiO2), 10

Inhalation: Remove from exposure, if breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Immediately seek medical aid.

Skin Contact: Wash thoroughly with soap and water. Seek medical aid.

Eye Contact: Flush immediately with large amounts of water, lifting the lower and upper lids occasionally. Seek medical help.

Ingestion: Give 1-2 large glasses of water or milk. Immediately seek medical aid. Never give liquids to an unconscious person.

Carcinogenicity: Not listed as a carcinogen by NTP, IARC, o rOSHA.

Routes of Entry: Inhalation, Skin and Eye Contact if handled in such a manner that dust is generated.

Effects of Over exposure: As sold, this product is not anticipated to pose an acute or significant health hazard. However, if subjected to dust generating processes, adverse health effects may occur.

Calcium oxide is caustic to living tissue. Over exposure may cause irritation of the eyes, skin, and upper respiratory tract. Inflammation of the respiratory tract, ulceration and perforation of the nasal septum, bronchitis and pneumonia have also been attributed to inhalation of calcium oxide dust. Eye contact may cause conjunctivitis, corneal ulceration. Skin contact may causes inflammation and ulceration.

Medical Conditions Aggravated by Exposure: Chronic disease and disorders of the respiratory system and skin.

9. SPECIAL PROTECTION INFORMATION LIME

Respiratory: Respiratory protection approved by NIOSH/MSI-IA for protection against dust should be used to avoid inhalation. Appropriate respiration selection depends on the type and magnitude of exposure.
Skin: Clean, body-covering clothing should be worn to prevent irritation in situation where direct contact with product may occur or dust levels are excessive.
Eyes: Employees should be required to wear chemical safety splash goggles in situations where direct contact with the product may result in eye injury.
Ventilation: Local exhaust ventilation should be used to control worker exposure to below recommended Permissible Exposure Levels(PEL).

Other Protective Equipment: Emergency eye wash stations and deluge safety showers should be available in the work areas.

Material Safety Data Sheet
For
PORTLAND CEMENT

Section 1 - IDENTIFICATION

Product Names: Nevada Portland Cement - Type I/II

MSDS Information
This MSDS was revised January 5, 2004 and supercedes and replaces any prior versions.

Product Code
Standard Industrial Classification: 3241

Chemical Family
Calcium compounds. Calcium silicate compounds and other calcium compounds containing iron and aluminum make up the majority of this product. Major compounds:

$3CaO{\cdot}SiO_2$	Tricalcium silicate	CAS#12168-85-3
$2CaO{\cdot}SiO_2$	Dicalcium silicate	CAS#10034-77-2
$3CaOAl_2O_3$	Tricalcium aluminate	CAS#12042-78-3
$4CaO{\cdot}Al_2O_3{\cdot}Fe_2O_3$	Tetracalcium aluminoferrite	CAS#12068-35-8
$CaSO_4{\cdot}2H_2O$	Calcium sulfate dihydrate or Gypsum	CAS#7778-18-9

Chemical Name and Synonyms
Portland cement. Also known as hydraulic cement.

Formula
This product consists of finely ground portland cement clinker mixed with a small amount of calcium sulfate.*

Supplier/Manufacturer

Nevada Cement Company
I-80 East @ Exit 46
Fernley, Nevada 89408
(775) 575-2281

Emergency Contact Information

Safety Director - (775) 575-2281, Ext 288
Chief Chemist - (775) 575-2281, Ext. 252

*Trace Elements
Portland cement is made from materials mined from the earth and is processed using energy provided by fuels; and therefore may contain trace amounts of naturally occurring materials which might be detected during chemical analysis. For example: Portland cement may contain up to 0.75% insoluble residue, of which <0.1% may be free crystalline silica. Other trace constituents may include potassium and sodium sulfate compounds, chromium compounds, and nickel compounds.

Section 2 - COMPONENTS

Hazardous Substances	**OSHA PEL (8-Hour TWA)**	**ACGIH TLV-TWA (1995 - 1996)**	**NIOSH REL (8-Hour TWA)**
Portland Cement Clinker (CAS#65997-15-1) Nominal 95% by weight	50 million particles/ft^3	10mg total dust/m^3	
Calcium sulfate (CAS#7778-18-9) [Gypsum (CAS#13397-24-5)] Nominal 5% by weight	5mg respirable dust/m^3 10mg total dust/m^3	10mg total dust/m^3	
Calcium Oxide (CAS#1306-78-8) (Free Lime) < 4% by weight	5mg/m^3	2mg/m^3	
Magnesium Oxide (CAS #1309-48-4) < 5% by weight	15mg total dust/m^3	10mg total dust/m^3	

Crystalline silica (CAS#14808-60-7	10mg of respirable dust/m^3 (%SiO2 +2)	0.10mg respirable quartz/m^3	0.05mg respirable quartz/m^3

Section 3 - HAZARDS IDENTIFICATION/TOXICOLOGICAL INFORMATION

Emergency Overview:
Portland cement is a light gray powder that poses little immediate hazard. A single short-term exposure to the dry powder is not likely to cause serious harm. However, exposure of sufficient duration to wet portland cement can cause serious, potentially irreversible tissue (including skin or eye) destruction in the form of chemical (caustic) burns, including third degree burns. The same type of tissue destruction can occur if wet or moist areas of the body are exposed for sufficient duration to dry portland cement.

Potential Health Effects:
Potential effects resulting from **eye contact**;
Exposure to airborne dust may cause immediate or delayed irritation or inflammation.
Eye contact by larger amounts of dry powder or splashes of wet portland cement may cause effects ranging from moderate eye irritation to chemical burns and blindness. Such exposures require immediate first aid (see Section 4) and medical attention to prevent significant damage to the eye.

Potential effects resulting from **skin contact:**
Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimizing or avoiding skin contact, particularly contact with wet cement. Persons exposed to wet cement may not feel discomfort until hours after the exposure has ended and significant injury has occurred.

Exposure to dry portland cement may cause drying of the skin with consequent mild irritation or more significant effects attributable to aggravation of other conditions. Dry portland cement contacting wet skin or exposure to moist or wet portland cement may cause more severe skin effects including thickening, cracking or fissuring of the skin. Prolonged exposure can cause severe skin damage in the form of (caustic) chemical burns.

Some individuals may exhibit an allergic response upon exposure to portland cement, possibly due to trace amounts of chromium. The response may appear in a variety of forms ranging from a mild rash to severe skin ulcers. Persons already sensitized may react to their first contact with the product. Other persons may first experience this effect after years of contact with hydraulic cement products.

Potential effects resulting from **inhalation:**
Portland cement may contain trace amounts (<0.1%) of free crystalline silica. Prolonged exposure to respirable free crystalline silica may aggravate other lung conditions. It also may cause delayed lung injury including silicosis, a disabling and potentially fatal lung disease.

Exposure to portland cement may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system. It may also leave unpleasant deposits in the nose.

Potential effects resulting from **ingestion:**
Although small quantities of dust are not known to be harmful, ill effects are possible if larger quantities are consumed. Portland cement should not be eaten under any circumstances.

Carcinogenic Potential:
Portland cement is not listed as a carcinogen by IARC, the State of California, NTP or OSHA. It does, however, contain trace amounts (<0.1%) of a substance listed as a carcinogen by some of these organizations. Crystalline silica is now classified by IARC as a known human carcinogen (Group 1). It is known by the State of California to cause cancer. NTP has characterized respirable crystalline silica as "reasonably anticipated to be (a) carcinogen".

Medical Conditions Which May Be Aggravated By Inhalation or Dermal Exposure:
- Pre-existing upper respiratory and lung diseases.
- Unusual (hyper) sensitivity to hexavalent chromium (chromium +6) salts.

Section 4 - FIRST AID

Eyes
Immediately flush eyes thoroughly with water. Continue flushing eyes for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

Skin
Wash skin with cool water and pH-neutral soap or a mild detergent intended for use on skin. Seek medical treatment in all cases of prolonged exposure to wet cement, cement mixtures, liquids from fresh cement products, or prolonged wet skin exposures to dry cement.

Inhalation of Airborne Dust
Remove to fresh air. Seek medical help if coughing and other symptoms do not subside. (Inhalation of gross amounts of portland cement requires immediate medical attention.)

Ingestion
Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

Section 5 - FIRE & EXPLOSION DATA

Flash Point	None
Lower Explosive Limit	None
Upper Explosive Limit	None
Auto Ignition Temperature	Not combustible
Extinguishing Media	Not combustible
Special Fire Fighting Procedures	None (Although portland cement poses no fire-related hazards, a self-contained breathing apparatus is recommended to limit exposure to combustion products when fighting any fire.)
Hazardous Combustion Products	None
Unusual Fire and Explosion Hazards	None

Section 6 - ACCIDENTAL RELEASE MEASURES

Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate personal protective equipment as described in Section 8.

Scrape up wet material and place in an appropriate container. Allow the material to "dry" before disposal. Do not attempt to wash portland cement down drains.

Dispose of waste material according to local, state and federal regulations.

Section 7 - HANDLING AND STORAGE

Keep portland cement dry until used. Normal temperature and pressure do not affect the materials.

Promptly remove dusty clothing or clothing which is wet with cement fluids and launder before reuse. Wash thoroughly after exposure to dust or wet cement mixture or fluids.

Section 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

Skin Protection
Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened (wet) portland cement products. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to unhardened portland cement products might occur, wear impervious clothing and gloves and boots to eliminate skin contact.

Respiratory Protection
Avoid actions that cause dust to become airborne. Use local or general ventilation to control exposures below applicable exposure limits. Use NIOSH/MSHA-approved respirators in poorly ventilated areas when dust causes discomfort or irritation, or where there is an applicable exposure limit (Advisory: Respirators and filters purchased after July 10, 1998 must be certified under 42 CFR 84).

Ventilation
Use local exhaust or general dilution ventilation to control exposure below applicable limits.

Eye Protection
When engaged in activities where cement dust or wet cement or concrete could contact the eye, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with portland cement or fresh cement products.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Gray or White powder
Odor	No distinct odor
Physical state	Solid (powder)
pH (in water)(ASTM D 1293-95)	12 to 13
Solubility in water	Slightly soluble (0.1 to 1.0%)
Vapor pressure	Not applicable
Vapor density	Not applicable
Boiling point	Not applicable (i.e. > 1000°C)
Melting point	Not applicable
Specific gravity (H20 = 1.0)	3.15
Evaporation rate	Not applicable

Section 10 - STABILITY AND REACTIVITY

Stability
Stable

Conditions To Avoid
Unintentional contact with water.

Incompatibility
Wet portland cement is alkaline. As such it is incompatible with acids, ammonium salts and aluminum metal.

Hazardous Decomposition
Will not spontaneously occur. Adding water results in hydration and produces (caustic) calcium hydroxide.

Hazardous Polymerization
Will not occur.

Section 11 - TOXICOLOGICAL INFORMATION - See Section 3

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity
No recognized unusual toxicity to plants or animals.

Relevant Physical and Chemical Properties
(See Sections 9 and 10).

Section 13 - DISPOSAL

Dispose of waste material, including bags, according to local, state, and federal regulations.

Section 14 - TRANSPORTATION DATA

Hazardous Materials Description/Proper Shipping Name
Portland cement is not hazardous under U.S. Department of Transportation (DOT) regulations.

Section 15 - OTHER REGULATORY INFORMATION

Status Under USDOL-OSHA Hazard Communication Rule 29 CFR 1910.1200
Portland cement is considered a "hazardous chemical" under this regulation, and should be part of any hazard communication program.

Status Under CERCLA/Superfund 40 CFR 117 and 302(v)
Not listed.

Hazard Category Under SARA (Title III) Section 311 and 312
Portland cement qualifies as a "hazardous substance" with delayed health effects.

Status Under SARA (Title III) Section 313
Not subject to reporting requirements under Section 313.

Status Under TSCA (as of May 1997)
Some substances in portland cement are on the TSCA inventory list.

Status Under the Federal Hazardous Substances Act
Portland cement is a "hazardous substance" subject to statutes promulgated under the subject act.

Status Under California Proposition 65
Crystalline silica is known by the State of California to cause cancer.

Status Under WHMIS
Portland cement is considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products regulations (class E - corrosive material) and is therefore subject to the labeling and MSDS requirements of the workplace hazardous materials information system (WHMIS).

Section 16 - OTHER INFORMATION

Prepared By
Nevada Cement Company
I-80 East @ Exit 46
Fernley, Nevada 89408

Revision Date
January 5, 2004

Other Important Information
Portland cement should only be used by knowledgeable persons. Inexperienced product users must obtain proper training before using this product. A key to using the product safely requires the user to recognize that portland cement chemically reacts with water, and that some of the

intermediate products of this reaction (that is, those present while a portland cement product is "setting") pose a far more severe hazard than does portland cement itself.

While the information provided in this material safety data sheet is believed to provide a useful summary of the hazards of portland cement as it is commonly used, the sheet cannot, and does not, anticipate and provide all of the information that might be needed in every situation. In particular, the data furnished in this sheet does not address hazards that may be posed by other materials mixed with portland cement products. Users therefore, should review other applicable material safety data sheets before working with this portland cement or working on portland cement products, for example, portland cement concrete.

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Cement

From Wikipedia, the free encyclopedia

In the most general sense of the word, a **cement** is a binder, a substance that sets and hardens independently, and can bind other materials together. The word "cement" traces to the Romans, who used the term *opus caementicium* to describe masonry resembling modern concrete that was made from crushed rock with burnt lime as binder. The volcanic ash and pulverized brick additives that were added to the burnt lime to obtain a hydraulic binder were later referred to as cementum, cimentum, cäment and cement.

Lafarge cement plant in Contes, France.

Cement used in construction is characterized as **hydraulic** or **non-hydraulic**. Hydraulic cements (*e.g.*, Portland cement) harden because of hydration, chemical reactions that occur independently of the mixture's water content; they can harden even underwater or when constantly exposed to wet weather. The chemical reaction that results when the anhydrous cement powder is mixed with water produces hydrates that are not water-soluble. Non-hydraulic cements (*e.g.*, lime and gypsum plaster) must be kept dry in order to retain their strength.

The most important use of cement is the production of mortar and concrete—the bonding of natural or artificial aggregates to form a strong building material that is durable in the face of normal environmental effects.

Concrete should not be confused with cement, because the term *cement* refers to the material used to bind the aggregate materials of concrete. Concrete is a combination of a cement and aggregate.

Contents

History of the origin of cement

Early uses

It is uncertain where it was first discovered that a combination of hydrated non-hydraulic lime and a pozzolan produces a hydraulic mixture (see also: Pozzolanic reaction), but concrete made from such mixtures was first used by the Ancient Macedonians[1][2] and three centuries later on a large scale by Roman engineers.[3] They used both natural pozzolans (trass or pumice) and artificial pozzolans (ground brick or pottery) in these concretes. Many excellent examples of structures made from these concretes are still standing, notably the huge monolithic dome of the Pantheon in Rome and the massive Baths of Caracalla.[4] The vast system of Roman aqueducts also made extensive use of hydraulic cement.[5]

Although any preservation of this knowledge in literary sources from the Middle Ages is unknown, medieval masons and some military engineers maintained an active tradition of using hydraulic cement in structures such as canals, fortresses, harbors, and shipbuilding facilities.[6][7] The technical knowledge of making hydraulic cement was later formalized by French and British engineers in the 18th century.[6]

Modern cement

Modern hydraulic cements began to be developed from the start of the Industrial Revolution (around 1800), driven by three main needs:

- Hydraulic cement render (stucco) for finishing brick buildings in wet climates.
- Hydraulic mortars for masonry construction of harbor works, etc., in contact with sea water.
- Development of strong concretes.

In Britain particularly, good quality building stone became ever more expensive during a period of rapid growth, and it became a common practice to construct prestige buildings from the new industrial bricks, and to finish them with a stucco to imitate stone. Hydraulic limes were favored for this, but the need for a fast set time encouraged the development of new cements. Most famous was Parker's "Roman cement".[8] This was developed by James Parker in the 1780s, and finally patented in 1796. It was, in fact, nothing like any material used by the Romans, but was a "Natural cement" made by burning septaria – nodules that are found in certain clay deposits, and that contain both clay minerals and calcium carbonate. The burnt nodules were ground to a fine powder. This product, made into a mortar with sand, set in 5–15 minutes. The success of "Roman Cement" led other manufacturers to develop rival products by burning artificial mixtures of clay and chalk.

John Smeaton made an important contribution to the development of cements when he was planning the construction of the third Eddystone Lighthouse (1755–9) in the English Channel. He needed a hydraulic mortar that would set and develop some strength in the twelve hour period between successive high tides. He performed an exhaustive market research on the available hydraulic limes, visiting their production sites, and noted that the "hydraulicity" of the lime was directly related to the clay content of the limestone from which it was made. Smeaton was a civil engineer by profession, and took the idea no further. Apparently unaware of Smeaton's work, the same principle

was identified by Louis Vicat in the first decade of the nineteenth century. Vicat went on to devise a method of combining chalk and clay into an intimate mixture, and, burning this, produced an "artificial cement" in 1817. James Frost,[9] working in Britain, produced what he called "British cement" in a similar manner around the same time, but did not obtain a patent until 1822. In 1824, Joseph Aspdin patented a similar material, which he called Portland cement, because the render made from it was in color similar to the prestigious Portland stone.

Setting time and "early strength" are important characteristics of cements. Hydraulic limes, "natural" cements, and "artificial" cements all rely upon their belite content for strength development. Belite develops strength slowly. Because they were burned at temperatures below 1250 °C, they contained no alite, which is responsible for early strength in modern cements. The first cement to consistently contain alite was made by Joseph Aspdin's son William in the early 1840s. This was what we call today "modern" Portland cement. Because of the air of mystery with which William Aspdin surrounded his product, others (*e.g.*, Vicat and I.C. Johnson) have claimed precedence in this invention, but recent analysis[10] of both his concrete and raw cement have shown that William Aspdin's product made at Northfleet, Kent was a true alite-based cement. However, Aspdin's methods were "rule-of-thumb": Vicat is responsible for establishing the chemical basis of these cements, and Johnson established the importance of sintering the mix in the kiln.

William Aspdin's innovation was counterintuitive for manufacturers of "artificial cements", because they required more lime in the mix (a problem for his father), a much higher kiln temperature (and therefore more fuel), and the resulting clinker was very hard and rapidly wore down the millstones, which were the only available grinding technology of the time. Manufacturing costs were therefore considerably higher, but the product set reasonably slowly and developed strength quickly, thus opening up a market for use in concrete. The use of concrete in construction grew rapidly from 1850 onwards, and was soon the dominant use for cements. Thus Portland cement began its predominant role.

In the US the first large scale use of cement was Rosendale cement a natural cement mined from a massive deposit of a large dolostone rock deposit discovered in the early 19th century near Rosendale, New York. Rosendale cement was extremely popular for the foundation of buildings (*e.g.*, Statue of Liberty, Capitol Building, Brooklyn Bridge) and lining water pipes. But its long curing time of at least a month made it unpopular after World War One in the construction of highways and bridges and many states and construction firms turned to the use of Portland cement. Because of the switch to Portland cement, by the end of the 1920s of the 15 Rosendale cement companies, only one had survived. But in the early 1930s it was soon discovered that Portland cement while it had a faster setting time was not as durable, especially for highways, to the point that some states stopped building highways and roads with cement. An engineer, Bertrain H. Wait, whose company had worked on the construction of the New York Cities Catskill Aqueduct, and was impressed with the durability of Rosendale cement, came up with a blend of both Rosendale and synthetic cements which has the good attributes of both: it was highly durable and had a much faster setting time. Mr. Wait convinced the New York Commissioner of Highways to construct an experimental section highway near New Paltz, New York, of one sack of Rosendale to six sacks of synthetic cement, and it was proved a success and for decades hence the Rosendale-synthetic cement blend became common use in highway and bridge construction.[11]

Types of modern cement

Portland cement

Main article: Portland cement

Cement is made by heating limestone (calcium carbonate) with small quantities of other materials (such as clay) to 1450 °C in a kiln, in a process known as calcination, whereby a molecule of carbon dioxide is liberated from the calcium carbonate to form calcium oxide, or quicklime, which is then blended with the other materials that have been included in the mix. The resulting hard substance, called 'clinker', is then ground with a small amount of gypsum into a powder to make 'Ordinary Portland Cement', the most commonly used type of cement (often referred to as OPC).

Portland cement is a basic ingredient of concrete, mortar and most non-speciality grout. The most common use for Portland cement is in the production of concrete. Concrete is a composite material consisting of aggregate (gravel and sand), cement, and water. As a construction material, concrete can be cast in almost any shape desired, and once hardened, can become a structural (load bearing) element. Portland cement may be grey or white.

Portland cement blends

Portland cement blends are often available as inter-ground mixtures from cement manufacturers, but similar formulations are often also mixed from the ground components at the concrete mixing plant.[12]

Portland blastfurnace cement contains up to 70 % ground granulated blast furnace slag, with the rest Portland clinker and a little gypsum. All compositions produce high ultimate strength, but as slag content is increased, early strength is reduced, while sulfate resistance increases and heat evolution diminishes. Used as an economic alternative to Portland sulfate-resisting and low-heat cements.[13]

Portland flyash cement contains up to 35 % fly ash. The fly ash is pozzolanic, so that ultimate strength is maintained. Because fly ash addition allows a lower concrete water content, early strength can also be maintained. Where good quality cheap fly ash is available, this can be an economic alternative to ordinary Portland cement.[14]

Portland pozzolan cement includes fly ash cement, since fly ash is a pozzolan, but also includes cements made from other natural or artificial pozzolans. In countries where volcanic ashes are available (e.g. Italy, Chile, Mexico, the Philippines) these cements are often the most common form in use.

Portland silica fume cement. Addition of silica fume can yield exceptionally high strengths, and cements containing 5–20 % silica fume are occasionally produced. However, silica fume is more usually added to Portland cement at the concrete mixer.[15]

Masonry cements are used for preparing bricklaying mortars and stuccos, and must not be used in concrete. They are usually complex proprietary formulations containing Portland clinker and a number of other ingredients that may include limestone, hydrated lime, air entrainers, retarders, waterproofers and coloring agents. They are formulated to yield workable mortars that allow rapid and consistent masonry work. Subtle variations of Masonry cement in the US are Plastic Cements and Stucco Cements. These are designed to produce controlled bond with masonry blocks.

Expansive cements contain, in addition to Portland clinker, expansive clinkers (usually sulfoaluminate clinkers), and are designed to offset the effects of drying shrinkage that is normally encountered with hydraulic cements. This allows large floor slabs (up to 60 m square) to be prepared without contraction joints.

White blended cements may be made using white clinker and white supplementary materials such as high-purity metakaolin.

Colored cements are used for decorative purposes. In some standards, the addition of pigments to produce "colored Portland cement" is allowed. In other standards (e.g. ASTM), pigments are not allowed constituents of Portland cement, and colored cements are sold as "blended hydraulic cements".

Very finely ground cements are made from mixtures of cement with sand or with slag or other pozzolan type minerals that are extremely finely ground together. Such cements can have the same physical characteristics as normal cement but with 50% less cement particularly due to their increased surface area for the chemical reaction. Even with intensive grinding they can use up to 50% less energy to fabricate than ordinary Portland cements.[16]

Non-Portland hydraulic cements

Pozzolan-lime cements. Mixtures of ground pozzolan and lime are the cements used by the Romans, and can be found in Roman structures still standing (e.g. the Pantheon in Rome). They develop strength slowly, but their ultimate strength can be very high. The hydration products that produce strength are essentially the same as those produced by Portland cement.

Slag-lime cements. Ground granulated blast furnace slag is not hydraulic on its own, but is "activated" by addition of alkalis, most economically using lime. They are similar to pozzolan lime cements in their properties. Only granulated slag (i.e. water-quenched, glassy slag) is effective as a cement component.

Supersulfated cements. These contain about 80% ground granulated blast furnace slag, 15 % gypsum or anhydrite and a little Portland clinker or lime as an activator. They produce strength by formation of ettringite, with strength growth similar to a slow Portland cement. They exhibit good resistance to aggressive agents, including sulfate.

Calcium aluminate cements are hydraulic cements made primarily from limestone and bauxite. The active ingredients are monocalcium aluminate $CaAl_2O_4$ ($CaO \cdot Al_2O_3$ or CA in Cement chemist notation, CCN) and mayenite $Ca_{12}Al_{14}O_{33}$ ($12\ CaO \cdot 7\ Al_2O_3$, or $C_{12}A_7$ in CCN). Strength forms by hydration to calcium aluminate hydrates. They are well-adapted for use in refractory (high-temperature resistant) concretes, e.g. for furnace linings.

Calcium sulfoaluminate cements are made from clinkers that include ye'elimite ($Ca_4(AlO_2)_6SO_4$ or $C_4A_3\$$ in Cement chemist's notation) as a primary phase. They are used in expansive cements, in ultra-high early strength cements, and in "low-energy" cements. Hydration produces ettringite, and specialized physical properties (such as expansion or rapid reaction) are obtained by adjustment of the availability of calcium and sulfate ions. Their use as a low-energy alternative to Portland cement has been pioneered in China, where several million tonnes per year are produced.[17][18] Energy requirements are lower because of the lower kiln temperatures required for reaction, and the lower amount of limestone (which must be endothermically decarbonated) in the mix. In addition, the lower limestone content and lower fuel consumption leads to a CO_2 emission around half that associated with Portland clinker. However, SO_2 emissions are usually significantly higher.

"Natural" cements correspond to certain cements of the pre-Portland era, produced by burning argillaceous limestones at moderate temperatures. The level of clay components in the limestone (around 30–35 %) is such that large amounts of belite (the low-early strength, high-late strength mineral in Portland cement) are formed without the formation of excessive amounts of free lime. As with any natural material, such cements have highly variable properties.

Geopolymer cements are made from mixtures of water-soluble alkali metal silicates and aluminosilicate mineral powders such as fly ash and metakaolin.

The setting of cement

Cement sets when mixed with water by way of a complex series of hydration chemical reactions still only partly understood. The different constituents slowly hydrate and crystallise while the interlocking of their crystals gives to cement its strength. After the initial setting, immersion in warm water will speed up setting. In Portland cement, gypsum is added as a compound preventing cement flash setting. The time it takes for cement to set varies; and can take anywhere from twenty minutes for initial set, to twenty-four hours, or more, for final set.

Safety issues

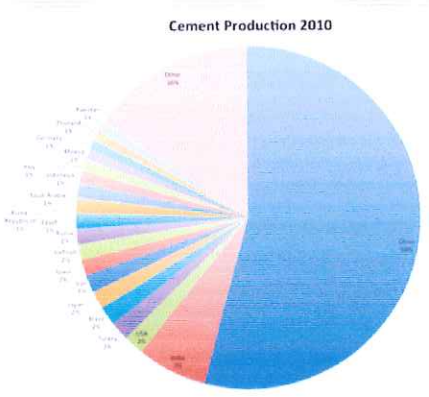
Bags of cement routinely have health and safety warnings printed on them because not only is cement highly alkaline, but the setting process is exothermic. As a result, wet cement is strongly caustic and can easily cause severe skin burns if not promptly washed off with water. Similarly, dry cement powder in contact with mucous membranes can cause severe eye or respiratory irritation. Cement users should wear protective clothing.[19][20][21]

Cement industry in the world

See also: List of countries by cement production

In 2010 the world production of hydraulic cement was 3,300 million tonnes. The top three producers were China with 1,800, India with 220 and USA with 63.5 million tonnes for a combined total of over half the world total by the world's three most populated states.[22]

For the world capacity to produce cement in 2010 the situation was similar with the top three states (China, India and USA) accounting for just under half the world total capacity.[23]



Global Cement Production in 2010

China

"For the past 18 years, China consistently has produced more cement than any other country in the world. [...] (However,) China's cement export peaked in 1994 with 11 million tonnes shipped out and has been in steady decline ever since. Only 5.18 million tonnes were exported out of China in 2002. Offered at $34 a ton, Chinese cement is pricing itself out of the market as Thailand is asking as little as $20 for the same quality."[24]

In 2006 it was estimated that China manufactured 1.235 billion tonnes of cement, which was 44% of the world total cement production.[25] "Demand for cement in China is expected to advance 5.4% annually and exceed 1 billion tonnes in 2008, driven by slowing but healthy growth in construction expenditures. Cement consumed in China will amount to 44% of global demand, and China will remain the world's largest national consumer of cement by a large margin."[26]

In 2010, 3.3 billion tonnes of cement was consumed globally. Of this, China accounted for 1.8 billion tonnes. [27]

Africa

See also: Cement in Africa

Environmental impacts

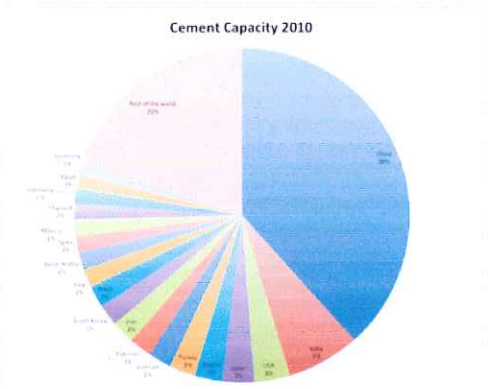
Cement manufacture causes environmental impacts at all stages of the process. These include emissions of airborne pollution in the form of dust, gases, noise and vibration when operating machinery and during blasting in quarries, and damage to countryside from quarrying. Equipment to reduce dust emissions

during quarrying and manufacture of cement is widely used, and equipment to trap and separate exhaust gases are coming into increased use. Environmental protection also includes the re-integration of quarries into the countryside after they have been closed down by returning them to nature or re-cultivating them.

CO_2 emissions

Cement manufacturing releases CO_2 in the atmosphere both directly when calcium carbonate is heated, producing lime and carbon dioxide,[28] and also indirectly through the use of energy if its production involves the emission of CO_2. The cement industry is the second largest CO_2 emitting industry behind power generation. The cement industry produces about 5% of global man-made CO_2 emissions, of which 50% is from the chemical process, and 40% from burning fuel.[29] The amount of CO_2 emitted by the cement industry is nearly 900 kg of CO_2 for every 1000 kg of cement produced. [30] The high proportion of carbon dioxide produced in the chemical reaction leads to large decrease in mass in the conversion from limestone to cement. So, to reduce the transport of heavier raw materials and to mimimize the associated costs, it is more economical for cement plants to be closer to the limestone quarries rather than to the consumer centers.[31]

In certain applications, lime mortar, reabsorbs the same amount of CO_2 as was released in its manufacture, and has a lower energy requirement in production than mainstream cement. Newly developed cement types from Novacem[32] and Eco-cement can absorb carbon dioxide from ambient air during hardening.[33] Use of the Kalina cycle during production can also increase energy efficiency.



Global Cement Capacity in 2010

Cement output in 2004

Heavy metal emissions in the air

In some circumstances, mainly depending on the origin and the composition of the raw materials used, the high-temperature calcination process of limestone and clay minerals can release in the atmosphere gases and dust rich in volatile heavy metals, a.o, thallium,[34] cadmium and mercury are the most toxic. Heavy metals (Tl, Cd, Hg, ...) are often found as trace elements in common metal sulfides (pyrite (FeS_2), zinc blende (ZnS), galena (PbS), ...) present as secondary minerals in most of the raw materials. Environmental regulations exist in many countries to limit these emissions. As of 2011 in the United States, cement kilns are "legally allowed to pump more toxins into the air than are hazardous-waste incinerators."[35]

Heavy metals present in the clinker

The presence of heavy metals in the clinker arises both from the natural raw materials and from the use of recycled by-products or alternative fuels. The high pH prevailing in the cement porewater ($12.5 < pH < 13.5$) limits the mobility of many heavy metals by decreasing their solubility and increasing their sorption onto the cement mineral phases. Nickel, zinc and lead are commonly found in cement in non-negligible concentrations.

Use of alternative fuels and by-products materials

A cement plant consumes 3 to 6 GJ of fuel per tonne of clinker produced, depending on the raw materials and the process used. Most cement kilns today use coal and petroleum coke as primary fuels, and to a lesser extent natural gas and fuel oil. Selected waste and by-products with recoverable calorific value can be used as fuels in a cement kiln, replacing a portion of conventional fossil fuels, like coal, if they meet strict specifications. Selected waste and by-products containing useful minerals such as calcium, silica, alumina, and iron can be used as raw materials in the kiln, replacing raw materials such as clay, shale, and limestone. Because some materials have both useful mineral content and recoverable calorific value, the distinction between alternative fuels and raw materials is not always clear. For example, sewage sludge has a low but significant calorific value, and burns to give ash containing minerals useful in the clinker matrix.[36]

See also

- BET theory
- Cement chemist notation
- Cement render
- Fly ash
- Geopolymers
- Portland cement
- Rosendale cement

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IF this GETs into your Respiratory System it will Set FAST)

MATERIAL SAFETY DATA SHEET

QUIKRETE®

CEMENT & CONCRETE PRODUCTS™

Dry-Packaged Fast-Setting Cement Based Products

MATERIAL SAFETY DATA SHEET
(Complies with OSHA 29 CFR 1910.1200)

SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30329

Emergency Telephone Number
(770) 216-9580

Information Telephone Number
(770) 216-9580

MSDS J2
Revision: Dec-11

QUIKRETE® Product Name	Code #
Fast-Setting Concrete Mix	1004-50
Post Haste	1004-65
Concrete Resurfacer	1131-40
Multipurpose Concrete Resurfacer	1131-45
All-Star 10 Minute Instant Post Mix	1005-51
All-Star Fast Setting Concrete Mix	1004-50
Bonded Topping Mix	1133-04, 1018, 1017
Commercial Grade FastSet™ Cement	1124-92
Commercial Grade FastSet™ Non-Shrink Grout	1585-09
Commercial Grade FastSet™ Repair Mortar	1241-60
Commercial Grade FastSet™ Concrete Mix	1004-51
Commercial Grade FastSet™ DOT Mix	1244-56
Commercial Grade FastSet™ DOT Mix – Extended	1244-81
Commercial Grade FastSet™ All-Crete	1585-59
Commercial Grade FastSet™ DOT Deck Repair – Polymer Modified	1244-58
Polymer Modified Structural Concrete – Extended Set	1242-85
Commercial Grade FastSet™ Repair Mortar – Zip And Mix	1241

Product Use: Portland cement-based, rapid-setting materials for general construction or repair.

SECTION II - HAZARD IDENTIFICATION

Route(s) of Entry: Inhalation, Skin, Ingestion
Acute Exposure: Product becomes alkaline when exposed to moisture. Exposure can dry the skin, cause alkali burns and affect the mucous membranes. Dust can irritate the eyes and upper respiratory system. Toxic effects noted in animals include, for acute exposures, alveolar damage with pulmonary edema.
Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis.

Carcinogenicity: Since Portland cement and blended cements are manufactured from raw materials mined from the earth (limestone, marl, sand, shale, etc.) and process heat is provided by burning fossil fuels, trace, but detectable, amounts of naturally occurring, and possibly harmful, elements may be found during chemical analysis. Under ASTM standards, Portland cement may contain 0.75 % insoluble residue. A fraction of these residues may be free crystalline silica. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs and possibly cancer. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.

Carcinogenicity Listings:		
	NTP:	Known carcinogen
	OSHA:	Not listed as a carcinogen
	IARC Monographs:	Group 1 Carcinogen
	California Proposition 65:	Known carcinogen

NTP: The National Toxicology Program, in its "Ninth Report on Carcinogens" (released May 15, 2000) concluded that "Respirable crystalline silica (RCS), primarily quartz dusts occurring in industrial and occupational settings, is *known to be a human carcinogen*, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust (reviewed in IAC, 1997; Brown *et al.*, 1997; Hind *et al.*, 1997)

IARC: The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz or cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans* (Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances or studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates." (1997)

Signs and Symptoms of Exposure: Symptoms of excessive exposure to the dust include shortness of breath and reduced pulmonary function. Excessive exposure to skin and eyes especially when mixed with water can cause caustic burns as severe as third degree.

Medical Conditions Generally Aggravated by Exposure: Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure. Exposure to crystalline silica or the disease silicosis is associated with increased incidence of scleroderma, Tuberculosis and possibly increased incidence of kidney lesions.

Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis. (May contain trace (<0.05 %) amounts of chromium salts or compounds including hexavalent chromium, or other metals found to be hazardous or toxic in some chemical forms. These metals are mostly present as trace substitutions within the principal minerals)

Medical Conditions Generally Aggravated by Exposure: Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure.

SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

QUIKRETE®

CEMENT & CONCRETE PRODUCTS™

Hazardous Components	CAS No.	PEL (OSHA) mg/M^3	TLV (ACGIH) mg/M^3
Portland Cement	65997-15-1	5	5
Lime	01305-62-0	5	5
Silica Sand, crystalline	14808-60-7	$\frac{10}{\%SiO_2+2}$	0.05 (respirable)
May contain one or more of the following ingredients:			
Amorphous Silica (From fly Ash)	07631-86-9	$\frac{80}{\%SiO_2+2}$	10
Alumina (From Fly Ash)	01344-28-1	5	5
Limestone Dust	01317-65-3	5	5
Calcium Sulfate	10101-41-4 or 13397-24-5	5	5
Calcium Sulfoaluminate	65997-16-2	15	10

Other Limits: National Institute for Occupational Safety and Health (NIOSH). Recommended standard maximum permissible concentration=0.05 mg/M^3 (respirable free silica) as determined by a full-shift sample up to 10-hour working day, 40-hour work week. See NIOSH Criteria for a Recommended Standard Occupational Exposure to Crystalline Silica.

SECTION IV – First Aid Measures

Eyes: Immediately flush eye thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.
Skin: Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation or inflammation develops or persists. Seek immediate medical treatment in the event of burns.
Inhalation: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek medical help if coughing and other symptoms do not subside. Inhalations of large amounts of Portland cement require immediate medical attention.
Ingestion: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

SECTION V - FIRE AND EXPLOSION HAZARD DATA

Flammability: Noncombustible and not explosive.
Auto-ignition Temperature: Not Applicable
Flash Points: Not Applicable

SECTION VI – ACCIDENTAL RELEASE MEASURES

If spilled, use dustless methods (vacuum) and place into covered container for disposal (if not contaminated or wet). Use adequate ventilation to keep exposure to airborne contaminants below the exposure limit.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

Do not allow water to contact the product until time of use. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended.

SECTION VIII – EXPOSURE CONTROL MEASURES

Engineering Controls: Local exhaust can be used, if necessary, to control airborne dust levels.

Personal Protection: The use of barrier creams or impervious gloves, boots and clothing to protect the skin from contact is recommended. Following work, workers should shower with soap and water. Precautions must be observed because burns occur with little warning -- little heat is sensed.

WARN EMPLOYEES AND/OR CUSTOMERS OF THE HAZARDS AND REQUIRED OSHA PRECAUTIONS ASSOCIATED WITH THE USE OF THIS PRODUCT.

Exposure Limits: Consult local authorities for acceptable exposure limits.

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance: Gray to gray-brown colored powder; Some products contain coarse aggregates.

Specific Gravity:	2.6 to 3.15	**Melting Point:**	>2700°F
Boiling Point:	>2700°F	**Vapor Pressure:**	Not Available
Vapor Density:	Not Available	**Evaporation Rate:**	Not Available
Solubility in Water:	Slight	**Odor:**	Not Available

SECTION X - REACTIVITY DATA

Stability: Stable.
Incompatibility (Materials to Avoid): Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires
Hazardous Decomposition or By-products: Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.
Hazardous Polymerization: Will Not Occur.
Condition to Avoid: Keep dry until used to preserve product utility.

SECTION XI – TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, Ingestion
Toxicity to Animals:
LD50: Not Available
LC50: Not Available
Chronic Effects on Humans: Conditions aggravated by exposure include eye disease, skin disorders and Chronic Respiratory conditions.
Special Remarks on Toxicity: Not Available

SECTION XII – ECOLOGICAL INFORMATION

Ecotoxicity: Not Available
BOD5 and COD: Not Available

Products of Biodegradation: Not available
Toxicity of the Products of Biodegradation: Not available
Special Remarks on the Products of Biodegradation: Not available

SECTION XIII – DISPOSAL CONSIDERATIONS

Waste Disposal Method: The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302).

SECTION XIV – TRANSPORT INFORMATION

Not hazardous under U.S. DOT and TDG regulations.

SECTION XV – OTHER REGULATORY INFORMATION

US OSHA 29CFR 1910.1200: Considered hazardous under this regulation and should be included in the employers' hazard communication program
SARA (Title III) Sections 311 & 312: Qualifies as a hazardous substance with delayed health effects
SARA (Title III) Section 313: Not subject to reporting requirements
TSCA (May 1997): Some substances are on the TSCA inventory list
Federal Hazardous Substances Act: Is a hazardous substance subject to statues promulgated under the subject act
Canadian Environmental Protection Act: Not listed
Canadian WHMIS Classification: Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class D2A, E- Corrosive Material) and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This product has been classified according to the hazard criteria of the Controlled Products Regulation (CPR). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

SECTION XVI – OTHER INFORMATION

HMIS-III:

Health –
0 = No significant health risk
1 = Irritation or minor reversible injury possible
2 = Temporary or minor injury possible
3 = Major injury possible unless prompt action is taken
4 = Life threatening, major or permanent damage possible

Flammability-
0 = Material will not burn
1 = Material must be preheated before ignition will occur
2 = Material must be exposed to high temperatures before ignition
3 = Material capable of ignition under normal temperatures
4 = Flammable gases or very volatile liquids; may ignite spontaneously

Physical Hazard-
0 = Material is normally stable, even under fire conditions
1 = Material normally stable but may become unstable at high temps
2 = Materials that are unstable and may undergo react at room temp
3 = Materials that may form explosive mixtures with water
4 = Materials that are readily capable of explosive water reaction

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Abbreviations:

ACGIH	American Conference of Government Industrial Hygienists
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CPR	Controlled Products Regulations (Canada)
DOT	Department of Transportation
IARC	International Agency for Research
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicity Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TLV	Threshold Limit Value
TWA	Time-weighted Average
WHMIS	Workplace Hazardous Material Information System

Last Updated: December 29, 2011

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products. END OF MSDS.

Material Safety Data Sheet

Hanson

Product: CONCRETE, PREMIXED CONCRETE

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Company Details:	Hanson Construction Materials Pty Ltd ABN 90 009 679 734
Address	Level 6 35 Clarence street Sydney 2000
Tel/Fax	Tel: +61 2 9323 4000 Fax: +61 2 9323 4500
Product:	CONCRETE, PREMIXED CONCRETE
Other Names/Synonyms	Ready-mixed concrete, Grout, Mortar , Sure-Set®, Easycrete®, Coremasta®, Liquifill®
Use	Premixed concrete is used for a wide variety of building and construction applications
Other Information	Plastic concrete begins to harden about one hour after delivery and is quite hard within eight hours. The rate of setting depends on ambient conditions (temperature, wind and humidity) and the concentration of cementitious ingredients

SECTION 2: HAZARDS IDENTIFICATION

HAZARDOUS SUBSTANCE **NON-DANGEROUS GOODS**

- Classified as **hazardous** according to the criteria of the Australian Safety and Compensation Commission ASCC (formerly NOHSC) (Approved Criteria for Classifying Hazardous Substances [NOHSC:1008] 3rd Edition).
- This product may contain crystalline silica. Crystalline silica dust is classified as Hazardous.
- The solid product as supplied is classified as non-Hazardous.
- Dust created when the product is cut, abraded, or crushed may contain crystalline silica some of which may be respirable (particles small enough to go into the deep parts of the lung when breathed in).
- A proportion of the fine dust in/on the supplied product may be respirable crystalline silica.

The following Risk and Safety phrases apply to this product:

Risk Phrases:

R20: Harmful by Inhalation (applies to concrete dust)
R21: Harmful in Contact with Skin
R22: Harmful if Swallowed
R43: May cause sensitisation by skin Contact
R48: Danger of serious damage to health by prolonged exposure through inhalation (Applies to concrete dust)

Safety Phrases:

S22: Do not breathe dust
S24: Toxic in contact with skin
S24: Toxic if swallowed
S28: After contact with skin, wash immediately with plenty of water
S29: Do not empty into drains
S36: Wear suitable protective clothing
S37: Wear suitable gloves
S39: Wear eye/face protection

SECTION 15: REGULATORY INFORMATION

Classification	Hazardous according to ASCC/NOHSC criteria and not classified as Dangerous Goods
Hazard Symbol	None allocated
Poisons Schedule	None allocated

- Exposures by inhalation to high levels of dust may be regulated under the Hazardous Substances Regulations (State and Territory) as they are applicable to Respirable Crystalline Silica, requiring exposure assessment, and control of inhalation exposure below the NES
- Persons who have potential for exposure above the NES may be required by Regulations to have periodic health surveillance including Chest X-ray (see relevant State Government Regulations and ASCC/NOHSC documentation)

SECTION 16: OTHER INFORMATION

Emergency Contact No
Contact For further information contact the Risk Manager at your nearest Hanson office;

New South Wales & ACT
Level 5, 75 George Street
Parramatta, NSW, 2150
Ph: (02) 9354 2600
Fax: (02) 9354 2699

Tasmania
114 Gormandston Road
Moonah, TAS, 7009
Ph: (03) 6272 6796
Fax: (03) 6272 1714

South Australia
55 Galway Avenue
Marleston, SA, 5033
Ph: (08) 8292 5950
Fax: (08) 8292 5995

Northern Territory
Winnellie Road Level 1
Winnellie, NT, 5789
Ph: (08) 8984 4266
Fax: (08) 8984 3717

Victoria
601 Doncaster rd
Doncaster, VIC, 3108
Ph: (03) 9274 3700
Fax: (03) 9274 3794

Queensland
Level 11, Toowong Tower
9 Sherwood Road
Toowong, Qld, 4066
Ph: (07) 3246 5500
Fax: (07) 3246 5533

Western Australia
123 Burswood Road
Victoria Park, WA, 6100
Ph: (08) 9311 8811
Fax: (08) 9470 2793

Authorised by: Jeremy Smith
Date of issue information 17-11-06 (Replace version dated Sept 2004)

Notice: We believe the information contained in this Material Safety Data Sheet is accurate and is given in good faith, but no warranty expressed or implied is made.
The suggested procedures are based on experience as of the date of publication. They are not necessarily all-inclusive nor fully adequate in every circumstance. Users are advised to make their own independent determination of suitability and completeness of information at their own risk, in relation to the particular purposes and specific circumstances.
Since the information contained in this document may be applied under conditions beyond our control, no responsibility can be accepted by us for any loss or damage cause by any person acting or refraining from action as a result of any information contained in this Material Safety Data Sheet.
Where the information provided herein disclosed a potential hazard or hazardous ingredient, adequate warning should be provided to employees and users and appropriate precautions taken

END OF MSDS

Other Information	repeated exposure to high levels of dust with increased risk of bronchitis and pneumonia Long term occupational over-exposure or prolonged breathing-in (or inhalation) of crystalline silica dust at levels above the NES carries the risk of causing serious and irreversible lung disease, including bronchitis, and silicosis (scarring of the lung), including acute and/or accelerated silicosis. It may also increase the risk of other irreversible and serious disorders including scleroderma (a disease affecting the skin, joints, blood vessels and internal organs) and other auto-immune disorders Inhalation of dust, including crystalline silica dust, is considered by medical authorities to increase the risk of lung disease due to tobacco smoking The product contains a proportion of respirable free crystalline silica in the quartz component. Crystalline silica (inhaled in the form of quartz or cristobalite from occupational sources) has been classified by The International Agency for Research on Cancer (IARC) as carcinogenic to humans (Group 1). However (in the view of CC&AA) the research on this is inconclusive and ASCC/NOHSC has not classified crystalline silica as a carcinogen The most current research indicates no excess risk of lung cancer or other cancers from using these products Inhalation of airborne particles from other sources in the work environment, including those from cigarette smoke, may increase the risk of respiratory diseases. It is recommended that all storage and work areas should be smoke-free zones and that other airborne contaminants should be kept to a minimum

SECTION 12: ECOLOGICAL INFORMATION

Concrete:	
Ecotoxity	Product forms an alkaline slurry when mixed with water
Persistence and Degradability	Product is persistent and would have a low degradability
Mobility	A low mobility would be expected in a landfill situation

Dust - Crystalline silica is non-toxic to aquatic and terrestrial organisms; is not biodegradable; is insoluble and is expected to have low mobility in landfill

SECTION 13: DISPOSAL CONSIDERATIONS

Spills & Leaks	Plastic concrete; Recover spilled material by shoveling into containers and using mechanical sweepers, but avoid generating dust. Prevent spillage or wash down water from entering sewers drains, stormwater and watercourses If contamination of drains or watercourses has occurred, advise the relevant state environment protection agency and the company
Disposal	May be disposed of as inert landfill in accordance with local authority regulations. Measures should be taken to prevent dust generation during disposal and exposure and personal precautions should be observed (see above)

SECTION 14: TRANSPORT INFORMATION

UN Number	None Allocated
UN proper Shipping name	None Allocated
Class and subsidiary risk	None Allocated
Packing Group	None Allocated
Hazchem Code	None Allocated
Special precautions for user	See Above
DG class	None Allocated

Boiling Point/range	Not determined
Freezing/melting point	Melting point >1200 ^{0}C
Solubility	Not soluble. Can react on mixing with water forming an alkaline solution with Ph >11
Specific gravity	2.5
Flash Point	Not applicable
Upper and lower flammability Limits	Not applicable
Ignition Temp	Not applicable
Particle Size	A *proportion* of the dust may be respirable (below 10 microns) and if it becomes airborne constitutes an exposure if inhaled.

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability:	Chemically Stable
Condition to avoid:	Keep away from water. Dust generation.
Incompatible materials:	None
Hazardous Decomposition: Products	None
Hazardous Reactions:	None

Crystalline silica is stable, compatible with other materials, does not polymerise, and will not decompose into hazardous by-products.

SECTION 11: TOXICOLOGICAL INFORMATION

Health Effects

Acute - Swallowed	Unlikely in normal use in industrial situation .Concrete is abrasive and mildly corrosive. Swallowing either plastic or hardened concrete will result in abdominal discomfort. Symptoms can include nausea, stomach cramps and vomiting
Eye	Plastic concrete will cause severe irritation in contact with the eyes, which will result in redness, stinging and lachrymation. Alkaline properties may produce severe alkali burns or serious eye damage. Dry concrete dust may cause mechanical irritation resulting in redness and lachrymation
Skin	Contact with plastic concrete will cause severe irritation and possible chemical burns, cement dermatitis and dry skin · Portland cement is alkaline in nature so plastic concrete and mortars are strongly alkaline (pH of 12 -13). Strong alkalines, like strong acids, are harmful or caustic to the skin. This may produce alkali burns · Portland cement is hygroscopic - it absorbs water. Plastic concrete needs water to harden. It will draw water away form any other material in contacts, including skin. This will irritate and dry the skin
Inhaled	Sprayed plastic concrete droplets and dry concrete dust may irritate the nose, throat and respiratory tract causing coughing, sneezing and breathing difficulties. Pre-existing upper respiratory and lung diseases included asthma and bronchitis may be aggravated
Chronic-	
Eyes	In dust form may cause inflammation of the cornea
Skin	Repeated or prolonged skin contact with plastic concrete can dry the skin and cause alkali burns due to the caustic nature of the product. This condition is described as irritant contact dermatitis. Some individuals may experience allergic dermatitis because there are trace amounts of water soluble hexavalent chromium salts (Chromium VI) present in Portland Cement (0 - 20ppm). Once a person is sensitised to water soluble chromates any further skin exposure to chromates will bring back the symptoms
Inhaled	Plastic concrete is not considered a chronic inhalation hazard Repeated exposure to the dust may result in increased nasal and respiratory secretions and coughing. Inflammation of lining tissue of the respiratory system may follow

Personal Protection:

Skin:

Prevent all contact with skin

When handling wet concrete personnel should wear loose comfortable clothing and impervious boots, suitable protective/impervious gloves

Contact with plastic concrete will cause severe irritation and possible chemical burns, cement dermatitis and dry skin
· Portland cement is alkaline in nature so plastic concrete and mortars are strongly alkaline (pH of 12 -13). Strong alkalines, like strong acids, are harmful or caustic to the skin. This may produce alkali burns
· Portland cement is hygroscopic - it absorbs water. Plastic concrete needs water to harden. It will draw water away form any other material in contacts, including skin. This will irritate and dry the skin

Ensure a high level of personal hygiene is maintained when using this product. That is; always wash hands before eating, drinking, smoking or using the toilet

Remove all contaminated clothing. Wash gently and thoroughly with tepid water and non-abrasive soap. If irritation develops and persists seek medical attention.
Wash hands before eating, or smoking

Eyes

Safety glasses with side shields or safety goggles (AS/NZ 1336) or a face shield should be worn
Plastic concrete will cause severe irritation in contact with the eyes, which will result in redness, stinging and lachrymation. Alkaline properties may produce severe alkali burns or serious eye damage
Dry concrete dust may cause mechanical irritation resulting in redness and lachrymation

Respiratory:

Where engineering and handling controls are not enough to minimise exposure to total dust and to respirable crystalline silica, personal respiratory protection may be required. The type of respiratory protection required depends primarily on the concentration of the respirable crystalline silica dust in the air, and the frequency and length of exposure time. Amount of exertion required during the work, and personal comfort are other considerations in choice of respirator. A suitable P1 or P2 particulate respirator chosen and used in accordance with AS/NZS 1715 and AS/NZS 1716 may be sufficient for many situations, but where high levels of dust are encountered, more efficient cartridge-type or powered respirators or supplied-air helmets or suits may be necessary.
Use only respirators that bear the Australian Standards mark and are fitted and maintained correctly
For dust levels approaching or exceeding the NES (see above) a more effective particulate respirator providing a greater protection factor should be worn. Procedures for effective use of respirators should be applied and supervised
Do not contaminate the home environment with dusty work clothes and shoes. Do not shake out work clothes before laundering

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	A mouldable generally grey mixture which will set and harden to become a stable solid. Colour may vary from near white to any other colour
Odour	Some added ingredients used in concrete may create a smell of ammonia
Ph	>7.0 dry state. >10 in wet plastic state
Vapour Pressure	Not determined
Vapour Density	Not determined

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spills:

- Dust is best cleaned up by vacuum device to avoid making dust airborne. Wetting down before sweeping up dust may be a useful control measure
- Recommendations on Exposure Controls / Personal Protection (see Section 8 below) should be followed during spill clean-up if conditions are dusty
- Plastic concrete;
  -Recover spilled material by shoveling into containers and using mechanical sweepers, but avoid generating dust. Prevent spillage or wash down water from entering sewers drains, stormwater and watercourses
  -If contamination of drains or watercourses has occurred, advise the relevant state environment protection agency and the company

Disposal:

- May be disposed of as inert landfill in accordance with local authority regulations

SECTION 7: HANDLING AND STORAGE

Storage Precautions	No special storage requirements
Transport	Not classified as a Dangerous Goods, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (6th Edition)
Handling	Prevent all contact with skin. Ensure a high level of personal hygiene is maintained when using this product. That is; always wash hands before eating, drinking, smoking or using the toilet
Proper Shipping Name	None Allocated

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

The following applies to dust from this product:

Exposure Limits:

National Occupational Exposure Standard (NES) Australian Safety and Compensation Commission ASCC (formerly NOHSC)

Exposure to dust should be kept as low as practicable, and below the following NES:-

Crystalline silica (quartz): 0.1 mg/m^3 TWA (time-weighted average) as respirable dust

Total dust (of any type, or particle size): 10 mg/m^3 TWA

Chromium VI: 0.05 mg/m3 -sensitiser

Engineering Controls:

All work should be carried out in such a way as to minimise dust generation, and exposure to dust.

Mechanical ventilation: Dust extraction and collection may be used, if necessary, to control airborne dust levels.

Work areas should be cleaned regularly.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

All significant constituents are listed below:

Major Ingredients

Name	CAS	Proportion
Sand Containing Crystalline Silica (Quartz)	14808-60-7	20-85 %
Crushed Stone, Gravel or Blast Furnace Slag.	Not required	20-85 %
Portland cement	65997-15-1	10-60 %
Chromium VI	1333-82-0	2-20ppm
Water	7732-18-5	0-20 %

Other ingredients may be added:

Blast Furnace Slag or Fly Ash:		0 - 20%
Pozzolans		0 - 10%
Pigments: (metallic oxide colours)		0 -10%
Silica Fume (amorphous silica)	7699-41-4	0 - 10%
Chemical Admixtures:		2 - 10%
Polystyrene balls:	9003-53-6	0 - 60% by volume
Polypropylene fibres		0 - 10%
Steel Fibres		0 - 10%

NOTE:

- Chromium VI is a trace impurity in Portland Cement.
- Portland Cement, Sand, Crushed stone, Gravel, Blast Furnace Slag and Fly Ash may contain crystalline silica (quartz). Depending on the source of the material for the above ingredients, the crystalline silica content of the final product can vary from product to product.
- Cementitous additives may contain traces of metals

SECTION 4: FIRST AID MEASURES

Swallowed	Rinse mouth and lips with water. Do not induce vomiting. If symptoms persist, seek medical attention
Eye	Flush thoroughly with flowing water, while holding eyelids open, for 15 minutes to remove all traces. If symptoms such as irritation or redness persist, seek medical attention
Skin	Remove heavily contaminated clothing. Wash off skin thoroughly with water. Use a mild soap if available. Shower if necessary. Seek medical attention for persistent redness, irritation or burning of the skin
Inhaled	Remove the source of contamination or move the victim to fresh air. Ensure airways are clear and have a qualified person give oxygen through a face mask if breathing is difficult. If irritation develops seek medical attention.
First Aid Facilities	Eye wash and normal washroom facilities.

Advice to Doctor: Treat symptomatically or consult a Poisons Information Centre

SECTION 5: FIRE FIGHTING MEASURES

Flammability:	Not flammable or combustible
Hazards from combustion products:	None
Suitable extinguishing media:	Not applicable
Special protective precautions ands equipment for fire fighters:	None
Hazchem code:	None allocated

Hanson
HEIDELBERGCEMENT Group

West Region
P O Box 639069
San Diego, CA 92163-9069
Telephone: (858) 577-2770

January 24, 2012

Rob Eastwood
County of Santa Clara
County Government Center, East Wing
70 West Hedding Street, 7th Floor
San Jose, CA 95110

Re: Permanente Quarry Reclamation Plan Amendment
Draft Environmental Impact Report Comments

Dear Mr. Eastwood:

These comments are submitted by Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc. (collectively, "Lehigh"), the operator and owner of the Permanente Quarry. The purpose of this letter is to provide Lehigh's comments on the Draft Environmental Impact Report ("DEIR") for the proposed amendment to the Quarry's reclamation plan (the "project").

Lehigh would like to begin by expressing its gratitude to the County of Santa Clara Planning Department, its staff members and consultants for their efforts. Lehigh recognizes the great deal of work and attention to detail that was required to prepare the DEIR, and appreciates the County's thoroughness and professionalism throughout the process.

The County has performed admirably in describing the environmental impacts of this complex reclamation project, and Lehigh believes the DEIR meets CEQA's requirements. There are, however, aspects of the DEIR that would benefit from clarification which Lehigh is uniquely situated to provide. We are taking this opportunity to present our formal comments on the DEIR to ensure that this information is part of the public record before the County.

We have organized our comments to follow the general order in which language and concepts are introduced in the DEIR.

Project Description

Section 2.1

With respect to the Exploration Area, the Final EIR should clarify that only a small portion of this 284-acre area has been disturbed by exploration. The DEIR offers the impression to readers that exploratory disturbance covers the entire 284 acres: "...approximately 284-acres located south of Permanente Creek that have been disturbed by prior exploratory activities..." (DEIR, § 2.1, p. 2-1.) In fact, exploratory disturbance covers only approximately 19.5 acres, as noted in the Amendment.

Section 2.7.8

Minor formatting corrections also are needed for Tables 2-6, 2-7 and 2-9, which contain text that extends beyond the printable portion of the pages.

Section 2.8.3

Table 2-17 ("Proposed Five-Year Performance Standards for Revegetation in the PCRA") should be corrected to show the performance standards listed in the December 13, 2011 version of the Reclamation Plan Amendment ("Amendment"). The correct standards are shown in Table 21 of the Amendment and Table 18 of Appendix B, the Revegetation Plan.

Alternatives

Section 3.3.1.1

The DEIR recognizes that the Complete Backfill Alternative would not meet certain project objectives such as screening cement plant facilities, and also would increase air emissions and releases of toxic air contaminants. We agree with the DEIR, and write to summarize the adverse consequences of this alternative:

- The scale of additional heavy equipment use under the Complete Backfill Alternative deserves greater emphasis. This alternative would excavate and move an additional 6.5 million tons of overburden from the EMSA to the main pit. The excavators, bulldozers, and off-road haul trucks generating noise and air emissions would be concentrated in that part of the Quarry that is nearest to sensitive receptors. Noise, air and health risks impacts from toxic air contaminants would notably increase.

- Members of the community have expressed strong support for the screening benefits of the EMSA, which, when complete, would replace views of the cement plant facility with a vegetated hillside. As the DEIR correctly notes, under Complete Backfill Alternative the screening function of the EMSA would be lost. (See DEIR, § 3.3.1.1, p. 3-9.) The public would likewise be visually exposed to an extended period of construction activity as EMSA stockpiles

are excavated and hauled to another part of the Quarry. Because tree and shrub replanting would be delayed in the area of the former stockpiles, the visual benefits of revegetation would also be delayed, and extend the length of time that the public would view an unvegetated hillside. The Complete Backfill Alternative, in short, presents short and long-term and visual impacts that exceed the visual impacts of the project.

- The proposed project is superior to the Complete Backfill Alternative in its treatment of water quality issues. The project includes a thoroughly analyzed plan for reducing runoff containing selenium to levels at or beneath the regulatory benchmarks, by covering disturbed areas with non-limestone rock types and adding a growth media and vegetation. The removal of the EMSA, which is a key feature of the Complete Backfill Alternative, would require a longer period to achieve the same result. Moreover, the earthwork and ground disturbance required to excavate and relocate 6.5 million tons of overburden stockpiles increases the potential for both sedimentation and selenium mobilization over a significantly longer period than the project. As a result, the potential for interim water quality impacts would increase under this alternative.

Overall, the Complete Backfill Alternative poses adverse environmental impacts that equal or exceed the project impacts in nearly every category. We agree fully with the conclusion reached in the DEIR that the Complete Backfill Alternative has equal or greater environmental impacts than the project, and does not qualify as the environmentally-superior alternative. (DEIR, § ES.6, p. E-8.)

Aesthetics

Section 4.1.5

The DEIR's discussion of aesthetics deserves clarification on the visual impacts of ongoing surface mining operations, versus the beneficial effects of reclamation to be gained by the project.

The DEIR adopted a very conservative approach to aesthetics that tends to overstate impacts by including the visual effect of ongoing mining activities. Although we understand the County's need for a conservative approach, we nonetheless want to ensure that the distinction between mining and reclamation remains clear.

California law makes a clear legal distinction between "surface mining operations" and "reclamation." Surface mining operations means the process of mineral extraction and expressly includes "production and disposal" of overburden. (Pub. Resources Code, § 2735.) Reclamation is, in contrast, the "process of land treatment that minimizes…[the] adverse effects from surface mining operations." (Pub. Resources Code, § 2733.)

The disposal and stockpiling of overburden, accordingly, is part of Lehigh's surface mining operation. As correctly described in the Project Description that precedes the Aesthetics chapter of the DEIR, Lehigh has a confirmed vested right to stockpile overburden in the EMSA,

is already engaging in this activity, and no discretionary approval is being requested relating to the continuation of this activity:

> However, because the County has determined that mining operations are a legal nonconforming use (i.e., a vested right) in the Project Area, the potential environmental impacts related to surface mining in the Project Area generally are not analyzed as part of the Project evaluated in this EIR…

(DEIR, § 2.3.1, p. 2-5.)

The DEIR's aesthetic and visual impacts discussion could create confusion by suggesting that Lehigh's placement of overburden in the EMSA, which is ongoing as part of the surface mining operation, is part of the project to be approved by the County and analyzed under CEQA. For example:

> The increased prominence and extent of disturbed areas, and the creation of a new distinctly unnatural landform would be particularly noticeable immediately following the completion of construction…

(DEIR, p. 4.1-46.)

Under this approach, the DEIR conservatively evaluated the adverse visual impacts of overburden stockpiling for significance under CEQA, and found the visual impact of this activity in the short term to be significant and unavoidable. (See DEIR, Impacts 4.1-1, 4.1-3, 4.1-5.) The Cumulative Impacts discussion similarly identified significant and unavoidable cumulative impacts after combining the EMSA construction together with a proposed flood protection project by the Santa Clara Valley Water District. (DEIR, § 6.2.1, p. 6-14.)

Clarifying the visual impacts analysis to observe the distinction between mining and reclamation would allow the Final Environmental Impact Report ("FEIR") to focus more closely on the overwhelming visual benefits from implementation of approval of the Amendment. Because overburden stockpiling is an existing condition, and implementation of the reclamation project will result only in significant improvement to the visual appearance of the EMSA, the significance determination should be revised in the FEIR to clarify that the visual impacts of reclamation are not significant.

Biological Resources

Section 4.4.5

The DEIR states that potentially significant biological impacts are significant and unavoidable because mitigation could not completely eliminate the possibility of adverse effects on biological organisms. (DEIR, § 4.4.5, p. 4.4-37.) Again, we recognize this is a conservative approach which tends to overstate impacts. We are commenting to offer additional context, and

make certain that the current baseline aquatic conditions in Permanente Creek are clearly stated for the record.

The existing, baseline conditions in Permanente Creek appear to provide ample habitat for aquatic organisms. Appendix D of the Amendment contains the results of a Biological Resources Assessment (WRA, 2011), which evaluated conditions in the creek, and found that a community of biological organisms presently exists. The assessment included the results of detailed surveys of benthic macro-invertebrates and amphibians in the creek, and did not report any apparent toxicological effects. The assessment also included the results of bioassay testing, a standard technique designed to gather evidence on the acute toxicity of water to biological organisms (in this case, the test introduced creek water samples to a tank holding fathead minnows and assesses survivability). The tests resulted in a 100 percent survival rate, meaning the subjects did not exhibit acute toxicological effects.

The record therefore demonstrates that a community of biological organisms presently exists in Permanente Creek under existing water quality conditions. From this baseline condition the project's effects will improve long-term water quality and aquatic habitat in the creek.

Geology, Soils and Seismicity

Section 4.7

The record also should have a clear distinction between modern and historic mining practices. The DEIR's Geology, Soils and Seismicity section indicates that mining operations resulted in the placement of fill material in Permanente Creek. (See DEIR, § 4.7.1.4, p. 4.7-19.) Any such activity, however, occurred prior to California's enactment of the Surface Mining and Reclamation Act of 1975 ("SMARA"). (Pub. Resources Code, § 2710, *et seq.*) The modern, post-SMARA operation of the Quarry has not included these activities. The record should also be clear that Lehigh, in establishing a new set of reclamation standards and activities for the Permanente Creek Reclamation Area ("PCRA"), has embraced a higher standard of responsibility for addressing the historical conditions in Permanente Creek than it is required to assume under SMARA.

Greenhouse Gas Emissions

Section 4.8.5

We comment to clarify that certain mitigation alternatives described under Mitigation Measure 4.8-1b may not be available. The DEIR lists "Replacement of on-road and off-road vehicles and construction equipment with lower GHG-emitting engines, such as electric or hybrid" as one of the options to reduce greenhouse gas emissions. (DEIR, § 4.8.5, p. 4.8-13.) To our knowledge, there currently are no electric or hybrid engines on the market for these classes of heavy equipment. However, because other mitigation alternatives remain available, the non-availability of electric or hybrid engines should not prevent Lehigh from meeting the mitigation requirements of this section.

Hydrology and Water Quality

Section 4.10.5 (Flood Risk)

Impact 4.10-4 indicates that the project will create a significant risk of downstream flooding from backfilling of the Quarry pit, which will increase runoff. This represents a very conservative approach because, even after backfilling, Permanente Creek flows at Lehigh's property line during the 100-year storm will remain below the 100-year flood level, and have not been shown likely to place downstream people or structures at significant increased risk of flooding.

The increase in runoff that will occur after backfilling is relatively small. After backfilling, the 100-year storm flow in the creek at Lehigh's downstream property line has been calculated at 1,075 cfs. (Attachment 1, Chang Consultants' December 16, 2011 letter, p. 2) This is 405 cfs less than the flood level predicted by the Federal Emergency Management Agency for the creek at this location, which is 1,480 cfs. As further context, the 100-year flows in the creek also will be less than pre-mining conditions because runoff will travel longer flow routes before entering the creek than under the original topography. (Attachment 2, Chang Consultants' February 14, 2012 letter, p. 2.)

Criteria (g) and (h) of the DEIR's significance criteria (listed in § 4.10.3, p. 4.10-27) reflect the importance of FEMA's 100-year flood level as the benchmark for assessing flood risk, and post-backfilling creek flows will remain below this level. Criterion (d) also lists a significant impact as one that would "substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite." (DEIR, § 4.10.3, p. 4.10-27.) The DEIR presents no evidence that the relatively small increase in post-reclamation flows will result in downstream flooding. To the contrary, because creek flows will remain below the 100-year flood benchmark, there is affirmative evidence that the project will not significantly increase downstream flooding risks.

Section 4.10.5 (Effects of Mining Versus Reclamation)

Impact 4.10-2 states that the interim water quality impacts of the project would be significant and unavoidable because ground-disturbing activities during the reclamation period could cause or contribute to runoff containing selenium. The analysis should more narrowly focus on the effects of reclamation activities that will result from project approval, independent from any ongoing mining operations, for the same reasons noted in the Aesthetics section above. Again, we understand that the DEIR has taken a conservative approach which tends to overstate the impacts of the project by including the effects of ongoing mining in the analysis. We believe this should be clearly stated on the record, and noted in the FEIR.

Section 4.10.5 (Feasibility of Treatment Plant)

The DEIR correctly concludes that any technologies having the capability of treating runoff to reduce selenium discharges to levels below the regulatory benchmarks cannot be feasibly implemented at the Quarry. Lehigh concurs that the application of treatment systems in

this case would be infeasible, based on all "economic, environmental, social, and technological factors." (Pub. Resources Code, § 21061.1.) The record should be clear on this point, and include the following:

Technological, Environmental and Legal Factors

- The interim water treatment technology described in the DEIR (anaerobic bioreactors) has not been demonstrated to treat the highly variable flows and water quality that is characteristic of stormwater at the Permanente Quarry, and achieve target concentrations of less than 5.0 µg/L for selenium on a consistent basis. Biological water treatments such as anaerobic bioreactors, while generally capable of this level of performance under favorable operational parameters, are sensitive to the consistency of the influent flow volume and water quality. Large variations in storm flows and changes in the concentrations of selenium, which characterize the Quarry site in this case, can upset the treatment system and affect reactor performance. The technology may not be adaptable under these site conditions to achieve the desired reductions in runoff-based selenium. (See Attachment 3, SES Technical Memorandum, February 14, 2012, p. 3.)

- The Quarry's layout, configuration and topography are not suited for an active water treatment system of this type. An anaerobic bioreactor system would consist of a central plant reactor facility which would receive stormwater runoff from all disturbed areas, which at the Quarry consist of over 600 acres spread across a distance of roughly two and a half miles. The system would require a series of large detention basins spaced in intervals in the EMSA, WMSA and main pit to collect stormwater from each area, together with new drainage features to route flows to each basin. The system also would require new infrastructure (likely a series of lift systems and pipes) to enable Lehigh to deliver stormwater runoff captured in the basins to a central reactor facility. There are few if any locations available for installing the basins and infrastructure necessary to support such a treatment system, in light of the steep terrain and the slope stability concerns that mark some areas. It also is doubtful that such a treatment system can be designed to accommodate the highly dynamic physical environment present here in which most operational areas of the Quarry will be substantially reconfigured under the reclamation plan amendment through excavation and backfilling. Design and construction simply may not be achievable for this site. (Attachment 3, p. 3-4.)

- The timing requirements for designing and building an active water treatment system negatively affect feasibility. Designing, permitting and building an $86 million treatment facility represents a major undertaking that would require months of study before it can be determined whether any design for this type of system can be successfully adapted to the Quarry considering the site configuration and evolving terrain. Assuming that a design can be achieved, it would take a period of years to design the system, obtain the necessary permits, and build the system even without encountering engineering obstacles and assuming that permits can be obtained in a timely manner. (Attachment 3, p. 4.) During this period, however, the interim need for water treatment will diminish, because by as early as 2025 the pit is scheduled to be backfilled and the long-term reclamation strategy for water quality (i.e., backfilling the main pit and covering disturbed areas) will be in full implementation. In short, the design and

construction of such a treatment system represents a lengthy, complex and extremely costly undertaking that if eventually built would have a relatively short operational life.

- An active water treatment system cannot be legally implemented at this time under the current orders of the agency primarily in charge of water quality. The Regional Water Quality Control Board (RWQCB) is the governmental agency responsible for regulating the Quarry's water discharges. The RWQCB has asserted jurisdiction over the Quarry and issued orders requiring Lehigh to investigate the source of selenium and develop a RWQCB-approved solution for managing water quality. Because the RWQCB's investigation and compliance process remains pending, and the RWQCB has not approved the size, manner, cost and functionality of water treatment using anaerobic bioreactor technology and may be nowhere near doing so at this time, this proposed mitigation measure is currently in conflict with the authority and orders of the RWQCB.

- An active water treatment system represents potentially large environmental impacts which cannot yet be analyzed. The potential for sedimentation and runoff is an example. In this regard, a treatment system would require a series of large basins, accompanied by upslope grading to route flows to basins, and infrastructure to deliver runoff to a central reactor facility. These activities mean a large amount of grading and earth movement, which exacerbates water quality concerns at a site that is already concerned over sedimentation and runoff. Other potential impacts relate to hazardous materials and the electrical demands of a treatment system. These potential impacts underscore that an active water treatment system is itself a major project that is capable of generating its own set of distinct environmental impacts. These impacts cannot be ascertained, however, until the system is actually designed.

Economic Factors

- The costs of an anaerobic bioreactor system treatment system, as noted in the DEIR, are exceedingly high. CH2M Hill provided the County with an estimate, contained in the DEIR, that it would cost $86 million to install a water treatment system, and an additional $2.8 million in annual operation costs. This means a unit cost of selenium removal of approximately $116,000 per pound of selenium (assuming a $113 million present value of the system, 17 years of treatment operations, and 40 lb/year of selenium removed). (Attachment 3, p. 4.) Also, although not mentioned in the DEIR, additional costs would likely be required to fund the environmental review needed to obtain the permits for the system, as well as to dismantle and remove the system and related infrastructure at the time of final reclamation.

- Against these costs, the treatment system would be operational only for a relatively short time. The DEIR identified the treatment system as a possible interim measure to mitigate pre-reclamation water quality impacts. The need for a system would therefore diminish and eventually be eliminated as backfilling and reclamation progresses. Backfilling is scheduled to be complete as early as 2025 under the current project schedule. (See Amendment, Table 2, Phasing Timeline.) Considering the time requirements of design and construction, and current schedule for backfilling and reclamation, the treatment system (as noted, a $113 million present value) could be rendered unnecessary in the time of less than 20 years after it becomes operational.

Conclusion

Lehigh, again, appreciates the Planning Department's hard work in preparing the Draft Environmental Impact Report. We will be prepared to answer questions and concerns as needed during the Planning Commission's final hearing on the Amendment.

Very truly yours,

Marvin Howell
Director of Land Use and Planning

cc: Kari Saragusa, President, Lehigh Hanson
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December 16, 2011

Mr. Marvin Howell
Hanson Aggregates Pacific Southwest, Inc.
P.O. Box 639069
San Diego, CA 92163-9069

Subject: Permanente Quarry Reclamation Plan – Permanente Creek Impacts

Dear Mr. Howell:

This letter addresses whether post-reclamation flows from the Quarry pit at the Permanente Quarry will increase flood hazards in Permanente Creek downstream of Lehigh's property. The County of Santa Clara has requested additional information on whether final reclamation, including backfilling the existing Quarry pit that currently functions as a retention basin, will increase peak 100-year storm flows in Permanente Creek to levels that exceed the peak 100-year flow rate calculated by the Federal Emergency Management Agency (FEMA).

FEMA's May 18, 2009, *Flood Insurance Study, Santa Clara County, California* (FIS), provides 100-year flow rates and tributary drainage areas at various locations along Permanente Creek. The attached Table 6 is from the FIS and shows that the 100-year flow rate and drainage area downstream of Permanente Road are 1,480 cubic feet per second and 3.40 square miles, respectively.

To compare post-reclamation flow rates against the FEMA 100-year flows, the drainage basin boundary was defined using USGS quadrangle mapping that would have existed in the late 1970's, when the FEMA analysis was performed. The attached exhibit entitled "Reconstruction of FEMA Drainage Basin" contains a delineation based on the 1971 Cupertino USGS map and 1968 Mindego Hill USGS map. The Cupertino map covers the easterly portion of the area and the Mindego Hill map covers the westerly portion. The downstream-most point corresponds to the "Downstream of Permanente Road" location from Table 6. The delineated drainage basin matches the FEMA area of 3.40 square miles and shows that the quarry pit was included within the drainage basin.

Second, a hydrologic analysis was conducted to determine the post-reclamation 100-year storm flows. The analysis follows the unit hydrograph method from the Santa Clara County *Drainage Manual.* The following describes the input parameters. The backup data and results are attached.

- Rainfall Pattern: The 24-hour, 5-minute rainfall pattern given in Appendix D of the *Drainage Manual* was used. The 100-year, 24-hour precipitation value was determined using the Return Period-Duration-Specific (TDS) equation and is 7.63 inches.

- Drainage area: The post-reclamation drainage basin was delineated from the base topography prepared for the site (flown in 2007 and 2008 with field adjustments in 2009), the proposed Reclamation Plan Amendment grading representing the final site configuration, and the most recent USGS quadrangle mapping.

- Hydrologic soil groups: The hydrologic soil group was determined from "Figure 1, Soil Texture and Mean Annual Precipitation Depths for the Santa Clara Basin" in SCVURPPP's May 2004, *C.3. Stormwater Handbook.* The soil type at the site is entirely within group B.

- Curve Number: The curve number was based on the shrub land category (CN = 62 for poor cover, soil group B, and AMC II). A poor cover condition was assumed, which will generate conservative (higher flow rate) results. The CN was adjusted to AMC II-1/2 (CN = 71) in accordance with the *Drainage Manual*. The initial abstraction was equal to 0.2[(1000/CN) – 10] inches (or 0.82 for the final condition).

- SCS Lag: The SCS lag was calculated using the formula in the *Drainage Manual*. The flow lengths, elevations, effective slope, and the centroid were obtained from the topographic mapping. The watershed roughness was assigned a value of 0.070 to represent a drainage basin with minimal urbanization. The duration of the unit hydrograph was calculated based on 1/4 the lag time.

This input data was entered into a HEC-1 model (attached), which provided a 100-year flow rate of 1,075 cfs. In comparison, the FEMA 100-year flow rate is 1,480 cfs.

The results of the analyses show that FEMA's existing floodplain analyses includes the footprint of the Quarry pit within the drainage basin, but did not assume any retention from the Quarry pit. A post-reclamation hydrologic analysis based on the Santa Clara County criteria shows, accordingly, that the 100-year flow rate from the site will not exceed the FEMA flow rate. Therefore, the Quarry pit backfilling will not adversely increase the 100-year flow rates nor floodplain from FEMA. These results are corroborated by information provided by Jim Schaaf from Schaaf & Wheeler, who helped prepare the existing FEMA analyses. He indicated that the FIS analyses were based on the USGS mapping. It is likely that the FEMA study would have ignored storage effects from the pit. When performing large-scale hydrologic analyses using USGS mapping, it would not be typical to include storage from something like the quarry, particularly given the relatively small size in comparison the overall watershed.

Please let me know if you have questions.

Sincerely,

Wayne W. Chang, M.S., P.E.

Enclosures

Table 6 – Summary of Discharges, continued

Flooding Source and Location	Drainage Area (sq mi)	Peak Discharges (cfs) 10-Percent Annual Chance	2-Percent Annual Chance	1-Percent Annual Chance	0.2-Percent Annual Chance
PERMANENTE CREEK, continued					
Downstream of Miramonte Avenue	8.9[6]	370	760	890	1,030
Downstream of Permanente Road	3.40	760	1,260	1,480	1,960
Downstream of Portland Avenue	8.10	1,340	2,050	2,050	2,050
Downstream of U.S. Highway 101	15.80[2]	1,350	1,400[1]	1,400[1]	1,400[1]
Upstream of confluence with Hale Creek	9.20[2]	440[3]	840[3]	980[3]	1,110[3]
Upstream of Interstate Highway 280	7.60	1,250	2,160	2,570	3,480
Upstream of Portland Avenue	8.10	1,340	2,220	2,700	3,440
Upstream of Tributary, 700 feet upstream of Interstate Highway 280	3.90	860	1,460	1,720	2,310
Upstream of U.S. Highway 101	15.80[2]	1,350	2,250[4]	4,000[4]	7,100[4]
PERMANENTE DIVERSION					
At confluence with Stevens Creek	8.90[5]	1,230	1,280	1,390	1,550
At Grant Road	8.60	1,200	1,240[1]	1,340[1]	1,490[1]
Downstream of Carmel Terrace	8.20	1,075[1]	1,075[1]	1,075[1]	1,075[1]
Downstream of Diversion Structure	8.10	1,190	1,610	1,610	1,610
PROSPECT CREEK					
Upstream of confluence with Calabazas Creek	1.40	[6]	[6]	635	[6]
PURISSIMA CREEK					
At corporate limits	1.25	147	320	402	588
At Interstate Highway 280	0.30	37	82	104	153
At Viscaino Road	0.70	88	182	227	320
SAN FRANCISQUITO CREEK					
At Alma Street	40.60	4,350	7,050	8,280	9,850[1]
At U.S. Geological Survey gage	37.10	4,050	6,700	7,860	10,500
Downstream of Chaucer Road	41.60	4,350	6,000[1]	6,000[1]	6,200[1]

[1]Decrease in flow rate based on capacity restrictions

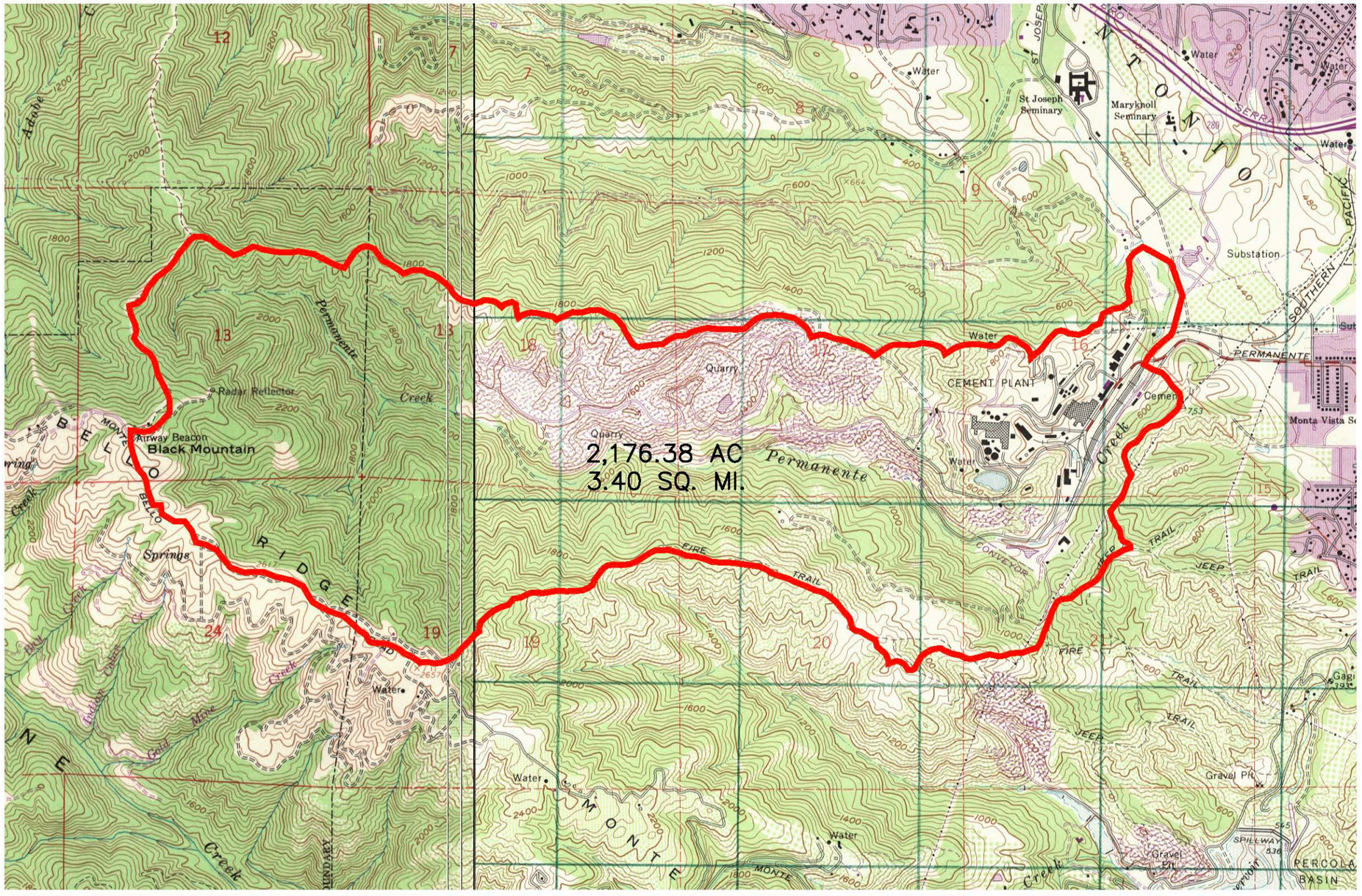
[2]Decrease in flow rate due to storage along channel

[3]High flows affected by Permanente Diversion

[4]Flow influenced by spill from adjoining watercourse

[5]Low flows continue down Permanente Creek

[6]Data not available



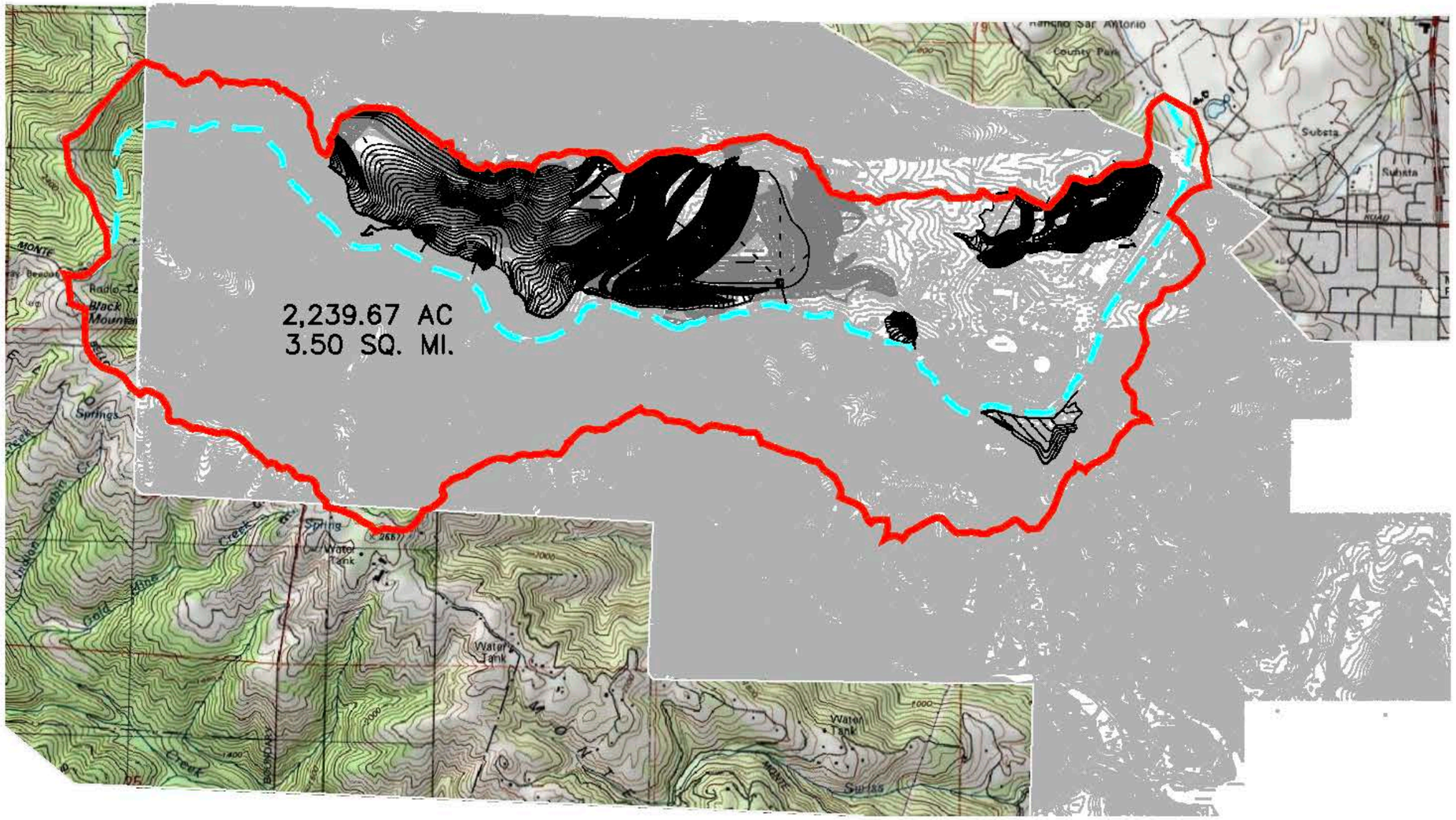
GRAPHIC SCALE

0 2000

1 INCH = 2,000 FEET

NOTE:
PERMANENTE CREEK WATERSHED BOUNDARY WAS DELINEATED USING 1968 MINDEGO HILL USGS MAP AND 1971 CUPERTINO USGS MAP. THE WATERSHED AREA HEREON MATCHES THE FEMA WATERSHED AREA. THEREFORE, THE DELINEATION REVEALS THAT THE QUARRY FOOTPRINT WAS INCLUDED IN THE LATE 1970'S FEMA FLOODPLAIN STUDY.

RECONSTRUCTION OF FEMA DRAINAGE BASIN



GRAPHIC SCALE

0 2000

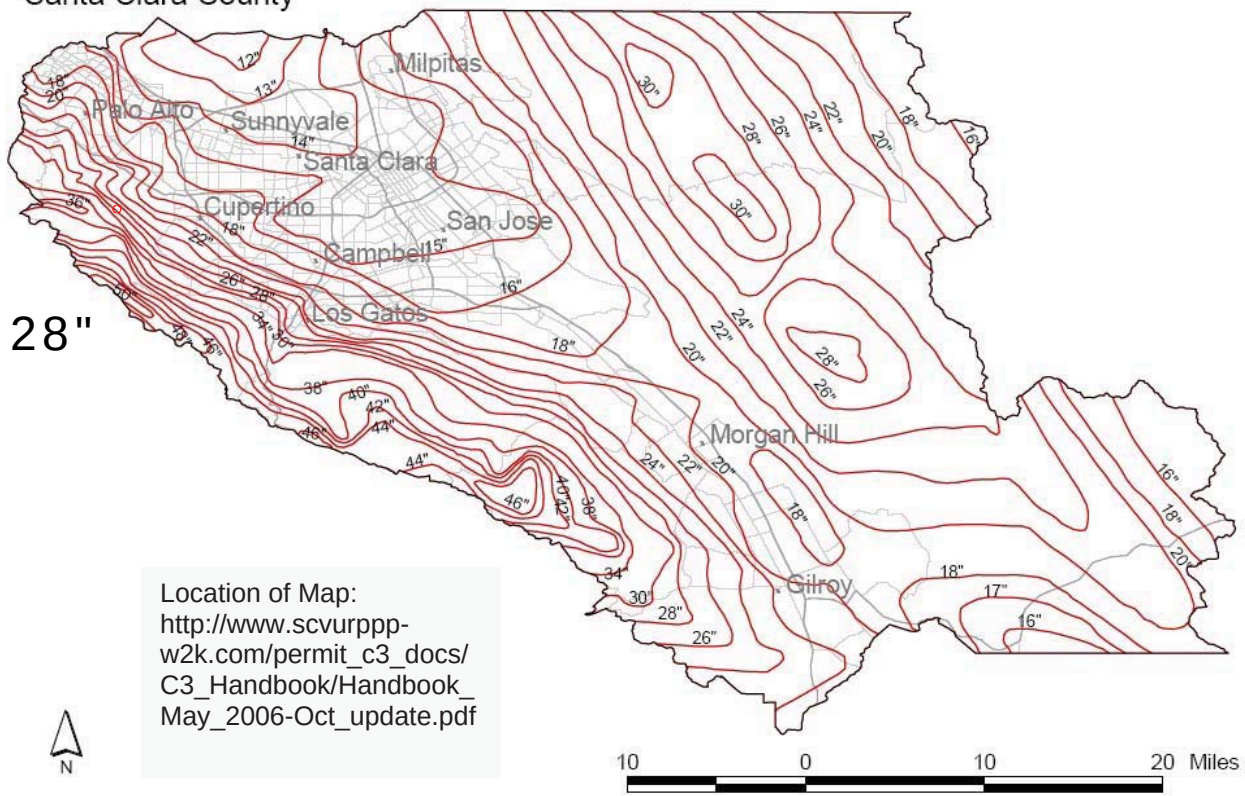
1 INCH = 2,000 FEET

NOTE:
PERMANENTE CREEK WATERSHED BOUNDARY WAS DELINEATED BASED ON THE POST-RECLAMATION CONDITIONS, PROJECT'S TOPOGRAPHIC MAPPING, AND CURRENT USGS MAPS. THE BLUE LINE IS THE PERMANENTE CREEK FLOW LINE.

POST-PROJECT DRAINAGE BASIN

Figure A-2
Mean Annual Precipitation Map
Santa Clara County

PRECIP = 28"



SOURCE: Santa Clara Valley Water District, Mean Annual Precipitation Map, San Francisco & Monterey Bay Region, 1998

Figure A-2: Mean Annual Precipitation, Santa Clara County

100-Year Return Period Rainfall

Duration	A	B	MAP, in	x, in	I, in/hr
5	0.269993	0.003580	28	0.3702	4.443
10	0.315263	0.007312	28	0.5200	3.120
15	0.421360	0.006957	28	0.6162	2.465
30	0.553934	0.009857	28	0.8299	1.660
60	0.626608	0.019201	28	1.1642	1.164
120	0.732944	0.036193	28	1.7463	0.873
180	0.816471	0.051981	28	2.2719	0.757
360	0.776677	0.101053	28	3.6062	0.601
24-hour	0.814046	0.243391	28	7.6290	for UH calc

Initial Abstraction

0.82 for CN 71

Lag

N	L, mi	Lc, mi	S, ft/mi	D, hours	Lag, hours
0.07	5.14	2.53	465.87	0.27	1.06

D was selected to be 1/4 basin lag

Table E-1: Curve Numbers for AMC II

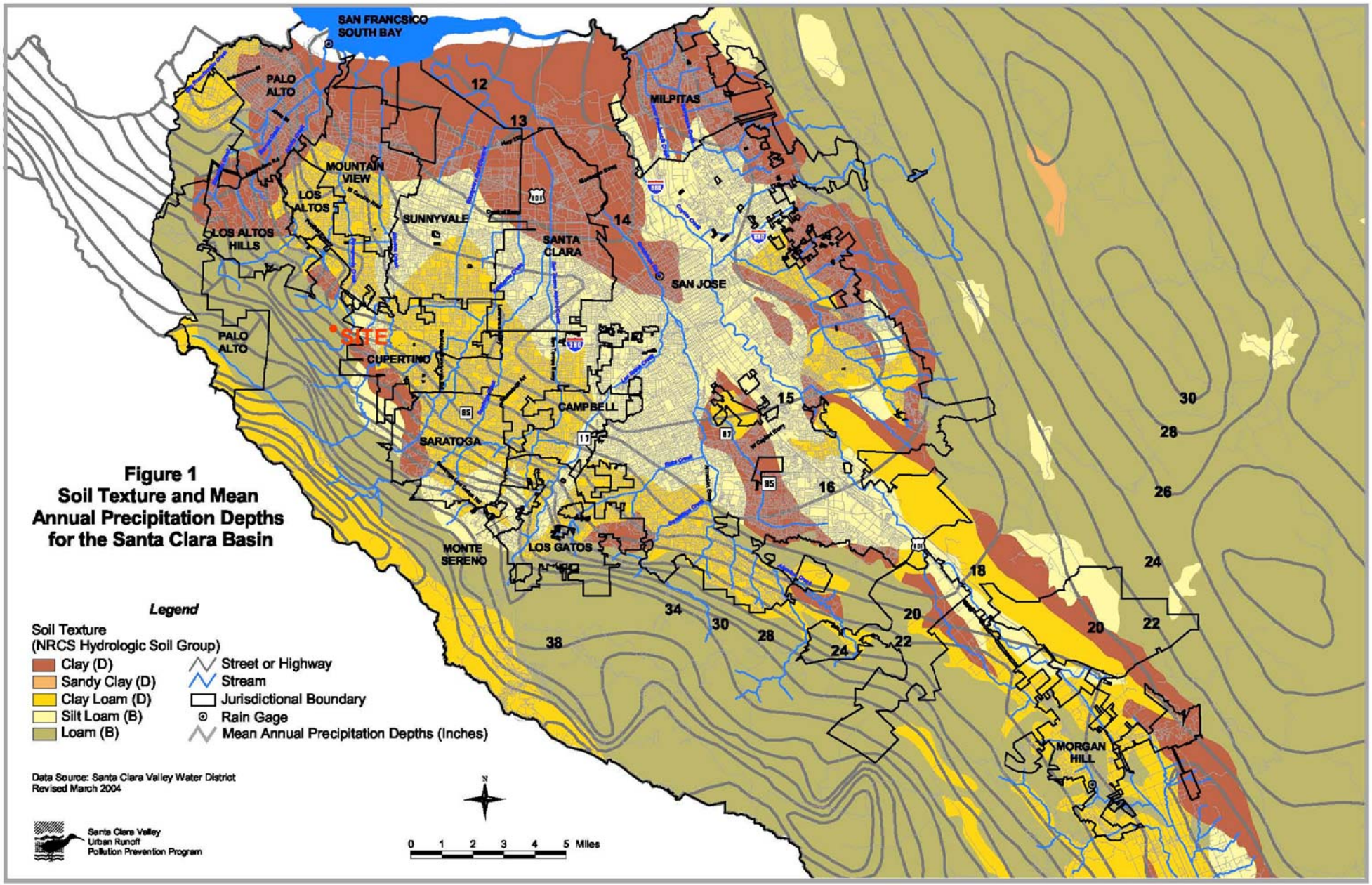
Land Use Type	Hydrologic Condition	Hydrologic Soil Group A	B	C	D
Open Water (100% Impervious)	good				
	fair				
	poor				
Low Density Residential (25% Impervious)	good	35	48	66	70
	fair	44	58	71	74
	poor	64	68	78	79
High Density Residential (50% Impervious)	good	35	48	65	70
	fair	44	58	71	74
	poor	64	68	78	79
Commercial/Industrial (80% Impervious)	good	35	48	65	70
	fair	44	58	71	74
	poor	64	68	78	79
Bare Rock/Sand/Clay (Imperviousness Varies)					
Quarries/Gravel Pits (0 % Impervious)	good	0	0	0	0
	fair	0	0	0	0
	poor	0	0	0	0
Deciduous Forest (0% Impervious)	good	27	30	41	48
	fair	35	48	57	63
	poor	48	66	74	79
Evergreen Forest (0% Impervious)	good	37	43	62	70
	fair	45	57	69	80
	poor	58	71	85	90
Mixed Forest	good	32	36	51	59
	fair	40	52	63	72
	poor	53	68	80	85
Shrub Land (0% Impervious)	good	27	43	60	68
	fair	35	51	65	72
	poor	48	62	72	78
Orchards (1% Impervious)	good	39	52	66	71
	fair	43	65	76	82
	poor	57	73	82	86
Vineyards (1% Impervious)	good	64	70	77	80
	fair	67	75	82	85
	poor	71	80	87	90
Grassland (0% Impervious)	good	38	50	69	76
	fair	48	60	74	80
	poor	58	70	80	84
Pasture/Hay (0% Impervious)	good	34	50	69	76
	fair	44	60	74	80
	poor	64	70	80	84
Row Crops (1% Impervious)	good	64	70	77	80
	fair	67	75	82	85
	poor	71	80	87	90
Small Grains (0% Impervious)	good	48	58	70	74
	fair	49	59	71	75
	poor	50	60	71	75
Fallow (1% Impervious)	good	64	68	78	79
	fair	70	77	84	86
	poor	77	86	91	94
Urban Recreational (10% Impervious)	good	34	48	66	70
	fair	44	58	71	74
	poor	64	64	78	79

Assume poor cover to be conservative (i.e., higher runoff)

Table E-2: Conversion of AMC II Curve Numbers to Other AMC Values

AMC II	AMC I	AMC III	AMC II-1/4	AMC II-1/2	AMC II	AMC I	AMC III	AMC II-1/4	AMC II-1/2
100	100	100	100	100	61	41	78	65.5	70
99	97	100	99.5	100	60	40	78	64.5	69
98	94	99	98.5	99	59	39	77	63.5	68
97	91	99	97.5	98	58	38	76	62.5	67
96	89	99	97	98	57	37	75	61.5	66
95	87	98	96	97	56	36	75	61	66
94	85	98	95	96	55	35	74	60	65
93	83	98	94.5	96	54	34	73	59	64
92	81	97	93.5	95	53	33	72	58	63
91	80	97	92.5	94	52	32	71	57	62
90	78	96	91.5	93	51	31	70	56	61
89	76	96	91	93	50	31	70	55	60
88	75	95	90	92	49	30	69	54	59
87	73	95	89	91	48	29	68	53	58
86	72	94	88	90	47	28	67	52	57
85	70	94	87.5	90	46	27	66	51	56
84	68	93	86.5	89	45	26	65	50	55
83	67	93	85.5	88	44	25	64	49	54
82	66	92	84.5	87	43	25	63	48	53
81	64	92	84	87	42	24	62	47	52
80	63	91	83	86	41	23	61	46	51
79	62	91	82	85	40	22	60	45	50
78	60	90	81	84	39	21	59	44	49
77	59	89	80	83	38	21	58	43	48
76	58	89	79.5	83	37	20	57	42	47
75	57	88	78.5	82	36	19	56	41	46
74	55	88	77.5	81	35	18	55	40	45
73	54	87	76.5	80	34	18	54	39	44
72	53	86	75.5	79	33	17	53	38	43
71	52	86	75	79	32	16	52	37	42
70	51	85	74	78	31	16	51	36	41
69	50	84	73	77	30	15	50	35	40
68	48	84	72	76	25	12	43	29.5	34
67	47	83	71	75	20	9	37	24.5	29
66	46	82	70	74	15	6	30	19	23
65	45	82	69.5	74	10	4	22	13	16
64	44	81	68.5	73	5	2	13	7	9
63	43	80	67.5	72	0	0	0	0	0

For AMC II = 62, AMC II-1/2 = 71


SAN FRANCISCO SOUTH BAY
PALO ALTO
MOUNTAIN VIEW
LOS ALTOS
LOS ALTOS HILLS
SUNNYVALE
SANTA CLARA
MILPITAS
SAN JOSE
SITE
CUPERTINO
CAMPBELL
SARATOGA
LOS GATOS
MONTE SERENO
MORGAN HILL
12
13
14
15
16
18
20
22
24
26
28
30
34
38
Figure 1
Soil Texture and Mean Annual Precipitation Depths for the Santa Clara Basin
Legend
Soil Texture
(NRCS Hydrologic Soil Group)
Clay (D)
Sandy Clay (D)
Clay Loam (D)
Silt Loam (B)
Loam (B)
Street or Highway
Stream
Jurisdictional Boundary
Rain Gage
Mean Annual Precipitation Depths (Inches)
Data Source: Santa Clara Valley Water District
Revised March 2004
Santa Clara Valley
Urban Runoff
Pollution Prevention Program
N
0 1 2 3 4 5 Miles

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*               JUN   1998             *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   15DEC11  TIME  22:36:22  *
*                                      *
****************************************
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```
************************************
*                                  *
*    U.S. ARMY CORPS OF ENGINEERS  *
*    HYDROLOGIC ENGINEERING CENTER *
*          609 SECOND STREET       *
*       DAVIS, CALIFORNIA 95616    *
*           (916) 756-1104         *
*                                  *
************************************
```


```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
         LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

                       *DIAGRAM
*** FREE ***
              1        ID   PERM CREEK
              2        ID   FEMA CONDITIONS
              3        ID   100-YEAR FLOW RATE
              4        ID   MEAN ANNUAL PRECIPITATION = 28"
              5        ID   SOIL TYPE B
              6        ID   COUNTY OF SANTA CLARA HYDROGRAPH METHOD
              7        ID   THIS ANALYSIS IS BASED ON POST-PROJECT CONDITIONS
              8        IT       5       0       0     300
              9        IO       5       2

             10        KK   BASIN
             11        IN       5
             12        PB    7.63
             13        PI  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015   0.001
             14        PI  0.0015  0.0015  0.0014  0.0014  0.0014  0.0014  0.0014  0.0014  0.0014   0.001
             15        PI  0.0014  0.0014  0.0014  0.0014  0.0030  0.0030  0.0030  0.0030  0.0030   0.003
             16        PI  0.0030  0.0030  0.0030  0.0030  0.0030  0.0030  0.0062  0.0062  0.0062   0.006
             17        PI  0.0062  0.0062  0.0062  0.0062  0.0062  0.0062  0.0062  0.0062  0.0055   0.005
             18        PI  0.0055  0.0055  0.0055  0.0055  0.0055  0.0055  0.0055  0.0055  0.0055   0.005
             19        PI  0.0053  0.0053  0.0053  0.0053  0.0053  0.0053  0.0053  0.0053  0.0053   0.005
             20        PI  0.0053  0.0053  0.0345  0.0345  0.0103  0.0103  0.0103  0.0103  0.0094   0.009
             21        PI  0.0094  0.0094  0.0094  0.0094  0.0053  0.0053  0.0053  0.0053  0.0053   0.005
             22        PI  0.0053  0.0053  0.0053  0.0053  0.0053  0.0053  0.0033  0.0033  0.0033   0.003
             23        PI  0.0033  0.0033  0.0033  0.0033  0.0033  0.0033  0.0033  0.0033  0.0025   0.002
             24        PI  0.0025  0.0025  0.0025  0.0025  0.0025  0.0025  0.0025  0.0025  0.0025   0.002
             25        PI  0.0034  0.0034  0.0034  0.0034  0.0034  0.0034  0.0034  0.0034  0.0034   0.003
             26        PI  0.0034  0.0034  0.0041  0.0041  0.0041  0.0041  0.0041  0.0041  0.0041   0.004
             27        PI  0.0041  0.0041  0.0041  0.0041  0.0031  0.0031  0.0031  0.0031  0.0031   0.003
             28        PI  0.0031  0.0031  0.0031  0.0031  0.0031  0.0031  0.0032  0.0032  0.0032   0.003
             29        PI  0.0032  0.0032  0.0032  0.0032  0.0032  0.0032  0.0032  0.0032  0.0023   0.002
             30        PI  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023   0.002
             31        PI  0.0026  0.0026  0.0026  0.0026  0.0026  0.0026  0.0026  0.0026  0.0026   0.002
             32        PI  0.0026  0.0026  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023   0.002
             33        PI  0.0023  0.0023  0.0023  0.0023  0.0013  0.0013  0.0013  0.0013  0.0013   0.001
             34        PI  0.0013  0.0013  0.0013  0.0013  0.0013  0.0013  0.0017  0.0017  0.0017   0.001
             35        PI  0.0017  0.0017  0.0017  0.0017  0.0017  0.0017  0.0017  0.0017  0.0018   0.001
             36        PI  0.0018  0.0018  0.0018  0.0018  0.0018  0.0018  0.0018  0.0018  0.0018   0.001
             37        PI  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015   0.001
             38        PI  0.0015  0.0015  0.0037  0.0037  0.0037  0.0037  0.0037  0.0037  0.0037   0.003
             39        PI  0.0037  0.0037  0.0037  0.0037  0.0030  0.0030  0.0030  0.0030  0.0030   0.003
             40        PI  0.0030  0.0030  0.0030  0.0030  0.0030  0.0030  0.0015  0.0015  0.0015   0.001
             41        PI  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015
             42        BA    3.50
             43        LS    0.82      71
             44        UD    1.06
             45        ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT
LINE (V) ROUTING (---->) DIVERSION OR PUMP FLOW

NO. (.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW

10 BASIN

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*               JUN   1998              *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   15DEC11  TIME  22:36:22   *
*                                       *
*****************************************
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*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
```

```
                     PERM CREEK
                     FEMA CONDITIONS
                     100-YEAR FLOW RATE
                     MEAN ANNUAL PRECIPITATION = 28"
                     SOIL TYPE B
                     COUNTY OF SANTA CLARA HYDROGRAPH METHOD
                     THIS ANALYSIS IS BASED ON POST-PROJECT CONDITIONS

  9 IO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          2  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

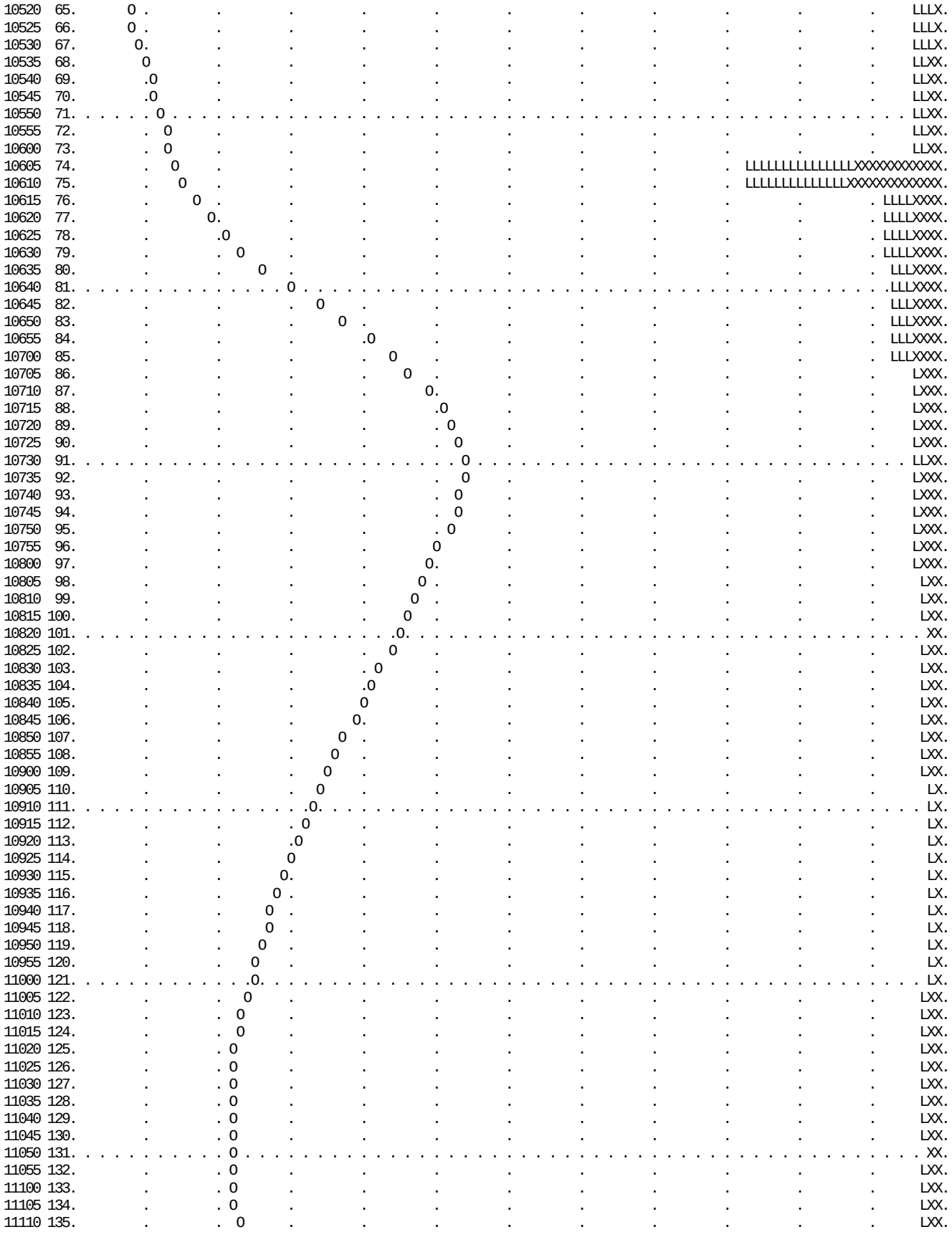
    IT          HYDROGRAPH TIME DATA
                      NMIN          5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2    0  ENDING DATE
                    NDTIME        0055  ENDING TIME
                    ICENT           19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA         SQUARE MILES
               PRECIPITATION DEPTH   INCHES
               LENGTH, ELEVATION     FEET
               FLOW                  CUBIC FEET PER SECOND
               STORAGE VOLUME        ACRE-FEET
               SURFACE AREA          ACRES
               TEMPERATURE           DEGREES FAHRENHEIT
```

```
                                    STATION    BASIN

                  (O) OUTFLOW
         0.      200.      400.      600.      800.     1000.     1200.        0.        0.        0.        0.        0.        0.
                                                                                                   (L) PRECIP,   (X) EXCESS
        .0        .0        .0        .0        .0        .0        .0        .0        .0        .3        .2        .1        .0
DAHRMN PER
10000  10---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
10005  20         .         .         .         .         .         .         .         .         .         .         .        L.
10010  30         .         .         .         .         .         .         .         .         .         .         .        L.
10015  40         .         .         .         .         .         .         .         .         .         .         .        L.
10020  50         .         .         .         .         .         .         .         .         .         .         .        L.
10025  60         .         .         .         .         .         .         .         .         .         .         .        L.
10030  70         .         .         .         .         .         .         .         .         .         .         .        L.
10035  80         .         .         .         .         .         .         .         .         .         .         .        L.
10040  90         .         .         .         .         .         .         .         .         .         .         .        L.
10045 100         .         .         .         .         .         .         .         .         .         .         .        L.
10050 110 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .L.
10055 120         .         .         .         .         .         .         .         .         .         .         .        L.
10100 130         .         .         .         .         .         .         .         .         .         .         .        L.
10105 140         .         .         .         .         .         .         .         .         .         .         .        L.
10110 150         .         .         .         .         .         .         .         .         .         .         .        L.
10115 160         .         .         .         .         .         .         .         .         .         .         .        L.
10120 170         .         .         .         .         .         .         .         .         .         .         .        L.
10125 180         .         .         .         .         .         .         .         .         .         .         .        L.
10130 190         .         .         .         .         .         .         .         .         .         .         .        L.
10135 200         .         .         .         .         .         .         .         .         .         .         .        L.
10140 210 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .L.
10145 220         .         .         .         .         .         .         .         .         .         .         .        L.
10150 230         .         .         .         .         .         .         .         .         .         .         .        L.
10155 240         .         .         .         .         .         .         .         .         .         .         .        L.
10200 250         .         .         .         .         .         .         .         .         .         .         .        L.
10205 260         .         .         .         .         .         .         .         .         .         .         .       LL.
10210 270         .         .         .         .         .         .         .         .         .         .         .       LL.
10215 280         .         .         .         .         .         .         .         .         .         .         .       LL.
10220 290         .         .         .         .         .         .         .         .         .         .         .       LL.
10225 300         .         .         .         .         .         .         .         .         .         .         .       LL.
10230 310 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . LL.
10235 320         .         .         .         .         .         .         .         .         .         .         .       LL.
10240 330         .         .         .         .         .         .         .         .         .         .         .       LL.
10245 340         .         .         .         .         .         .         .         .         .         .         .       LL.
10250 350         .         .         .         .         .         .         .         .         .         .         .       LL.
10255 360         .         .         .         .         .         .         .         .         .         .         .       LL.
10300 370         .         .         .         .         .         .         .         .         .         .         .       LL.
10305 380         .         .         .         .         .         .         .         .         .         .         .    LLLLL.
10310 390         .         .         .         .         .         .         .         .         .         .         .    LLLLL.
10315 400         .         .         .         .         .         .         .         .         .         .         .    LLLLL.
10320 410 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .LLLLL.
10325 420         .         .         .         .         .         .         .         .         .         .         .    LLLLL.
10330 430         .         .         .         .         .         .         .         .         .         .         .    LLLLL.
10335 440         .         .         .         .         .         .         .         .         .         .         .    LLLLL.
10340 450         .         .         .         .         .         .         .         .         .         .         .    LLLLL.
10345 460         .         .         .         .         .         .         .         .         .         .         .    LLLLL.
10350 470         .         .         .         .         .         .         .         .         .         .         .    LLLLL.
10355 480         .         .         .         .         .         .         .         .         .         .         .    LLLLL.
10400 490         .         .         .         .         .         .         .         .         .         .         .    LLLLX.
10405 500         .         .         .         .         .         .         .         .         .         .         .     LLLX.
10410 510 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . LLLX.
10415 52.O        .         .         .         .         .         .         .         .         .         .         .     LLLX.
10420 53.O        .         .         .         .         .         .         .         .         .         .         .     LLLX.
10425 54.O        .         .         .         .         .         .         .         .         .         .         .     LLLX.
10430 55. O       .         .         .         .         .         .         .         .         .         .         .     LLLX.
10435 56. O       .         .         .         .         .         .         .         .         .         .         .     LLLX.
10440 57.  O      .         .         .         .         .         .         .         .         .         .         .     LLLX.
10445 58.  O      .         .         .         .         .         .         .         .         .         .         .     LLLX.
10450 59.   O     .         .         .         .         .         .         .         .         .         .         .     LLLX.
10455 60.   O     .         .         .         .         .         .         .         .         .         .         .     LLLX.
10500 61. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . LLLX.
10505 62.     O   .         .         .         .         .         .         .         .         .         .         .     LLLX.
10510 63.     O   .         .         .         .         .         .         .         .         .         .         .     LLLX.
10515 64.      O  .         .         .         .         .         .         .         .         .         .         .     LLLX.
```



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11115 136.         .         .  O      .         .         .         .         .         .         .         .         .      LXX.
11120 137.         .         .  O      .         .         .         .         .         .         .         .         .      LXX.
11125 138.         .         .   O     .         .         .         .         .         .         .         .         .      LXX.
11130 139.         .         .   O     .         .         .         .         .         .         .         .         .      LXX.
11135 140.         .         .   O     .         .         .         .         .         .         .         .         .      LXX.
11140 141. . . . . . . . . . . . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .LXX.
11145 142.         .         .    O    .         .         .         .         .         .         .         .         .      LXX.
11150 143.         .         .     O   .         .         .         .         .         .         .         .         .      LXX.
11155 144.         .         .     O   .         .         .         .         .         .         .         .         .      LXX.
11200 145.         .         .      O  .         .         .         .         .         .         .         .         .      LXX.
11205 146.         .         .      O  .         .         .         .         .         .         .         .         .       XX.
11210 147.         .         .       O .         .         .         .         .         .         .         .         .       XX.
11215 148.         .         .       O .         .         .         .         .         .         .         .         .       XX.
11220 149.         .         .       O .         .         .         .         .         .         .         .         .       XX.
11225 150.         .         .        O.         .         .         .         .         .         .         .         .       XX.
11230 151. . . . . . . . . . . . . . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . XX.
11235 152.         .         .        O.         .         .         .         .         .         .         .         .       XX.
11240 153.         .         .        O.         .         .         .         .         .         .         .         .       XX.
11245 154.         .         .        O.         .         .         .         .         .         .         .         .       XX.
11250 155.         .         .        O.         .         .         .         .         .         .         .         .       XX.
11255 156.         .         .        O.         .         .         .         .         .         .         .         .       XX.
11300 157.         .         .       O .         .         .         .         .         .         .         .         .       XX.
11305 158.         .         .       O .         .         .         .         .         .         .         .         .       XX.
11310 159.         .         .       O .         .         .         .         .         .         .         .         .       XX.
11315 160.         .         .       O .         .         .         .         .         .         .         .         .       XX.
11320 161. . . . . . . . . . . . . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . XX.
11325 162.         .         .      O  .         .         .         .         .         .         .         .         .       XX.
11330 163.         .         .      O  .         .         .         .         .         .         .         .         .       XX.
11335 164.         .         .      O  .         .         .         .         .         .         .         .         .       XX.
11340 165.         .         .     O   .         .         .         .         .         .         .         .         .       XX.
11345 166.         .         .     O   .         .         .         .         .         .         .         .         .       XX.
11350 167.         .         .     O   .         .         .         .         .         .         .         .         .       XX.
11355 168.         .         .     O   .         .         .         .         .         .         .         .         .       XX.
11400 169.         .         .     O   .         .         .         .         .         .         .         .         .       XX.
11405 170.         .         .     O   .         .         .         .         .         .         .         .         .       LX.
11410 171. . . . . . . . . . . . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . LX.
11415 172.         .         .     O   .         .         .         .         .         .         .         .         .       LX.
11420 173.         .         .     O   .         .         .         .         .         .         .         .         .       LX.
11425 174.         .         .     O   .         .         .         .         .         .         .         .         .       LX.
11430 175.         .         .     O   .         .         .         .         .         .         .         .         .       LX.
11435 176.         .         .    O    .         .         .         .         .         .         .         .         .       LX.
11440 177.         .         .    O    .         .         .         .         .         .         .         .         .       LX.
11445 178.         .         .    O    .         .         .         .         .         .         .         .         .       LX.
11450 179.         .         .   O     .         .         .         .         .         .         .         .         .       LX.
11455 180.         .         .   O     .         .         .         .         .         .         .         .         .       LX.
11500 181. . . . . . . . . . . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . LX.
11505 182.         .         .  O      .         .         .         .         .         .         .         .         .       XX.
11510 183.         .         .  O      .         .         .         .         .         .         .         .         .       XX.
11515 184.         .         . O       .         .         .         .         .         .         .         .         .       XX.
11520 185.         .         . O       .         .         .         .         .         .         .         .         .       XX.
11525 186.         .         . O       .         .         .         .         .         .         .         .         .       XX.
11530 187.         .         . O       .         .         .         .         .         .         .         .         .       XX.
11535 188.         .         .O        .         .         .         .         .         .         .         .         .       XX.
11540 189.         .         .O        .         .         .         .         .         .         .         .         .       XX.
11545 190.         .         .O        .         .         .         .         .         .         .         .         .       XX.
11550 191. . . . . . . . . . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . LX.
11555 192.         .         .O        .         .         .         .         .         .         .         .         .       XX.
11600 193.         .         .O        .         .         .         .         .         .         .         .         .       XX.
11605 194.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11610 195.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11615 196.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11620 197.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11625 198.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11630 199.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11635 200.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11640 201. . . . . . . . . . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . LX.
11645 202.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11650 203.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11655 204.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11700 205.         .         .O        .         .         .         .         .         .         .         .         .       LX.
11705 206.         .         O         .         .         .         .         .         .         .         .         .        X.
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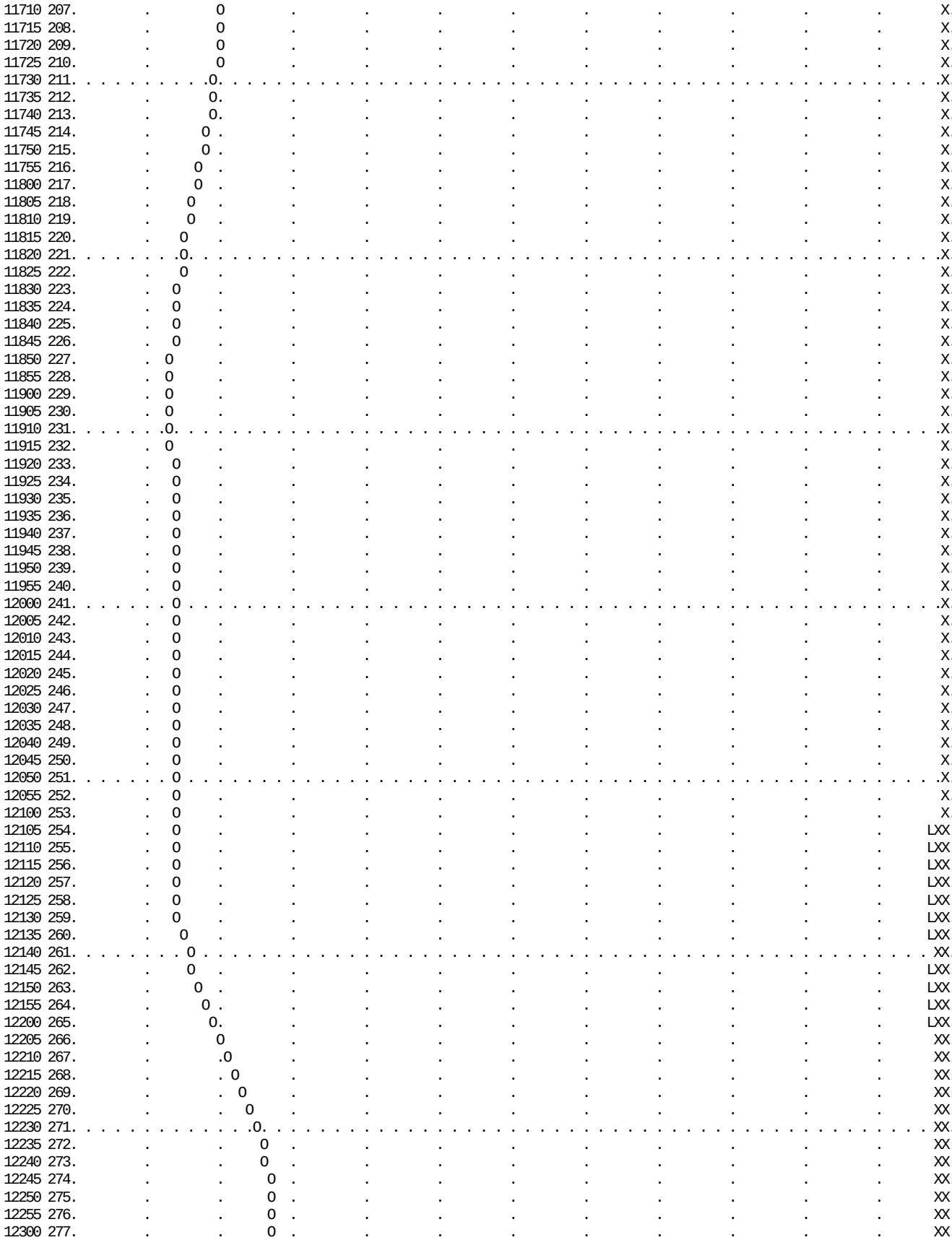

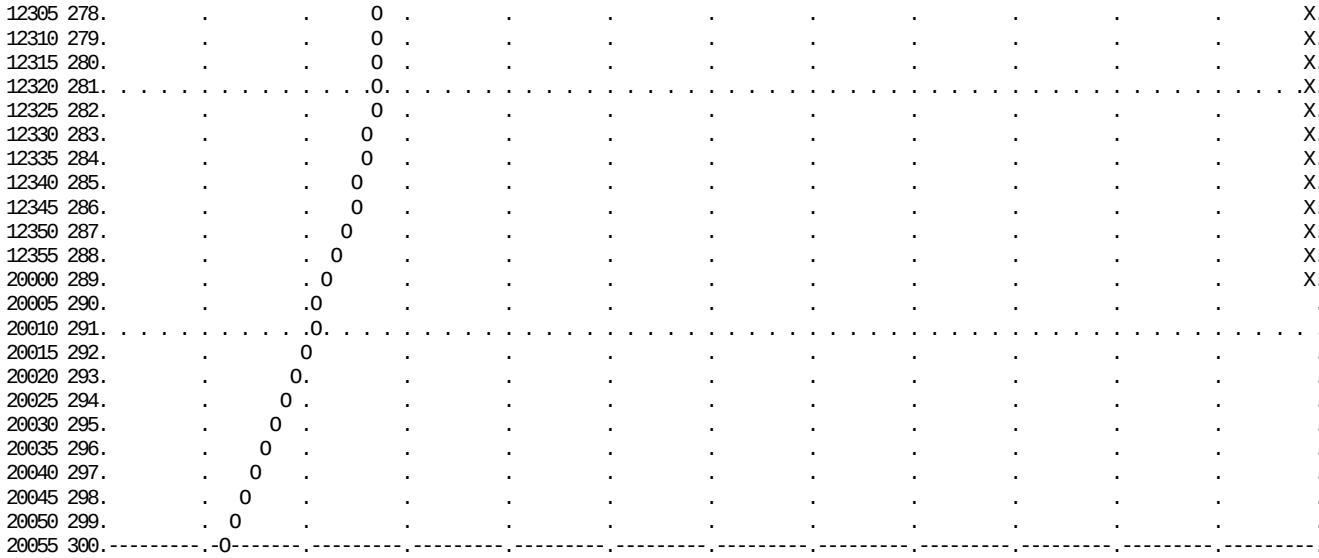
12305 278.
12310 279.
12315 280.
12320 281.
12325 282.
12330 283.
12335 284.
12340 285.
12345 286.
12350 287.
12355 288.
20000 289.
20005 290.
20010 291.
20015 292.
20020 293.
20025 294.
20030 295.
20035 296.
20040 297.
20045 298.
20050 299.
20055 300.

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	BASIN	1075.	7.58	668.	393.	379.	3.50		

*** NORMAL END OF HEC-1 ***

ChangConsultants
Civil Engineering◦Hydrology◦Hydraulics◦Sedimentation

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T: 858.692.0760
F: 858.832.1402
wayne@changconsultants.com

February 14, 2012

Mr. Marvin Howell
Hanson Aggregates Pacific Southwest, Inc.
P.O. Box 639069
San Diego, CA 92163-9069

Subject: Permanente Quarry Reclamation Plan – Supplemental Hydrologic Analyses

Dear Mr. Howell:

This letter contains supplemental hydrologic analyses performed for the Permanente Quarry. The analyses were used to assess a post-reclamation detention scenario, and to compare post-reclamation flows with pre-quarry flows.

Under current conditions, water stored in the main pit can be pumped into Permanente Creek at a rate of 4.5 cubic feet per second (per the December 2011, *Draft Environmental Impact Report)*. A hydrologic analysis was performed to estimate the detention volume needed to attenuate the 100-year post-reclamation discharge from the North Quarry to 4.5 cfs. The attached exhibit contains the post-reclamation drainage map from the December 12, 2011, *Drainage Report for the Permanente Quarry*. There are three major drainage basins defined by the magenta boundaries. A detention analysis has been performed for the easterly drainage basin (315.32 acres) that is tributary to the pit floor. The attached results (nqwmsapd.out) show that approximately 108 acre-feet of volume would be needed to detain the post-reclamation 100-year flow of 235 cfs to 4.5 cfs. If the basin footprint was about 5 acres, the depth would need to be nearly 22 feet.

My December 16, 2011 letter to you contained a hydrologic analysis which showed that the post-reclamation 100-year flow rate in Permanente Creek near the quarry (1,075 cfs) is less than the FEMA 100-year flow rate (1,480 cfs). An additional hydrologic analysis has been performed to assess potential changes in flow rate generated by the post-reclamation project footprint in comparison to historic, pre-quarry conditions. Flow rate (or storm runoff) is affected by precipitation, drainage area, soil type, land use (impervious versus pervious cover), and travel time/rainfall intensity. For a given storm event, the precipitation is the same regardless of the site condition, e.g., the 100-year precipitation does not change for historic versus post-reclamation conditions. The overall drainage area also does not change. My understanding is that the soil type will be similar since the post-reclamation grading and fill will be done using on-site material. The impervious/pervious cover will be essentially the same particularly after revegetation.

The primary difference will be in the travel time of flow through the site. Under post-reclamation conditions, the travel lengths will tend to be longer because the flow will occur along benches and the perimeter road. The easterly drainage area on the exhibit provides an example of this. The post-reclamation flow follows a longer path from the top of the drainage area to the bottom (light blue dashed line) in comparison to the historic flow path, which followed a straighter line down the hillside (represented by the orange dashed line). Hydrologic conditions are such that a shorter flow path or time is associated with higher rainfall intensity than a longer flow path or time. By lengthening the flow path, the rainfall intensity and flow rate will be reduced. The attached analysis (nqwmsaph.out) was performed for the easterly drainage area assuming the flow path along the orange line and yields a 100-year flow rate of 344 cfs. In comparison, the post-reclamation analysis based on the light blue flow path has a 100-year flow of 235 cfs. Therefore, the longer flow paths created by the post-reclamation landform will reduce the off-site flow rate in comparison to historic pre-quarry conditions.

Please let me know if you have questions.

Sincerely,

Wayne W. Chang, M.S., P.E.

Enclosures

3 AC
300
310
302
69.89 AC
2.56 AC
312
3.33 AC
304
40C
204
40B
200
100
29.64 AC
202
21.63 AC
PAD ELEVATION = 1700'
PAD ELEVATION 1750'
CENTROID
315.32 AC
44.45 AC
PAD ELEVATION = 990'
40A
102

LEGEND:

- MAJOR DRAINAGE BASIN BOUNDARY
- MINOR DRAINAGE BASIN BOUNDARY
- OVERLAND FLOW PATH
- 3.62 AC DRAINAGE BASIN AREA
- 100 NODE NUMBER
- 40A PROPOSED DESILTATION BASIN

NOTE:
THE DESILTATION BASINS ARE TEMPORARY AND WILL BE ALLOWED TO FILL ONCE THE VEGETATION ESTABLISHES. THE HYDROLOGIC ANALYSES WERE BASED ON THE FINAL POST-RECLAMATION CONDITIONS.

SCALE: 1" = 300'

0 150 300 600

NORTH QUARRY & WEST MATERIALS STORAGE AREA

PROPOSED CONDITION RATIONAL METHOD WORK MAP

NQWMSAPD.OUT

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*               JUN   1998              *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   02FEB12  TIME  19:44:19   *
*                                       *
*****************************************
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*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X       X     X        XX
X     X  X       X              X
XXXXXXX  XXXX    X        XXXXX  X
X     X  X       X               X
X     X  X       X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
         LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

                       *DIAGRAM
*** FREE ***
            1          ID   WEST MATERIALS STORAGE AREA & NORTH QUARRY
            2          ID   PROPOSED CONDITIONS
            3          ID   100-YEAR FLOW RATE
            4          ID   COUNTY OF SANTA CLARA HYDROGRAPH METHOD
            5          ID   DETENTION VOLUME FOR 4.5 CFS OF OUTFLOW
            6          IT       5       0       0     300
            7          IO       5       2

            8          KK WMSA-NQ
            9          IN       5
           10          PB    7.63
           11          PI  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015   0.001
           12          PI  0.0015  0.0015  0.0014  0.0014  0.0014  0.0014  0.0014  0.0014  0.0014   0.001
           13          PI  0.0014  0.0014  0.0014  0.0014  0.0030  0.0030  0.0030  0.0030  0.0030   0.003
           14          PI  0.0030  0.0030  0.0030  0.0030  0.0030  0.0030  0.0062  0.0062  0.0062   0.006
           15          PI  0.0062  0.0062  0.0062  0.0062  0.0062  0.0062  0.0062  0.0062  0.0055   0.005
           16          PI  0.0055  0.0055  0.0055  0.0055  0.0055  0.0055  0.0055  0.0055  0.0055   0.005
           17          PI  0.0053  0.0053  0.0053  0.0053  0.0053  0.0053  0.0053  0.0053  0.0053   0.005
           18          PI  0.0053  0.0053  0.0345  0.0345  0.0103  0.0103  0.0103  0.0103  0.0094   0.009
           19          PI  0.0094  0.0094  0.0094  0.0094  0.0053  0.0053  0.0053  0.0053  0.0053   0.005
           20          PI  0.0053  0.0053  0.0053  0.0053  0.0053  0.0053  0.0033  0.0033  0.0033   0.003
           21          PI  0.0033  0.0033  0.0033  0.0033  0.0033  0.0033  0.0033  0.0033  0.0025   0.002
           22          PI  0.0025  0.0025  0.0025  0.0025  0.0025  0.0025  0.0025  0.0025  0.0025   0.002
           23          PI  0.0034  0.0034  0.0034  0.0034  0.0034  0.0034  0.0034  0.0034  0.0034   0.003
           24          PI  0.0034  0.0034  0.0041  0.0041  0.0041  0.0041  0.0041  0.0041  0.0041   0.004
           25          PI  0.0041  0.0041  0.0041  0.0041  0.0031  0.0031  0.0031  0.0031  0.0031   0.003
           26          PI  0.0031  0.0031  0.0031  0.0031  0.0031  0.0031  0.0032  0.0032  0.0032   0.003
           27          PI  0.0032  0.0032  0.0032  0.0032  0.0032  0.0032  0.0032  0.0032  0.0023   0.002
           28          PI  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023   0.002
           29          PI  0.0026  0.0026  0.0026  0.0026  0.0026  0.0026  0.0026  0.0026  0.0026   0.002
           30          PI  0.0026  0.0026  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023  0.0023   0.002
           31          PI  0.0023  0.0023  0.0023  0.0023  0.0013  0.0013  0.0013  0.0013  0.0013   0.001
           32          PI  0.0013  0.0013  0.0013  0.0013  0.0013  0.0013  0.0017  0.0017  0.0017   0.001
           33          PI  0.0017  0.0017  0.0017  0.0017  0.0017  0.0017  0.0017  0.0017  0.0018   0.001
           34          PI  0.0018  0.0018  0.0018  0.0018  0.0018  0.0018  0.0018  0.0018  0.0018   0.001
           35          PI  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015   0.001
           36          PI  0.0015  0.0015  0.0037  0.0037  0.0037  0.0037  0.0037  0.0037  0.0037   0.003
           37          PI  0.0037  0.0037  0.0037  0.0037  0.0030  0.0030  0.0030  0.0030  0.0030   0.003
           38          PI  0.0030  0.0030  0.0030  0.0030  0.0030  0.0030  0.0015  0.0015  0.0015   0.001
           39          PI  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015
           40          BA  0.4927
           41          LS    0.82      71
           42          UD     .30

           43          KK  DETAIN
           44          RS       1    STOR      -1
           45          SV       0     108
           46          SQ       0     4.5
           47          SE     100     101
           48          ZZ


                SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    8     WMSA-NQ
              V
              V
   43      DETAIN

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
```

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*               JUN   1998              *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   02FEB12  TIME  19:44:19   *
*                                       *
*****************************************
```

```
*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
```

WEST MATERIALS STORAGE AREA & NORTH QUARRY
PROPOSED CONDITIONS
100-YEAR FLOW RATE
COUNTY OF SANTA CLARA HYDROGRAPH METHOD
DETENTION VOLUME FOR 4.5 CFS OF OUTFLOW

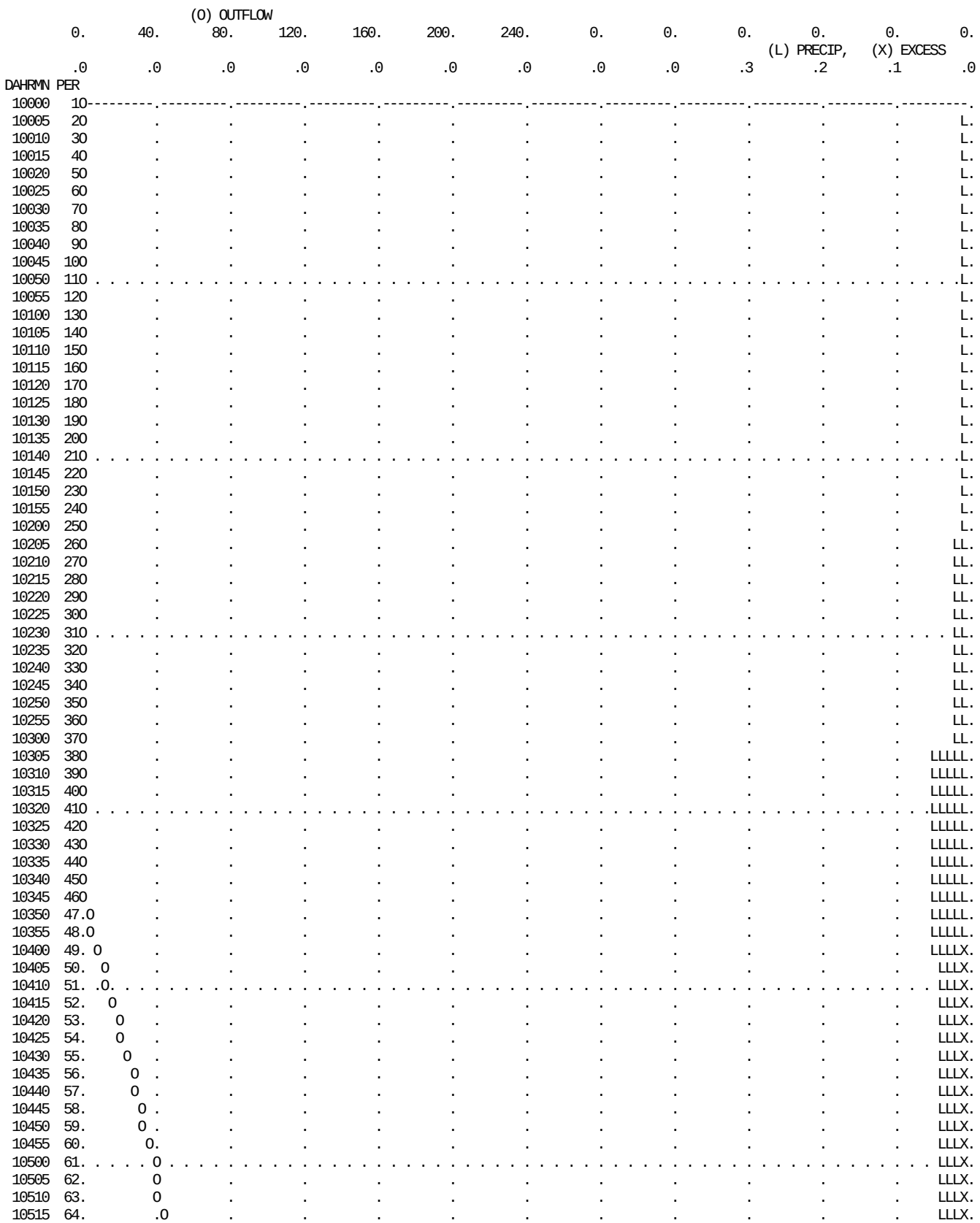
7 IO	OUTPUT CONTROL VARIABLES			
	IPRNT		5	PRINT CONTROL
	IPLOT		2	PLOT CONTROL
	QSCAL		0.	HYDROGRAPH PLOT SCALE
IT	HYDROGRAPH TIME DATA			
	NMIN		5	MINUTES IN COMPUTATION INTERVAL
	IDATE	1	0	STARTING DATE
	ITIME		0000	STARTING TIME
	NQ		300	NUMBER OF HYDROGRAPH ORDINATES
	NDDATE	2	0	ENDING DATE
	NDTIME		0055	ENDING TIME
	ICENT		19	CENTURY MARK

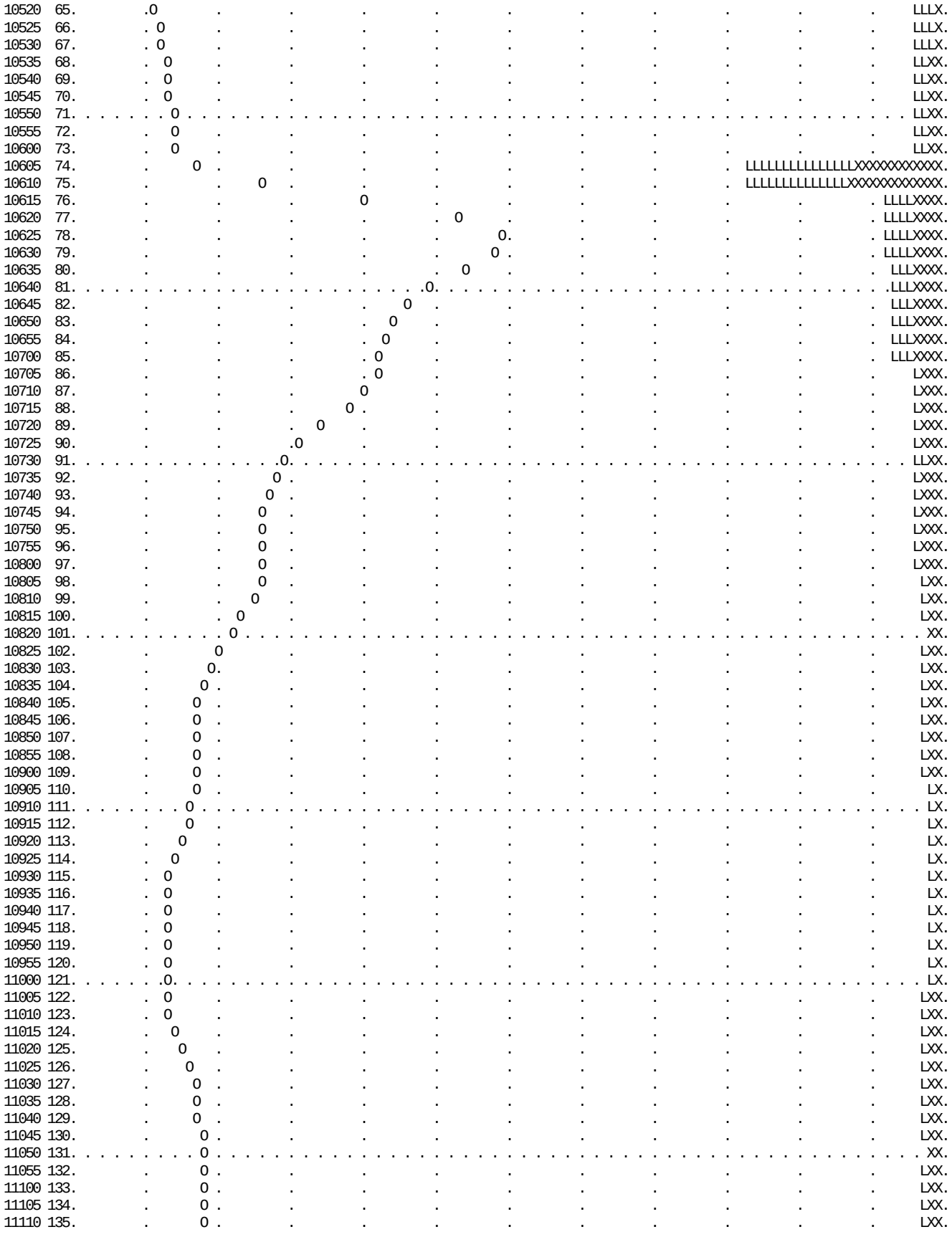
COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

DRAINAGE AREA	SQUARE MILES
PRECIPITATION DEPTH	INCHES
LENGTH, ELEVATION	FEET
FLOW	CUBIC FEET PER SECOND
STORAGE VOLUME	ACRE-FEET
SURFACE AREA	ACRES
TEMPERATURE	DEGREES FAHRENHEIT

STATION WMSA-NQ





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11125 138.       .       .0      .       .       .       .       .       .       .       .       .      LXX.
11130 139.       .       .0      .       .       .       .       .       .       .       .       .      LXX.
11135 140.       .       . 0     .       .       .       .       .       .       .       .       .      LXX.
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11150 143.       .       . 0     .       .       .       .       .       .       .       .       .      LXX.
11155 144.       .       . 0     .       .       .       .       .       .       .       .       .      LXX.
11200 145.       .       . 0     .       .       .       .       .       .       .       .       .      LXX.
11205 146.       .       . 0     .       .       .       .       .       .       .       .       .       XX.
11210 147.       .       . 0     .       .       .       .       .       .       .       .       .       XX.
11215 148.       .       .0      .       .       .       .       .       .       .       .       .       XX.
11220 149.       .       0       .       .       .       .       .       .       .       .       .       XX.
11225 150.       .      0.       .       .       .       .       .       .       .       .       .       XX.
11230 151. . . . . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . XX.
11235 152.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11240 153.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11245 154.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11250 155.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11255 156.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11300 157.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11305 158.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11310 159.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11315 160.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11320 161. . . . . . . . 0 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . XX.
11325 162.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11330 163.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11335 164.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11340 165.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11345 166.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11350 167.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11355 168.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11400 169.       .      0 .       .       .       .       .       .       .       .       .       .       XX.
11405 170.       .      0 .       .       .       .       .       .       .       .       .       .       LX.
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11415 172.       .     0  .       .       .       .       .       .       .       .       .       .       LX.
11420 173.       .    0   .       .       .       .       .       .       .       .       .       .       LX.
11425 174.       .   0    .       .       .       .       .       .       .       .       .       .       LX.
11430 175.       .  0     .       .       .       .       .       .       .       .       .       .       LX.
11435 176.       .  0     .       .       .       .       .       .       .       .       .       .       LX.
11440 177.       .  0     .       .       .       .       .       .       .       .       .       .       LX.
11445 178.       .  0     .       .       .       .       .       .       .       .       .       .       LX.
11450 179.       .  0     .       .       .       .       .       .       .       .       .       .       LX.
11455 180.       .  0     .       .       .       .       .       .       .       .       .       .       LX.
11500 181. . . . . . . . 0 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . LX.
11505 182.       . 0      .       .       .       .       .       .       .       .       .       .       XX.
11510 183.       . 0      .       .       .       .       .       .       .       .       .       .       XX.
11515 184.       .  0     .       .       .       .       .       .       .       .       .       .       XX.
11520 185.       .  0     .       .       .       .       .       .       .       .       .       .       XX.
11525 186.       .  0     .       .       .       .       .       .       .       .       .       .       XX.
11530 187.       .   0    .       .       .       .       .       .       .       .       .       .       XX.
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11540 189.       .   0    .       .       .       .       .       .       .       .       .       .       XX.
11545 190.       .   0    .       .       .       .       .       .       .       .       .       .       XX.
11550 191. . . . . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . LX.
11555 192.       .   0    .       .       .       .       .       .       .       .       .       .       XX.
11600 193.       .   0    .       .       .       .       .       .       .       .       .       .       XX.
11605 194.       .   0    .       .       .       .       .       .       .       .       .       .       LX.
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11625 198.       .  0     .       .       .       .       .       .       .       .       .       .       LX.
11630 199.       .  0     .       .       .       .       .       .       .       .       .       .       LX.
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11650 203.       .  0     .       .       .       .       .       .       .       .       .       .       LX.
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11700 205.       .  0     .       .       .       .       .       .       .       .       .       .       LX.
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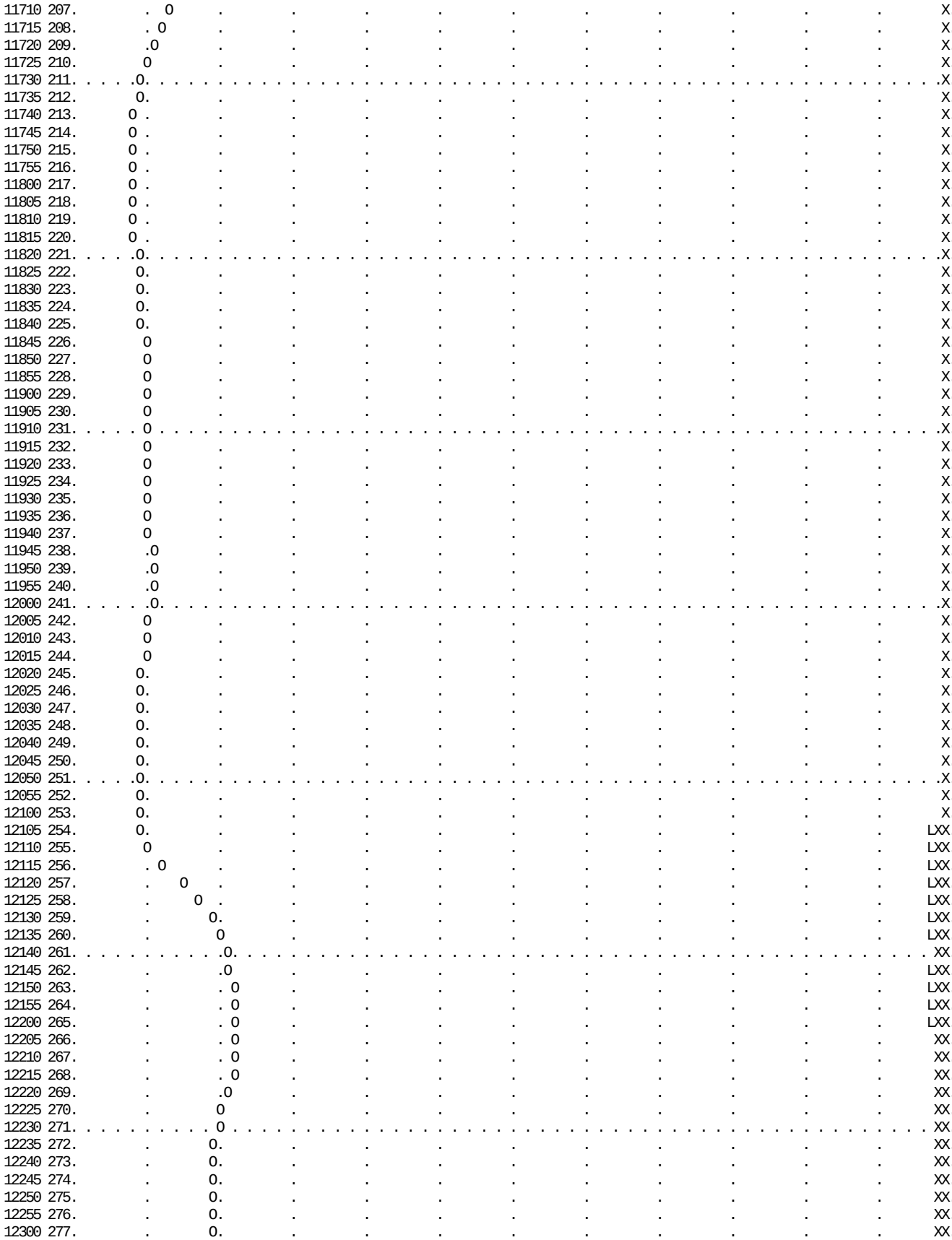


12305 278.
12310 279.
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20005 290.
20010 291.
20015 292.
20020 293.
20025 294.
20030 295.
20035 296.
20040 297.
20045 298.
20050 299
20055 300

STATION DETAIN

(I) INFLOW, (O) OUTFLOW

	0.	40.	80.	120.	160.	200.	240.	0.	0.	0.	0.	0.	0.
									(S) STORAGE				
	0.	0.	0.	0.	0.	0.	0.	40.	80.	120.	0.	0.	0.
DAHRMN	PER												
10000	1	I						S					
10005	2	I						S					
10010	3	I						S					
10015	4	I						S					
10020	5	I						S					
10025	6	I						S					
10030	7	I						S					
10035	8	I						S					
10040	9	I						S					
10045	10	I						S					
10050	11	I						S					
10055	12	I						S					
10100	13	I						S					
10105	14	I						S					
10110	15	I						S					
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10120	17	I						S					
10125	18	I						S					
10130	19	I						S					
10135	20	I						S					
10140	21	I						S					
10145	22	I						S					
10150	23	I						S					
10155	24	I						S					
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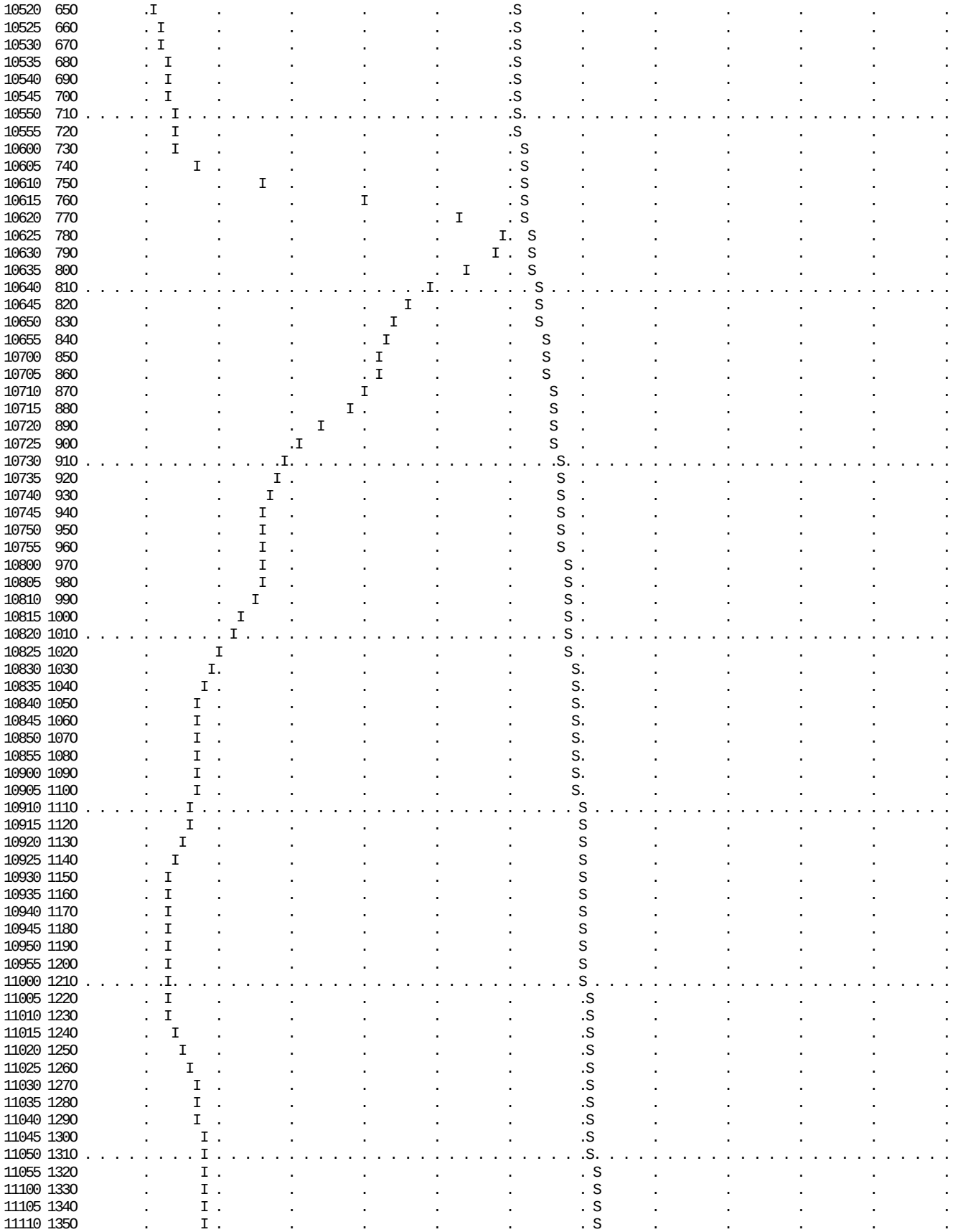

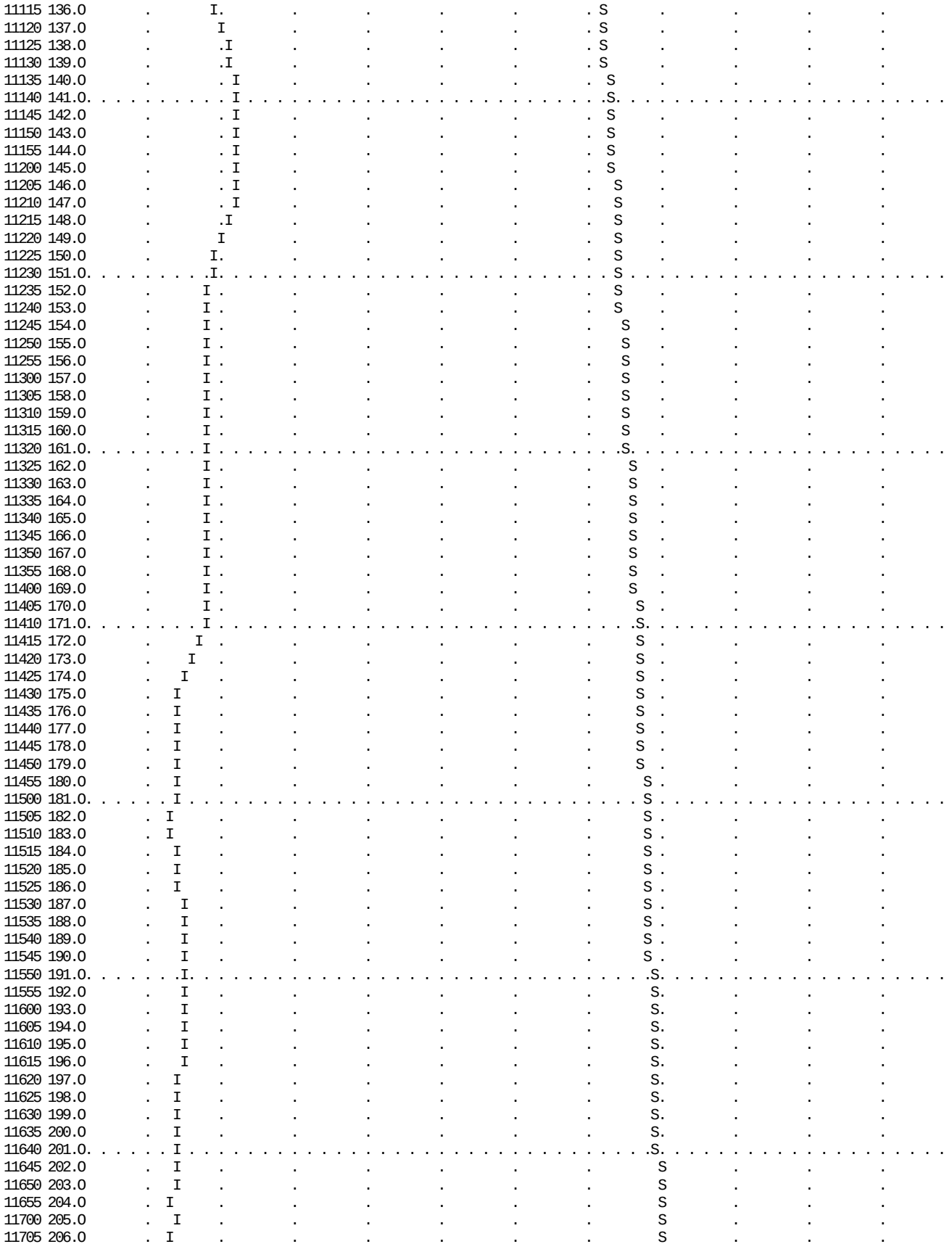

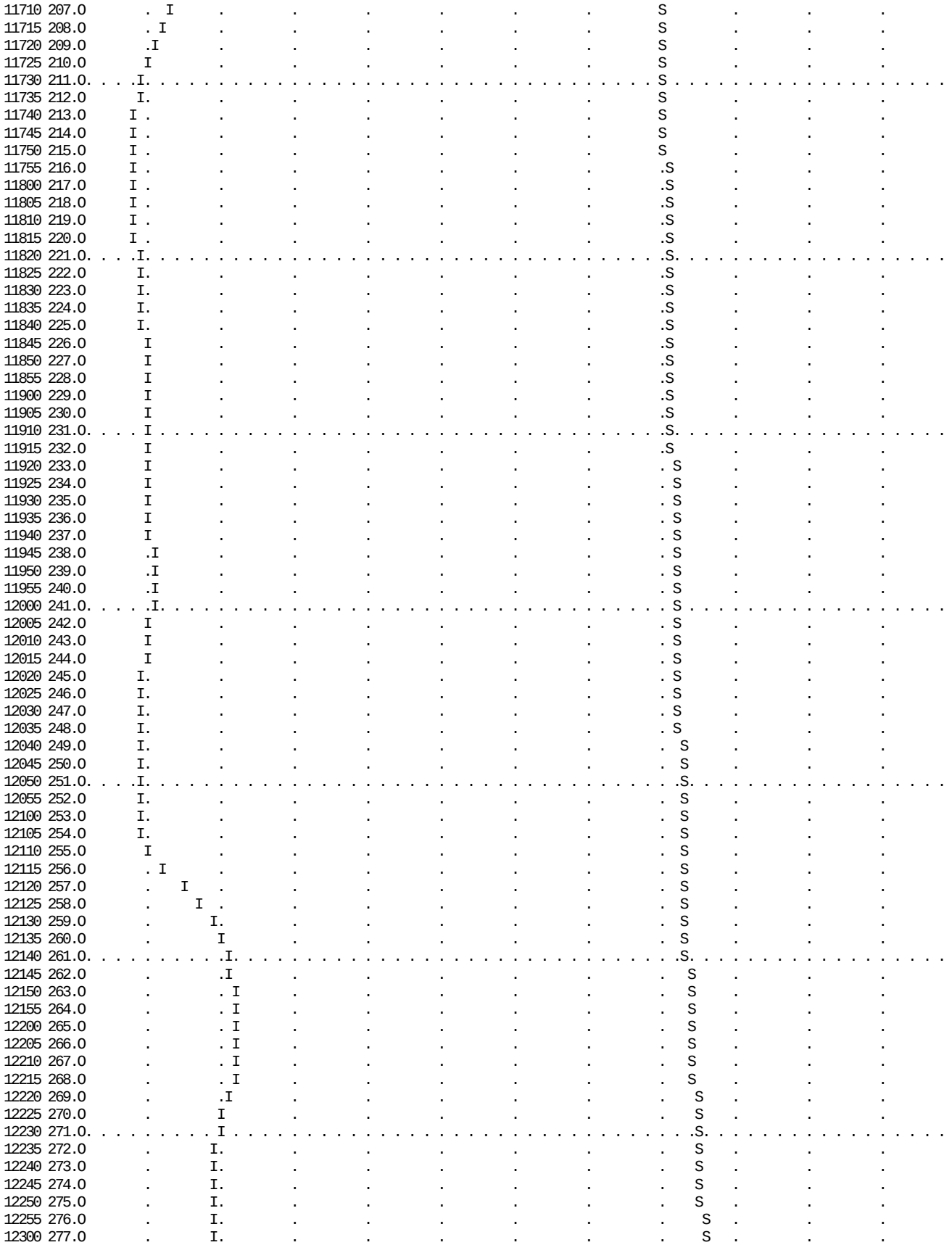

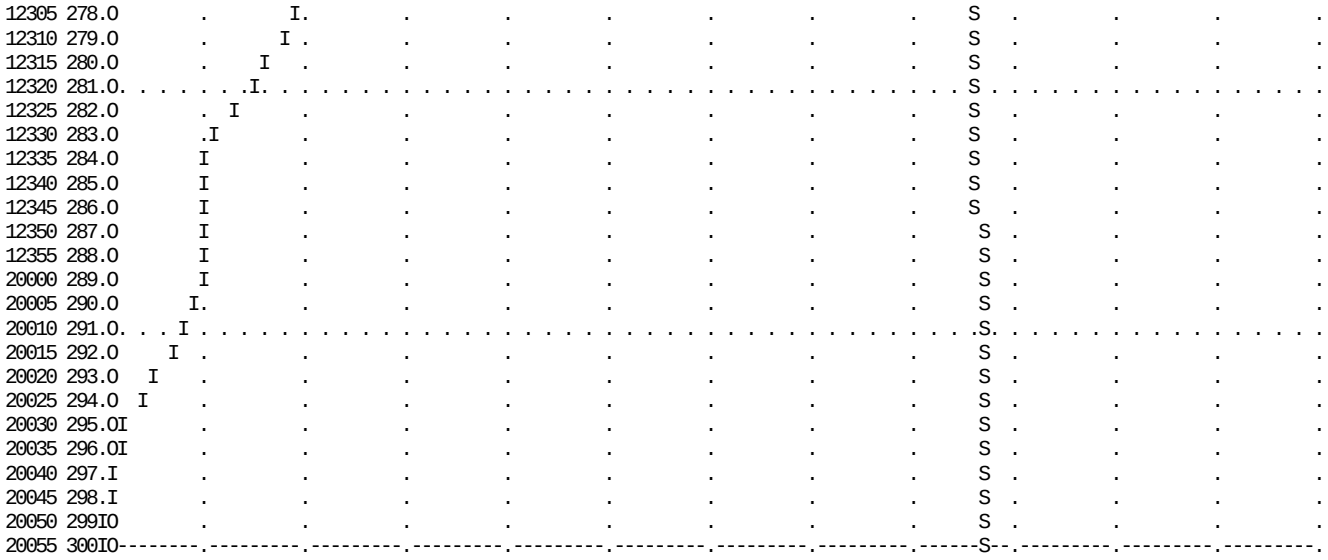
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20015 292.O
20020 293.O
20025 294.O
20030 295.O
20035 296.O
20040 297.I
20045 298.I
20050 299IO
20055 300IO

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
	HYDROGRAPH AT									
+		WMSA-NQ	235.	6.42	98.	56.	54.	.49		
	ROUTED TO									
+		DETAIN	4.	24.58	4.	2.	2.	.49		
+									100.99	24.67

*** NORMAL END OF HEC-1 ***

NQWMSAPH.OUT

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*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*               JUN   1998              *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   02FEB12  TIME  19:59:13   *
*                                       *
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*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X       X     X        XX
X     X  X       X              X
XXXXXXX  XXXX    X        XXXXX  X
X     X  X       X              X
X     X  X       X     X        X
X     X  XXXXXXX   XXXXX        XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
         LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

                       *DIAGRAM
*** FREE ***
              1        ID   WEST MATERIALS STORAGE AREA & NORTH QUARRY
              2        ID   PROPOSED CONDITIONS
              3        ID   100-YEAR FLOW RATE
              4        ID   COUNTY OF SANTA CLARA HYDROGRAPH METHOD
              5        ID   LAG BASED ON HISTORIC FLOW PATH DOWN HILLSIDE
              6        IT       5       0       0     300
              7        IO       5       2

              8        KK WMSA-NQ
              9        IN       5
             10        PB    7.63
             11        PI  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015  0.0015   0.001
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             40        BA  0.4927
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             42        UD     .13
             43        ZZ


                  SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    8     WMSA-NQ

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
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*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*               JUN   1998              *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   02FEB12  TIME  19:59:13   *
*                                       *
*****************************************
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*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
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WEST MATERIALS STORAGE AREA & NORTH QUARRY
PROPOSED CONDITIONS
100-YEAR FLOW RATE
COUNTY OF SANTA CLARA HYDROGRAPH METHOD
LAG BASED ON HISTORIC FLOW PATH DOWN HILLSIDE

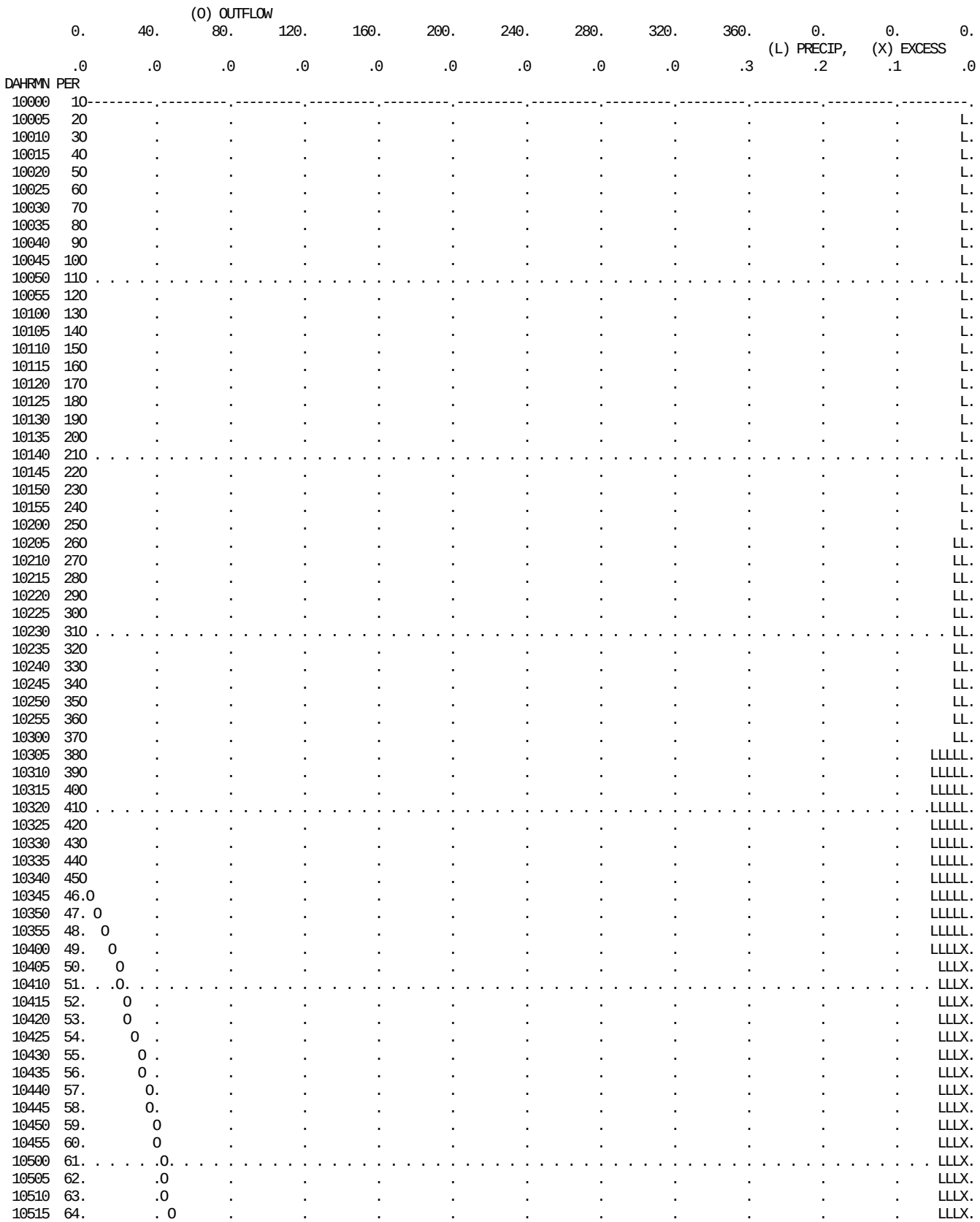
7 IO	OUTPUT CONTROL VARIABLES			
	IPRNT		5	PRINT CONTROL
	IPLOT		2	PLOT CONTROL
	QSCAL		0.	HYDROGRAPH PLOT SCALE
IT	HYDROGRAPH TIME DATA			
	NMIN		5	MINUTES IN COMPUTATION INTERVAL
	IDATE	1	0	STARTING DATE
	ITIME		0000	STARTING TIME
	NQ		300	NUMBER OF HYDROGRAPH ORDINATES
	NDDATE	2	0	ENDING DATE
	NDTIME		0055	ENDING TIME
	ICENT		19	CENTURY MARK

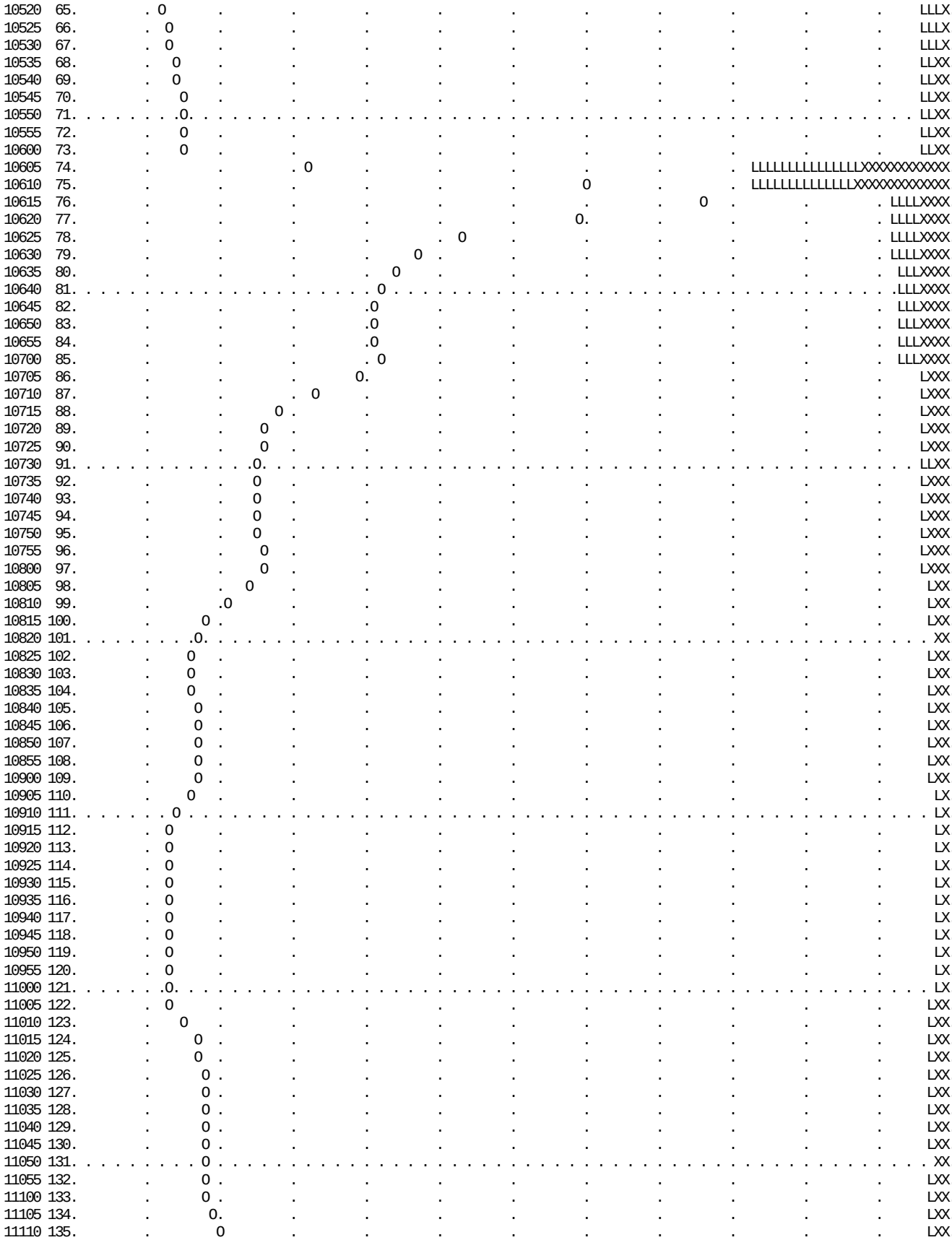
COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 24.92 HOURS

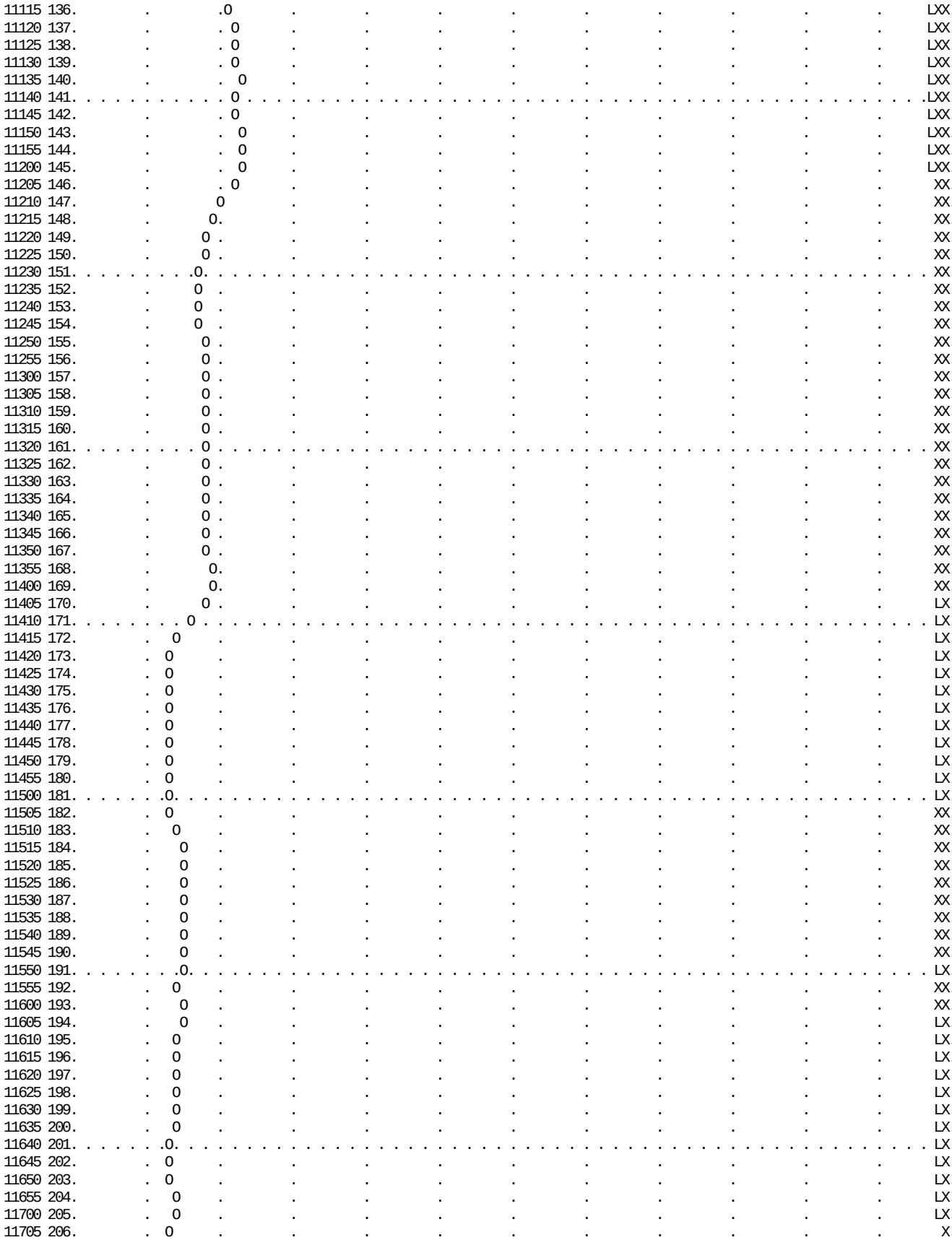
ENGLISH UNITS

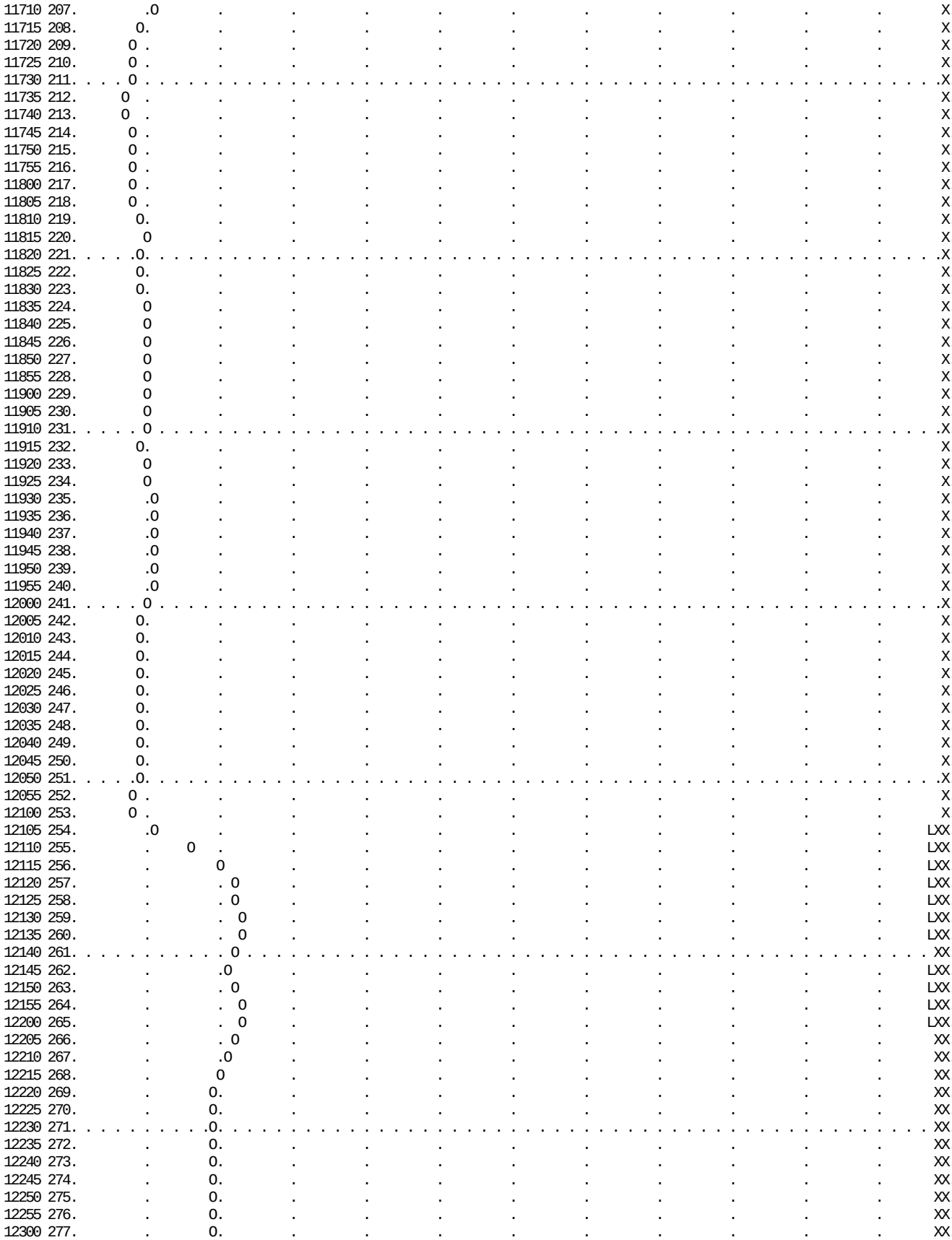
DRAINAGE AREA	SQUARE MILES
PRECIPITATION DEPTH	INCHES
LENGTH, ELEVATION	FEET
FLOW	CUBIC FEET PER SECOND
STORAGE VOLUME	ACRE-FEET
SURFACE AREA	ACRES
TEMPERATURE	DEGREES FAHRENHEIT

STATION WMSA-NQ







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20035 2960
20040 2970
20045 2980
20050 2990
20055 3000

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	WMSA-NQ	344.	6.25	98.	56.	54.	.49		

*** NORMAL END OF HEC-1 ***

TECHNICAL MEMORANDUM

TO: Marvin Howell, Lehigh Hanson

FROM: Tom Patterson, Ph.D.; Vice President - **Strategic Engineering & Science, Inc.**

SUBJECT: Review of Selenium Treatment Option in Permanente Quarry Draft EIR

DATE: February 14, 2012

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1. INTRODUCTION

This memorandum presents an independent review of the technical feasibility of active treatment to reduce selenium in stormwater runoff from the Permanente Quarry. The Draft EIR for the proposed Permanente Quarry reclamation plan amendment concluded that active treatment to reduce selenium to the applicable regulatory benchmarks is infeasible based on cost considerations. This discussion is contained on Pages 4.10-46 and -47 regarding Mitigation Measure 4-10.2b and is based on information provided to the Santa Clara County Planning Department by Mr. Tom Sandy, a chemical engineer of CH2M Hill. To supplement the Draft EIR's analysis, we also have considered whether the water treatment methods referenced by CH2M Hill are capable of implementation at the Permanente Quarry site in light of certain engineering, technological and practical factors. Based on the information discussed below, there is a considerable technical risk that treatment of stormwater to reliably remove selenium to concentrations <5 µg/L cannot be reasonably and feasibly achieved under the conditions at the site.

2. BACKGROUND

The technical feasibility of stormwater treatment to reduce selenium concentrations in runoff depends on a number of important factors. The key considerations are the volume and flow characteristics of the stormwater, and the treatment target in terms of the amount of selenium to remove.

In terms of volume and flow characteristics, the Draft EIR assumed the collection of all runoff from the WMSA and the EMSA as well as from the catchment of the quarry/pit, and treatment of the collected stormwater to remove selenium prior to discharge to Permanente Creek. The combined surface area for these areas totals approximately 510 acres. For an estimated design criteria runoff event (which assumes one inch of rainfall falling in two hours under saturated antecedent soil conditions so that runoff is 100 percent), the runoff volume would be approximately 14 million gallons collecting in two hours (117,000 gallons per minute [gpm] average flow). This volume of stormwater runoff is too large to be effectively treated and discharged simultaneously. As a result, surge storage would need to be provided in the form of a holding or detention pond. The amount of storage required would be on the order of 100 acre feet (AF), or 32.6 million gallons. This volume of storage would likely require utilization of the

quarry pit and several additional ponds in the EMSA and WMSA. The Draft EIR assumed that such water would be delivered to a treatment plant with the capacity to treat approximately 3600 gpm, or 100 AF of stored stormwater in six days. This assumed treatment capacity appears to be reasonable given this scenario (it is rare to have four inches of rain in a week, and the yield of water as runoff is typically more on the order of 60 percent of rainfall for rainy periods longer than one day).

The treatment target and the amount of selenium to remove are based on measured selenium concentrations in runoff samples from the EMSA and WMSA, which are on the order of 4 to 50 µg/L, and selenium concentrations in the main pit, which are on the order of 80 µg/L. Assuming an annual average 30% runoff factor, the runoff area of 510 acres, and 23 inches of rainfall per year, the total amount of stormwater that would be collected is 293 acre feet (AF), or 95 million gallons. Assuming the average selenium concentration of the stormwater is 50 µg/L, the total amount of selenium in the annual stormwater flow (i.e., that requires treatment) is approximately 40 pounds. The target concentration for selenium in the treated effluent is <5 µg/L (based on aquatic life criteria), which means >90% removal on average but >95% removal when the selenium concentrations are high.

3. DESCRIPTION OF POTENTIAL TREATMENT TECHNOLOGY

The Draft EIR states correctly that there are a variety of treatment technologies that could be considered for selenium removal from the stormwater. These include ferrihydrite adsorption, ferrous hydroxide co-precipitation, ion exchange, and anaerobic bioreactors. All of these technologies are costly to implement on the scale discussed in the Draft EIR (i.e., 3,600 gpm of treatment capacity with construction of surge/equalization storage). The proposed treatment system described in the Draft EIR involved the use of anaerobic bioreactors, and estimated that the design, capital and construction costs would be $86 million, with operations and maintenance costs of an estimated $2.8 million per year, and a 21-year present value of $113 million assuming an 8% return.

Treatment with anaerobic bioreactors is a biological process that uses naturally-occurring bacteria to convert dissolved selenium (typically the selenate ion, SeO_4^{2-}) into solid elemental selenium. It is typically a multi-stage process which requires some pretreatment such as filtering to remove suspended solids, water softening, temperature adjustments, and/or pH control. Nutrients (phosphate and nitrogen) are added to the water with a carbon source that is used as food for the natural bacteria. The carbon source can be alcohols such as methanol or ethanol; other common carbon sources are molasses, acetate, and lactate.

Following pre-treatment, the water with nutrients is fed into a reactor vessel then isolated from oxygen to create an anaerobic environment where the selenium-converting bacteria thrive. The proposed treatment system described in the Draft EIR appears to have assumed the use of fixed film bioreactors based on the required space for the treatment facilities described (two to three acres). With fixed film technologies, there is a fixed or fluidized bed of solid media such as sand or granular activated carbon filling the reactor vessel. The solid media provides a substrate for bacteria to grow on. Treatment requires on the order of six to eight hours, and can require two to three stages to progressively bring the selenium concentration down. With this residence time

and the indicated treatment capacity, the reactor(s) would require 3.5 million to 5.5 million gallons of storage. One five million gallon tank is on the order of 45 feet tall by 140 feet in diameter.

The solidified selenium is removed from the reactor vessel by backwashing in the case of a fixed bed system, or by solids separation in the case of a fluidized bed, and it is removed along with excess/dead bacteria. These treatment residuals are dewatered with a filter press, and then disposed at a landfill.

The bioreactors also produce gases. If there is elevated nitrate in the influent, nitrogen gas is generated; if there is elevated sulfate, hydrogen sulfide can be generated although this is an undesirable competing reaction that is typically controlled. Carbon dioxide is also generated. The gases are vented into the air.

Once the selenium removal is complete, the effluent water typically requires post-treatment. Post-treatment consists of aeration to restore aerobic bacterial processes which then consume any remaining carbon source or other organic matter in the water and clarification to reduce total suspended solids. Adjustment of pH and sometimes temperature (the biological processes generate heat) can also be required for post-treatment.

4. DISCUSSION

Anaerobic bioreactors have been demonstrated to be successful in treating selenium to levels of <5 µg/L and attaining 90% to 95% removal, provided that the operational conditions are favorable. With respect to reactor performance, a common difficulty with all biological treatment systems is consistency of the influent flow and quality. Consistent attainment of the treatment objectives depends on consistent flows and influent quality. Large increases in flows or changes in the concentrations of biologically important constituents (including selenium) cause an upset in the ecosystem established in the bioreactor and reduce treatment performance. In other mining facilities where biological treatment of selenium was successfully demonstrated to <5 µg/L (MSE, 2001; Maniatis and Adams, 2003), the site conditions featured relatively constant flows of mine water that was isolated from other water sources (including stormwater runoff), and these systems did not produce effluent <5 µg/L during the entire demonstration period.

Use of this technology at the Permanente Quarry to treat large volumes of stormwater presents significant technical challenges as there would be rainy periods lasting on the order of a few days where treatment would be required at flow rates near the plant capacity but with lower selenium concentrations, and other periods during the dry season where the treatment plant probably would be shut down due to lack of flow (starting and stopping plant operation requires a period of a week or two to re-establish the anaerobic ecosystem that effectively removes the selenium). We are not aware of any successful demonstrations of this technology under these or similar site conditions, and it is unlikely that the treatment objectives could be constantly met under these highly variable conditions based on our experience with biological treatment systems.

The infrastructure requirements also present a major engineering obstacle considering the large drainage area that a treatment plant would serve. The collection and treatment systems represent

major design and engineering undertakings, considering the sizeable space and siting commitments required for ponds and equipment, and the general absence of suitable locations within the site to place infrastructure. The WMSA, main pit and EMSA occupy an area of over 500 acres and a lateral distance of approximately 2.5 miles over steep and difficult terrain. As noted above, the treatment system would likely require water storage on the order of 100 AF, or 32.6 million gallons, consisting of a number of large detention ponds across the site. This is a larger volume of storage than what is currently needed as Best Management Practices to control suspended solids in the stormwater. The ponds would need to be physically connected (through a system of pumps and piping) to route stormwater flows to a central staging pond prior to treatment in the reactor(s). Individual storage ponds would likely occupy several acres (notably, using the pit bottom for storage prevents quarrying of rock as well as backfilling, which may be unacceptable). it is not immediately apparent where these new large storage ponds could be located within the site given the topography and slope stability concerns that have characterized some areas.

Further, design of the treatment system would require bench and pilot scale testing, and it is possible that the testing would demonstrate that this technology will not work for the conditions at Permanente. Finally, the physical environment is highly dynamic, with the landforms scheduled to be significantly altered as the WMSA, quarry pit and EMSA are reconfigured according to the reclamation plan amendment. This becomes particularly problematic for finding a suitable permanent location for the large treatment system equipment.

The timing requirements for the design and installation of the system present a particular drawback considering the relatively short time period in which treatment would be required. Design and permitting[1] would require on the order of two years. Construction and startup would be approximately two additional years given the large amount of equipment that would need to be fabricated and installed. Therefore, on the order of four years would be required once contracting and financing was completed to perform the design, engineering, construction and startup. Against these time requirements, the interim need for water treatment will diminish and eventually disappear as the pit is backfilled and exposed areas are covered and revegetated, which is scheduled to occur in approximately 2025.

In terms of the costs of the treatment system, the unit cost of selenium removal would be approximately $116,000 per pound of selenium. This assumes a $113 million present value of the system, 17 years of treatment operations, and 40 lb/year of selenium removed.

5. OTHER CONSIDERATIONS

As described above, there are technologies other than anaerobic bioreactors that could be used to treat the stormwater for selenium removal. In our opinion and experience, the next-most viable technology after anaerobic bioreactors is ion exchange. Ion exchange is not a demonstrated technology for treatment of selenium to <5 µg/L. However, based on the similarity between the chemistry of selenate and other chemicals that are removed effectively using ion exchange (i.e.,

[1] Permitting of the NPDES discharge would be required, and can take two years or more.

sulfate, perchlorate, and chromate), it is likely that this technology could be developed to a full scale process at the present time. An ion exchange treatment system would likely have costs on the same order as described above for anaerobic bioreactors, although the capital costs might be slightly lower and the operations and maintenance would be higher. This system also would require nearly identical infrastructure to collect and route large volumes of stormwater runoff to a central treatment facility, and bench scale and pilot testing would be required to determine if the desired level of performance could be achieved. However, the following additional factors would need to be studied if ion exchange was considered as the treatment process:

- There is a risk that other toxic substances could be released to the effluent. On a recent project by the City of Glendale for treatment of chromate, it was discovered that the ion exchange resin leached formaldehyde (toxic to aquatic life).
- Ion exchange treatment facilities would likely require on the order of an acre, again in a permanent location. An ion exchange treatment plant with 3600 gpm of capacity would consist of three or four large vessels/tanks (each 12 ft diameter, 18 feet tall) on permanent foundations, along with large capacity filters, surge and/or break tanks, booster pumps, loading and unloading facilities, power, instrumentation, and controls.
- With the testing and permitting, the design would require approximately two years. The construction and startup would likely require one to one and a half years (the adsorption vessels, filters and other tanks need to be fabricated). Therefore, it would be about three to four years to complete the project after financing and contracting.
- Our experience with ion exchange systems of this size and type (weak base anion and strong base anion; ion-selective resins for perchlorate and chromate in drinking water systems) indicate that the technology is not very sustainable. The resin would need to be changed approximately once per year, and each vessel holds about 5 tons of resin (total of 15 to 20 tons of resin per year). Ion exchange resin consists of small plastic beads (about the size of fine sand). The resin is typically polyacrylic or polystyrene, both of which are petroleum products. There are regeneration technologies, but development of a suitable regeneration process extends the time for design (and may be infeasible). Further, regeneration produces large volumes of caustic brines that cannot be re-used and must be disposed of properly. If not regenerated, the spent resin cannot be re-used, and so it is incinerated. Removing on the order of 40 pounds of selenium per year to protect a creek that is not impaired by the existing runoff and discharge consumes 15 to 20 tons of a highly refined petrochemical product that is burned as a waste. This may not be environmentally sustainable.

6. CONCLUSIONS

Based on the considerations presented above, there is a considerable technical risk that treatment of stormwater to reliably remove selenium to concentrations <5 µg/L cannot be reasonably achieved under the conditions present at the Permanente site. This technical risk compounds the economic infeasibility that is appropriately claimed in the Draft EIR. The technical risks principally include the following:

- There is no existing technology that has been shown to treat the highly variable flows and water quality that would be characteristic of the stormwater at Permanente Quarry to

concentrations <5 µg/L for selenium on a consistent basis (i.e., NPDES discharge limits would be violated on occasion)

- Constructability is a significant question given the limited amount of suitable space available at the site that could be committed to the treatment plant, ponds/surge storage facilities and associated pumps and piping infrastructure, and the need for such infrastructure to accommodate a dynamic, changing environment as the WMSA, quarry pit and EMSA landforms are physically transformed under the reclamation plan amendment.
- The design and engineering constraints do not fit well with the relatively short time period in which treatment would be needed before backfilling and reclamation are complete. An estimated four years would be required to perform the design, engineering, construction and startup once contracting and financing was completed, assuming no major obstacles to implementation are encountered. In the meantime, backfilling is scheduled to be completed as early as 2025. While the design process would further characterize the risk and establish with certainty whether such water treatment technologies could be reasonably implemented at the site, this would not be known until years after the EIR is certified along with all mitigation measures and monitoring.

7. REFERENCES

Maniatis, T. and D.J. Adams. 2003. *Biological Treatment of Surface and Groundwater for Selenium and Nitrate.* Presented at the 2003 National Meeting of the American Society of Mining and Reclamation.

MSE Technology Applications, Inc. (MSE). 2001. *Final Report – Selenium treatment/removal alternatives demonstration project.* Mine Waste Technology Program Activity III, Project 20. Report prepared for U.S. Environmental Protection Agency, National Energy Technology Laboratory, Office of Research and Development, Cincinnati, OH and U.S. Department of Energy, Federal Energy Technology Center, Pittsburgh, PA.

From: <Jlemons@aol.com>
Date: Sun, 5 Feb 2012 00:37:43 -0500 (EST)
To: <rob.eastwood@pln.sccgov.org>
Subject: Lehigh

I have lived in Cupertino for over 40 years. Our city has suffered with years and years of abuse from Lehigh Cement. From air pollution from their facility and their trucks, to hazardous, speeding cement trucks spewing toxic exhaust, to broken roads from the trucks day and night, and so forth. They have raped our foothills beyond reason and it is time for them to call a halt to these substantive abuses.

We Cupertino residents can see the pollution that sits atop our outdoor furniture tables and chairs.

I remember when they wanted to burn rubber tires which would elevate the pollution levels. Their comment? To paraphrase, "Well it will only increase the pollution a very little bit." That is their arrogant attitude.

Please represent the lungs and lives of Cupertino/Los Altos residents in a worthy and fair manner.

Sincerely,

Mary Ann Lemons

------ End of Forwarded Message

Community Development Department
Engineering Division
One North San Antonio Road
Los Altos, California 94022-3087
(650) 947-2780
Fax (650) 947-2732

February 2, 2012

County of Santa Clara-Planning Office
70 West Heading Street, East Wing, 7th Floor
San Jose, CA 95110

Attn: Mr. Rob Eastwood, Principal Planner

SUBJECT: The Lehigh Permanente Quarry Reclamation Plan Amendment Draft Environmental Impact Report (DEIR)

Dear Mr. Eastwood :

Thank you for the opportunity to comment on the Draft Environmental Impact Report dated December 23, 2011 concerning the Lehigh Permanente Quarry Reclamation Plan Amendment. The City Council and staff of Los Altos have been monitoring the permit and compliance issues for the Lehigh Quarry with concerns for public health impacts. The following comments are based on potential health impacts that might affect the residents of Los Altos, and are requested to be addressed prior to County adoption of a Final Environmental Impact Report.

The DEIR documents the environmental consequences of implementing the Lehigh Permanente Quarry Reclamation Plan Amendment (RPA, or the Project) which has been submitted to the Santa Clara County Department of Planning and Development (the County).

The following sections are the focus of these comments: Section 4.3, Air Quality, Section 4.8, Greenhouse Gas Emissions, Section 4.10, Hydrology and Water Quality, Appendix B, Air Resources, and Appendix E, Health Risk Assessment.

Air Quality:

DEIR Impact 4.3-1: Criteria Pollutant Emissions

The cause of the large reductions in the maximum daily and maximum annual emissions of most criteria pollutants is unclear in this section. The baseline air emissions included periods of relatively high and relatively low production at the Facility. Therefore, if the Facility operates at the maximum permitted production rate (i.e., high production) during Phase I of the Project when mining activities are planned to continue, it would appear that Facility emissions would be higher than the baseline.

DEIR Impact 4.3-3: Increased Cancer Risk Due to Toxic Air Contaminants

The DEIR presents an incremental health risk assessment to examine the increase or decrease in adverse health impacts due to toxic air contaminants associated with the Project as compared to the conditions that would exist without the Project. This health risk assessment concluded that the incremental cancer risks would be above the threshold of 10 in a million for the adult resident, primarily due to exposures to diesel particulate matter (DPM). However, several mitigation measures are proposed which are estimated to lower the cancer risks to levels below the threshold. Therefore, this impact is concluded to be a "less than significant impact with mitigation incorporated."

The analysis presented focuses on metals within fugitive dust, crystalline silica, and DPM. However, other toxic chemicals associated with diesel truck traffic such as benzene, formaldehyde and acetaldehyde are not addressed. For completeness, all chemicals should be included in the analysis. At a minimum, it should be demonstrated qualitatively that these chemicals are insignificant to cumulative health risks.

On the surface the mitigation measures do not appear to be sufficient to ensure the incremental change in emissions of toxic air contaminants are below thresholds. At a minimum, this analysis should be updated annually during the Project to incorporate the mitigation measures which are put in place to demonstrate that the predicted emissions reductions do occur.

With the inclusion of the assumed mitigation measures, the incremental cancer risk is 8.7 in a million and is therefore slightly below the threshold of 10 in a million. Because the predicted cancer risk is only slightly below the threshold, it should be verified that the incremental cancer risk remains below the threshold if production is increased to the maximum permitted level.

DEIR Impact 4.3-4: Increased Acute and Chronic Health Risks Due to Toxic Air Contaminants

Incremental acute and chronic hazard impacts are quantified and shown to be below thresholds. Therefore, no mitigation measures are proposed and the impact is concluded to be a "less than significant impact."

A health risk assessment conducted for the Facility showed that acute and chronic health risks are of concern at the Facility primarily due to naturally occurring mercury in regional soil (AMEC, 2011). It

would be helpful for this health risk assessment to more fully explain the release mechanisms and exposure conditions assumed for mercury. In particular, if mercury was assumed not to be present in the volatile, elemental form the basis should be stated in the risk assessment. Without more details regarding the assumptions of the risk assessment, it is difficult to agree with the conclusion that acute and chronic hazards are not of concern for the Project.

Hazard quotients in this analysis are calculated as the ratio of the chemical concentration to toxicity value. However, some California Environmental Protection Agency (Cal/EPA) risk assessment guidance recommends the inclusion of exposure assumptions in the calculation noncancer hazard quotients. In particular, it would be more conservative to follow the guidance of including an age-adjusted receptor which is assumed to be a child for a portion of the exposure duration to account for the higher per body weight exposures that occur during the childhood years (Cal/EPA, 2005).

DEIR Impact 4.3-5: Human Health Risks Due to Increased Emissions of PM2.5

An analysis was conducted to determine the maximum annual increase in particulate matter with a diameter of 2.5 micrometers or less (PM2.5) for sensitive receptors in the vicinity of the Project. The analysis concluded that the incremental annual PM2.5 concentration was above the threshold and would therefore constitute a potentially significant impact without mitigation. The DEIR proposes implementing the same mitigation measures discussed above in Section 2.2 to reduce the incremental PM2.5 concentration to levels below the threshold. Therefore, this impact is determined to be a "less than significant impact with mitigation incorporated."

As discussed above, these mitigation measures do not appear to be sufficient to obtain the necessary emissions reductions. Because the predicted incremental concentration with the incorporation of the mitigation measures is essentially equal to the threshold, a small decrease in the functionality of the mitigation measures could result in the threshold being exceeded. It may be advisable to incorporate other mitigation measures. At a minimum, the performance of these mitigation measures should be demonstrated to ensure anticipated emissions reductions are occurring.

Greenhouse Gas Emissions:

The DEIR presents an analysis quantifying the incremental increase in emissions of greenhouse gases (GHGs) due to the proposed Project. This increase is determined to be above the threshold. Several mitigation measures are proposed to reduce emissions of GHGs to levels below the threshold. This impact is concluded to be a "less than significant impact with mitigation measures."

The proposed mitigation measures to reduce emissions of GHGs do not appear likely to be capable of significantly reducing emissions of GHGs due to the Project. The DEIR proposes several offsets for all remaining Project incremental emissions above the threshold following mitigation measures. However, it may be optimal to develop mitigation measures which are capable of significantly reducing the emissions of GHGs particularly because it is not clear how BAAQMD will treat the use of carbon credits as GHG mitigation under CEQA.

Hydrology and Water Quality:

The DEIR provides a summary of historical violations of the Facility which have occurred primarily as a result of discharges of sediment-laden water to Permanente Creek. The DEIR notes that "a notice

of violation was issued to the Quarry as recently as March of 2010." However, there are more recent violations issued by the Water Board, such as the notice of violation issued on February 18, 2011. Of significance is that the Water Board plans to require the Facility to obtain coverage under a different discharge permit. This was not noted in the March, 2010 notice of violation which is referenced in the DEIR.

The baseline conditions used in the hydrology and water quality analyses presented in the DEIR are those that existed in June 2007. This is inconsistent with Section 4.3, Air Quality which used an 11 year timeframe to calculate baseline conditions in order to account for fluctuations in the production rate of the Facility due to market demand. On the surface, higher production rates appear to have the potential to increase the mobilization of some chemicals of potential concern, such as selenium. The DEIR should document the rationale for this inconsistency in defining baseline conditions and should document that the varying production rates of the Facility do not significantly affect the analyses presented in this section.

DEIR Impact 4.10-1: Post-Reclamation Impacts to Permanente Creek

Activities associated with the Project have the potential to increase the mobilization of naturally occurring chemicals thus increasing the runoff of these chemicals to Permanente Creek. An analysis is conducted which is intended to demonstrate that all chemicals other than selenium will not be released to Permanente Creek at levels above thresholds. A detailed analysis specific to selenium is conducted and it is concluded that with mitigation measures impacts to the creek will be below thresholds. Therefore this impact is concluded to be a "less than significant impact with mitigation incorporated."

The evaluation presented includes total dissolved solids (TDS), sulfate, molybdenum, and selenium as primary chemicals of potential concern because they have been detected above the water quality objectives in samples from surface runoff and/or Permanente Creek. TDS and sulfate are determined to be present at similar concentrations upstream and downstream of the Facility. Additionally, historical detections of mercury are shown to generally be below thresholds.

Hexavalent Chromium

It would be helpful if hexavalent chromium were included in these evaluations. At a minimum, sampling results for hexavalent chromium should be mentioned and shown to be below applicable water quality standards. Hexavalent chromium has been detected in previous sampling and is thought to occur naturally in regional soils. Given the relatively high toxicity of hexavalent chromium, it should be discussed within this impact in some fashion.

Molybdenum

Releases of molybdenum are not considered an issue because the only applicable objective for molybdenum is associated with agricultural supply, which is not a designated beneficial use of Permanente Creek. However, molybdenum has been detected above some thresholds [such as Environmental Screening Levels (ESLs)] and the Project may contribute to these elevated concentrations. A more thorough evaluation of molybdenum is necessary to determine the significance of these impacts.

Mercury

The evaluation of mercury is insufficient to demonstrate that the Project will not contribute to elevated concentrations in Permanente Creek. Mercury does occur naturally in regional soils and the Project is likely contributing to mobilization and discharge of mercury. The DEIR presents three mercury samples which are above the water quality objective, one of which is 20 times higher than the objective. Though mercury is present naturally at relatively low concentrations in regional soils, the high toxicity of some forms of mercury necessitates ongoing monitoring of the potential impacts of the Project on mercury concentrations in Permanente Creek.

Selenium

Selenium is of particular concern because the Water Board in 2009 adopted a proposal to list Permanente Creek as water quality impaired by selenium under the Clean Water Act (CWA) (SFBRWQCB, 2010). As noted in the DEIR, previous sampling has indicated that the Facility is a significant contributor to selenium concentrations in Permanente Creek. The reclamation activities propose a number of mitigation techniques. In particular, the Project calls for covering exposed limestone with other materials which do not contain high levels of selenium. The mitigation measures call for ongoing monitoring to ensure adequacy of these measures. However, the DEIR solely compares selenium concentrations to the Basin Plan's Benchmark. Of note, as part of the CWA, the Water Board plans to develop a Total Maximum Daily Load (TMDL) for selenium in Permanente Creek by 2021 which will limit the total amount of selenium Permanente Creek can receive in order to achieve water quality goals. This analysis should be reevaluated in the context of the TMDL when it becomes available.

DEIR Impact 4.10-2: Interim Impacts on Permanente Creek

The DEIR presents an evaluation of the potential impacts to Permanente Creek during the reclamation activities. It is concluded this impact is a "significant and unavoidable impact" because of the releases of selenium to Permanente Creek. The DEIR proposes several mitigation techniques intended to help minimize the impacts. In the past the Facility has not adequately or sufficiently implemented in-place Best Management Practices (BMPs) to control runoff of sediment-laden water. The DEIR should contain measures for assessing the effectiveness of the mitigation measures as they are implemented.

Health Risk Assessment

A health risk assessment was conducted and is presented as Appendix E of the DEIR. The health risk assessment supports the evaluation and conclusions contained in the Section 4.3, Air Quality. The health risk assessment is intended to be conducted in accordance with applicable federal, state, and regional agencies guidance. Comments and limitations of the health risk assessment are discussed below.

In general, the health risk assessment presented as Appendix E of the DEIR should more clearly an explain the methodology followed.

Chemicals of Potential Concern

The health risk assessment concluded that diesel vehicles are the primary driver of potential health risks to offsite receptors. While DPM is included in the risk assessment, other chemicals which are potentially significant for evaluating diesel vehicle emissions such as benzene, formaldehyde, and acetaldehyde are not included. Inclusion of these chemicals would result in a more complete analysis. At a minimum, a justification of the rationale for excluding chemicals should be provided.

Toxicity Assessment

Appendix E states that the health risk assessment used toxicity values published by the Cal/EPA website. However, the toxicity values reported in Table 7 for mercury do not match what is on Cal/EPA's website for inorganic mercury. A detailed review of toxicity values for all chemicals has not been performed; it is possible other chemicals also do not match current Cal/EPA guidance. Additionally, some departments of Cal/EPA [e.g., the Department of Toxic Substances Control (DTSC)] recommend including toxicity values from other sources and using the most conservative value to estimate health risks.

Approval of Cement Plant HHRA (AMEC, 2011)

Appendix E states that the HHRA previously conducted for the cement plant has been approved; however, the main text of the DEIR states that approval is pending. Clarifying this discrepancy would be helpful.

Sincerely,

Jim Gustafson, P.E.
Engineering Services Manager

Cc: DJS, City Manager

From: <JLucas1099@aol.com>
Date: Tue, 21 Feb 2012 14:29:49 -0500 (EST)
To: <Rob.Eastwood@pln.sccgov.org>
Subject: Lehigh Permanente Quarry Reclamation Plan Amendment DEIR # 2010042063

Rob Eastwood, Principal Planner

February 21, 2012

County of Santa Clara, Planning Office
70 West Hedding Street, East Wing, 7th floor
San Jose, CA 95110

RE: Lehigh Permanente Quarry Reclamation Plan Amendment (Consolidated)
(State Mine ID# 91-43-004) DEIR # 2010042063

Dear Rob Eastwood,

In regards areas of concern about adequacy in Santa Clara County's environmental review of the reclamation plan amendment for a Lehigh Permanente Quarry Reclamation Plan, please accept the following comments.

~ Groundwater monitoring wells to assess levels of COC's from present quarry operations introduced into watershed of Black Mountain and Monte Bello Ridge are located above facility rather than downstream of it. This results in misrepresentation of critical groundwater quality data necessary for Reclamation Plan review.

~ In consideration of the high susceptability of Santa Clara Valley's unconfined aquifer in this area and that the nucleus (some 17) of CalWater's prime regional deep drinking water wells lie just one mile downhill, it is basic for any integrity in this environmental analysis to sink at least a dozen monitoring wells downstream of quarry in an arc and direct line, following railroad ravine, to intersection of Stevens Creek and #280 and #85. EPA protocols for this level of groundwater investigation are available. Without such data the EIR is deficient.

~ Geology of quarry site in EIR is not adequately profiled in regards delineation of faults and fissures that might be acerbated by deep quarrying activities and hasten introduction of COC's to groundwater flows.The constraints of these physical features need to be scientifically assessed and reported in supplement to EIR.

~ Recent slides and slope failures need to be precisely shown on detailed drawings of site. Correlation with heavy rain years or regional quake activity might give regulatory perspective for best management practices. Mention needs to be made of 1982-83 site activities that resulted in downstream flooding of Blach School.

~ The reference to sediment yields from this East Fork of Permanente Creek compared to average sediment yields is erroneously stated. In USGS study, "Effects of Limestone Quarrying and Cement-Plant Operations on Runoff and Sediment Yields in the Upper Permanente Creek Basin, Santa Clara County, California" it was found to be twenty times greater than the West Fork in wet year of 1986, and the West Fork has high yield. Quantification of sediment loads needs to be specific in EIR, such as 1986's 53,000 tons of sediment yield.

~ In consideration of excessive loads of sediment capable of being released in high storm events (likely to be more intense in consideration of global warming trends) it would seem a responsible conservative measure to create a terraced delta below facility to slow and entrap any such mudslide deluge. This possibly 350' deep terraced delta would be thickly vegetated with willows and native species. Feel this is reclamation alternative that needs inclusion in this plan, with the strong recommendation for immediate implementation.

~ Did not find rainfall data for quarry site, that depicted full range of precipitation in wet and dry years. Believe this is needed to safely assess extensive tonnage of soils proposed for recontouring and backfilling quarry for reclamation plan compliance. Maryknoll gage has been in existence long enough to provide significant data?

~ Also, do not find Permanente Creek corridor revegetation/restoration documentation in reclamation plan. There needs to be a geomorphic analysis of present creek channel in comparison with historic conditions. The creek restoration efforts need to coordinate with historic channel meander lengths, water levels and cfs. If revegetation is not planned in accordance with natural dynamics of the stream, nothing will hold over time. Also one can never underestimate the importance of a 50 to 75 foot buffer of vegetation in restoring stream health and water quality. This should be implemented now in order to mature sufficiently in reclamation plan. Santa Clara Valley Water District staff can advise on sources for obtaining vegetation native to watershed.

~ Reclamation Plan EIR has discrepancies in assessing prevalence and health of the red-legged frog colony that exists throughout quarry site. As this is an endangered species it is essential that regulatory wildlife agencies do a professional evaluation of present colony, said to have been Santa Clara County's biggest, with continuing quarterly assessments throughout the life of this reclamation plan. Another critical aspect to the well-being of the red-legged frog colony is the recent focus on selenium levels in permanente Creek. The susceptability of the species to selenium levels in its habitat must be mandated guiding criteria in EIR plan.

~ References to impacts on recreation in DEIR appear incomplete. That is, did not find mention of De Anza Trail which passes through (at base of quarry operations) to Rancho San Antonio Preserve, where Santa Clara County foothill bike trail is also located. Historically the Stevens Creek Road connecting with Monte Bello Ridge Road passed through the quarry site and as ultimately might be restored as recreation corridor, it should be referenced in this EIR reclamation scenario in

regards safety and as trail from valley floor to sea.
Downstream parks that need also to be considered for health and safety concerns are Rancho San Antonio County Park, MidPeninsula San Antonio Open Space Preserve, Los Altos Heritage Oaks Park, and City of Mountain View's Cuesta Annex, McKelvey Park and Shoreline Parks. Impact to SCVWD recreation unclear.

As seem to be still coming out of general malaise from flu, would like to close comments for present, and submit details on chapter and verse for some of these points at later time, this afternoon. Thank you for your kind consideration of concerns in regards this long term reclamation plan.

Sincerely,

Libby Lucas
174 Yerba Santa Ave.,
Los Altos, CA 94022

Rob,

Attached please find old stream gage data on Permanente Creek that believe illustrates wide range of flows that must be analysed in an appropriate assessment of impacts of COC's and on synergistic complications that need to be looked for in cumulative impacts to stream channel and underground aquifer water quality.

Libby Lucas, 174 Yerba Santa Ave., Los Altos, Ca 94022

------ End of Forwarded Message

From: JLucas1099@aol.com
Date: February 6, 2012 11:31:39 AM PST
To: administration@losaltos.ca.gov, administration@losaltosca.gov
Cc: dpedro@losaltoshills.ca.gov
Subject: Santa Clara Valley Conservation District Historic Permanente Creek Flow Data

Attachment 1 - Permanente Quarry letter submitted by Libby Lucas

Not sure if it helps discussion, but did review old Santa Clara Valley Water Conservation District Permanente Creek flow records for period 1938 through 1961 and daily flow rate of 8 cfs or above occurred less than 10 % of time, and it looks as if there is no daily flow to record at all in a third of these months.

If you would like a break down, here goes: Loyola Corners

1938 - 39 92 acre feet flow for year 0 days of flow 8 cfs or over 10 months no flow " "
1939 - 40 4170 acre feet flow " " 70 days of flow " " " " 6 months " " " "
1940 - 41 8803 acre feet " " " 145 days of flow " " " " 3 mth" ", 1 mth 2.0cfs, 1 mth 1.0cfs
1941 - 42 5159 acre feet " " " 88 days of flow " " " " 2 mth" ", 4 mth 2.0cfs daily average
1942 - 43 3117 acre feet " " " 68 days of flow " " " " 2 mth. 1.0 cfs, 2 mth 0.5 cfs av flow
1943 - 44 516 acre feet " " " 2 days of flow 8 cfs or over 3 mth 0.5 cfs, 7 mth 0.25 cfs " "
1944 - 45 1426 acre feet " " " 15 days of flow " " " " 6 mths record flows Loyola Corners
1944 - 45 289 acre feet " " " 0 days of flow " " " " 5 mths record " " Holly Ranch
1945 - 46 1039 acre feet " " " 8 days of flow " " " " 50 days no flow " "
1946 - 47 282 acre feet " " " 0 days of flow " " " " 5 mths no flow " "
1947 - 48 69 acre feet " " " 0 days of flow " " " " 9 mths no flow

" "
1948 - 49 599 acre feet " " " 7 days of flow 8 cfs or over 8 mths no flow
" "
1949 - 50 305 acre feet " " " 0 days of flow " " " " 7 mths no flow
" "
1950 - 51 2603 acre feet " " " 41 days of flow " " " " 4 mths no flow
" "
1951 - 52 4353 acre feet " " " 92 days of flow " " " " 4 mths no flow
" "
1952 - 53 2028 acre feet " " " 38 days of flow " " " " 4 mths no flow
" "
1953 - 54 498 acre feet " " " 0 days of flow " " " " 5 mths no flow
" "
1954 - 55 207 acre feet " " " 0 days of flow " " " " 5 mths no flow
" "
1955 - 56 5000 acre feet " " " 87 days of flow " " " " 4 mths no flow
" "
1956 - 57 371 acre feet " " " 5 days of flow " " " " 4 mths no flow
" "
1957 - 58 6279 acre feet " " " 98 days of flow " " " " 2 mths no flow
" "
1958 - 59 166 acre feet " " " 0 days of flow " " " " 1 mth no flow
" "
1959 - 60 382 acre feet " " " 4 days of flow 8 cfs or over 2 mths 0.1 cfs
average flow " "
1950 - 61 61 acre feet " " " 0 days of " " " " " 5 mths no flow
" "

If any questions on this data please do not hesitate to reply.

Main concern I continually find in routine white-wash assessments of stream flows is that they average out overall data when we know California has flashy streams that will only become flashier with global warming.

Libby Lucas

Rob Eastwood, Principal Planner
County of Santa Clara Planning Office February 21, 2012

RE: Lehigh Permanente Quarry Reclamation Plan Amendment DEIR

Dear Rob Eastwood,

As documentation for source of comments submitted to you earlier today, please include following items.

~ USGS Report 89-4130 evaluated daily sediment yields from East Fork of Permanente Creek on page 41, with summation for year 1986 of 53,240 tons of sediment, but with West Fork yield at 2870 tons, page 19. 1986 was a wet year but was no 100 year storm event. A 100-year scenario needs to be assessed in DEIR.

~ An Analysis of the Sensitivity to Contamination of the Santa Clara Valley Groundwater Aquifers Based on the USEPA Drastic Methodology, December 1999, Roger Pierno, Santa Clara Valley Water District depicts location of major CalWater drinking water wells (near #280 & #85) and the Aquifer Protection Vadose Zone.

~ Flatland Deposits - Their Geology and Engineering Properties and Importance to Comprehensive Planning, Geological Survey Peofwaaional Paper 943 by E.J. Helley features in Figure 48, a map of Areas favorable for ground water recharge in Santa Clara County. (Page and Wire 1969) which depicts region downstream of quarry as favorable and highly favorable for groundwater recharge.

~ California Department of Water Resources map of Evaluation of Ground Water Resources of South Bay shows Santa Clara Area of aquifer with adjacent West Side Subarea which locates 'zone of ground water cascade' (area of high percolation into deep drinking water aquifer) as it intercepts Permanente Creek.

~ Permanente Creek Restoration Area documentation in DEIR is too vague to give confidence in ultimate stability of slopes in this upper watershed. Please consider implementation of 50 foot terraces or benches, sufficiently compacted to sustain bushes and trees with viable root systems. This might be designed as a Guggenheim Museum corkscrew spiralling up of benches to ease maintenance or else be pure terraces. Do not believe that hydroseeding is going to stabilize these slopes, but mandate use of approved native seed.

~ Billions of tons of backfill referenced in some alternatives would not be sound in case of high storm events.

~ Though De Anza Historic Trail is referenced, it is qualified as not a public trail option as being on private quarry property. When historic Stevens Creek Road to Monte Bello Ridge was given over to Quarry the lower De Anza Trail use should have been obtained as this element is essential to recreation circulation in area.

~ P. 4.7-38 Inaccurately claims that no active fault passes through project area yet

in Loma Prieta quake the Jesuit Seminary building in Rancho San Antonio was rendered uninhabitable and had to be removed.

~ P. 4.10-5 Selenium studies need to be conducted on red-legged frogs both in Permanente Creek and in the 26 (or 28) ponds that are referenced in DEIR. As an endangered species they are the indicator species.

~ In Mitigation measures and the discussion of significant and unavoidable impacts human health must be included in this analysis and in this matter this DEIR is seriously deficient. Water quality analysis needs to be conducted in wells below quarry site in ravine under railroad tracks as well as in 2 and 1/2 miles of Permanente Creek's percolation unconfined aquifer zone between quarry and Foothill Expressway. (Air quality gages at Calero Reservoir are out of air basin so not acceptable reference data.)

Will send this on now along with water resource stream data. Thank you for your diligence in all this.

Libby Lucas

------ End of Forwarded Message

QuarryNo
10570 Blandor Way
Los Altos Hills, CA 94024

February 21, 2012

Rob Eastwood
Santa Clara County Planning Office
70 West Hedding Street
San Jose, CA 95110

Dear Rob,

We appreciate the opportunity to comment on the Draft EIR (DEIR) and the Planning Offices' incorporation into it of some of our past comments. However we believe it still has some omissions. CEQA states that the **EIR must include a description of the physical environmental conditions in the vicinity of the project as they exist at the time the NOP was published,** which in this case was 5 years ago (2007). There is no such description easily understood by the Public in the DEIR.

While the Reclamation Plan outlines a 20 year plan of action there is no chronology of the changes that have already occurred since the NOP was published and a listing of actions to mitigate the damage. Hopefully this can be corrected quickly but the public is left with wonderment of a Reclamation Plan and accompanying EIR that only appears 5 years after the Notice of Publication.

The DEIR describes in great detail the extensive operations of the Lehigh Quarry and Cement Plant covering 3,510 acres in an unincorporated area of Santa Clara County. However the focus or "Project" is limited to Reclamation, the majority of which will not start for another 10 years. Reclamation under the prior 1985 Reclamation Plan has never occurred. For example:

1. Ridge line elevation limits of 1,500 and 1,650 feet on page 2 not achieved.
2. WSMA re-vegetation as committed on page 24 yet to occur.
3. Mining to be limited to 330 acres as stated on page 18 greatly exceeded.
4. Permanente Creek limit not to pass through quarried area per page 3 unmet.
5. Assumption of no rare or endangered species present on page 4 erroneous.
6. Limestone not described as having high Mercury content missed.
7. Assumption of unlikely pit wall failure on page 12 incorrect.
8. EMSA to have "extensive tree and shrub plantings" per page 25 erroneous.
9. Five years of irrigation to occur as stated page 25 erroneous.
10. Oak seedlings with individual mesh screening as stated page 25 yet to occur.
11. New EMSA hill to be incorporated into natural setting per page 25 missing.
12. WSMA not maintained at specified 3:1 gradient on page 28 creating erosion.

There has never been an EIR for the Lehigh operation although it is a prime polluter in Santa Clara County with a past EIR required by Statute (CEQA 15081.5). This is justified on the basis that the Lehigh

Quarry is vested, the operations are not integrated (which Lehigh denies), the County has only limited responsibility (Cement Plant operates under a County Use Permit) and the County can only address truck pollution on Lehigh property not on County Roads.

As a consequence this EIR is very narrow in scope and does not meaningfully address Public Health and Safety. The County states on page ES-2 that the number one objective is to continue operations of the Quarry in order to maintain a local economic source of cement and reclaim mining disturbance. So much for Health and Safety.

The EIR process is intended to protect residents of Santa Clara County from significant environmental impacts from the Lehigh operations. California Courts have stated that the EIR process should be a demonstration to the Public that the environment is being protected. This is not the case here.

The pollution from Lehigh is treated as an ongoing toxic spill that cannot be stopped or mitigated but can only be continually cleaned up through Amended Reclamation Plans. The deliberate narrowness of the EIR Statement and Purpose restricts and excludes consideration of meaningful alternatives. According to CEQA the County decision makers (Planning Commission) must consider direct and indirect impacts of the expansion of Lehigh operations.

This is indeed an expansion. Lehigh deliberately expanded outside its mining boundaries in the EMSA in 2007 which triggered the NOP. However the EIR does not address the expansion, only the cleanup. From 2007 on Lehigh continuously submitted many Reclamation Plans to cover their expansion even to the point of two plans covering the same operation in violation of the *California Code of Regulations*.

The most significant one was the biggest expansion yet, that of digging a second Pit on the basis that the current Pit limestone was close to exhaustion. The Plan submitted testified to this in detail and stated there was no alternative other than to dig a new Pit. This Plan was processed and a Public Hearing held with Public comments submitted April 11, 2011.

However, on June 3, 2011 it was withdrawn by Lehigh to speed up approval of the current EMSA Plan. We understand that this shortcut approach was suggested to Lehigh by a County Supervisor. However that does not make it compliant with CEQA but may explain why there has never been an EIR while the Quarry and Cement Plant expanded. County Staff stated to the State Mining and Geology Board that the new Pit was being set aside only to speed up the approval process.

In essence the withdrawal of the proposal for a new Pit appears to be a temporary administrative action to speed up approval of the EMSA Reclamation Plan and not to eliminate the new Pit. Hence it appears to be a reasonably foreseeable event that CEQA says must be considered in the EIR. CEQA is very clear in stating that the lead agency shall consider reasonably foreseeable physical changes in the environment which may be related to the project. A new adjacent Pit is exactly that**. The DEIR must be modified to address the Reclamation of the new Pit**. Thankfully the extensive data required is already on file with the County.

This has been confirmed by California Court rulings stating that if there is substantial evidence indicating reasonable foreseeable future activities that will alter or change the scope of the initial project an EIR must analyze the impacts of those future activities to determine if they will change or alter the scope or nature of the of the initial project: *Laurel Heights versus Regents of California (1988) 47 Cal. 3d376.*

Even if this is rectified there are other issues with the DEIR in the critical area of Health. Great dependency is placed on the Air District and its Health Risk Assessment (HRA) even though it is based on old (2008) source data projected out only for the next 2 years of the 20 year Reclamation Plan period. The HRA in Appendix E is based on the Air District HRA and hence has the same flaws.

The HRA defines in parts per million the amount of each of the 69 toxins that fall on individual schools and homes concluding all is well. It touts the use of the AERMOD model in doing this and the approval of the Office of Environmental Health Hazard Assessment (OEHHA). Nowhere is it mentioned that the Air District has concluded that the complex terrain surrounding the Lehigh facility is not adequately accommodated by AERMOD and that they are looking for a better model.

Much credence is given to the fact that the OEHHA has approved the use of AERMOD but a reading of the approval states that their approval is dependent on the appropriateness of the selection of AERMOD. Bottom line the Air District and the County do not know with certainty where the toxins will be falling over the next 20 years, the duration of the Reclamation Plan under consideration.

Finally the HRA assumes that the level of toxic emissions by Lehigh will be down in 2012 due to reduced production. Factually this is not the case as December 2011 production was 124,987 tons which over 12 months becomes 1.5 million tons of clinker well above the 994,020 tons assumed for 2012 in the HRA.

The HRA assumes eventual increased production over the next 20 years but mitigated by the effectiveness of the Mercury Reduction effort which hopefully will be the case. However what of the other toxins such as Benzene and Hexavalent Chromium? Consequently it is obvious **the HRA must be redone to correct all these flaws before it is considered in the EIR.**

Appendix B on Air Resources is a well intended effort to correct this but it continues to only address the limited impact of the reclamation activity and not the overwhelming impact coming from the Quarry and Cement Plant daily operations. Adding additional appendices without new independent data does not correct the flaws in the Air District HRA. Since the purpose of the Reclamation Plan is to allow Limestone to be produced for the Cement Plant, the toxic pollution from the Cement Plant must be considered in the EIR.

Beyond the HRA what else do we know about the Health Hazards from the Lehigh operation? Well the Air District states that Lehigh is the largest source of Nitrogen Oxides emissions in the Bay Area, not just in the County, operating without modern emission reducers. They emit 5 tons per day. In addition the Air District says Lehigh does not meet ground level Ozone requirements and that Lehigh will have to reduce Nitrogen Oxides emissions by 58% to meet safer standards now being set. For now the Public will breathe the unclean air coming from Lehigh.

Far worse are the Particulate (PM) emissions by Lehigh. According to the Air District Lehigh emitted 32 pounds of PM per day in 2010 when production was running at 50% of capacity. As production doubles, these emissions will double.

The worst form of PM is the microscopic PM 2.5 which is 2.5 microns in size. Currently Santa Clara County is categorized by the EPA as non-attaining the safe level of PM 2.5. The Lehigh Cement Plant and the Diesel Trucks servicing it are one of the reasons. They are the largest emitters of PM 2.5 in the County if not the largest. It comes from the Kiln as well as the tailpipes of the diesel trucks. It does not come from common dust.

PM 2.5, according to the Air District, is the most harmful air pollutant in the Bay area. It aggravates asthma, bronchitis and other respiratory ailments and leads to hardening of the arteries while triggering heart attacks consequently decreasing life expectancy by years. The Air District must submit a State Implementation Plan to reduce PM 2.5 to the California Air Resources Board (CARB) this spring. Key to this Plan is the development of a "Transportation Conformity Budget" reducing PM 2.5 emissions from Heavy Duty Diesel Engines. The absence of treatment of the Diesel Trucks in the EIR puts it at odds with CARB's objectives. The 100,000 trips per year by the trucks is the delivery of the cement produced by the Cement Plant using the Quarry product. It is what CEQA defines as an indirect impact.

According to a September 2011 study by the Air District the County would save $2.965 Billion, yes Billion, from a reduction of PM2.5. However this environmental impact is not considered in the EIR on the basis that the Cement Plant is not part of the Quarry (Lehigh says they are one united operation) and the Diesel Trucks are not owned by Lehigh. This is plain gerrymandering of the facts to avoid the obvious conclusion. **The public must be told of the health consequences of adding more pollutants in a non-attainment area and the justification for not including the impact of the Lehigh trucks.**

Equal to the toxic effect of PM 2.5 is the effect of Hexavalent Chromium. According to the EIR it is nowhere to be found with one of the reasons being that none of the current Monitoring Stations, including the Monte Vista Station, monitor the air for Hexavalent Chromium.

Another reason is that Lehigh has buried the results in their submission. On page 4-10-8 we are told of the 82ug/liter of Selenium found in a water sample taken January 2010. That same sample showed 2.0ug/liter of Hexavalent Chromium with even higher amounts seen in samples taken by Lehigh on August 30, 2011 and September 21, 2011. Nowhere is this mentioned in the EIR.

The Public Health Goal (PHG) is .02ug/liter and this level will become the California Maximum Contaminant Level (MCL) later this year. This reasonably foreseeable event is not addressed in the EIR. Hexavalent Chromium is released from the rock when crushed and finds its way into the water and the air. The regulators sweep it away by claiming it only comes from slag which Lehigh does not use. It is there and the Reclamation Plan does not address it. **The DEIR must be amended to include corrective action for the removal of Hexavalent Chromium.**

In addition they say Lehigh is exceeding the one hour national safe emission standard for Sulfur Oxide based on the AERMOD model. As stated before they are now looking for a new model that may give a different result. The Air District when faced with a toxic threat always seems to look for reasons to conclude there is no threat.

They found no threat when Lehigh reported that they had emitted 2 tons of Mercury in 2008-2010. The EPA had directed in 2009 that a Mass Balance approach be used in determining Mercury emissions due to the underreporting in the past. Lehigh stated Public Notification for 2010 was now required. The Air District said they would decide when Public Notification was required, not Lehigh, and concluded Notification would not be required if they credited Lehigh for using Mercury Reduction equipment for all of 2010 even though it was only installed in midyear which is what was done.

Beyond these toxins are the huge emissions of Green House Gases (GHG) by the Lehigh Operation. Lehigh is the largest producer in the County. The output of just the Cement Plant is 4 million tons per day compared to the 10 tons produced by an automobile in one year. Put another way the Lehigh

Cement Plant emits more Green House Gases in one hour than the County Operations do in an entire year. As the County strives to meet new standards for GHG emissions they could have to take 150,000 cars off the road to offset these emissions. That does not include additional offsets for the Diesel Trucks servicing Lehigh.

The trucks produce Green House Gases equal in volume to the Cement Plant. Because of this the California Air Resources Board (CARB) banned diesel trucks older than 1993 at the Port of Oakland and this year that ban is extending to trucks older than 2005. In addition, underlining the severity of these emissions, the Air District will spend $15 million this year to replace 247 privately owned Diesel Trucks servicing the Port.

There is no such action contemplated by the County or the Air District for the trucks servicing Lehigh as the claim is made that mitigation is not required (page 4-3-14): *Emissions associated with operations of the adjacent cement plant are not included in the baseline analysis since the cement plant is a separately permitted industrial use, and because the "Project" would not affect the cements plants use permit, operating permits or regulatory status.* No mention made that the Cement Plant's permits come from Santa Clara County. **There must be similar mitigating action for the trucks servicing Lehigh.**

This is not the only "face slap" to the Public. Condition #8 of the current 1985 Reclamation dictated that the maximum height of the West Material Storage Area shall not exceed the top of the ridgeline. Lehigh swept this aside and piled excessive mine waste there in direct violation of the Reclamation Plan and there it stands above Los Altos today. This deliberate action suggests Lehigh has no intention of abiding by any Reclamation Plan.

The DEIR submerges this transgression and does not suggest corrective action until 2022 at the earliest. In essence the County is saying that Reclamation Plan commitments are only on paper and nothing more than pap for the Public. This is an ongoing violation of the 1985 Reclamation Plan and must be corrected before any new action is taken under the new Reclamation Plan. The EIR must address this physical impact change and **the Reclamation Plan must require that the excessive mine waste in the West Material Storage area be removed immediately.**

In summary, while the DEIR states the "project" is limited to only Reclamation, the County shows doubt by spending over 400 pages describing the massive impact of the Lehigh operation on the local environment. The only alternatives proposed are other ways to eventually clean it up. Santa Clara County is the California Lead Agency for regulating the Lehigh Quarry and the State Permit Issuer for the Cement Plant but it appears to spend its time more on establishing what cannot be done rather than using its eminent authority to safeguard the Environment and Public Health.

Bill

Bill Almon
balmon@pacbell.net

County of Santa Clara

Parks and Recreation Department

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MEMORANDUM

DATE: September 1, 2011

TO: Marina Rush, Planner
County Planning Office

FROM: Kimberly Brosseau, Park Planner
County Parks Department

SUBJECT: Notice of Preparation of an Environmental Impact Report for the Mining Reclamation Plan Amendment for Permanente Quarry (File No. 2250-13-66-10P (M1) and 10EIR (M1))

The County Parks Department has reviewed the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Permanente Quarry (modification to the existing May 2010 application) for a Mining Reclamation Plan Amendment for issues related to park use, trails, and implementation of the Countywide Trails Master Plan and submits the following comments.

The Trails Element of the Park and Recreation Chapter of the 1995-2010 County General Plan indicates a trail alignment nearby the subject parcel. Per the General Plan, Countywide Trail Route R1-A (*Juan Bautista de Anza NHT*) is located northeast of the project site. The *Santa Clara County Countywide Trails Master Plan Update*, which is an adopted element of the General Plan, designates the countywide trail as a "trail route within other public lands" for hiking, off-road cycling, and equestrian use. This trail route provides an important connection between the City of Cupertino and Rancho San Antonio County Park. The City of Cupertino's Final Stevens Creek Trail Feasibility Study also indicates this trail route as an important connection between Rancho San Antonio County Park and the City of Cupertino.

Visual Resources

The quarry is located adjacent to Rancho San Antonio County Park (Diocese Property). Since the County Parks Department is an adjacent property owner, modifications to the Reclamation Plan should take into account the potential aesthetic/visual impacts of the quarry and mitigation of views from these public parklands and trails.

The project is located in a Zoning District with a Design Review overlay for the Santa Clara Valley Viewshed (d1). It is expected that the applicant will construct as per the submitted plans and comply with design guidelines towards screening the project from public views.

An adequate vegetated buffer between the degraded hillsides and the adjacent County parkland and trails should be incorporated into the Reclamation Plan for the quarry.

Biological Resources
The EIR for the Reclamation Plan Amendment should discuss whether or not the project would have an impact on Permanente Creek and the California red-legged frog (CRLF) and California tiger salamander. The CRLF has mitigation sites on the adjacent Diocese property.

Surface Hydrology, Drainage and Water Quality
The EIR for the Reclamation Plan Amendment should evaluate potential hydrological impacts resulting from any grading, recontouring and seeding of the site. The EIR should also discuss if there are any proposed modifications to the riparian corridor or Permanente Creek. The Reclamation Plan Amendment should also take into account adequate erosion control measures and proposed grading and the potential impacts it may have to the adjacent County parkland and trails.

The Santa Clara Valley Water District (SCVWD) is currently preparing a Final EIR for the Permanente Creek Flood Protection Project, which includes a proposed flood detention basin facility to be constructed, operated and maintained at Rancho San Antonio County Park Diocese Property as the Project's Recommended Alternative. This Permanente Creek Quarry's Reclamation Plan should evaluate future hydrological modifications that may impact the District's Permanente Creek Flood Protection Project for portions of Permanente Creek through Rancho San Antonio County Park.

Noise Impacts
The EIR for the Reclamation Plan Amendment should evaluate any potential noise impacts to the adjacent Rancho San Antonio County Park and impacts that noise from the quarry may have on park users.

Air Quality
The EIR for the Reclamation Plan Amendment should evaluate any potential air quality impacts as a result of the quarry use and associated truck trips generated to and from the quarry on the adjacent Rancho San Antonio County Park and impacts that may have on park users.

The County Parks and Recreation Department appreciates the opportunity to provide comments on the NOP of an EIR for the Permanente Quarry Reclamation Plan Amendment. We look forward to reviewing the EIR once it becomes available. If you have any questions regarding this letter, please contact me at (408) 355-2230 or by email at: Kimberly.Brosseau@prk.sccgov.org.

Sincerely,

Kimberly Brosseau
Park Planner

cc: Jane Mark, Senior Planner
Don Rocha, Natural Resources Management Program Supervisor
Ana Ruiz, Midpeninsula Regional Open Space District

Santa Clara Valley Water District

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AN EQUAL OPPORTUNITY EMPLOYER

File: 2985
Permanente Creek

February 21, 2012

Mr. Rob Eastwood
County of Santa Clara
Planning Office
70 West Hedding, 7th Floor, East Wing
San Jose, CA 95110

Subject: Lehigh Permanente Quarry Reclamation Plan Amendment Draft EIR

Dear Mr. Eastwood:

The Santa Clara Valley Water District (District) has reviewed the Lehigh Permanente Quarry Reclamation Plan Amendment Draft EIR dated December 2011. The District has a strong interest in the outcome of the reclamation plan as it relates to future runoff and its contribution to potential flood flows from the site, and the protection of the groundwater basin.

Flooding

The District is in the design phase for the Permanente Creek Flood Protection Project. The project will address erosion control, maintenance, structural repair, and habitat restoration in the Permanente Creek watershed and provide protection from the 1% event to areas currently subject to flooding in Mountain View and Los Altos. The District is planning to start construction on the $40 million project next year.

Under existing conditions, a portion of the quarry lands (361 acres) drain to the quarry pit. The Permanente Creek Flood Protection Project is using this existing condition as a baseline to determine flood impacts. As reclamation progresses, these lands are proposed to drain to Permanente Creek. The EIR estimates that the future condition will add 230 cubic feet per second (cfs) of runoff to the creek during a 1% event. This additional runoff cannot be accommodated by the District's flood protection project and would re-introduce homes to the FEMA 100-year flood hazard zone removed by the District's flood protection project and potentially cause flooding downstream in Mountain View and Los Altos.

The EIR recognizes that the increase in runoff to Permanente Creek after reclamation is completed would result in significant impacts to downstream flooding and hydromodification effects along the creek. A mitigation measure is included requiring the construction of detention facilities to manage increased runoff from the reclamation of the site and for the applicant to consult with the District. However, the Draft EIR concludes that this impact is still potentially significant and unavoidable since it is currently unknown if a basin of sufficient size can be constructed to meet this requirement.

The District cannot accept a potentially significant and unavoidable conclusion as we believe there are solutions to prevent increased flows in Permanente Creek and flooding in Mountain View and Los Altos. We request the County modify Mitigation Measures 4.10-4 and 6-2 to require the applicant to work with the District to determine the level of runoff that can be accommodated by the District's Permanente Creek project and to include in the reclamation

plan adequate facilities to reduce or detain flows in excess of this level up to the 1% event. District staff is available to work with the County and the applicant to ensure downstream communities are protected from flooding.

Groundwater Quality

The District is the groundwater management agency for Santa Clara County and Board policy states that the District will aggressively protect groundwater from the threat of contamination. Portions of the project site overlie the Santa Clara Groundwater Subbasin, a major water supply source in Santa Clara County. Downstream of the Quarry, Permanente Creek overlies the groundwater recharge area of the Santa Clara Subbasin. While the Draft EIR states that the proposed actions and mitigation measures will likely reduce the levels of selenium and other contaminants in surface water runoff to Permanente Creek, adequate verification and monitoring is needed to ensure surface water and groundwater quality are protected. Therefore, the District recommends the following:

- Mitigation Measure 4.10-1b, which relates to water quality monitoring, should identify the monitoring frequency and parameters to be monitored in the runoff from East Materials Storage Area and West Materials Storage Area (6th bullet). This mitigation measure should also identify how all water quality monitoring results will be reported and what actions may be taken to ensure surface water and groundwater quality are protected if Basin Plan benchmarks are exceeded.
- The Draft EIR states that the applicant proposes to add organic material to the backfill as a means to enhance chemical reducing conditions and minimize the mobility of selenium (p. 4.10-38). It should be confirmed that the organic matter to be used will not introduce other contaminants to surface water or groundwater.
- Mitigation Measure 4.10-4 states that detention basins should be designed to "optimize groundwater recharge." Assuming the water quality projections for the runoff from the reclaimed quarry area (Table 4.10-8) are realistic, this concept seems reasonable. However, runoff monitoring data to be collected during reclamation should be considered prior to designing the detention basins to ensure no negative impacts to groundwater quality will result. Also, potential impacts to nearby properties should be considered, including potential mounding effects.
- The District recommends that groundwater sampling be conducted in the Santa Clara Subbasin downstream of the Quarry to confirm that the project is not negatively impacting groundwater quality.

District staff is available to meet and discuss the above areas of concern. Please provide a copy of the Final EIR to the District for review when it becomes available. If you have any questions or need further information, you can reach me at (408) 265-2607, extension 3095.

Sincerely,

Michael Martin
Environmental Planner
Community Projects Review Unit

cc: S. Tippets, C. Elias, S. Hosseini, A. Rouhani, K. Lueneburger, U. Chatwani, V. De La Piedra, B. Ahmadi, File

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SIERRA CLUB
FOUNDED 1892

Rob Eastwood, Principal Planner
County of Santa Clara
Department of Planning and Development
County Government Center, East Wing
70 West Hedding Street, 7th Floor
San Jose, California 95110

February 21, 2012

Dear Mr. Eastwood,

Please find appended our comments on behalf of the Sierra Club regarding the County of Santa Clara's Draft Environmental Impact Report (DEIR) covering the Lehigh Permanente Quarry Reclamation Plan Amendment.

We appreciate this opportunity to participate in this process and look forward to further opportunities to assist the County in shaping this important project.

Sincerely,

Michael J. Ferreira
Conservation Chair
Loma Prieta Chapter
Sierra Club

Cc: Ginny Laibl – Chair, Loma Prieta
Melissa Hippard – Vice Chair
Gary Latshaw, AQ Committee
Reed Zars, Counsel
Ellen Medlin, Counsel

Sierra Club's February 21, 2012 Comments Regarding
County of Santa Clara Planning Department's December 21, 2011
Draft Environmental Impact Report -- Lehigh Permanente
Quarry Reclamation Plan Amendment

A. HYDROLOGY SECTION COMMENTS:

1. The DEIR's Hydrology Section fails to describe what should be its core objective: ensuring compliance with all water quality standards in all reaches of Permanente Creek during all periods of mining, reclamation and post-reclamation activities proposed in Lehigh's December 2011 Reclamation Plan Amendment.

Currently, Permanente Creek is an "impaired" stream under Section 303(d) of the Clean Water Act due to excessive concentrations of selenium and chronic toxicity. In a supplemental EIR, the County should first begin with the objective of ensuring that the water quality in all reaches of Permanente Creek meets all water quality standards during all of the mining, reclamation and post-reclamation activities proposed in Lehigh's December 2011 Reclamation Plan Amendment. This is an inescapable legal obligation under SMARA, the federal Clean Water Act and California's Porter-Cologne Water Quality Control Act. Second, the County should fully analyze and describe what measures will be necessary during all mining, reclamation and post-reclamation phases to achieve this objective. Unless and until an EIR can demonstrate immediate and consistent compliance with this objective neither the EIR nor the Reclamation Plan Amendment should be approved.

2. The DEIR correctly concludes that Lehigh's continuous discharge of toxic quarry pit wastewater into Permanente Creek is a significant reason why Permanente Creek is in violation of selenium and chronic toxicity water quality standards.

According to the Hydrology Section in the County's DEIR at pp. 4.10-31 and 32:

> The effect of the ongoing Quarry pit dewatering discharges (which enter the creek between SW-1 and SW-2) on existing Permanente Creek water quality is indicated by the samples collected at SW-2 (the downstream location in Permanente Creek), where dissolved selenium concentrations ranged from 13 to 81 µg/l. A Quarry pit water sample in January 2010 had a dissolved selenium concentration of 82 µg/l (Golder, 2011), indicating that dewatering is a significant factor with respect to selenium concentrations in the creek.

3. Unfortunately, and without reasoned analysis or demonstrating compliance with the law, the County's DEIR concludes that the toxic pit wastewater discharges to Permanente Creek will continue and will be unavoidable.

According to the County's DEIR at p. 4.10-47, treatment measures sufficient to reduce discharges of selenium into Permanente Creek to concentrations below the 5 µg/l selenium standard would cost "approximately $86 million [to construct], and cost approximately $2.8 million per year to operate and maintain." Without further explanation, the County concludes, "[d]ue to the high estimated costs, this potential mitigation was determined to be infeasible. As a result of these factors, the County has determined the impact to water quality in Permanente Creek from selenium runoff would be significant and unavoidable during the interim period until final reclamation is completed."

As an initial matter, if approval of Lehigh's Reclamation Plan Amendment will result in "unavoidable" violations of law, obviously the Amendment should not be approved. Said differently, Lehigh's Reclamation Plan Amendment may only be approved if it assures compliance with all law. The current DEIR provides no such assurance. Furthermore, because there appear to be serious factual and analytical flaws in the DEIR regarding the necessary measures to assure Lehigh's discharges into Permanente Creek do not violate the law, the DEIR should be supplemented.

The County's selenium treatment cost estimate, which resulted in a finding of infeasibility, is based on assumptions set forth in footnote 14 on DEIR p. 4.10-47:

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14 This treatment system assumes treatment of the selenium primarily in the form of selenate as well as treatment to meet conventional pH, D.O., BOD, and TSS discharge limitations. These are Class 5 cost estimates (+100%, -50%) as defined by the Association of the Advancement of Cost Estimating International, and include a 25 percent contingency. The cost estimates also assume that stormwater detention facilities would be constructed to divert and equalize the runoff into a storage impoundment, thereby resulting in an equalized flow of 8 cfs or 3,590 gpm and limiting the size of the treatment system.

The County's cost estimate appears to be based on flawed flow values. The County assumed that an "equalized" flow of 8 cubic feet per second (cfs) from the quarry pit and the East and West Materials Storage Areas would need to be treated, when 1-2 cfs appears closer to the annual average, selenium-contaminated flow rate coming from the pit and lands that drain into the pit.

First, Lehigh's November 2011 (rev.1) "Hydrologic Investigation," generated by Golder Associates, Inc., Attachment E to the Reclamation Plan Amendment, determined a cumulative pit inflow of approximately 37 million cubic feet for a nine-month period.

4.6.3.3 North Quarry

Table 4.7 is a summary of the water balance for the North Quarry from February 2009 to mid-October 2009. The primary goal of estimating the water balance for the North Quarry was to provide a calibration point for the numerical groundwater flow model.. Using the data provided by Lehigh, the groundwater inflow into the North Quarry was estimated from the following formula:

$$V_{GW} = V_{PIT} + V_{PUMPED} + V_{EVAP} - V_{PRECIP} - V_{RUNOFF}$$

Where:

V_{GW} is the total volume of groundwater entering the pit
V_{PIT} is the change in volume of the water in the pit
V_{PUMPED} is the volume of water pumped out of the pit
V_{PRECIP} is the volume of water from direct precipitation into the pit
V_{EVAP} is the volume of water lost to evaporation based on the surface area of the pit water
V_{RUNOFF} is the volume of water from runoff using the catchment area of the North Quarry and a runoff coefficient of 0.3

Figure 4.18 is a semi-log plot of the various components of inflow calculated from the water balance estimated for the North Quarry. Over the available period of record, the total amount of inflow into the North Quarry was 37,395,000 ft^3 (858 acre-ft), with a range of flow from 210 gpm to 5,700 gpm. The total surface water runoff that entered the North Quarry from February 2009 to mid-October 2009 was estimated to be 7,729,000 ft^3 (177 acre-ft), with a range of inflows from 0 to over 8,800 gpm. The total estimated amount of groundwater that entered the North Quarry was 29,412,000 ft^3 (675 acre-ft), with a range of inflows from about 210 gpm (5^{th}-percentile) to 1,480 gpm (95^{th}-percentile), and a geometric mean of 687 gpm. From early September to mid-October, the North Quarry water level remained constant at 738 feet amsl while the daily pumping rate remained steady at 211 gpm; therefore, suggesting that the ambient groundwater seepage into the North Quarry is about 0.47 cfs (211 gpm) during the dry season.

37 million cubic feet of water over nine months represents an average flow of approximately 1.6 cfs. The Golder Associates analysis also concluded that ground water represented approximately 75% of the pit inflow during the nine-month period (approximately 29 million cubic feet) and surface runoff represented 25% of the pit inflow during the same time (approximately 7.7 million cubic feet).

Second, Lehigh's December 2011 Strategic Engineering & Science, Inc. (SES) Reclamation Water Quality Report at p. 15 (supported by SES Appendix C at p. C-5) predicts that approximately 39,133,000 cubic feet of ground water and surface runoff flows into the pit in an average year. This represents an average flow of 1.24 cfs, or 555 gpm. See SES spreadsheets at SES Appendix C.1, summing "Water Entering Pit Lake" column that includes both ground water inflow, and all other water inputs. SES p. C-6.

In sum, the DEIR's assumption of an "equalized" flow of 8 cfs from the quarry pit and EMSA/WMSA areas into Permanente Creek appears suspect. Because the cost of treatment is directly related to flow, this means the cost analysis is also suspect. In a supplemental EIR the County should fully analyze and describe what measures will be

necessary, during all mining and reclamation phases, to ensure pit and related discharges to Permanente Creek assure compliance with all in-stream selenium and other standards.

4. The County's DEIR also fails to assure that water in all reaches of Permanente Creek will be in compliance will all applicable stream standards.

In addition to its failure to demonstrate Lehigh's discharges of contaminated pit wastewater will comply with stream water quality standards, the DEIR also fails demonstrate that contamination from mined soils, rock, sediments and rubble in Permanente Creek, and mined soils, rock, sediments and rubble that continue to slump and erode into Permanente Creek, will be managed to assure compliance with water quality standards.

The DEIR at p. 4.10-47 states:
"Sediment yield downstream from Permanente Creek has been estimated to be chronically about 3.5 times higher than it would be under natural basin conditions (Nolan and Hill, 1989), potentially contributing to flooding and other adverse effects downstream, and potentially compromising downstream beneficial uses as established in the Basin Plan. Currently, pre-and post-SMARA slopes within the PCRA are eroding into Permanente Creek. In addition, the pre-and post-SMARA slopes and mining disturbances with the seven areas of PCRA areas may be delivering selenium and high TDS to Permanente Creek."

The DEIR should be supplemented to include a thorough analysis of the contribution of streambed and bank sediments to water quality violations in Permanente Creek. After such an analysis, the DEIR should only suggest approval of Lehigh's Reclamation Plan Amendment if it describes mitigation measures that assure immediate and permanent compliance with all water quality standards.

5. The DEIR also fails to describe how polluted floodwaters from the Lehigh site will be controlled and treated to assure that water in all downstream reaches of Permanente Creek will be in compliance will applicable stream standards.

The DEIR's hydrology section that starts at p. 4.10-48 states that the on- and off-site flooding impacts from the mining site due to a 100-year storm event will be "significant and unavoidable." Although the necessary retention facility could be designed, the DEIR states that "as of the time that this EIR was published, it is unknown if a basin or other detention measure of sufficient size could be feasibly constructed onsite to reduce this impact to less that significant levels." p. 4.10-48.

Similar to our concern above, we believe that any County approval of continued mining at the quarry should be contingent on Lehigh first demonstrating that it can retain the flows and pollution from a 100-year storm event on-site. Large floods originating from the Lehigh facility have caused significant damage downstream in the past, and in the future threaten to flush many additional tons of sediment and related pollution into the

lower reaches of Permanente Creek and the Stevens Creek by-pass. A supplemental DEIR should describe and analyze all measures necessary to assure all floodwaters from the Lehigh site are retained on-site, and that all floodwaters discharged from the site into Permanente Creek comply with all stream water quality standards.

6. Lehigh's related Financial Assurance Cost Estimate (FACE) fails to include those measures necessary to attain and maintain water quality standards in Permanente Creek, and fails to require sufficient bonding to ensure performance of such measures.

Related to the County's failure to describe in the DEIR all measures necessary for Lehigh to attain and maintain water quality standards in Permanente Creek, Lehigh's January 23, 2012 Financial Assurance Cost Estimate (FACE) fails to include the costs of performing those measures. Nowhere in Lehigh's FACE are the costs associated with reducing pit wastewater discharges into Permanente Creek to below 5 μg/l of selenium, or ensuring the water quality in all reaches of Permanente Creek meet water quality standards, or ensuring all floodwaters are retained on-site and are discharged in full compliance with stream water quality standards. There should be no bonding approval until the full costs of water quality compliance are calculated and covered.

B. GENERAL COMMENTS:

1. The DEIR has a development timeline with milestones that do not provide sufficiently small time increments. For example, Table 2-2 (page 2-14) has phase 1 staring in 2012 and ending in 2020, but there are no end dates for the components of Phase 1. Given the desire to establish public confidence and a managerial mechanism for tracking progress, at least quarterly start and end date times should be given for the first five years, and annually thereafter. Clearly, it is reasonable that the schedule, which extends to 2030, is subject to revision. But that revision should be done in a transparent manner. The timeline should be updated at least annually with detailed milestones for the following five years.

2. The specifics of the method of providing the financial assurances should be specified. At the public hearing in Cupertino, the statement was made that the financial assurance was $47.8 million. Consistent with the comments above, this amount appears to be significantly underestimated. Whatever the final amount, it must be well documented and well secured.

3. The DEIR describes how the quarry pit will be backfilled with approximately 60 million tons of material currently stockpiled in the West Materials Storage Area (WMSA). The WMSA backfill in the quarry pit is then anticipated to be saturated almost completely with ground water and that water is then anticipated to begin flowing underground into Permanente Creek. The DEIR fails to describe the chemical composition and leachability of the millions of tons of WMSA materials, however, and therefore is fatally flawed. This material should not be dumped into the quarry pit, to

become a potential toxic legacy for the foreseeable future, without first being comprehensively cored and analyzed.

4. The DEIR discusses vertical, but not horizontal expansion of Lehigh's mining operation. According to Lehigh's most recently revised Reclamation Plan Amendment (Nov. 2011), no further surface disturbances are planned. Once the quarry is mined to a depth of 440 feet mining will cease and comprehensive and permanent reclamation will begin. The DEIR should be clear that no further mining will be allowed. If further mining may be allowed at the site in the future, the full impacts of such mining should be described now – not later.

5. To maximize public health the Health Risk Assessment air pollution modeling should be supplemented with more extensive measurements. In particular, "hot spot" locations should be monitored, and the measurements expanded to include chemical analyses of the particulates. The modeling and measurements performed thus far do not include the chemical analysis of the particulates.

Iris Environmental also concluded the need for more measurements in the report they prepared for Los Altos Hills and Los Altos "TECHNICAL MEMORANDUM – REVIEW OF DOCUMENTS PERTAINING TO THE LEHIGH SOUTHWEST CEMENT PERMANENTE PLANT." On page 21:

> The Facility has implemented several mitigation measures which are intended to reduce mercury emissions such that the acute hazard indices are below 1.0 by 2011 as demonstrated in the 2011 scenario. The performance of these mitigation measures should be monitored on an ongoing basis to ensure the assumed reduction in mercury emissions is occurring. It cannot be assumed reductions observed in initial or pilot testing will continue under various operating conditions or as the systems age.

Although the Iris report did not include the reclamation efforts, it accurately reflects the technical need to ascertain the chemical composition of the particulates. While the quotation explicitly states the desire for measurements of mercury, the presence of chromium VI, benzene, arsenic, and other toxic chemicals should also be measured. In the absence of such measurements, assessment of public health relies on simulations which don't represent the complete complexity of the terrain or the meteorology.

Date: February 21, 2012
To: Rob Eastwood
Santa Clara County Planning Office, County Government Center
70 W. Hedding St., 7th Floor, East Wing, San Jose, CA 95110
Re: Comments and questions for the Lehigh Permanente Quarry Reclamation Plan Amendment (RPA) Project Draft Environmental Impact Report (EIR) (SCH#2010042063)

A California Environmental Quality Act (CEQA) review 13-years after the illegal expansion of an open pit mining operation is confirmation of a lead agency's failure to lead. Before the Santa Clara County Board of Supervisors (Board) retroactively certifies the Lehigh Permanente Quarry (Lehigh/Quarry) RPA EIR, they had better figure out whether or not their constituents are being poisoned by the Quarry's past and present illegal activities.

Illegal demolitions: According to a public records request, at least 10 structures on an adjacent parcel formerly owned by Kaiser Metals Corp. and Kaiser Aluminum and Chemical Co. (Kaiser), were demolished without a Final Inspection; their permit status is "incomplete." (Exhibit A)

Left: Kaiser's World War II munitions and chemical factory. **Right:** After the illegal demolition of the factory, leaching mining material was dumped within 250 ft of the Permanente Creek without pollution control measures. **Source:** Google Earth 1948 and 2004

After dodging CEQA and the Surface Mining and Reclamation Act (SMARA), new owner Hanson Cement began illegally grading and covering up the Kaiser parcel, where hazardous materials had been used and stored since World War II, with tons of mining waste. The Kaiser address (23333 Stevens Creek Blvd.) was eliminated; the Quarry's name and operator were changed to Lehigh; and the parcel's hazardous materials legacy misleadingly changed to "the Quarry's historic 70-year old East Materials Storage Area (EMSA)." The simple truth is Lehigh's so-called "historic EMSA" wasn't included in the Quarry's original 1985 Reclamation Plan because no mining activities were taking place on that parcel to be reclaimed until after the illegal demolitions and expansion.

Without an honest and thorough environmental review, a potential public and environmental health emergency will continue to be concealed from the public, and possibly a future housing development. Therefore, the current condition of the "EMSA" is an insufficient CEQA baseline. Fortunately, County regulations, when enforced, require "incomplete" demolition permits to be "renewed," which will ensure that the RPA EIR baseline is not based on a manipulation.

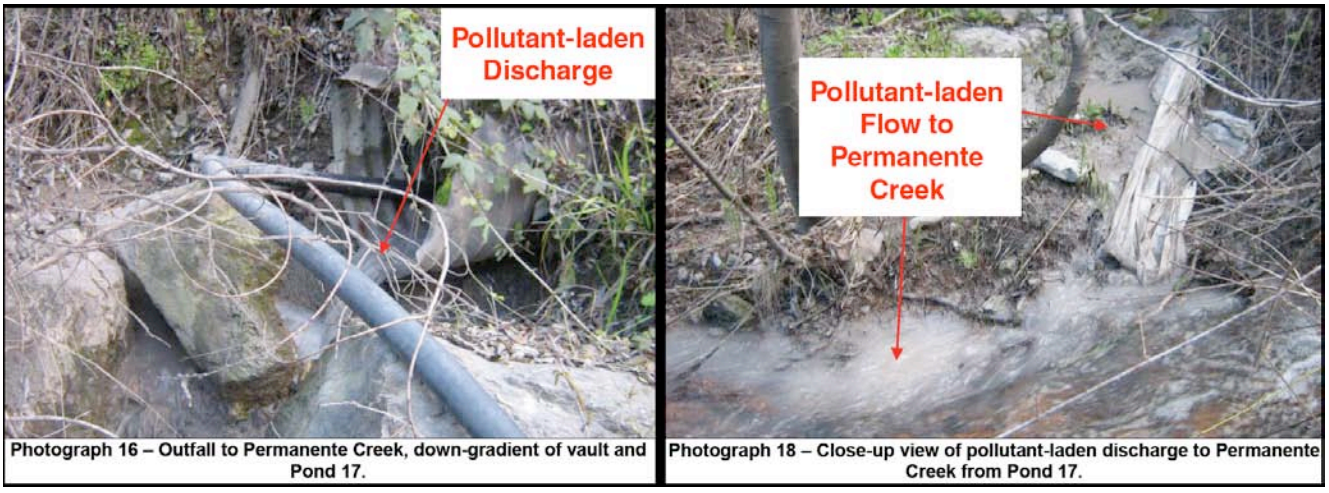
The County has been reckless in their lack of enforcement of CEQA and SMARA (Exhibit B). Was it really just a coincidence that the County failed to perform their required annual SMARA inspection the exact same year 9 structures were illegal demolished in 1998? A full 2 years and 7 months elapsed before the County resumed inspections in 2000, filing what appears to be a fraudulent report with the State Office of Mine Reclamation (OMR): "Stream Protection = OK. Tailings and Mine Waste Management = OK. Building, Structure, Equipment Removal = Not Applicable. Number of Violations = Zero." (Exhibit C)

After the illegal hills of mining waste became visible from miles away, a concerned citizen alerted the County – and was completely ignored. But for the citizen's persistence in contacting the OMR (which led to the first SMARA Notice of Violation in 2006) this parcel's hazardous materials legacy would have been completely concealed from the public. As a matter of fact, the Quarry expansion continues on unabated and without financial penalty, courtesy of a backdoor "AGREEMENT" made in 2009 between the County and Lehigh (no public hearing). (Exhibit D)

"EMSA" mining waste: A view from Rancho San Antonio Park's PG&E Trail. **Source:** QuarryNo

This "AGREEMENT" is the epitome of complicit negligence: Immediately adjacent to the mining waste is the Rancho San Antonio County Park and Open Space Preserve, which welcomes upwards of 500,000 visitors annually. In other words, unregulated particulate matter/fugitive dust has been blowing into the lungs of unsuspecting hikers, joggers and equestrians for over a decade; the distance from the "EMSA" to the closest public access trail is just 550 ft.

Illegal discharges of pollutants: On August 24, 2011, the Sierra Club issued a Notice of Intent to Sue "Lehigh… for significant and ongoing violations of the Clean Water Act" (Exhibit E): "Due to chronically elevated levels of selenium and toxicity immediately downstream from the Permanente facility, the EPA recently approved the listing of Permanente Creek as impaired for these pollutants… Pollutants illegally discharged by Lehigh into Permanente Creek also enter Santa Clara County's underground drinking water supply as they flow across the unconfined areas of the Santa Clara Subbasin aquifer. The Santa Clara Subbasin aquifer is the primary reservoir of drinking water for San Jose and surrounding cities." [Emphasis added]



Pollutant-laden discharges flow from Lehigh into the Permanente Creek. **Source:** U.S. Environmental Protection Agency (EPA) Inspection Report, Lehigh Southwest Cement Co., February 10, 2011

Lehigh readily admits they discharge water that contains – by their own measure – harmful levels of pollutants into the Permanente Creek, while also claiming to have a "valid permit" to do so. Not surprisingly, the Regional Water Quality Control Board (RWQCB) disagrees:

"Lehigh repeatedly asserts that the Facility's discharges of quarry bottom water, wash-down water, and dust suppression water are in compliance... The Industrial General Storm Water Permit specifically prohibits all three of these self–admitted discharges from the Lehigh facility. Lehigh is grossly mistaken in its assertion that the Facility is permitted to discharge these three types of non-storm water flows."

On December 19, 2011, the Sierra Club filed a lawsuit in federal court, asking that Lehigh be forced to stop dumping untreated wastewater containing dangerous toxins into Permanente Creek, as well as pay multi-millions in fines for violating the Clean Water Act.

After the Board's careless disregard for the Quarry's past and present illegal activities, yet another "failure to exercise a sense of concern for future generations" (aka Love Canal) would be unthinkable. As required by law, the "owner or agent" of the illegal demolitions must be ordered by the County to "renew" their "incomplete" demolition permits. This might ensure a legitimate environmental review baseline, one that could determine whether or not the citizens of Santa Clara County are being poisoned by these unconscionable acts.

Questions

Before the Lehigh RPA EIR is certified, will the County:

1) Order Lehigh to amend their RPA to reflect the hazardous materials legacy of the "EMSA"?

2) Order Lehigh to stop their pollutant-laden discharges into the Permanente Creek?

3) Determine if there are poisonous substances (pollutants) contained in the "EMSA" mining waste?

4) Produce certified proof that the illegally demolished structures, and their hazardous chemical contents, were disposed of properly off-site rather than buried under millions of tons of mining waste?

5) Order core sample testing of Lehigh's 3510-acre landholding to determine whether or not Santa Clara County's primary drinking water aquifer is being poisoned as a consequence of the documented illegal acts that have taken place since the 1985 Reclamation Plan baseline: illegal demolitions, illegal expansion, and illegal pollution discharges?

Prior to the illegal demolitions:

6) Did the owner or agent submit the required certification of filing to the County for the State Water Resources Control Board (SWRCB) Notice of Intent (NOI) to Comply with the Statewide General NPDES Permit for Storm Water Discharges Associated with Construction Activity?

7) Did the owner or agent submit to the County's Building Inspection Office a completed copy of the Bay Area Air Quality Management District's demolition notification form – <u>including a completed Asbestos Survey Report</u>?

8) Did the owner or agent contact PG&E regarding disconnection of utilities, and obtain a plumbing permit clearance signature from the County's Environmental Health Services for septic tank abandonment?

9) For environmental review purposes under CEQA, did the owner or agent obtain the required clearance signature from the County's Planning Office for the Identification of Structures for Potential Historic Significance prior to demolishing this World War II munitions factory and chemical laboratory?

10) Did the owner or agent complete Part II of the Identification of Structures for Potential Historic Significance form as required for structures older than 50 years, and submit photographs of each elevation of the structures?

Sincerely,

Susan Sievert
A resident of Santa Clara County, California

Cc: Lisa P. Jackson, U.S. EPA Administrator

ATTACHMENTS

Exhibit A: Public Records Request for Permanente Quarry Demolition Permits, February 10, 2011

Exhibit B: Office of Mine Reclamation 30-day Pending Removal from the AB 3098 List, Reclamation Plan Non-compliance, Permanente Quarry, Mine ID #91-43-0004, July 20, 2011

Exhibit C: Santa Clara County's Annual Surface Mining and Reclamation Act Inspection Report for the Permanente Quarry, covering the years 1998, 1999, 2000

Exhibit D: 2009 "Agreement" between Santa Clara County and Lehigh Southwest Cement Company

Exhibit E: Sierra Club's Notice of Intent to Sue for Violations of the Clean Water Act at Lehigh Southwest Cement Company's Permanente Plant in Santa Clara County, California, August 24, 2011

EXHIBIT A

County of Santa Clara

Department of Planning and Development
County Government Center, East Wing
70 West Hedding Street, 7th Floor
San Jose, California 95110

	Administration	Development Services	Fire Marshal	Planning
Phone:	(408) 299-6740	(408) 299-5700	(408) 299-5760	(408) 299-5770
Fax:	(408) 299-6757	(408) 279-8537	(408) 287-9308	(408) 288-9198

February 10, 2011

RE: **Public records request for demolition permit for:**

Site Address: 0 Stevens Creek Blvd./24001 Stevens Creek Blvd., Cupertino

Assessor Parcel No.: 351-10-005

Present Jurisdiction: County

Bldg. Permit #	Date	Description	Status
19658	06/25/74	Demolish	Incomplete
76991	02/27/98	Demolish Storage Bldg.	Incomplete
76992	02/27/98	Demolish Office Bldg.	Incomplete
76993	02/27/98	Demolish Office Bldg.	Incomplete
76994	02/27/98	Demolish Office Bldg.	Incomplete
76995	02/27/98	Demolish Storage Bldg.	Incomplete
76996	02/27/98	Demolish Storage Bldg.	Incomplete
76997	02/27/98	Demolish Office Bldg.	Incomplete
76998	02/27/98	Demolish Office Bldg.	Incomplete
76999	02/27/98	Demolish Office Bldg.	Incomplete

Respectfully,

Michael L. Harrison

Michael L. Harrison,
Acting Building Official

Attachment

*Please see other side

EXHIBIT A

COMPLETED:	The project has received a final inspection by office.
INCOMPLETE:	The project has not received a final inspection by this office. If the last inspection was made more than six months, ago, the building permit will have to be renewed by the owner or agent.
JURISDICTION:	If the parcel was annexed to a city, information regarding construction will have to be obtained from the noted city.
NO PERMIT:	A building permit has not been issued by this office, for work at this address. In order to legalize construction, the owner or his agent has to apply for a building permit. For more information, please ask for a building permit information handout.
PRIOR TO: 1947	Buildings constructed prior to 1947 were not required to have a permit.

EXHIBIT B

NATURAL RESOURCES AGENCY

EDMUND G. BROWN, JR., GOVERNOR

DEPARTMENT OF CONSERVATION

Managing California's Working Lands

OFFICE OF MINE RECLAMATION

801 K STREET • MS 09-06 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 323-9198 • **FAX** 916 / 445-6066 • **TDD** 916 / 324-2555 • **WEB SITE** conservation.ca.gov

July 20, 2011

Via Email: Scott.Renfrew@LehighHanson.com

Via Certified Mail: 7010 2780 0000 4767 7882

Mr. Scott Renfrew
Designated Agent
Lehigh Southwest Cement Company
24001 Stevens Creek Boulevard
Cupertino, CA 95014

Dear Mr. Renfrew:

30-DAY PENDING REMOVAL FROM THE AB 3098 LIST, RECLAMATION PLAN NON-COMPLIANCE, PERMANENTE QUARRY, MINE ID #91-43-0004

The purpose of this letter is to bring to your attention a matter of AB 3098 list eligibility pursuant to the Surface Mining and Reclamation Act of 1975 (SMARA) Section 2717(b) regarding the Permanente Quarry (Quarry). The Quarry is actively operated by the Lehigh Southwest Cement Company. The County of Santa Clara (County) is the SMARA lead agency for this surface mining operation.

On October 10, 2006, the County issued the Quarry an Order to Comply (OTC)/Notice of Violation (NOV) requiring the operator to prepare an amended reclamation plan and submit it for approval in accordance with a Compliance Schedule. Violations identified in the order included instability of the pit slopes and surface mining operations occurring outside the approved reclamation boundary. Based on that schedule, the Quarry should have come into compliance by December 2007. Subsequently, the schedule was extended for an additional two years to allow for completion of geotechnical investigations.

While still under the October 10, 2006 Order to Comply, the operator expanded operations outside the approved reclamation plan boundary and began dumping materials in the East Materials Storage Area (EMSA). The County issued a NOV on June 20, 2008 to the Quarry operator for the illegal stockpiling material outside the approved reclamation plan boundary.

In a status letter to the State Mining & Geology Board (SMGB), dated June 9, 2011, the County indicated that the CEQA review of the amended reclamation plan is underway.

The current target date for achieving full compliance with SMARA at the Quarry is June 2012. The letter states that this is the earliest date in which the Final Environmental Impact Report (FEIR) is expected to be certified, depending on the volume of public comments received by the County. This "best case" schedule is approximately five years longer than the OTC/NOV allowed for achieving compliance, and well after the original violations were brought to the County's attention.

Public Resources Code (PRC) Section 2770(a) provides that no person shall conduct surface mining operations unless a permit is obtained from, and a reclamation plan and financial assurances for reclamation have been submitted to, and approved by, the lead agency for the operation. Surface mining operations must be conducted in accordance with the approved reclamation plan. Except as provided under PRC Section 2714, any surface mining operations conducted without an approved reclamation plan is a violation of SMARA.

We understand that the County is reviewing two reclamation plans for the Quarry, one for the EMSA, and a more comprehensive reclamation plan. These plans cover two parts of the same operation. However, pursuant to California Code of Regulations (CCR) Section 3502(d) a surface mining operation as defined in PRC Section 2735 and Title 14 CCR Section 3501, shall have no more than one approved reclamation plan applicable to the operation.

Further, CCR Section 3502(g) provides that, should an expansion of an operation into an area not covered by an approved reclamation plan be determined by the lead agency to be a substantial deviation, an amended reclamation plan shall be prepared that ensures adequate reclamation for the surface mining operation. The EMSA should not be treated as a separate reclamation amendment, but included in a single amended reclamation plan which includes all areas disturbed by surface mining operations.

The Department of Conservation's Office of Mine Reclamation (OMR) periodically publishes a list of mining operations that meet the requirements of PRC Section 2717(b). This list is generally referred to as the AB 3098 list, in reference to the 1992 legislation that established it. The Public Contract Code prohibits state agency purchases of mined materials produced by mining operations that are not included on the AB 3098 list. Sections 10295.5 and 20676 of these statutes also prohibit the sale of such materials to local government agencies. The requirements for inclusion on the AB 3098 list include compliance with the financial assurance requirements developed pursuant to PRC Section 2773.1.

This letter serves as official notice that, if the violations noted in the OTC extend beyond 30 days after the date of this notice, the Quarry will be removed from the AB 3098 List. The appropriate steps that the Lehigh Southwest Cement Company must take to resolve this violation is to:

1. Prepare and submit to the lead agency for approval, a reclamation plan amendment that encompasses all the area disturbed by surface mining operations, including those areas conducted outside the approved reclamation plan boundary. The Quarry will not be list eligible until the proposed reclamation plan amendment has been approved by the County.

2. Submit to the lead agency for approval, a revised financial assurance cost estimate (FACE) that includes the cost of reclaiming all the area disturbed by surface mining operations conducted outside the reclamation plan boundary. The Quarry will not be list eligible until the revised financial assurance has been approved by the County.

Proof of the adequacy of the FACE must be submitted to OMR by the lead agency, not by the mine operator. The submission must be in accordance with the SMGB financial assurance guidelines.

Reinstatement to the AB 3098 list requires an approved reclamation plan and financial assurances that cover the affected surface mining operation pursuant to PRC section 10295.5 (a). Prior to reinstatement, the Department will need to verify that the surface mining operations being conducted at the Quarry are covered by an approved reclamation plan and adequate financial assurances.

In summary, the Permanente Quarry, CA Mine ID #91-43-0004, is scheduled to be removed from AB 3098 list 30 days after the date of this notice unless the OTC violations are corrected.

If you have any questions regarding this letter, please contact Bret Koehler at (916) 323-9198.

Sincerely,

Kenneth E. Trott, Manager
Reporting and Compliance Unit

cc: Marvin Howell, Lehigh Southwest Cement Company
Gary Rudholm, County of Santa Clara
Stephen Testa, State Mining & Geology Board

EXHIBIT C

State of California
DEPARTMENT OF CONSERVATION
OFFICE OF MINE RECLAMATION
MRRC-1 Page 2 of 2 (Rev. 04/97)

SURFACE MINING INSPECTION REPORT

VI. Is the operation in compliance with provisions of the approved Reclamation Plan and Mining Permit with respect to:	OK	VN	NI	NA	CA Mine ID #: 91-43-0004
Wildlife Habitat	✓				Weather Code(s): CR
Revegetation	✓				
Agricultural Land				✓	Duration of Inspection: 2.0 hr.
Stream Protection	✓				
Tailings and Mine Waste Management	✓				Approximate Disturbed Acreage: 200
Building, Structure, and Equipment Removal				✓	
Topsoil Salvage, Maintenance, and Redistribution	✓				Status of Operation Code(s): A
Backfilling, Regrading, Slope Stability, and Recontouring	✓				
Drainage, Diversion Structures, Waterways, and Erosion	✓				Status of Reclamation Code(s): R
Other (list or explain below)					

VII. Comments/Description of Violation(s) and Corrective Measure(s) Required [NOTE: please indicate if you have attached notice(s) of violation(s) and correction order(s), in lieu of description on this form]:

The previous inspection of the site took place on Nov. 2, 1997. This inspection report is to cover the calendar years of 1998, 1999 and 2000.

VIII. Number of Violations: 0	Inspector's Signature: Harry Rudholm	Date Signed: 7-27-2000

DISTRIBUTION: White–Operator Green–State (by Lead Agency) Pink–Lead Agency Goldenrod–State (by Operator) Canary–BLM or USFS (if required)

97 90880

EXHIBIT D

AGREEMENT

THIS AGREEMENT is made this 14th day of April, 2009, by and between the County of Santa Clara, a political subdivision of the State of California (hereinafter referred to as the "County") and the undersigned duly authorized representatives of Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc. (hereinafter referred to as "Company") regarding the Permanente Quarry.

RECITALS

A. The Company owns and operates the Permanente Quarry ("Quarry"), which is located within the jurisdiction of the County.

B. In March 1985, the County approved a Reclamation Plan for the Quarry ("Reclamation Plan").

C. In October 2006, the County issued an Order to Comply/Notice of Violation ("2006 Order") pursuant to the Surface Mining and Reclamation Act of 1975 ("SMARA"), Pub. Res. Code § 2710 *et seq.*,to the Quarry owner/operator requiring the processing of an amendment to the Reclamation Plan to encompass mining-related disturbance outside of the approved reclamation plan (except for the cement plant), and set forth a compliance schedule for the amendment. A copy of the 2006 Order is attached as Exhibit A to this Agreement.

D. In May 2008, the County issued a modification to the compliance schedule included in the 2006 Order ("2008 Schedule Modification"). A copy of the 2008 Schedule Modification is attached as Exhibit B to this Agreement. The 2008 Schedule Modification called for the Company to file a reclamation plan amendment by February 2010, with final County action on the amendment to take place in 2011.

E. In June 2008, the County issued a Notice of Violation ("2008 NOV") related to the placement of overburden material in an area known as the East Materials Storage Area ("EMSA"). A copy of the 2008 NOV is attached as Exhibit C to this Agreement. Among other things, the 2008 NOV instructed the Company to cease depositing material in the EMSA.

F. Due to operational needs at the Quarry, the Company desires to continue using the EMSA. The County is amenable to allowing the Company to use the EMSA pending final action on a reclamation plan amendment, provided the Company files and diligently pursues a reclamation plan amendment for the EMSA. Accordingly, the County and the Company agree as follows:

File 2250--09P

AGREEMENT

1. With respect to the Reclamation Plan amendment for the EMSA ("EMSA Amendment"), the parties agree as follows:

A. Not later than April 20, 2009, the Company shall submit to the County an application for the EMSA Amendment. Upon a timely request by Company to meet with County staff prior to April 20, 2009 to discuss the requirements for the application, County representatives will make themselves available for such a meeting.

B. Within thirty (30) days of the Company's submittal, the County shall make a completeness/incompleteness determination specifying in writing the information, if any, needed to make the application complete. The Parties intend to meet during the first week of May to facilitate the County's completeness review.

C. If the County deems the application incomplete, the Company shall respond to the County's incompleteness determination by providing a resubmittal within thirty (30) days after the incompleteness determination.

D. Within thirty (30) days of the Company's resubmittal, the County shall review the Company's resubmittal and determine the completeness/incompleteness of the application.

E. In the event the County still deems the application incomplete, the Company shall be required to continue working in good faith with the County to provide the additional material within thirty (30) day resubmittal/review cycles as outlined above. However, if the County determines that the Company has not produced a complete application by July 20, 2009, the County shall assess, starting as of June 20, 2009, a penalty of $250/day, which daily penalty shall be doubled every thirty days thereafter, until such time as a complete application is submitted to the County and deemed complete by the County. The penalty shall cease when the County deems the application complete.

2. Upon execution of this Agreement, the Company may recommence use of the EMSA as depicted on Exhibits D and E, subject to the stipulations and understandings set forth in this Agreement, pending final action by the County on the EMSA Amendment, and the language in the 2008 NOV instructing the Company to cease depositing material in the EMSA is modified to conform to this Agreement.

3. Nothing in this Agreement shall be interpreted in a manner that indicates that the County will approve the EMSA Amendment or will allow the Company to continue using the EMSA if the EMSA Amendment application is denied or if the Company withdraws the EMSA Amendment application prior to the County taking final action on the application. Nor shall anything in this Agreement be interpreted as a waiver

of the County's legal authority, including but not limited to its enforcement authority under SMARA.

4. Due to timing requirements for geotechnical studies, the County agrees to amend and reissue the compliance schedule issued with the 2006 Order and revised pursuant to the 2008 Schedule Modification to extend the date for submission of the Quarry's overall Reclamation Plan amendment application from February 2010 to May 2010.

5. This Agreement is binding on the Company's successors in interest with respect to the Quarry property and operations.

IN WITNESS WHEREOF, the parties have executed this Agreement, in counterpart, on the day and year first hereinabove written.

LEHIGH SOUTHWEST CEMENT COMPANY,

By: _____

(SEAL)

ATTEST: _____

APPROVED AS TO FORM:

_____

Mark D. Harrison
Counsel for Company

COUNTY OF SANTA CLARA,
A political subdivision of the State of California

By: _____
Jody Hall Esser
Director, Department of Planning & Development

APPROVED AS TO FORM AND LEGALITY:

_____

County Counsel

EXHIBIT E

Reed Zars
Attorney at Law
910 Kearney Street, Laramie, WY 82070
307-745-7979

August 24, 2011

VIA CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Mr. Henrik Wesseling, Plant Manager
Lehigh Southwest Cement Company
Hanson Permanente Cement, Inc.
Permanente Plant
24001 Stevens Creek Boulevard
Cupertino, CA 95014

Dr. Bernd Scheifele, Chairman
HeidelbergCement
Berliner Strasse 6
69120 Heidelberg
Germany

RE: Notice of Intent to Sue for Violations of the Clean Water Act at Lehigh Southwest Cement Company's Permanente Plant in Santa Clara County, California.

Dear Mr. Wesseling and Dr. Scheifele,

We are writing on behalf of Sierra Club to notify you of its intent to file suit against Lehigh Southwest Cement Company, Hanson Permanente Cement, Inc., Lehigh Hanson, Inc., and HeidelbergCement Group ("Lehigh") to enjoin and penalize significant and ongoing violations of the Clean Water Act at your Permanente Quarry and Cement Plant in Santa Clara County, California. Lehigh is liable for the continuous, unpermitted discharge into Permanente Creek of millions of gallons of polluted quarry water, containing elevated levels of selenium and other toxic and conventional pollutants, for at least the last five years. Lehigh is also liable for the continuous, unpermitted discharge of pollutants into Permanente Creek from tons of mine tailings and waste that have been dumped into Permanente Creek. These wastes act similar to coffee grounds, clogging Permanente Creek and continuously discharging a brew of harmful chemicals such as selenium and other toxic and conventional pollutants into its waters.

Both of these types of continuous, unpermitted discharges have caused and/or contributed to significant exceedences of water quality standards for selenium and toxicity in Permanente Creek, have caused and/or contributed to Permanente Creek's state and federal listing as an impaired water body due to the presence of such pollutants, and have substantially diminished the creek's ability to sustain aquatic life including but not limited to steelhead trout and the California red-legged frog, both of which are federally listed as threatened species.

Pollutants illegally discharged by Lehigh into Permanente Creek also enter Santa Clara County's underground drinking water supply as they flow across the unconfined areas of the Santa Clara Subbasin aquifer. The Santa Clara Subbasin aquifer is the primary reservoir of drinking water for San Jose and surrounding cities.

The Clean Water Act at 33 U.S.C. § 1365(a)(1), authorizes citizens to bring suit to enjoin violations of an effluent standard or limitation and to seek civil penalties for such violations. The definition of effluent standard or limitation includes the discharge of pollutants into waters of the United States without a permit. Committee to Save Mokelumne River v. East Bay Utility Dist., 1993 U.S. Dist. LEXIS 8364, 11, n. 7 (E.D. Cal. 1993); aff'd, 13 F.3d 305, 309 (9th Cir. 1993), cert. denied, 115 S. Ct. 198 (1994). Violators of the Act are also subject to an assessment of civil penalties of up to $32,500 per day per violation for all violations occurring through January 12, 2009, and up to $37,500 per day per violation for all violations occurring after January 12, 2009, for each violation, pursuant to Sections 309(d) and 505(a) of the Act. 33 U.S.C. §§ 1319(d), 1365(a) and 40 C.F.R. §§ 19.1 - 19.4.

To the extent required by the Clean Water Act at 33 U.S.C. § 1365(a)(1), we are writing to notify you that Sierra Club intends to file suit in the applicable federal district court anytime 60 days after the postmark date of this letter to enjoin and penalize the violations described below.

I. Background

Kaiser Cement Company opened the main Permanente quarry and original cement plant in 1939. Hanson Corporation purchased the quarry and cement plant from Kaiser in 1986. Lehigh Southwest Cement Company is the operator of the facility. Today Lehigh claims the quarry and plant provide over 50 percent of the concrete used in the Bay Area.

Permanente Creek runs from its headwaters in the Coast Range east through the middle of the quarry property, then north through the cities of Los Altos and Mountain View before draining into the San Francisco Bay.

From http://www.lehighpermanente.com/#/virtual-tour/4537662984.

II. The Violations

A. Unpermitted Quarry Discharges

According to Lehigh's own statements, the company has been discharging without a proper permit, and continues to discharge without a proper permit, pollutants generated by its quarry mining operations directly into Permanente Creek. Permanente Creek is a water of the United States. In particular, Lehigh's quarry mining operations have exposed pollutants to both rain and ground water. As these waters flow over and through Lehigh's disturbed soils and rock, pollutants such as selenium, arsenic, molybdenum, nickel and manganese, residual blasting agent (ANFO), and other toxic elements and compounds, are picked up by the water and are collected at the bottom of the quarry pit. Lehigh then pumps the contaminated pit water on a regular basis from the quarry pit through a pipe into a waste pond (Pond 4) and thence through a pipe into Permanente Creek. Permanente Creek flows into the San Francisco Bay. Lehigh employs no pollution control measures to reduce or eliminate selenium and other toxic substances that are dissolved and suspended in its wastewater. As Lehigh explained to the Regional Water Quality Control Board, San Francisco Bay Region ("Water Board"):

> [T]he quarry dewatering process routes water to Pond 4, where it then discharges to Permanente Creek, almost continuously or regularly depending on the time of year, the volume of storm water and groundwater that collects in the quarry bottom. This regular dewatering process is interrupted only when regular maintenance of the pumping system or other aspects of the storm water management system require maintenance.

Lehigh Response to the Water Board, December 13, 2010, at page 6, attached hereto as **Exhibit A**. A map showing the location of the quarry pit, Pond 4, and the pipe that discharges selenium and other toxic pollutants from the pit and Pond 4 is attached hereto as **Exhibit B**.

According to Lehigh in that same response, "[t]he average *daily flow* into Pond 4 can range from 250,000 to 2,500,000 gallons." **Exhibit A** (emphasis added).

Not only that, Lehigh also admits that the wastewater it has been discharging into Permanente Creek, and that it continues to discharge into Permanente Creek, is contaminated with selenium[1] in concentrations that greatly exceed water quality standards. Again, according to Lehigh:

> The results of the metals analyses indicate that water being collected in the quarry may contain concentrations of selenium that exceed water quality standards, and, when discharged through the quarry dewatering system pursuant to the SWPPP [Storm Water Pollution Prevention Plan], could be contributing to exceedances of the water quality standards for selenium in Permanente Creek.

Exhibit C, Report of Potential Exceedance of Water Quality Standards, Geosyntec Consultants, March 17, 2010, p. 8.

Lehigh's qualification that the water it is discharging into Permanente Creek "could" contain concentrations of selenium above water quality standards is unnecessary. Although not a necessary element to establish liability under the Clean Water Act, Lehigh's own sampling evidence shows that selenium concentrations in its wastewater *are* in excess of water quality standards.

The water quality standards applicable to Permanente Creek are set forth in the 2007 San Francisco Bay Basin Water Quality Control Plan ("Basin Plan") and the California Toxics Rule at 40 C.F.R. §131.38. Both the Basin Plan and the California Toxics Rule establish a chronic total selenium standard of 5.0 micrograms per liter in fresh water. **Exhibit D**. Due to chronically elevated levels of selenium and toxicity immediately downstream from the Permanente facility, EPA recently approve the listing of Permanente Creek as impaired for these pollutants. **Exhibit E**, EPA Approval Letter, November 12, 2010.

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[1] "[S]elenium is a naturally occurring element, common in the environment. It is problematic only in high concentrations, but at certain levels has toxic effects. Selenium impacts the reproductive cycle of many aquatic species, can impair the development and survival of fish, and can even damage gills or other organs of aquatic organisms subjected to prolonged exposure. It can also be toxic to humans, causing kidney and liver damage, and damage to the nervous and circulatory systems." *Ohio Valley Envtl. Coalition, Inc. v. Hobet Mining, LLC*, 723 F. Supp. 2d 886, 900 (S.D. W.Va. 2010).

Water quality testing performed by Lehigh in January of 2010 found that the concentration of dissolved selenium in Pond 4 was 82 micrograms per liter, well over ten times the applicable 5.0 micrograms per liter water quality standard. (Had Lehigh properly analyzed for total selenium rather than just the dissolved component, this value likely would have been higher.) As explained above, Lehigh discharges the contaminated water in Pond 4 directly into Permanente Creek without employing any measures to reduce selenium concentrations. **Exhibit C**, Report of Potential Exceedance, Table 2-1 and Appendix A, page 4 of 16.

Lehigh has an Industrial General Storm Water Permit issued by the Water Board, but that permit, as its name indicates, only applies during specified storm events and not to the on-going, non-storm water discharges from Pond 4 described here. The Water Board emphatically confirmed this fact on February 18, 2011:

> Lehigh repeatedly asserts that the Facility's discharges of quarry bottom water, wash-down water, and dust suppression water are in compliance with the Industrial General Storm Water Permit. The Industrial General Storm Water Permit specifically prohibits all three of these self-admitted discharges from the Lehigh facility. *Lehigh is grossly mistaken in its assertion that the Facility is permitted to discharge these three types of non-storm water flows*.

Exhibit F, Water Board staff review and response to Lehigh's letter of December 13, 2010, in response to our "13267" letter of November 29, 2010, p. 1 (emphasis added).

Because Lehigh pumps the water from its quarry pit into Pond 4 on a continuous or regular basis, and because Pond 4 is the functional equivalent of a full bathtub, the continuous pumping of quarry water contaminated with selenium and other toxic substances inexorably results in the continuous discharge of pollutants through a pipe directly into Permanente Creek. Lehigh has no permit authorizing this continuous discharge. Therefore, Lehigh has violated the Act every day, for each pollutant, for at least the last five years when it has actively pumped and discharged water-borne selenium and other toxic substances from its quarry to Pond 4 and thence to Permanente Creek without a permit.

B. <u>Unpermitted Stream Fill Discharges</u>

According to Lehigh's own reports, Permanente Creek has been used, and continues to be used, as a disposal area for quarry mining wastes. Mine tailings, overburden and other wastes have been dumped, and continue to be dumped into Permanente Creek throughout the stream's path within Lehigh's property. Lehigh's March 11, 2011 "Permanente Creek Long-Term Restoration Plan" documents many of these stream disposal sites. An annotated stream profile diagram, taken from Figure 2-5 in Lehigh's Restoration Plan and attached hereto as **Exhibit G**, shows the

location of some of the more notorious mine tailing and overburden waste disposal sites at Lehigh's quarry along the various sections of Permanente Creek.

Mining wastes have been dumped into Permanente Creek by bulldozers, dump trucks and other mining equipment, with the assistance of gravity. The disposal sites in Permanente Creek include, but are not limited to, those shown on **Exhibit G**, attached hereto. The disposal sites continuously discharge, release and otherwise add their toxins into the creek's waters much like coffee grounds in a percolator. As the waters of Permanente Creek flow over and through the mining wastes dumped into the creek, pollutants such as selenium, arsenic, molybdenum, nickel, manganese, residual blasting agent (ANFO), and other toxic elements and compounds, are dissolved into and suspended in the water. These added pollutants flow downstream through Lehigh's property, through public parks and neighborhoods, and finally into San Francisco Bay. The mine tailings and other rock and sediment wastes that physically remain in the creek bed and adjacent wetlands, or that are carried to various downstream locations during higher flow events, are also unpermitted pollutants that exist in the water column, banks and wetlands of Permanente Creek.

According to Lehigh's May 2010 Hydrologic Investigation, appended to its Reclamation Plan Amendment submitted to Santa Clara County on May 21, 2010, the average concentration of dissolved pollutants in Permanente Creek increases significantly as the creek flows through Lehigh's mining wastes. **Exhibit H**. For example, the water in Permanente Creek downstream of most of Lehigh's pollutant discharges at monitoring location SW-2 contains from three to over 100 times the dissolved concentrations of arsenic, selenium, nickel, manganese and molybdenum compared to the water upstream of most of Lehigh's discharges at monitoring location SW-1. See **Exhibit H**, Figure 6.2 (monitoring locations); Table 6.6 (average pollutant values for monitoring locations); and Figures 6.13 and 6.14 (bar charts illustrating significant increase in pollution from SW-1 to SW-2).

Lehigh has no permit authorizing the continuous discharge of dissolved and suspended pollutants from mine wastes dumped into Permanente Creek described above. Lehigh has no permit for the mine wastes that continuously clog the bed, banks and wetlands of Permanente Creek described above. Therefore Lehigh has violated the Act every day at each disposal site for at least the last five years as a result of such unpermitted discharges.

III. Offer to review information.

To the extent you have evidence that shows, contrary to the allegations in this letter, that Lehigh is in full compliance with all applicable requirements we urge you to provide it to us so that we may potentially avoid, or at least limit, litigation on these issues.

IV. Conclusion

Lehigh has been operating, and continues to operate the Permanente facility in violation of the Clean Water Act. We will seek an injunction to end the illegal, unpermitted discharges alleged in this letter, to restore the hydrologic and aquatic integrity of Permanente Creek, and to recover, on behalf of the United States, the maximum civil penalty for Lehigh's Clean Water Act violations for at least the last five years, as allowed by the applicable statute of limitations.

The address of Sierra Club is 85 Second Street, Second Floor, San Francisco, CA 94105. Sierra Club has individual members who have been, and continue to be, injured by the excessive and unlawful discharges from Lehigh's Permanente facility into Permanente Creek described above. Those injuries are fairly traceable to Lehigh's unlawful discharges, and can be redressed, at least in part, through the cessation of such discharges. If you have any questions regarding the allegations in this notice letter, believe any of the foregoing information to be in error, wish to discuss the exchange of information consistent with the suggestion above, or would otherwise like to discuss a settlement of this matter prior to the initiation of litigation, please contact the attorneys below.

Yours sincerely,

REED ZARS

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Attorney at Law
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Laramie, WY 82070
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GEORGE HAYS BY RZ

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pc: by certified mail:

Lisa Jackson, Administrator
U.S. Environmental Protection Agency
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Washington, DC 20460

Dorothy Rice, Executive Director
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Eric Holder, U.S. Attorney General
U.S. Department of Justice
950 Pennsylvania Avenue, N.W.
Washington, DC 20530-0001

Jared Blumenfeld, Regional Administrator
U.S. EPA – Region 9
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San Francisco, CA 94105

Bruce Wolfe, Executive Officer
San Francisco Bay
Regional Water Quality Control Board
1515 Clay St., Suite 1400
Oakland, CA 94612

Registered Agent
Lehigh Southwest Cement Company
Corporation Service Company
2730 Gateway Oaks Dr., Suite 100
Sacramento, CA 95833

pc: by regular mail

Santa Clara County Board of Supervisors
70 West Hedding Street
San Jose, CA 95110

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

Stevens & Permanente Creeks Watershed Council
2353 Venndale Avenue
San Jose, CA 95124

Midpeninsula Regional Open Space District
330 Distel Circle
Los Altos, CA 94022-1404

Department of Conservation
Office of Mine Reclamation
801 K Street, MS 09-06
Sacramento, CA 95814-3529

Exhibits Provided in Enclosed CD

Exhibit A: Lehigh Response to the San Francisco Bay Regional Water Quality Control Board, December 13, 2010, page 6.

Exhibit B: Map showing the location of the quarry pit, Pond 4, and the pipe that discharges selenium and other toxic pollutants from the pit and Pond 4.

Exhibit C: Report of Potential Exceedance of Water Quality Standards, Geosyntec Consultants, March 17, 2010, p. 8.

Exhibit D: 2007 San Francisco Bay Basin Water Quality Control Plan ("Basin Plan") excerpts, and the California Toxics Rule at 40 C.F.R. §131.38.

Exhibit E: EPA approval letter listing Permanente Creek as impaired for selenium and toxicity, November 12, 2010.

Exhibit F: Water Board staff review and response to Lehigh's letter of December 13, 2010, in response to our "13267" letter of November 29, 2010, p. 1.

Exhibit G: Permanente Creek stream profile diagram showing examples of mine waste dump sites that continuously discharge pollutants into the creek.

Exhibit H: Hydrologic Investigation, Attachment F to Lehigh Reclamation Plan Amendment submitted to Santa Clara County on May 21, 2010, excerpts including Figure 6.2, Table 6.6, and Figures 6.13 and 6.14.

From: Vicky Ho <vickyyueho@yahoo.com>
Date: January 30, 2012 3:43:09 PM PST
Subject: Comment for Public Meeting re Lehigh Southwest Cement Co
Reply-To: Vicky Ho <vickyyueho@yahoo.com>

Dear Ms. Rush:

I cannot attend the meeting, but here is my input :

The current Environmental Impact Report (EIR) is inadequate.
It does not include the impact of the 100,000 Diesel truck trips per year
This must be included in the EIR.
This is essential as truck traffic goes with the cement plant ,
and the cement plant cannot exist without the Quarry.
The trucks generate pollution, noise and safety hazards 24x7 for the community around it.
The Cement Plant operates under a Permit from the County.
Lehigh owns both and they should not be considered as separate businesses.
Please for once do your job, SC council members, stand by the citizens instead of Lehigh.
Our grandchildren and yours as well will thank you.

Vicky Ho
22600 Alpine Dr, Cupertino, CA 95014

------ Forwarded Message
From: Barbie <westb@mac.com>
Date: Tue, 21 Feb 2012 13:34:24 -0800
To: <rob.eastwood@pln.sccgov.org>
Subject: Public Comment on Permanente Quarry Reclamation Plan Amendment
Draft Environmental Impact Report (DEIR)

Dear Rob:

We have two comments on the Permanente Quarry Reclamation Plan Amendment
DEIR.

1. For the benefi t of all Santa Clara County residents, the significant mining scars that are very visible when traveling in a generally westerly direction on Stevens Creek Blvd., Highway 280, or Highway 85 should be mitigated with re-vegetation as soon as mining operations have stopped on the area. Please do not make Santa Clara County residents suffer with those visual scars for 20 to 30 years when all mining operations have stopped before active re-vegetation is initiated. Rather, the mining operator should start the re-vegetation as soon as feasible in all areas that are no longer being actively mined. Also, re-vegetation could start at the mountain tops if the lower areas are still being mined.

2. Upon completion of mining operations, Permanente creek needs to be restored to its original pre-mining condition across all lands covered by the Amended Reclamation Plan.

Thank you for your consideration of these comments,

Dennis & Barbara West
10670 Cordova Road
Cupertino, CA 95014
westb@me.com

------ End of Forwarded Message

Attention: Rob Eastwood, Santa Clara County Planning Department, Santa Clara County Board of Supervisors (SCC BOS)

cc: Marina Rush, Santa Clara County Planning Department
California Office of Mine and Reclamation, Director
State Mining and Geology Board, Executive Director
City Of Cupertino
City of Los Altos
City of Los Altos Hills
California Regional Water Control Board

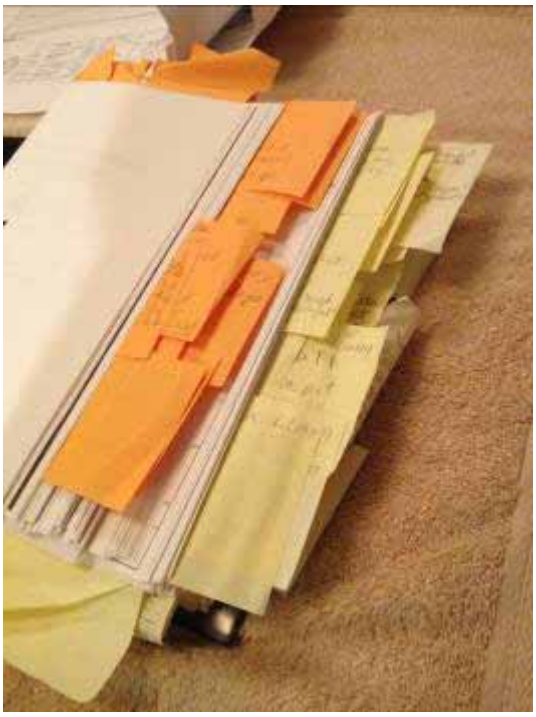
Comments on Lehigh Reclamation Plan Amendment DEIR, December, 2011

West Valley Citizens Air Watch (WVCAW)
and
Bay Area for Clean Environment (BACE)

February 21, 2012

[1] The RPA has changed substantially after the August 18, 2011 EIR Notice of Preparation

The original RPA dated July 2011 was replaced with a new RPA dated December 2011. The original public scoping comments were for the July version, but then when notice dated 12/23/2011 was sent to the public announcing the DEIR had been published, it referred to a new version that we had not seen. Most of the public was not aware of this new version until the first public meeting was held by the county on January 26, 2012, 5 months into the process and one month before the deadline for final comments to the DEIR. WVCAW has put forth considerable effort in analyzing the July RPA. We had spent $959.77 creating a hardcopy of these documents and invested substantial time notating this copy. Several pictures of these documents along with the receipt are shown below.



No explanation was given for what has changed or which pages or paragraphs are different and it is unreasonable to expect the public to review the entire document again in the time remaining. Furthermore, the body of the RPA is 42% larger in the new December RPA compared to the original July RPA, and the effect on the voluminous attachments is not known. How are citizens supposed to adequately review the DEIR when the supporting documents are changed without any schedule extension or even a notice? We believe the intent of the CEQA process will not be met without a new scoping period and additional time to review the DEIR and request the county rewrite the schedule accordingly.

[2] The EIR must include a true “no project alternative” which assumes the predictable consequence of an alternate (and legally required) reclamation plan without speculative assumptions about expanded mineral extraction

The DEIR arbitrarily assumes that if the proposed project is not approved, then an identical plan would be approved later on. CEQA pp15.126.6 states, “If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this “no project” consequence should be discussed.” It is entirely predictable that if this plan is not approved Lehigh will submit an alternate reclamation plan because they

are currently out of compliance, under local pressure from the community, and belatedly under State threat to implement AB3098 to correct SMARA violations of the 1985 reclamation plan. But while they are legally obligated to submit a reclamation plan, the extraction components of any future plan are not predictable but highly speculative. The past plans for the property by this cement company have included a housing development, for example. Furthermore, the County has discretionary power in the matter. Present day statements of intent by Lehigh to pursue such a course hardly embody a predictable outcome.

Yet the “no project alternative” in the DEIR assumes that any alternative with less extraction than currently proposed is invalid and can not be analyzed by the EIR. The total limestone extraction is considered a fixed constant and environmental impact mitigation measures that limit extraction are not considered.

For compliance with CEQA, the “no project alternative” must assume that the legally required reclamation plan is eventually put in place but without further extraction of resources. Conflation of expanded resource extraction with reclamation activity has been a common complaint by the citizenry and is mentioned repeatedly in the scoping comments by the public. The fact that expanded mining in the existing pit is now proposed compared to earlier proposals for a brand new mine does not substantially change the fact that Lehigh continues to hold the reclamation plan hostage to expanded mineral extraction.

We ask that in addition to the CEQA compliant “no project alternative” described above, the EIR evaluate an alternative which precludes mineral extraction until after all environmental violations are corrected.

We also ask for consideration of one more alternative which precludes mineral extraction below the present depth (750’ AMSL) of the mine due to geological and hydrological concerns.

We further ask for other alternatives that eliminate further dumping in the EMSA and include reclamation of the entire footprint of the cement plant location.

Paragraph 3.3.2.1 suggests that an alternative site is inappropriate because the reclamation must be applied to the existing site. But the extraction proposed in this RPA is ignored when it comes to considering other sites. Cement and limestone is available elsewhere and the EIR should discuss the availability of cement and limestone from other locations and how this would impact the environment. Lehigh is presently importing limestone and claims that the Cement Plant will continue to manufacture cement "long after the Quarry is exhausted of its limestone resource", as documented on page 6-8 of the DEIR.

[3] What is Lehigh's track record on execution of the existing 1985 reclamation plan? Where is a comprehensive list of other environmental statute violations? Ignoring past performance against the old plan and violations of other important statutes ignores a substantial body of evidence that directly applies to a realistic estimate of the environmental impact of this project.

The 1985 plan states:

> "*C. <u>Ultimate Conditions</u>*
> *At the end of this 25 year reclamation program the following conditions will exist. The West Materials Storage area will have reached a maximum elevation of 1975 feet. Its slopes will be established at a 3:1 gradient and planted with native grasses to control erosion.*
> *The East Materials Storage area will have reached a maximum elevation of 1475 feet, with slopes at a 3:1 gradient. It will be revegetated with native grasses, shrubs, and trees.*
> *The quarry pit area will be excavated at an overall gradient of 1:1 in conformance with the slope stability investigation. Any future alternatives, including revegetation and continued operation, will be addressed in another reclamation plan to be prepared in approximately 20 years."*

After 27 years, how much of this been accomplished? The West Materials Storage area has not been graded or re-vegetated. What happened to the original East Materials Storage Area plan? The main pit has not been stable with numerous landslides (it has even intruded onto neighboring property), and the new plan was not prepared in 20 years as promised (and would not yet be prepared if not for immense community outrage)."

CEQA 15384(a) states:

> *"Substantial evidence" as used in these guidelines means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency." And it further says, "…speculation…does not constitute substantial evidence."* (Emphasis added.)

Isn't it fair to say that the "whole" record should include the track record of this company and its predecessors on environmental issues; how well they complied with all applicable environmental laws and specifically SMARA with regard to compliance with the 1985 reclamation plan, and how well they achieved the results required by that plan? The presumption that this company will suddenly respect SMARA seems speculative and unreasonable. It is more than just an ironic coincidence that the primary motivation for this reclamation plan amendment is Lehigh's urgent need to legitimize the illegal construction of the EMSA which violates their existing 1985 reclamation plan; this history is relevant and not trivial.

The EIR should be a realistic estimate of the impacts of the project, not merely the impact of the 'intended' project because the past record clearly predicts that Lehigh will not adhere to the reclamation plan. To estimate the real impacts of the project, the report should provide a detailed accounting of all the violations this company has committed and how effectively the 'corrective action', if any, mitigated the damage.

Numerous people and organizations have sent in lists of past and ongoing serious violations of the law that this cement company has committed with little or no repercussions. We would like to ask for a tally of all the current and past fines, both levied and paid, going back to the 1985 Reclamation Plan's approval. A great deal of public input regarding this subject can be found in the EIR appendix, but little in the body of the EIR report itself. Comments to that end can be found from the Sierra Club, Audubon Society, BACE, WVCAW, and several individuals. A comprehensive accounting of the violations by this

company must be part of this EIR or mitigation cannot be addressed. This is the intent of the EIR process required by CEQA. Looking at the cover photo used by Santa Clara County on the Lehigh Reclamation Plan Amendment Environmental Impact Report for 2011, it is hard to believe that any reclamation plan has ever existed let alone been previously implemented in any way on any scale. The enormous gaping scar made by the workings of the current and previous landowners is unbelievable.

The “whole” body of evidence should also include the County’s record on oversight because if the County cannot effectively enforce the law, the SMARA requirement for compliance with the reclamation plan will be ignored in the future just as it was in the past. To that end, County oversight problems documented by the State Mining and Geology Board should be listed in the EIR. For example, page 5 of the executive officer’s report titled “Review of the 45-day Notice to Correct Deficiencies Sent to Santa Clara County, Issued April 19, 2006” states: “Furthermore, there is little evidence in the administrative record demonstrating that the County has the understanding, or will, to enforce SMARA. This is clearly documented by the County, serving as a lead agency, unwillingness to issue Notices of Violation, Orders to Comply, or Administrative Penalties, when appropriate, for any of the sites in all the years leading up to 2005.”

A NOV was issued by SCC to Lehigh regarding their use of the current EMSA area to dump mining materials and otherwise use it in mining operations only after a member of WVCAW had to push SCC to investigate the dumping of materials. Lehigh was neither required to remove the pile nor stop dumping. A fine was never issued. This incident illustrates why we in the community lack confidence in SCC as the lead agency for the mining operation and of the adequacy of the oversight of the SCC BOS.
Without including and considering an accounting of Lehigh’s compliance record and the County's enforcement record, the DEIR is critically flawed.

[4] Hydrology

[4.1] The level of the Main Pit according to the maps is now approximately 750' above sea level. However, our understanding is that this level may already be below the water table. What is the level of the water table? Why has the pit been allowed to be blasted deeper than the water table? How much

contamination is in the water because of that? How much contamination in Permanente Creek because of that? How much contamination is in our drinking water or may find its way into our drinking water in the future? Why has that been allowed to continue by SCC?

[4.2] The maps propose to allow the pit to be excavated yet further to **approximately 400'**. How can SCC justify allowing additional lowering of the Main Pit (North Pit) further into the water table? We ask this not be allowed.

[4.3] The water that would be pumped from the quarry in order to mine below the water table is ‘old’ water that has already been contaminated with selenium and pumping this to the surface will contaminate surface water. This is a direct unavoidable consequence of continued mining below the water level.

[4.4] The EIR should include a description of a contingency plan for generating electric power for the pumping equipment during power outages.

[4.5] The proposed 12” cap for the EMSA will not block rainwater from seeping through and seepage can occur at depths to nearly 100 feet. Capping will potentially reduce but not eliminate the oxidation of selenium. Of concern is that there is no mention in the DEIR of using low permeability barriers to prevent oxidation of the waste rock. Such barrier methods prevent both oxidation of selenium and leaching of the material into runoff water. Also, the leachable material should be buried deep enough so that deep-rooted vegetation does not increase the permeability of the cover nor endanger grazing wildlife.

Evidence that this method will be effective is weak against the price of failure. What are the mitigation measures available when we finally discover that this method was irresponsible years after it has been completed? Does the County intend to require financial assurances for the many decades it will take for us to find out how this experiment turns out? What is the expected lifetime of the 12" cap? Will the cap withstand erosion, weathering, land movement, etc.?

[4.6] How will the organic fill proposed for the main pit be isolated from oxygen in rain water or from other sources which would eventually circumvent the intended selenium mitigation mechanism? Are there other applicable

examples of this technique on such a large scale? If so, these should have been included in the DEIR.

In addition, we ask for an independent review of the literature documenting the long term and short term effectiveness of these proposed mitigation measures. Similar mitigation efforts have been attempted with varying degrees of success. We would ask for specific examples of other cases where this method was attempted, examples of suboptimal results, and how Lehigh will avoid or respond to similar pitfalls. This scheme must be proven before the County makes a commitment to accept the irreversible consequence we will face when it fails. Does the County intend to require financial assurances for the many decades it will take for us to find out how this experiment turns out?

[4.7] The necessity of mitigating selenium inputs into Permanente Creek in the first place is due to a violation of the existing Reclamation Plan of 1985. The EMSA is a significant source of selenium and other potentially toxic materials. Water runoff is currently collected in basins before being discharged into Permanente Creek; and average levels of selenium in the runoff water exceeds the Basin Plan objective. We ask that in addition to testing runoff into Permanente Creek that further long term testing also include inputs from the creek into San Francisco Bay wetlands as well as local groundwater.

[4.8] The planned timeframe for Reclamation of the EMSA, WMSA, and Quarry pit will take a minimum of 5 years before adequate data is available on the effectiveness of the mitigation strategy. In the meantime, downstream environmental impacts will presumably be ongoing. There is no mention in the DEIR of the consequences to the Applicant if the water quality from its operations does not improve.

Furthermore, a five-year monitoring period may not capture degrading effectiveness of any mitigation measures. The completion criteria listed on 4.10-42 should be extended to fifty years.

[4.9] Final Reclamation is expected to take 20 years. This represents a significant amount of time. Despite the listing of several measures which can all be considered under the heading of Best Management Practices, the sum total of these interim control measures are simply inadequate to address the large environmental impacts of discharges of selenium, sediment and TDS into

the local water system. The DEIR quite clearly states this as fact.

[4.10] Mitigation measure 4.10-2b, the EMSA Interim Stormwater Monitoring Plan, mandates that water samples be collected within 24 hours after a storm event. This represents a very large window of time to capture releases of selenium, sediment and TDS. On 4.10-12, "In the upper watershed, floods are flashy in nature...stream flows thus respond rapidly to rainfall." Discharges of contaminants can peak and then be washed away in a matter of a few hours, and this window of time needs to be narrowed, ideally at the peak of the flood and no more than 2 hours after the high water level.

[4.11] Best available information suggests that a 100-year discharge to Permanente Creek during the latter part of the Reclamation Plan would be highly adverse in terms of downstream flooding. Given the potential of real disaster, the Project should not proceed until actual planning is done to avoid this hazard. The DEIR clearly states the following facts: It is unknown if onsite detention is even feasible. Note that if the Quarry is not backfilled but left in its baseline condition, drainage would continue and this threat is minimized. However, the current plan to backfill from EMSA, et. al. could then not proceed.

[5] Biology

Show locations on a revised Woodlands Impacts map of each tree 5" >/=DBH proposed to be removed and explain why they need to be removed and the impacts of their removal and the impacts of related habitat and species migration areas, avian for example. How is this a reclamation plan if over two hundred trees of significant size will be removed, further enlarging the already huge dead zone of the mining operations and cement plant footprints? On the WRA Woodlands Impacts map there is no documentation of the trees in the EMSA. Yet other maps show oak woodland areas. Include these trees and their locations.

On Attachment D, Section 5.1 in the December 2011 RPA, page 37, Table 3 lists potential biological impacts for all sections **except for EMSA**. In order to get this information, reference is made to WRA's 2009 Biological Resources Assessment. This document does not adequately include the impacts of the

proposed project, which further illustrates the need for a complete RPA and new scoping period.

[6] EMSA viewshed screen function is unreasonable

Project goal of “providing screen with EMSA” is a smoke screen. ES.5.1 alternative of complete backfill should not claim lack of EMSA view screen as a disadvantage. Ultimately, the limestone will all be depleted and the temporary view being screened will be gone but the unsightly mountain they supposedly built to hide it will remain for eternity. The EMSA viewshed enhancement is naked Lehigh propaganda that needs to be removed, or at least labeled as temporary and less significant than the enormous mountain that will permanently scar our hillside. (Also, note that this view screen is claimed as an objective of the project in ES.5.1, but not listed as an objective in ES.2.)

[7] Inadequate reference description

Apparently a Lehigh Cement company webpage titled “Working Together to Build Our Communities” and a Hanson webpage titled “Welcome to the Hanson Global Site” were used as references on page 1-9 in preparing the introduction section of the DEIR, but it is unclear what “facts” were utilized from these references, nor how these temporal references can be reliably reproduced in the future.

[8] Page ES2 reference to future extraction

This Project SHOULD exclude any future extraction activities that have been previously proposed but deliberately removed from this Project. Delaying approval for these projects at this point may be a violation of the CEQA piecemealing provision. The application should include future commitments.

[9] Vested Rights

Last year, the County gave Lehigh property rights to the access road leading and going through the quarry. The County was able to give away the road because it belonged to the public. According to the Santa Clara County zoning ordinances, a permit is required to mine within 1000' of a public road. The fact that this transfer occurred proves that much of the land involved in this project

is not vested. This case is currently pending in court and therefore it is premature to assert that the issue of vested rights is settled. The area of the old cement plant and current cement plant is another issue of controversy which is discussed later in this letter.

[10] Inappropriate classification of EMSA as “existing”

Paragraph 2.6.1 describes the East Materials Storage Area as “existing” but fails to mention that plans for this storage area were never reviewed nor approved by any government agency until now. Classifying this storage area as “existing” is disingenuous. The DEIR should provide some accounting and analysis of the contaminants that could be buried under this waste pile from previous manufacturing operations at the site which include magnesium, etc…

[11] Baseline Conditions

Baseline conditions should assume adequate and legal adherence to the current Reclamation Plan and laws. To use a baseline condition associated with multiple existing violations (e.g. multiple landslides, operating outside the approved Reclamation Plan boundaries, violating neighboring property, oversteepened and dangerous slopes, impacted waterways) makes almost any alternative seem palatable. We ask that the baseline condition not be one that is fraught with violations.

[12] Geology (Section 4.7)

[12.1] Geological Studies and Limitations
Golder Associates Slope Stability Evaluation for Compliance with SMARA East Materials Storage Area Section 6.0 states "The analysis and recommendations contained in this report are based on data obtained from the results of previous subsurface explorations by others as well as the explorations and mapping conducted by Golder. The methods used generally indicate subsurface conditions at the time and locations explored and sampled. Boring logs may not reflect strata variations that may exist between all sampling locations. In addition, groundwater conditions can vary with time." In other words, if they did not sample enough areas or weather conditions are wetter than at the time of sampling none of their calculations will be valid. What

if there is a 20 or 50 or even a 100 year flood event? Will the slopes fail under these weather events?

[12.2] There are various fault lines (Monta Vista Fault Line and Berrocal Fault Zone) running through the quarry and cement plant. The San Andreas Fault is 2 miles away. Geotechnical Evaluation and Design Recommendations Update dated July 2011 by Golder Associates, Inc. page 16 states "potential seismic impacts for the project resulting from an earthquake event associated with a 10 percent probability of exceedance (POE) in a 50 year period." What are the risks of exceedance in 75 years, 100 years, 150 years? Do we not owe it to our children and grandchildren to make these calculations?

[12.3] Core sampling WMSA. Minimal core samples were taken in WMSA. This is completely inadequate. Since sometime in the 1800's all kinds of unknown materials had been dumped into the WMSA. There could be hazardous waste and other pollutants from various operations throughout the years contained therein. Planning to dig into this area for limestone and to truck it and dump it into other areas could be hazardous to the workers as well as nearby residents. Many more samples need to be taken and at various levels. Even then, how can one tell what may be in any one area. This needs to be addressed with more extensive testing.

[12.4] Mid-Peninsula Slide - The Mid-Pen slide occurred in 2001 during a heavy rain. Are the geological stability studies not supposed to account for heavy rain? This landslide destroyed part of the Mid-Pen Regional Open Space District's Rancho San Antonio Preserve. A land swap was orchestrated by Lehigh and SCC and as far as we are aware, no fines were levied against Lehigh.
As part of the land swap agreement, Lehigh agreed not to sell any product from the exchanged property for mining material. If the proposed grading of Mid-Pen does occur, will anyone be accountable for observing that Lehigh does not try to sell the graded material?

[12.5] We ask for clear disclosure of types and amounts of materials proposed to be extracted including limestone, aggregate, and overburden as required by CEQA. In addition, a comprehensive review of the estimates given in the 1985 Reclamation Plan compared with the actual volume of limestone, aggregate, and overburden extracted during the 20 year duration of the plan from 1985 to

2005. This disclosure will help the public evaluate the new proposals and provide a basis to estimate if they are realistic.

[12.6] The 1985 Reclamation Plan (page 12) refers to "serpentinized greenstone area in the upper northwest portion of the quarry." Yet the DEIR mentions only nine samples(p4.7-9) that were independently tested for asbestos. "The Franciscan Complex is highly variable in its lithology and the map used to locate ultramafic rocks is a coarse scale geologic map that doesn not allow for precise location of various rock types." These included samples of limestone and gravel that would not contain asbestos as serpentized soil tends to be soft. We ask that a independent geologist does a survey of the area for pockets of serpentinite to be sampled. Polarized light microscopy is also quite subjective as a method of detection and may not detect the presence of asbestos.

[12.7] There are three large slides in the quarry pit area.
1. Main Slide (1987) in the Northwest corner
2. Scenic Easement Slide (2001) near the crest of the north slope of the quarry pit. This slide violated an agreement between the quarry and the residents of Santa Clara County to protect the viewshed from the north. Please include a copy of the easement and any penalties Lehigh or its predecessors have paid for this violations.

Where are the "fixed monuments"? Do they still exist? Explain. Our understanding is that the scenic easement is supposed to be 1650', but it appears that this plan only is planned for it to reach 1450'. How does comply with the Scenic Easement Agreement? If there is non-compliance, what fines will be levied against Lehigh by the County? If there is non-compliance with the Scenic Easement and other environmental laws, how can Lehigh be trusted to continue to expand their operations?

3. Mid-Peninsula Slide (2001)- at the top of the Quarry pit's East wall during heavy rainfall in the winter of 2001. This landslide destroyed part of Rancho San Antonio Mid -Peninsula's land. Lehigh and Mid-Pen region subsequently negotiated a land swap.

Lehigh has blamed these slides on heavy rainfalls during meetings in the past and have not taken responsibility for them. It appears that this approach will be

taken in the future as the calculated Factor of Safety (FOS) remains unacceptably low. According to the EPA, ENGINEERING PROCEDURE 2.1 STEEP SLOPE MINING: AOC and EXCESS SPOIL DETERMINATION, "The applicant must design excess spoil fills in order to attain a long-term static safety factor of 1.5 and, if a durable rock fill, an earthquake static safety factor of 1.1. "
http://www.epa.gov/Region3/mtntop/pdf/appendices/j/appj-engproc2-1.pdf

TABLE 4.7-6
SUMMARY OF SLOPE STABILITY EVALUATIONS IN THE QUARRY PIT

Section[a]	Condition	Description	Calculated Factor of Safety and Estimated Displacement under a Design Earthquake
Main Slide (1987)			
Azimuth 120	Existing	Static	0.93
		Seismic: Pseudo-Static	NE
		Seismic: Displacement under design earthquake	NE
	Final RPA Slope	Static	1.44
		Seismic: Pseudo-Static	1.01
		Seismic: Displacement under design earthquake	7 inches (median)
Stability Section	Existing	Static	1.07
		Seismic: Pseudo-Static	NE
		Seismic: Displacement under design earthquake	NE
	Final RPA Slope	Static	1.53
		Seismic: Pseudo-Static	1.05
		Seismic: Displacement under design earthquake	6 inches (median)
Scenic Easement Slide			
SE1	Existing	Static	1.05
		Seismic: Pseudo-Static	0.8
		Seismic: Displacement under design earthquake	2.5 to 10 feet
	Final RPA Slope	Static:	2.27
		Seismic: Pseudo-Static	1.57
		Seismic: Displacement under design earthquake	NE
Mid-Peninsula Slide			
MP1	Existing	Static	1.03
		Seismic: Pseudo-Static	0.84
		Seismic: Displacement under design earthquake	4 feet
	Final RPA Slope	Static:	1.36
		Seismic: Pseudo-Static	1.03
		Seismic: Displacement under design earthquake	6 inches (median)
MP2	Existing	Static:	1.24
		Seismic: Pseudo-Static	0.98
		Seismic: Displacement under design earthquake	9 inches (median)
	Final RPA Slope	Static:	1.32
		Seismic: Pseudo-Static	1.02
		Seismic: Displacement under design earthquake	6 inches (median)
East Wall			
EW1	Ultimate Slope Excavation Prior to reclamation	Static	1.36
		Seismic: Pseudo-Static	1.04
		Seismic: Displacement under design earthquake	6 inches (median)
	Final RPA Slope	Static:	1.48
		Seismic: Pseudo-Static	1.02
		Seismic: Displacement under design earthquake	6 inches (median)
EW2	Ultimate Slope Excavation Prior to reclamation	Static:	1.28
		Seismic: Pseudo-Static	0.97
		Seismic: Displacement under design earthquake	12 inches (median)
	Final RPA Slope	Static	1.41
		Seismic: Pseudo-Static	1.07
		Seismic: Displacement under design earthquake	5 inches (median)

TABLE 4.7-6 (Continued)
SUMMARY OF SLOPE STABILITY EVALUATIONS IN THE QUARRY PIT

Section*	Condition	Description	Calculated Factor of Safety and Estimated Displacement under a Design Earthquake
South Wall			
9A	Ultimate Slope Excavation Prior to reclamation	Static: Final Excavated South Wall, circular failure	1.7
		Final Excavated South Wall, failure along thrust fault	2.3
		Seismic: Displacement under design earthquake	NE
	Final RPA Slope (within backfill)	Static	1.46
		Seismic: Pseudo-Static	1.05
		Seismic: Displacement under design earthquake	6 inches (median)

[a] Cross sections used to calculate FOS values were chosen by Golder Associates based on the location of current areas of instability, and locations considered to be most representative of current and proposed conditions. The acronyms uniquely identify each of the cross sections, which are further detailed in Golder's geotechnical evaluations.

NE: Not Evaluated

SOURCE: Golder Associates, 2011a

Good engineering practices should take into account very heavy rainfall and likely seismic events. None of these proposals will be likely to withstand either events given the low FOS. Furthermore, the seismic displacements are listed as median. However, for example a 7 inch median displacement could be from 1/2 inch to 10 feet or greater in various locations. It would be more reasonable and considerably safer if the worst case were to be assessed instead of the median. **The design of the final slopes are destined for failure due to the unacceptably low FOS.** We ask that the County revise the target FOS to account for errors of calculation and unforeseen factors, as recommended by EPA and generally accepted engineering practice.

[12.8] The Permanente Creek Restoration Area (PCRA) along the creek has "a substantial amount of mining-related overburden and/or road fills have traveled downslope, and in some places, have reached the active floodplain of Permanente Creek" PCRA has been subject to cleanup and abatement orders issued in July 1999 by the San Francisco Bay Regional Water Quality Control Board. How much of this order had Lehigh complied with and what if any penalties have been imposed?

[13] Cement Plant

[13.1] SCC determined that the old cement plant area was an integral part of the mining operation and therefore vested. Yet, the new cement plant area is not included in the Reclamation Plan. SCC cannot have it both ways. Either the cement plants as part of the mined lands are vested, requiring inclusion in the Reclamation Plan and an adequate FACE, or they are separate from the mined lands and therefore not vested.

This is completely inadequate oversight by SCC as a lead agency over the mining operations. This plan should not go one step forward until SCC resolves this issue of the cement plants one way or the other.

[13.2] We have repeatedly asked for in written communications with SCC a map by the SCC geologist outlining the location of the former cement plant. This is necessary if this reclamation plan is to continue to go forward. The water tower that is visible in the western section of the EMSA appears to be a clear maker by which an approximation of the location of the former cement plant can be located.

[13.3] The cement plant area is within Cupertino's Urban Service Area as Very Low Density Residential, NOT industrial use. In fact, the City of Cupertino General Plan 2000-2020 proposes a trail extension through the area "when the Railroad (Union Pacific RR that serves Lehigh Cement) goes out of service in 20 years" This area must be appropriately reclaimed for this use to occur. (pages 2-50, 2-51 City of Cupertino General Plan 2000-2020) http://www.cupertino.org/index.aspx?page=709

[14] Below is a letter we sent in 2007 explaining why the current cement plant should be included in the reclamation plan.

West Valley Citizens Air Watch
10136 Camino Vista Dr
Cupertino, CA 95014
(408) 446-1827
October 4, 2007

Douglas W. Craig

Assistant Director
Department of Conservation
Office of Mine Reclamation (OMR)
801 K Street, MS 09-06
Sacramento, CA 95814

Re: Hanson Permanente Cement Corporation (Hanson Permanente) -- necessity of inclusion of cement plant in reclamation plan amendment and Draft Environmental Impact Report (DEIR) based on State Mining and Reclamation Act (SMARA) requirements. Mine Identification No. 91-43-0004

Dear Mr. Craig:

The Hanson Permanente cement plant needs to be included in the upcoming reclamation plan amendment and Draft Environmental Impact Report (DEIR) as stated in the OMR letter of September 22, 2006 [1]; as also stated in the letter from James S. Pompy, Manager Reclamation Unit, OMR, in his letter of May 18, 2007 [2]; and again stated by Paul Marshall, Senior Engineering Geologist, Compliance Section, OMR, in his letter of June 7, 2007 [3].

The OMR letter dated, September 22, 2006, pointed out that, “According to the approved reclamation plan [of 1984], ‘. . . crushed rock is transported, for further processing, to the cement plant further to the east.’ Because the cement plant includes structures, facilities, equipment, machines, tools, or other materials or property which result from, or are used in, surface mining operations, it meets the definition of ‘Mined Lands’ contained in Public Resources Code (PRC) § 2729 (SMARA).* Because there is no approved reclamation plan or financial assurance for this area, Hanson has been and is currently operating the cement plant in violation of SMARA. “

“The Department [of Conservation] believes that the reclamation plan for the Hanson Permanente Quarry and Cement Plant needs to be amended to include the cement plant site.” [1]

On May 18, 2007, in reviewing the Hanson Permanente Application (dated March 2007), James S. Pompy, Manager Reclamation Unit, OMR, states,

“OMR
specifically identified the cement plant as an area which meets the definition of “Mined Lands” as stated in PRC Section 2729. The proposed Amendment is not in compliance with Article 1 (commencing with Section 3500) of Title 14 of the CCR that addresses reclamation plan amendments, and will not resolve this outstanding compliance issue.” [2], p 2.

On June 7, 2007, in reviewing the Financial Assurance cost estimate for Hanson Permanente, Paul Marshall, Senior Engineering Geologist, Compliance Section, OMR, wrote, “OMR has reviewed the cost estimate and proposed amendment and finds that it specifically excludes Kaiser Cement Corporation’s cement plant facilities that are located just east of the existing Permanente quarry pit . . . The proposed amendment is not in compliance with Article 1 (commencing with Section 3500) of Title 14 of the CCR that addresses reclamation plan amendments, and therefore, the cost estimate is inadequate to resolve this outstanding compliance issue.” [3] p 1.

To the contrary, after receiving a letter dated July 2, 2007, from Hanson Permanente, on August 23, 2007, the OMR reversed itself, “Based on a review of information provided by the operator of this site, Hanson Permanente Cement, Inc. . .” However, additional facts have come to our attention which provide for the opposite conclusion and which we have documented below. [4] & [5]

The OMR determination to include the cement plant in the reclamation plan and thus the DEIR needs to be restored; that is, include the cement plant in the upcoming reclamation plan and DEIR. [1] Not including the cement plant appears to violate the State Mining and Reclamation Act (SMARA) and possibly other laws. Hanson’s response in their letter of July 2, 2007, to OMR claims that SMARA did not apply to the plant as it met the exclusion criteria for a processing facility.”
[4]

To the contrary:

The Surface Mining and Reclamation Act of 1975 (SMARA) section 2714,

states:

“This chapter does not apply to any of the following activities:
. . .
(c) Operation of a plant site used for mineral processing, including associated onsite structures, equipment, machines, tools, or other materials, including the onsite stockpiling and onsite recovery of mined materials, subject to all of the following conditions: [bold added]

(1) The plant site is located on lands designated for industrial or commercial uses in the applicable county or city general plan.
(2) The plant site is located on lands zoned industrial or commercial, or are contained within a zoning category intended exclusively for industrial activities by the applicable city or county.
(3) None of the minerals being processed are being extracted onsite.
(4) All the reclamation work has been completed pursuant to the approved reclamation plan for any mineral extraction activities that occurred onsite after January 1, 1976.”

*** The cement plant site does not meet any of these four criteria for exclusion, let alone all of the criteria as required under 2714 (c) as quoted above. ***

West Valley Citizens Air Watch would like OMR to now have access to the pertinent facts and accurate information, which it appears they did not previously have, as follows:

Re: Subsection (c) (1)
The location of the cement plant site is within the City of Cupertino Urban Service Area and thus it is located on the City of Cupertino Land Use Map. (It does not fall under the Santa Clara County land use designation). On the City of Cupertino Land Use Map, the area is designated Very Low Density Residential (5-20 Acre Slope Density Formula) . Therefore the fact is the cement plant area is not designated for industrial or commercial use.[6]

In addition, attached is a letter dated August 30, 2007, from the City of Cupertino to SMGB requesting the cement plant be included in the EIR

for the reclamation plan amendment.[7]

Re: Subsection (c) (2)
When the cement plant facility was rebuilt in the early 1980's it was moved to a different site from the original location. [8] The new site, which is the current site, was and is zoned "A Exclusive Agriculture." (See the Santa Clara County Zoning map) [8] & [9]

Even if the current cement plant was still within the original A1 Zoning category, which it is not, A1 is a General Use District allowing for residential and agricultural uses and other uses through a permit process. It is not zoned industrial or commercial or exclusive industrial. [9]

Therefore the fact is the cement plant is not located on lands zoned for industrial or commercial uses, and it is not contained within a zoning category intended exclusively for industrial activities by the applicable city or county.

Re: Subsection (c) (3)
According to the approved reclamation plan "… crushed rock is transported, for further processing, to the cement plant further to the east." (Reclamation Plan, Kaiser Cement and Permanente Quarry, 1984, p 20) [10]

The cement plant was established after the quarry operation began because of the presence of the limestone onsite. The cement plant was and currently is primarily supplied by limestone from the onsite quarry. Although Hanson states in its letter of July 2, 2007 that it is served by rail, it fails to point out that it is primarily the fuel -- coal and petroleum coke -- which are delivered by rail, along with comparatively small amounts of bauxite and iron ore. Virtually all of the limestone used in the kiln comes from the onsite quarry. And, as was explained to me, Karen Del Compare, by Mr. John Giovanola of Hanson Permanente on an August 14, 2007 tour of the Hanson Permanente site, limestone makes up about 95% of the material needed to make cement. [11]

In a Scoping Meeting for the DEIR for the Reclamation Plan Amendment in the City of Cupertino on July 26, 2007, Hanson Permanente Land Use Director Marvin E. Howell stated “The most important thing I’d like you to take away today from my comments would be the fact that this material is mined here, the material is milled here, and the material is used here.” [12]. It is clear that the cement plant is part of an integrated operation, supplied by limestone from the quarry. As quoted above, Hanson’s own officials proclaim this in public meetings.

The fact is that the vast majority of the minerals being processed are being extracted onsite.

Re: Subsection (c) (4)
The document in Attachment [13] refers to the current cement plant site being “quarried” after 1976. [13] p 4

In its letter of July 2, 2007, Hanson incorrectly claims that, “The plant is a stand-alone facility that has been operating continuously in the same footprint since its inception in 1939.” [4]

It appears that Hanson’s position -- that the cement plant should not be included as a part of the reclamation plan -- would circumvent the CEQA process (Division 13, commencing with Section 21000) and produce an EIR which would improperly piecemeal the reclamation plan and would not properly provide for reclamation of a quarried area.

Because SMARA Section 2714, (c) requires all four conditions to be met as a criteria for exemption and because those required conditions are not satisfied (not even one of them), we are requesting redress of this matter, by OMR requiring inclusion of the cement plant in the reclamation plan amendment and the DEIR.

We support the OMR and the Department of Conservation in using your professional expertise to enforce SMARA. Please inform us of progress on this matter.

Thank you for your attention,

Karen Del Compare and Joyce M Eden for West Valley Citizens Air Watch

cc: Bridgett Luther, Director, Department of Conservation
Stephen Testa, Executive Officer, State Mining and Geology Board
Val Alexeeff, Director, Dept. of Planning, Santa Clara County
David W. Knapp, City Manager, City of Cupertino
Sally Lieber, Assemblywoman, 22nd Assembly District

* SMARA § 2729. “Mined lands” includes the surface, subsurface, and ground water of an area in which surface mining operations will be, are being, or have been conducted, including private ways and roads appurtenant to any such area, land excavations, workings, mining waste, and areas in which structures, facilities, equipment, machines, tools, or other materials or property which result from, or are used in, surface mining operations are located.

Attachments:
[1] OMR letter to Santa Clara County dated September 22, 2006
[2] OMR letter to Santa Clara County dated May 18, 200
[3] OMR letter to Santa Clara County dated June 7, 2007
[4] Hanson Aggregates letter to OMR dated July 2, 2007
[5] OMR letter to Santa Clara County dated August 23, 2007
[6] City of Cupertino Land Use Map- Note: an enlargeable pdf is available on the web. Google search, “Cupertino Land Use Map”
[7] Letter from City of Cupertino to State Mining and Geology Board dated August 30, 2007
[8] November 28, 1977 Memo from Lucas S. Stamos (SCC Planning) to Board of Supervisors
[9] Santa Clara County (SCC) Zoning Map
Santa Clara County Land Use Map
Santa Clara County Zoning Descriptions obtained on September 19, 2007 from SCC Planning Office
[10] Reclamation Plan, Kaiser Cement and Permanente Quarry, 1984, p 20

[11] Excerpted Notes from visit to quarry and cement factory on August 14, 2007 by members of West Valley Citizens Air Watch
[12] Hanson Quarry Scoping Meeting Video, July 26, 2007:
<http://cupertino.granicus.com/ViewPublisher.php?view_id=5>
Scroll down to “OTHER CITY PROGRAMS AND EVENTS”, click on “Hanson Quarry Community Scoping Meeting”, advance to minute 22:43. DVD available upon request from City of Cupertino.
[13] Application to Santa Clara County Planning Department for Categorical Exemption Assessment of Kaiser Cement & Gypsum Corporation Proposed Cement Plant Modernization; Permanente, California; Use Permit 23, Issued May 8, 1939;
dated, August 1977
Section: Environmental Assessment Factors of Applications to Santa Clara County for Categorical Exemption Assessment of Cement Plant Modernization, August 1977, p4

[15] Health Risk Assessment

Please find the attached analysis of the HRA performed by an independent consultant, along with 2 other documents showing correspondence between this consultant and the BAAQMD. These documents have the following filenames:
Bay Area for Clean Environment 2011-05-11 -Evaluation of the Health Risk Assessment.pdf
Bay Area for Clean Environment 2011-05-27 - BAAQMD response.pdf
Bay Area for Clean Environment 2011-06-01- Reply to BAAQMD response.pdf

[16] Chapter 6: Cumulative Impacts

[16.1] Only minimal comments are mentioned from this part of the EIR regarding the “past impact” of the Lehigh site. Scant mention is made of past-accumulated pollution on the site from the old aluminum plant, once present gas tank for the then company owned trucks and the magnesium workings years ago. Certainly some of these processes left permanent damage to the surrounding grounds long before any regulations or monitoring agencies even existed yet the effects may still impact current workings and proposed projects adding to the cumulated impact. These concerns need to be addressed.

[16.2] Seven quarries are listed in the “projects list”, four of which are “actively engaged in extraction activities” all within a 25-mile radius.

Their distance from resident’s homes cannot diminish their impact. Air & water pollution never go away – it just shifts to another location. Cumulative impacts of surrounding operations must be considered as a total when reclamation plans are proposed. Even if the Lehigh project does not exceed the identified significance thresholds, the cumulative impact of all the active sites may on maximum production days.

The daily operations of the cement kiln and the quarry at the Lehigh site contributes enough particulate matter and dangerous toxin and criteria pollutants to impact the Bay Area’s air quality and any incremental increase in their operations will only negatively impact our breathable air locally and on a global basis.

[16.3] As stated in 4.10-31 "atmospheric deposition is a notable source of mercury in the environment." Lehigh has emitted as much as 1200 pounds per year of mercury for decades. The deposition of this known toxic substance should be counted as a cumulative impact. The mercury in the environment near Lehigh is not likely to represent a naturally occurring "background" level as stated in the DEIR.

There is always going to be mercury in the environment since it occurs naturally in the earth yet 70% of our exposure comes from human activity. One seventieth of a teaspoon can pollute a 20-acre lake.

Lehigh must use the “best available control technology” to filter or remove mercury from its emissions.

[16.4] Traffic and transportation: Diesel fuel trucks are the majority of traffic entering and leaving the Lehigh site.

We have had a record number of “spare the air days” over the past 14 months and yet operations at Lehigh Permanente have been allowed to conduct “business as usual” on these days with a total disregard for the surrounding residents. Diesel truck traffic coming and going from the site alone increases

the pollutants on a daily basis, their impact on a “spare the air day” is only more profound.

Lehigh boasts that there are traffic controls in place yet there is no initiative on Lehigh’s part to put pressure on the trucks visiting the site to participate in the CARB program for emissions modification of these diesel trucks.
Table 4.3-10 indicates an increased cancer rate of 18.3 per million at a residential receptor. It is notable that the health risk in this residence is so high that Lehigh will force restrictions on occupying the residence. Given the large number of commercial trucks that travel through the same residential area, we recommend that Lehigh only allow trucks that participate with the CARB retrofit program to service Lehigh.

Location of the maximum impact for the cumulative impacts were separated for the project area from the cement plant, yet the air dispersal of PM2.5 and toxic air contaminants know no boundaries and mix freely in the atmosphere. We do not feel that adding the impacts together would be an over estimate.
Furthermore, no studies have been conducted on the impact of the diesel truck traffic on noise pollution. Specifically, braking at the stoplight on Stevens Creek Boulevard at the intersection with Foothill Expressway produces a significant amount of noise and represents a nuisance in the early hours of the morning. Limits need to be placed on the hours of truck traffic activity entering or leaving the facility.

[16.5] The aesthetics of the operation does not include some major viewing sites. Traveling North bound on HWY 85 near the Saratoga exit one can clearly see scarring and rock over burned dumping on the site. These views are seen by thousands of people every day and need to be addressed.

[17] Previous scoping comments

West Valley Citizens Air Watch requests that all scoping comments submitted against the current NOP or previous NOP's (as shown in the appendix of the DEIR) be addressed in the EIR.

[18] Confusing EMSA label

To avoid confusion, we herein point out the area referred to as the EMSA in the 1985 plan is in a completely different location (far west of the current EMSA and adjacent to the main pit) and orders of magnitude smaller than the current area referred to as the EMSA. This appears to further strengthen the indication that the current area of the EMSA was not intended to be used as a storage area under the 1985 plan. The new EMSA should be labeled differently such as EMSA2 to avoid confusing the public.

[19] Santa Clara County population

The population of SCC was approximately 60,000 when mining commenced. Today the population of Santa Clara County is around 2 million people. It is now a completely different situation. When the mining was started, few homes and businesses and schools (if any) and probably no health and retirement facilities were located nearby. Now there is a large population of all of these. This must be considered in impacts and in whether or not it is acceptable to expand mining in this location at this present time.

[20] Buffer Zones

Figure 2-2 "Project Area" shows virtually no boundary between the EMSA and the City of Cupertino. This is significant because the EMSA is very close to a highly populated area of Cupertino. Why are the buffer zones mostly to protect the rest of Lehigh property and not the citizens living in close proximity?

[21] Aggregate Storage near Entrance Gate

The Title V Permit Statement of Basis (date 1/21/2011) from the Bay Area Air Quality Management District, page 129
http://baaqmd.gov/Divisions/Engineering/Title-V-Permit-Programs/Title-V-Permits/Santa-Clara/A0017/Lehigh-Southwest-Cement-Company.aspx
"S-607 the stockpile area # 2 (1", ¼" aggregates and slag) at the entrance's gate is new."

Where exactly is this stockpile area? The current and proposed reclamation plans do not appear to account for aggregate storage near the entrance gate. We again request a formal investigation and report.

[22] Weed abatement and Permanente Creek

As per the proposed Amendment weed abatement will be done. Will round-up or any other potentially toxic herbicide be used? If so, please test the levels prior to usage in Permanente Creek before, during and after. Round-up is especially toxic for frogs and tadpoles. Protected species such as the red-legged frog live in Permanente Creek.

[23] Hours of operation

Operations are 24 hours/day for 365 days per year.Business hours should be limited to a reasonable level as to not disturb those living near the quarry and truck routes.

[24] Public document access

Please include copies, both hard copies and CDs to be held at the Cupertino Library for ease of public viewing for all public documents. The SCC planning department website documents are difficult to download, especially the larger files if the connections are not fast. Access hours to the Planning Department in Santa Clara County are limited to business hours, which makes it difficult for those who work during the workdays. Also in the past, planners have given the public who ask for documents a difficult time.

[25] Conclusion

We have brought up serious issues regarding the adequacy of the Lehigh Application, of the many violations documented by various regulatory and oversight agencies issued to Lehigh, and the quality of the decision making by the BOS. This Application by Lehigh will determine the fate of the hills above Western Santa Clara County, the watershed, whether or not the ground water and the San Francisco Bay continues to be polluted by this operation, whether or not our drinking water continues to be polluted, the quality of the air, the protection of the ecosystem of large segments of the hills of the Santa Cruz Mountains, the air we breathe, the visual impacts, the destruction of hundreds of trees and habitat, etc.

Thank You,

Joyce M Eden, Karen Del Compare, Tim Brand, Marylin McCarthy on behalf of West Valley Citizens Air Watch
Barry Chang, on behalf of Bay Area for Clean Environment

BACE 2011-05-26 BACE HRA evaluation

Evaluation of the Revised AB2588 Health Risk Assessment for 2005, Average 2008/2009 and 2013 Production Scenarios for the Lehigh Southwest Cement Company facility in Cupertino, California

May 26, 2011

Mark Chernaik, Ph.D., J.D.

Submitted by Bay Area
For
Clean Environment

May 26, 2011

Dr. George Alexeeff, Acting Director
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Ms. Deborah Jordan, Director
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RE: Evaluation of the Revised AB2588 Health Risk Assessment for 2005, Average 2008/2009 and 2013 Production Scenarios for the Lehigh Southwest Cement Company facility in Cupertino, California.

Dear Dr. Alexeeff, Dr. Marty, Mr. Lutz and Ms. Jordan:

No Toxic Air has evaluated the Revised AB2588 Health Risk Assessment for 2005, Average 2008/2009 and 2013 Production Scenarios for the Lehigh Southwest Cement Company facility in Cupertino, California. We believe that, consistent with its obligations under the Air Toxics "Hot Spots" Information and Assessment Act, the Bay Area Air Quality Management District must return the health risk assessment (HRA) to the Lehigh Southwest Cement Company with instructions to revise the HRA in the following manner:

- Assume the average mercury content of limestone is **0.36 ppm**, not 0.31 ppm. Please see attached spreadsheet: Hg in limestone data.xls.

- Derive maximum 1-hour and 8-hour mercury concentrations at receptors based on maximum production rates and **maximum hourly mercury contents of limestone** (as high as 1.44 ppm, but no less than 0.48 ppm). Please see attached spreadsheet: Hg in limestone data.xls.

- Derive hazard quotients and total hazard indices at receptors by comparing estimated maximum 8-hour concentrations of arsenic, manganese and mercury to the **8-hour Reference Exposure Levels** for these substances.

We would appreciate your careful consideration of the attached evaluation.

Sincerely,

Mark Chernaik, Ph.D.
For No Toxic Air, Inc.
Eugene, Oregon
Tel: (541) 513-1335
E-mail: mark@scienceforcitizens.com

May 26, 2011

Evaluation of

The Revised AB2588 Health Risk Assessment for 2005, Average 2008/2009 and 2013 Production Scenarios for the Lehigh Southwest Cement Company facility in Cupertino, California.

No Toxic Air reviewed the Revised AB2355 Health Risk Assessment (HRA) for 2005, Average 2008/2009 and 2013 Production Scenarios for the Lehigh Southwest Cement Company facility in Cupertino, California. What follows is a discussion of major flaws contained in the HRA.

1. By excluding its own data, the HRA underestimated the mercury content of limestone used by the Lehigh facility

Pre-blend stone (limestone) is the predominant raw material for the manufacturing of cement. Lehigh consumes more than one million tons of limestone per year, which it mines from a nearby quarry. The mercury content of this limestone is the main variable that determines mercury emissions from Lehigh's facility.

Appendix A of the HRA presents an analysis of the mercury content Lehigh's limestone performed over a 30-day period in March-April 2009. The data is presented in Table 1 of Appendix A.

The data shows substantial variability of the mercury content in Lehigh's limestone that is likely due to the heterogeneity of mercury in limestone. The lowest measured mercury content was 0.2 micrograms per gram (= 0.2 ppm) and the higher measured mercury content was 1.44 ppm. The average mercury content of Lehigh's limestone is 0.36 ppm. See attached spreadsheet: Hg in limestone data.xls.

However, AMEC does not use an average mercury content of 0.36 ppm for determining mercury emissions from Lehigh's facility. Instead, AMEC uses an average mercury content of 0.31 ppm by excluding four measurements (replicate analyses of limestone samples performed on March 26 and March 27, 2009) as 'outliers." However, AMEC does not provide any basis for why these measurements should be excluded as outliers. There is nothing to indicate that the measurements were invalid because of the analytical method: the measurements from 26 and March 27, 2009 have the exact same reproducibility as the other measurements in the dataset.

There is nothing to indicate that the mercury content of the samples analyzed on 26 and March 27, 2009 are beyond the mercury content that can be found in limestone. One cement facility in the U.S. uses limestone with an average mercury content of 1.15 ppm and another facility uses limestone with an average mercury content of 0.63 ppm.[1] The four measurements from 26 and

[1] U.S. EPA (August 9, 2010) "National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants." at page 43.

March 27, 2009 are what they are, and should have been retained in calculations for the average mercury content of the limestone the Lehigh facility uses.

2. By ignoring the heterogeneity of the limestone used at the Lehigh facility, the HRA grossly underestimates maximum 1-hour ambient air concentrations associated with emissions from the facility

Even if we were only to use data not excluded by AMEC, there is substantial variability of the mercury content in Lehigh's limestone. For example, on April 1, 2009, limestone used at the Lehigh facility had a mercury content of 0.48 ppm.[2]

However all of the maximum 1-hour ambient air concentrations contained in the HRA for the Lehigh facility are based on the assumption that at all times the facility is using limestone with the average mercury content of 0.31 ppm.[3] Production rate (capacity) was the only variable that AMEC adjusted in the HRA when predicting maximum 1-hour ambient air concentrations of mercury.

This is an unreasonable assumption. Clearly there are days during when the Lehigh Facility is using limestone with a mercury content 50% (or more) than the average mercury content of such limestone. All of the maximum 1-hour ambient air concentrations contained in the HRA for the Lehigh facility need to be adjusted to correct this unreasonable assumption.

3. By ignoring 8-hour Reference Exposure Levels, the HRA fails to derive accurate hazard quotients and total health indices for exposure to arsenic, manganese and mercury

The Air Toxics "Hot Spots" Information and Assessment Act of 1987 states:

> "Health risk assessments required by this chapter shall be prepared in accordance with guidelines established by the Office of Environmental Health Hazard Assessment."[4]

The OEHHA guidelines for the preparation of health risk assessments states:

> "The output of an air dispersion modeling analysis will be a receptor field of concentrations of the pollutant in ambient air. These concentrations in air need to be coupled with Reference Exposure Levels and cancer potency factors to estimate the hazard indices and potential carcinogenic risks."[5]

Contrary to these guidelines, the HRA for the Lehigh facility failed to compare concentrations of the pollutant in ambient air with Reference Exposure Levels (RELs) that all pertain to the short-term impacts of arsenic, manganese and mercury on the nervous system.[6] These RELs are:

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[2] HRA at Appendix A, Table 1.
[3] HRA at Appendix A, Table 3.
[4] California Health and Safety Code Section 44360(b)(2).
[5] OEHHA (2003) "Air Toxics Hot Spots Program Risk Assessment Guidelines" at page 4-4.
[6] See: http://oehha.ca.gov/air/allrels.html

Inorganic Arsenic 8-Hour REL

Reference Exposure Level	**0.015 µg/ As/m³**
Critical effect(s)	Decreased intellectual function in 10 year old children
Hazard Index target(s)	Development; cardiovascular system; nervous system; lung; skin

Manganese 8-Hour REL

Reference Exposure Level	**0.17 µg/m^3**
Critical effect(s)	Impairment of neurobehavioral function in humans
Hazard index target	Nervous system

Mercury 8-Hour REL

Reference Exposure Level	**0.06 µg Hg/m^3 (0.007 ppb Hg^0)**
Critical effect(s)	Impairment of neurobehavioral functions in humans
Hazard Index target(s)	Nervous system

The HRA for the Lehigh facility used an air dispersion model to predict only very short-term (1 hour) and very long-term (annual) concentrations of arsenic, manganese, and mercury. For example, the HRA contains the following predictions of 1-hour maximum concentrations of arsenic, manganese and mercury at the maximum exposed individual resident (MEIR):

	Arsenic	Manganese	Mercury
HRA, maximum 1-hour concentration at MEIR, 2005 production[7]	0.004	0.003	1.050
HRA, maximum 1-hour concentration at MEIR, 2008-9 production[8]	0.004	0.003	0.966
HRA, maximum 1-hour concentration at MEIR, 2010 production[9]	0.004	0.003	0.677
HRA, maximum 1-hour concentration at MEIR, 2011 production[10]	0.004	0.003	0.336
HRA, maximum 1-hour concentration at MEIR, 2013 production[11]	0.004	NR	0.002

[7] HRA at Table 9A, Receptor 2040
[8] HRA at Table 9B, Receptor 2040
[9] HRA at Table 9C, Receptor 2040
[10] HRA at Table 9C, Receptor 2040
[11] HRA, Appendix J, 2013_Rep_Acu_Rec2041_AllSrc_AllCh_ByRec_ByChem.txt

The HRA for the Lehigh facility only compares these predicted concentrations of arsenic, manganese, and mercury to very short-term (acute, 1-hour) and very long-term (chronic) Reference Exposure Levels adopted by OEHHA in deriving total hazard indices.

Even though the air dispersion model used in the HRA for the Lehigh facility only predicted 1-hour (and annual) concentrations of arsenic, manganese, and mercury, there is a means of predicting 8-hour concentrations based on such data. The Office of Environmental Health Hazard Assessment (OEHHA) guidelines for the preparation of health risk assessments contain a recommended procedure for "Estimating Concentrations of Longer Averaging Periods from the Maximum One-Hour Concentration for Screening Purposes."[12]

This recommended procedure involves the application of conversion factors according to the following table found on page H-2 of the OEHHA guidelines for the preparation of health risk assessments.

Table H.1 Recommended Factors to Convert Maximum 1-hour Avg. Concentrations to Other Averaging Periods (U.S. EPA, 1992; ARB, 1994).

Averaging Time	Range	Typical Recommended
3 hours	0.8 - 1.0	0.9
8 hours	0.5 - 0.9	0.7
24 hours	0.2 - 0.6	0.4
30 days	0.2 - 0.3	0.3
Annual	0.06 - 0.1	0.08

Application of these conversion factors to the predicted 1-hour maximum concentrations contained in the HRA allow an estimation of the following maximum 8-hour concentrations of arsenic, manganese and mercury at the MEIR.

	Arsenic	Manganese	Mercury
8-hour concentration at MEIR, 2005 production	0.003	0.002	0.735
8-hour concentration at MEIR, 2008-9 production	0.003	0.002	0.676
8-hour concentration at MEIR, 2010 production	0.003	0.002	0.474
8-hour concentration at MEIR, 2011 production	0.003	0.002	0.235
8-hour concentration at MEIR, 2013 production	0.003	NR	0.001

If, as required by the OEHHA guidelines, one compares these maximum 8-hour concentrations of arsenic, manganese and mercury at the MEIR to the 8-hour Reference Exposure Levels for arsenic, manganese and mercury, then one obtains the following hazard quotients and total hazard indices:

[12] OEHHA (2003) "Air Toxics Hot Spots Program Risk Assessment Guidelines" at Appendix H.

	Arsenic	Manganese	Mercury	Total HI
Hazard quotients at MEIR, 2005 Production	0.19	0.01	12.25	12.45
Hazard quotients at MEIR, 2008-9 Production	0.19	0.01	11.27	11.47
Hazard quotients at MEIR, 2010 Production	0.19	0.01	7.90	8.10
Hazard quotients at MEIR, 2011 Production	0.19	0.01	3.92	4.12
Hazard quotients at MEIR, 2013 Production	0.17	NR	0.02	0.18

The total hazard indices for 2005 and 2008-9 production scenarios are not only above the public notification threshold (hazard index =1), but are above the threshold the BAAQMD uses as a criteria for requiring a facility to reduce emissions.

These hazard quotients and total hazard indices do not reflect the fact that the HRA for the Lehigh facility underestimates the average mercury content of the limestone it uses and ignore the heterogeneity of mercury content in this material. Had the HRA for the Lehigh facility correctly inputted data about the mercury content of the limestone it uses and compared maximum 8-hour concentrations of arsenic, manganese and mercury at the MEIR to the 8-hour Reference Exposure Levels for arsenic, manganese and mercury, then even higher total hazard indices would have been derived.

4. Derived 1-hour maximum concentrations of mercury under the 2013 production scenario are inconsistent with emission factors provided in the HRA.

The HRA for the Lehigh facility provides information about mercury emissions under the various production scenarios (2005, 2008-2009, 2010 and 2013) it inputted into the air dispersion models for predicting 1-hour maximum concentrations of mercury.[13] These emission factors are as follows:

2005 Production Scenario: 0.2 pounds per hour
2008-2009 Production Scenario: 0.18 pounds per hour (90% of 2005 level)
2010 Production Scenario: 0.14 pounds per hour (70% of 2005 level)
2013 Production Scenario: 0.011 pounds per hour (5.5% of 2005 level)

For the 2005, 2008-2009 and 2010, the HRA for the Lehigh facility discloses the predicted 1-hour maximum concentrations of mercury at the MEIR that are consistent with the decline in mercury emissions for these years. They are as follows:

2005 1-hour maximum [mercury]: 1.06 g/m^3
2008-2009 1-hour maximum [mercury]: 0.966 g/m^3 (91% of 2005 level)
2010 1-hour maximum [mercury]: 0.677 g/m^3 (63% of 2005 level)

The body of the HRA for the Lehigh facility does not disclose the predicted 1-hour maximum concentration of mercury at the MEIR under the 2013 production scenario. However, consistent with the claim that mercury emissions under the 2013 production scenario would be approximately 5-6% of mercury emissions under the 2005 production scenario, one would

[13] HRA at Appendix A, Table 3

expect that the predicted 1-hour maximum concentration of mercury at the MEIR under the 2013 production scenario would be approximately 0.058 g/m^3.

Although the body of the HRA for the Lehigh facility does not disclose the predicted 1-hour maximum concentration of mercury at the MEIR under the 2013 production scenario, Appendix J of the HRA for the Lehigh facility - HARP Modeling Input and Output files, 2013 Production Scenario.

One of the files (2013_Rep_Acu_Rec2041_AllSrc_AllCh_ByRec_ByChem.txt) in Appendix J allows one to calculate the predicted 1-hour maximum concentration of mercury at the MEIR under the 2013 production scenario that the HRA does not reveal in its body. This file calculates an acute hazard quotient for mercury of 0.00252 in comparison to the acute Reference Exposure Level for mercury of 0.6 g/m^3. This allows one to calculate that the HRA for the Lehigh facility assumes that under the 2013 production scenario, the predicted 1-hour maximum concentration of mercury at the MEIR would be 0.0015 g/m^3.

This predicted 1-hour maximum concentration of mercury at the MEIR under the 2013 production scenario is only 0.15% of the predicted 1-hour maximum concentration of mercury at the MEIR under the 2005 production scenario and, therefore, is glaringly inconsistent with the claim that mercury emissions under the 2013 production scenario would still be roughly 5-6% of mercury emissions under the 2005 production scenario. Therefore, the HRA for the Lehigh facility needs to explain why predicted 1-hour maximum concentration of mercury at the MEIR under the 2013 production scenario are a 99.85% reduction of predicted 1-hour maximum concentration of mercury at the MEIR under the 2005 production scenario.

Hg in limestone data.xls.

25-Mar-09	0.394
	0.396
26-Mar-09	0.774
	0.780
27-Mar-09	1.440
	1.420
28-Mar-09	0.401
	0.397
29-Mar-09	0.302
	0.306
30-Mar-09	0.298
	0.295
31-Mar-09	0.328
	0.328
1-Apr-09	0.483
	0.480
2-Apr-09	0.272
	0.271
3-Apr-09	0.346
	0.342
4-Apr-09	0.384
	0.384
5-Apr-09	0.263
	0.264
6-Apr-09	0.279
	0.283
7-Apr-09	0.340
	0.341
8-Apr-09	0.382
	0.384
10-Apr-09	0.243
	0.243
11-Apr-09	0.253
	0.255
12-Apr-09	0.446
	0.446
13-Apr-09	0.261
	0.261
14-Apr-09	0.263
	0.262
15-Apr-09	0.247
	0.249

16-Apr-09	0.351
	0.352
17-Apr-09	0.238
	0.238
18-Apr-09	0.267
	0.267
19-Apr-09	0.200
	0.200
20-Apr-09	0.232
	0.232
21-Apr-09	0.216
	0.217
22-Apr-09	0.274
	0.273
23-Apr-09	0.326
	0.325
24-Apr-09	0.295
	0.296
Average	**0.360**

BACE 2011-05-27-BAAQMD reply
to BACE HRA evaluation

BAAQMD reply to BACE 5/26/2011 HRA evaluation

May 27, 2011

Scott Lutz, BAAQMD

Submitted by Bay Area
For
Clean Environment

Dr. Chernaik –

Thank you for providing comments regarding the Lehigh HRA. However, it is the District's preliminary conclusion that the HRA was prepared in accordance with our direction and the OEHHA AB2588 HRA guidelines. In addition, District staff have conducted AERMOD dispersion modeling to verify the results. The District is anticipating formal comments from OEHHA and will consider them before making a final decision about the approval of the HRA. Please consider my responses to your comments.

- You state that a greater average mercury content should be used. Lehigh indicated that there were analytical anomalies for two sampling days (of 30) in question and requested that they be excluded from the 30-day average; this is often done for questionable data. The 30-day averaging protocol was developed by USEPA and the District believes this methodology is appropriate for estimating emissions from this facility until Lehigh installs a continuous emissions monitor (CEM) later this year in order to demonstrate compliance with the Portland Cement NESHAP. The District has recently issued a permit for the kiln with an hourly mercury emission limit of 0.064 lb/hr (permit is for a carbon sorbent injection system installed to reduce mercury emissions); this is the emission rate used in the HRA for the 2011 production scenario and will be enforced using a 30-day rolling average based on material balance until the CEM is operational later this year.

- Your simple analysis regarding the 8-hour Hazard Index is flawed: you assumed that the overall maximum 8-hour concentration should be compared to the 8-hour REL – this is a common misconception. OEHHA indicates that the 8-hour REL is to be compared to repeated long-term daily 8-hour exposures (e.g., for off-site workers and children at schools or day-care facilities). Formal guidance from OEHHA is not yet available, however, OEHHA provided interim guidance to air districts on April 19, 2010. This guidance indicates that an 8-hr REL should be compared to the annual-average concentration for continuously emitting sources, and that the annual-average concentration should be adjusted by considering the operating schedule for non-continuously emitting sources (e.g., a factor of 4.2 for a source that operates 5 days a week, 8 hours/day). Since Lehigh's kiln is operated more than 4000 hours/yr, the adjustment factor would be about 2.2. The maximum annual-average concentration for a worker (MEIW = receptor 5076, Table 8B) for 2008/09 production is 4.2E-3 $\mu g/m^3$, the average exposure for a worker at the MEIW using the factor of 2.2 would be about 9E-3 $\mu g/m^3$. The 8-hour REL is 0.06 $\mu g/m^3$; therefore the 8-hr HQ for Hg for 2008/09 is about 0.15 - essentially the same as the chronic HQ of 0.14. In addition, current emissions of mercury are about 65% lower than in 2008/09. Mercury is the predominate contributor for chronic hazard index and would also be for the 8-hour hazard index; therefore, the 8-hour HI would not be significant. Because the revised HRA guidance document is not yet available and the 8-hr RELs have not been incorporated into HARP, most districts have deferred implementation of these new RELs, CARB and OEHHA have concurred with this policy.

- You state that the maximum 1-hour concentrations of Hg under the 2013 production scenario are inconsistent with emission rates for other scenarios. However, you failed to consider that improved dispersion will be achieved with the proposed new stack (see Section 6.0, page 58 of 194) that will be installed to meet requirements of the NESHAP. The much taller

stack and higher flow rates will enhance dispersion, therefore the risk estimates are not inconsistent - that's why we do detailed dispersion modeling. Although the 2013 concentration of mercury was not presented in the main report, the 2013 scenario is an optional future alternative analysis, therefore the District chooses to be less stringent in the presentation of results. Once the new equipment and stack are actually installed in 2013 and the new OEHHA HRA guidelines are adopted, the District can perform an updated risk analysis (including 8-hr HI).

Scott

BACE 2011-06-01-BACE response to
BAAQMD reply to BACE HRA evaluation

BACE response to BAAQMD 6/1/2011 reply to BACE 5/26/2011 HRA evaluation

June 1, 2011

Mark Chernaik, Ph.D., J.D.

Submitted by Bay Area
For
Clean Environment

Dear Scott,

Thank you for the thoughtful reply to the evaluation. What follows are some additional comments and questions that I hope will enhance the understanding of Lehigh's March 2011 Health Risk Assessment.

1. Mercury content of Lehigh's limestone

You wrote: "Lehigh indicated that there were analytical anomalies for two sampling days (of 30) in question and requested that they be excluded from the 30-day average; this is often done for questionable data."

Could you please specify the nature of the analytical anomalies that justify exclusion of this data? The nature of these analytical anomalies is not specified in the Health Risk Assessment.

You indicate that Lehigh requested that this data be excluded from the 30-day average. Could you please share all of the correspondence between Lehigh and BAAQMD regarding the treatment of the sampling data in question?

You wrote: "The 30-day averaging protocol was developed by USEPA and the District believes this methodology is appropriate for estimating emissions from this facility." Could you please provide a citation to or copy of the USEPA protocol used by Lehigh that specifies the methodology for analyzing the mercury content of Lehigh's limestone and the treatment of analytical results?

There is nothing analytically anomalous about the data for these two sampling days that is readily apparent. Two runs were made on each day of sampling. The mercury contents of the two runs made on March 26 and 27 differ by only a few percent (March 26, run 1 = 0.774 ppm, run 2 = 0.780 ppm; March 27 Run 1 = 1.44 ppm, Run 2 = 1.42 ppm), consistent with the small differences in the mercury contents for all of the other sampling days. Even if we exclude data from March 26 and 27, there is substantial variation in the mercury content of Lehigh's limestone, ranging almost two-and-half-fold, from a minimum of 0.20 ppm to 0.48 ppm. This substantial variation in measurements from the other 28 days of sampling further suggests that the measurements of March 26 and 27 validly reflect an inherent variability of the mercury content of Lehigh's limestone. Finally, when the U.S. EPA promulgated the new Portland Cement NESHAP in September 2010, it stated:

> "Industry commenters stated that we should account for additional sources of variability in this floor determination, namely intra-quarry variability and variability of the mercury content in local coals which kilns could utilize. As explained below, beyond those situations where commenters documented that sources actually used inputs with greater mercury content than used during the 30-day test period (see note 11 above), or where further intra-quarry mercury variability could reasonably be estimated, we did not do so.

> "EPA is of course aware that limestone quarries are immense, and are customarily used from periods of 50 to 100 years. Taking the average of 30 days of sampling data from one part of the quarry would not necessarily encompass all of the different mercury levels throughout the quarry."

The U.S. EPA also supplied a graph depicting the average mercury content of limestone used by U.S. Portland Cement plant. See: average mercury content of limestone.gif One U.S. Portland Cement plant uses limestone with an average mercury of more than 1.1 ppm. One of the two quarries with the highest mercury content of limestone in the U.S. is Lehigh's quarry in Tehachapi, California, about 200 miles from Lehigh's quarry in Cupertino. Therefore, there is nothing inherently anomalous with the measurements of March 26 and 27 showing mercury contents from 0.77 to 1.44 ppm.

Without further justification of why the data from March 26 and 27 should be excluded, BAAQMD's decision to exclude this data seems arbitrary.

2. The District's recent issuance of a permit for the kiln with an hourly mercury emission limit of 0.064 lb/hr

It is the contention of No Toxic Air that when predicting maximum hourly ambient air concentrations of mercury under the 2010, 2011 and 2013 production scenarios, the HRA should assume a clinker production rate of 200 tons per hour (which requires the consumption of 289 tons of limestone per hour) and a maximum mercury content of limestone.

It is the contention of No Toxic Air that, according to the mercury analysis that Lehigh performed in 2009, the maximum mercury content of limestone is 1.43 parts per million - the average mercury content of limestone that Lehigh sampled on March 27, 2009.

If the district can demonstrate that there are analytical anomalies that justify exclusion of this data (and the data from March 26, 2009), then it is the contention of No Toxic Air that, according to the mercury analysis that Lehigh performed in 2009, the maximum mercury content of limestone is 0.482 - the average mercury content of limestone that Lehigh sampled on April 1, 2009.

You wrote: "The District has recently issued a permit for the kiln with an hourly mercury emission limit of 0.064 lb/hr (permit is for a carbon sorbent injection system installed to reduce mercury emissions); this is the emission rate used in the HRA for the 2011 production scenario and will be enforced using a 30-day rolling average based on material balance until the CEM is operational later this year."

As you know, the District has issued two permits for the facility, a Major Facility Review Permit that was noticed by the District on January 7, 2011 and a Minor Revision of a Major Facility Review Permit that was noticed by the District on May 10, 2011.

It is my understanding that none of the limits on mercury emissions contained in the Major Facility Review Permit that was noticed by the District on January 7, 2011 come into effect until September 9, 2013.

The Minor Revision of a Major Facility Review Permit that was noticed by the District on May 10, 2011 does contain the following limit (on page 24):

> "The owner/operator of S-154, S-171 and S-172 shall not emit more than 261 lbs/yr (12-month rolling average) and 0.064 lb/hr (3-hour rolling average) of total mercury during normal operation. These mercury limits may be revised based on a new stack or other modifications that Lehigh will be making, which could affect the Health Risk Analysis results. (Basis: H&S Code 44300 et seq.)"

You wrote that the new hourly limit on mercury emissions would be: "enforced using a 30-day rolling average based on material balance until the CEM is operational later this year."

Does the Minor Revision of a Major Facility Review Permit that was noticed by the District on May 10, 2011 contain a deadline by which Lehigh must make CEM of mercury emissions operational?

Until Lehigh does make CEM of mercury emissions operational, how would enforcement of the hourly limit "using a 30-day rolling average based on material balance" prevent gross exceedances of the hourly limit?

For example, let us suppose that Lehigh is operating at a maximum production capacity of 200 tons per hour of clinker (289 tons per hour of limestone) and is using limestone that contains a mercury content of 1.43 ppm. Potential mercury emissions might be 0.826 lbs/hour (289 tons/hour x 2000 lbs/ton x 0.00000143). The Minor Revision of a Major Facility Review Permit explains that: "the 2011 Production scenario represents the implementation of the Activated Carbon Injection system (subject of this application) and an hourly emission rate of 0.064 lb/hr of mercury (approximate 65% reduction from baseline)." If we apply a 65% reduction of mercury emissions because of the implementation of the Activated Carbon Injection system, then Lehigh might still emit 0.289 lbs/hour for a substantial period of time. However, these elevated emissions would be completely masked by an enforcement mechanism that uses a <u>30-day rolling average</u> based on material balance.

Finally, would you agree that the new mercury limit contained in the Minor Revision of a Major Facility Review Permit that was noticed by the District on May 10, 2011 has no bearing on the analyses in the HRA on prior year (2005, 2009/2009, and 2010) Production Scenarios?

3. Comparison of predicted ambient air levels of arsenic, manganese and mercury to 8-hour Reference Exposure Levels

You wrote: "Formal guidance from OEHHA is not yet available, however, OEHHA provided interim guidance to air districts on April 19, 2010. This guidance indicates that an 8-hr REL should be compared to the annual-average concentration for continuously emitting sources, and

that the annual-average concentration should be adjusted by considering the operating schedule for non-continuously emitting sources (e.g., a factor of 4.2 for a source that operates 5 days a week, 8 hours/day). Since Lehigh's kiln is operated more than 4000 hours/yr, the adjustment factor would be about 2.2."

Could you please share the interim guidance that OEHHA provided to air districts on April 19, 2010? I looked carefully for the document on OEHHA's website, but could not find this interim guidance.

In developing the 8-hr REL for mercury, OEHHA stated:

> "The 8-hour Reference Exposure Level is a concentration at or below which adverse noncancer health effects would not be anticipated for repeated 8-hour exposures (see Section 6 of the Technical Support Document)."

So, I agree with you that my analysis was too simple: predicted maximum 8-hour exposures at schools and other relevant receptors may not be similar to repeated 8-hour exposures.

However, I have concerns that an adjustment of the annual-average concentration of mercury is an appropriate method of comparing predicted 8-hour exposures at schools and other relevant receptors to the 8-hour Reference Exposure Levels considering the strong tendency of mercury to bioaccumulate (because of its well-known avidity for sulfhydryl and thiol groups in biological material). As OEHHA has noted:

> "The half life of elimination of mercury in humans following a single inhalation exposure of 14-24 min. was 21 days from the head, 64 days from the kidney, and 58 days from the body as a whole (Hursh et al., 1976). Urinary elimination among workers occupationally exposed for several years had an elimination half-life of 55 days (Sallsten et al., 1994). Thus, since mercury is only slowly eliminated, the intervals between daily 8-hr exposures, and between weeks are not long enough for the elimination of significant amounts of the metal and it will accumulate in the body with repeated exposure."

Considering that the half-life of mercury following a single inhalation exposure is so long (58 days), multiple exposures to mercury over a period of only several days would result in a nearly cumulative dose of mercury and may exert a profound toxic effect on the nervous system.

4. Maximum 1-hour concentrations of Hg under the 2013 production scenario

For the 2013 Production Scenario, I did in fact consider that a much taller stack and higher flow rates would enhance dispersion. For example, the HRA indicates that maximum hourly emissions of arsenic would be the same under the 2005 and the 2013 production scenarios (compare tables 5A and 25A). The HRA predicts that maximum 1-hour concentrations of arsenic under the 2005 production scenario would be 4.04 E-3 at the MEIR, and roughly the same, 3.58 E-3, under the 2013 production scenario. So, clearly the tall stack and higher flow rates are not having much of an effect on particle-bound pollutants. For the various Production

Scenarios, what assumptions are being made about the speciation and fraction of particle-bound mercury in overall mercury emissions from the kiln?

Average Mercury Content of Limestone.gif

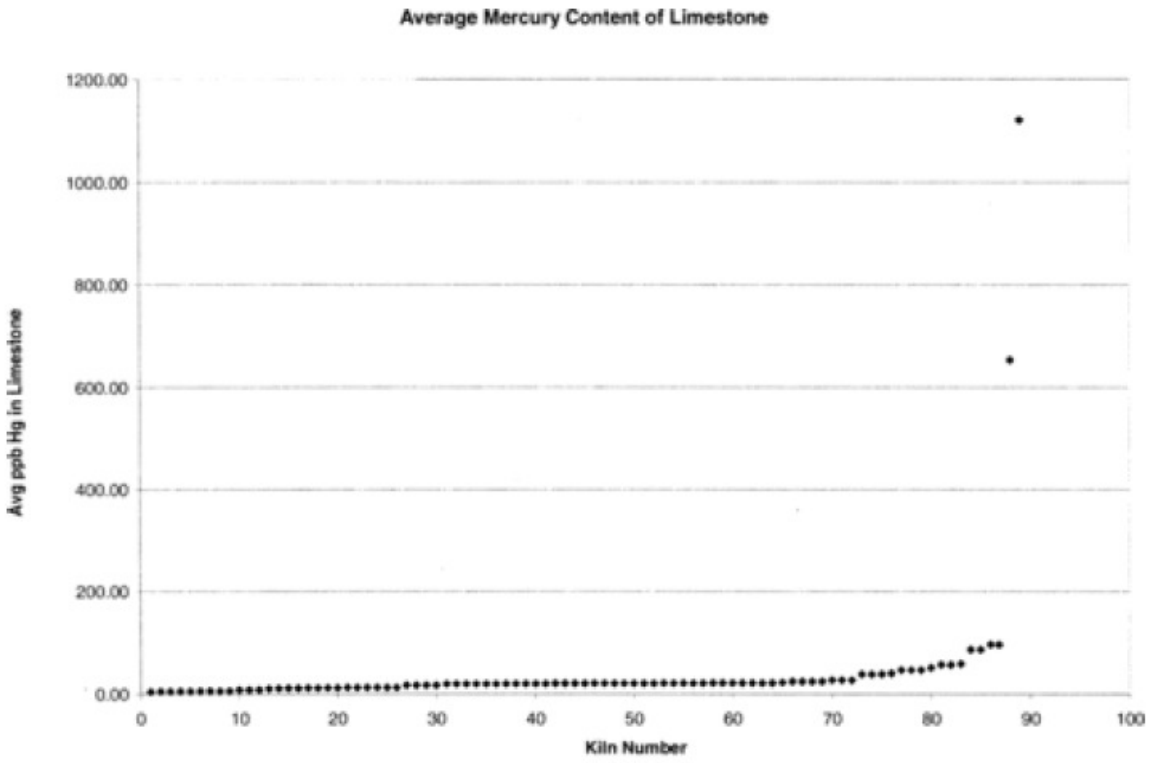

Figure 1. Average Mercury Concentration of Limestone

Average Mercury Conant ol Limeslonc

Figure 1. Average Mercury Concentration of Limestone

Rob Eastwood
SCC Planning Dept.

Re: dEIR Lehigh RPA: West Valley Citizens Air Watch additional comments

To Rob Eastwood: Please add this additional comment to the comments
previously submitted by WVCAW today.

In the dEIR Lehigh RPA, page 4.3-30 and 4.3-29 a reference is made to requiring Lehigh to submit a "legally binding" agreement precluding occupation of the "Caretaker's Residence" during Phase 1. It appears that this reference is to the residence known or previously known as the "Snyder-Hammond House." This house has been and perhaps still is a property of the City of Cupertino. If that is the case, then how can the county be asking Lehigh to require this agreement? In addition, even if it is owned by Lehigh, which we do not know to be the case, as far as we know, we object to residents being ask to move out of their current residence to facilitate Lehigh's project. SCC appears to be allowing Lehigh to do this.

So this project alternative is dependent on moving a local resident out of their residence? This project is rendering this house unliveable. We object to this.

For WVCAW, Joyce M Eden, Tim Brand

------ End of Forwarded Message