County of Santa Cruz

PLANNING DEPARTMENT
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TOM BURNS, DIRECTOR

January 12,2004

AGENDA DATE: JANUARY 28,2004

Planning Commission
County of Santa Cruz
701 Ocean Street
Santa Cruz, Ca 95060

APPLICATION NUMBER **02-0046**
OWNER/APPLICANT: **Hanson Aggregates Mid–Pacific (Hanson)**
APN: **067-011-07; 067-021-21& -22**

SUBJECT: Continued Public Hearing on Application for Mining Approval Amendment and Permit Review of Existing Mining Operation

Members of the Commission:

This item was originally scheduled before your Commission on December 10,2003. Prior to the hearing on December 10, Hanson requested a continuance to allow for additional time to review **the** staff report and discuss various aspects of the report with Planning staff. On December 10, 2003 your Commission opened the public hearing to allow one member of the public to provide oral and written comments, then continued the hearing to January 28,2004. Planning staff has meet with Hanson representatives to review and discuss their concerns with the staff report. As a result, some changes to the original staff report and Conditions of Approval have been made based on mutual agreement, resulting in a revised staff report. A copy of the revised, original staff report, including proposed Findings, Conditions, and Negative Declaration, has been attached to this letter for your reference.

Representatives of Hanson Aggregates continue to disagree with Planning staff, however, regarding that portion of the staff report and recommended Conditions of Approval related to retention pond management. The following discussion is a brief review of the changes to the staff report and further explanation of Planning staff analysis regarding the retention pond management issue.

DISCUSSION

Changes to the original staff report and proposed Conditions of Approval, based upon mutual agreement, include 1) clarification of buttress fill construction; 2) modifications to requirements for future monitoring by the project civil engineer and geologist; 3) modifications to requirements for timing of certain actions; **4)** clarification of past dust abatement actions **by** Hanson and 5) an added requirement for the submittal of as-built grading and drainage plans. Deletions are indicated by strikeout of text, and added text is shaded.

Hanson is generally agreeable to the requirement to prepare a basin management plan. However, there is disagreement on the general scope of work for development of the plan and the intended purpose of the plan. Hanson has submitted comments by electronic mail which, in general, suggest that the deep borings and water budget model should not be required because the retention basin is not intended to be a groundwater recharge facility.

Planning staff agrees that the basin is not intended to be a groundwater recharge facility. However, a basin such as this must be emptied of water and accumulated sediment each year in order to preserve a large factor of safety and accomplish vegetation management objectives, and a basin management plan is necessary to provide disposal options for any accumulated water and/or sediment from the pond. The pond will naturally lose water through evaporation and infiltration, but our experience has shown that excess water remains at the end of the summer that must be pumped out in order to allow for pond maintenance each year. Additional information about loss due to infiltration is necessary to develop an adequate management plan for the pond. This information will provide guidance to optimize the timing of pumping activities. The goal would be to leave water in the basin as long as possible in order to maximize infiltration, and to pump excess water in time to allow the pond bottom to *dry* adequately to allow for equipment access to remove accumulated sediment. This is the basis for the recommended condition for deep borings and development of a water budget model. Accordingly, no changes have been made to the staff report or the proposed condition regarding the scope of work for a basin management plan.

CONCLUSION AND RECOMMENDATIONS

While Planning Department staff has agreed to recommend that various changes be made to the original staff report and Conditions of Approval related to application number 02-0046, we have not departed from the position that additional information on infiltration rates is needed to develop an adequate management strategy for the retention pond. Staff therefore recommends that your Commission take the following actions:

1. Certify the Mitigated Negative Declaration as complying with the requirements of the California Environmental Quality Act (Exhibit E of the attached staff report); and

2. Approve Application Number 02-0046, based on the Findings and subject to the Conditions of Approval included in Exhibits B and C, respectively, of the attached staff report.

Sincerely,

David Carlson
Resource Planner
Environmental Planning

Reviewed By: _____
Ken Hart
Principal Planner

Attachments:

Revised Planning Commission Staff Report with Exhibits

COUNTY OF SANTA CR UZ
PLANNING DEPARTMENT

Date: January 28,2004
Agenda Item: # 12
Time: After 9:00 a.m.

STAFF REPORT TO THE PLANNING COMMISSION

APPLICATION NO.: 02-0046 **APN:** 067-011-07; 067-021-21; 067-021-22
APPLICANT: Hanson Aggregates Mid-Pacific Inc.
OWNER: Hanson Aggregates Mid-Pacific Inc. (Kaiser Sand & Gravel)

PROJECT DESCRIPTION: The proposed project consists of **the** following: **1)** Permit review of the existing mining operation; 2) Mining Approval Amendment to include changes to the mining plan, reclamation plan, and financial assurance.

LOCATION: Southwest of the intersection of Mt. Hermon Road and Conference Drive

PERMITS REQUIRED: Amendment to Mining Approval and Reclamation Plan Approval
ENVIRONMENTAL DETERMINATION: Mitigated Negative Declaration
COASTAL ZONE: —Yes _X_No APPEALABLE TO CCC: __Yes_X_No

PARCEL INFORMATION

PARCEL SIZE: 270 Acres
EXISTING LAND USE:
PARCEL: Mineral Quarry
SURROUNDING Residential and Public/Institutional
PROJECT ACCESS: Conference Drive
PLANNING AREA: San Lorenzo Valley
LAND USE DESIGNATION: R-M (Mountain Residential)
ZONING DISTRICT: **SU** (Special Use)
SUPERVISORIAL DISTRICT: District Five

ENVIRONMENTAL INFORMATION

a. Geologic Hazards	**a. Yes**
b. Soils	b. Zayante Coarse Sand
c. Fire Hazard	c. Critical Fire Hazard Area
d. Slopes	d. Mined slopes and quarry floor
e. Env. Sen. Habitat	e. Yes
f. Grading	f. Yes
g. Tree Removal	**g.** Yes
h. Scenic	h. Mt. Hermon Road corridor
i. Drainage	i. Drainage plan submitted
j. Traffic	j. No increase in traffic
k. Roads	**k.** Existing roads, no additional impact
l. Parks	l. Existing park facilities, no additional impact
m. Sewer Availability	m. Private septic system
n. Water Availability	n. Private well system
o. Archeology	o. Not mapped/no physical evidence on site

SERVICES INFORMATION

Inside Urban/Rural Services Line: ___Yes _X_No
Water Supply: Private Well
Sewage Disposal: Private septic system
Fire District: Scotts Valley
Drainage District: None

INTRODUCTION

The existing quarry is located southwest of the intersection of Mt. Hermon Road and Conference Drive and encompasses three separate parcels with a total area of 270 acres (Exhibit E, Attachment 4). The property consists of hilly terrain, which generally slopes from south to north towards Bean Creek, located approximately 350 feet north of the property. The highest elevations on the property are located along the west and east boundaries and at the south comer. Mining over the years has created a "quarry pit" with high walls along the west, south and east boundaries and a broad quarry floor in the central portion of the property that opens to the north.

This report will use the terms quarry, Kaiser Sand & Gravel and Hanson interchangeably. A British-based firm operating locally as Hanson Aggregates Mid-Pacific Inc acquired Kaiser Sand & Gravel, which started the quarry.

To the west of the quarry is the Mt. Hermon Conference Center, which contains single-family dwellings as well as the conference center. Southwest of the quarry is the Santa Cruz County Probation Center. Along the southeasterly and easterly boundary the quarry is adjacent to residential development along Worth Lane and Twin Pines Drive. Kaiser Sand & Gravel owns all except one of the properties adjacent the quarry immediately southwest of the intersection of Conference Drive and Mt. Hermon Road, which include five homes and a small office building. The one exception is a private residence. Kaiser Sand & Gravel owns several parcels on the north side of Conference Drive opposite the quarry, which are vacant and total approximately 12 acres. Other parcels on the north side of Conference Drive are either vacant or contain residential development.

The Conditions of Approval to operate the quarry are provided in Use Permit 69-U, Certificate of Compliance (COC) 75-0590-PQ and an Amendment to the COC. Additional Conditions of Approval have been added as a result of permit reviews conducted in 1988 and 1995. The item before the Commission today is an application for a Mining Approval Amendment to include changes to the Mining Plan, Reclamation Plan, and Financial Assurance and a periodic permit review of the existing mining operation.

Mining Approval Amendment Application

The application for a formal Mining Approval Amendment has been submitted to fulfill a requirement of the 1995 permit review, and to incorporate remedial grading and revised final quarry grading contours into the mining plan. Corresponding changes to the revegetation plan are also included in the application. The Mining Approval Amendment consists of changes to

the drainage plan including creation of a retention pond in the south corner of the quarry and conversion of the existing settling ponds into a series of detention ponds. In addition, the Amendment recognizes the buttress fill and quarry pit backfill, constructed under emergency conditions, which were not evaluated in the 1976 EIR nor approved by the COC 75-0590-PQ (Exhibit A)

Environmental Review History

The Environmental Review process for this application has resulted in the preparation and circulation of three separate Initial Studies based on changes to the drainage plans made by Hanson. A response to the comments received as a result of circulation of each Initial Study is included in the subsequent document.

The most recent Initial Study, dated October 6, 2003, was again circulated for public and agency comment. Two comment letters were received. Based on the comments received during the public review period, the Environmental Coordinator has decided to make modifications to the initial study, which are indicated by shaded text in the Initial Study attached as Exhibit **E.** Comments received during the review periods are attached as Exhibit E, Attachment 9.

Permit Review

As noted above, the initial study is limited to an evaluation of the potential environmental impacts associated with the aspects of the project that constitute the Mining Approval Amendment. All other aspects of the ongoing quarry operation are evaluated during the Permit Review. In connection with the Permit Review of the Hanson Quarry Use Permit and COC 75-0590-PQ the Planning Commission will take public testimony or otherwise investigate permit compliance. Further, the County's current Mining Code Section 16.54.074 states:

"New conditions shall not be imposed as part of a review process unless:

- there is a threat to public health and safety;
- there is a significant injurious threat to the environment;
- there is a nuisance;
- there is a violation of approval conditions;
- there is a change in the scope of operations; or,
- the ordinance in effect at the time of the Mining Approval, Certificate of Compliance or Reclamation Plan Approval being reviewed was originally approved, or the Approval itself, authorized imposition of new conditions by the Planning Commission."

All permit conditions and quany operations are evaluated with respect to these parameters in the Permit Review section of this staff report (Exhibit D).

Quarry History

The quarry obtained its original Use Permit for the production of sand on August 6, 1958, Use Permit 69-U. Mining operations began in January of 1959 and generally consist of excavating,

washing, classifying and shipping of sands, which occur within the Santa Margarita Formation underlying the property.

In June 1975, the quarry operator at the time, Kaiser Sand & Gravel applied for a Certificate of Compliance (COC) to comply with a requirement of the Santa Cruz County Mining Regulations. The 1978/79 COC approval applied to phased mining of the entire quarry site subject to specified conditions. The exhibits to that approval included maps showing both 1983 and final quany contours, which were specifically approved. The COC stipulated that the Planning Commission must review and approve each five-year continuation or phasing plan beyond the 1983 limits. The final quarry contour map approved with the COC indicated that drainage patterns in the southem portion of the quarry would flow north along the east side of the quarry towards Mt Hermon Road (Exhibit E, Attachment 5).

In 1988 and 1995 the Planning Commission completed 5-year reviews of the quarry operations. At the conclusion of the 1995 review, the Commission again approved the continuation of mining operations and approved the 5-year mining plan through the year 2000 subject to additional conditions imposed at that time. The current application reflects a condition from the 1995 review requiring the quarry to apply for a Mining Approval Amendment at the time of the next 5-year review. The reason that this condition was imposed was that a revision to the final contour plan was proposed by the quarry during the late stages of the 1995 five-year review. That plan depicted a closed depression in the south corner of the quarry that would impound water, which was inconsistent with the final quany contour map that was approved as part of the 1978179 COC. Because the Planning Commission was solely conducting a 5-year review and could not act on a proposal to amend the Mining Approval, the request to revise the final contours and drainage was deferred. Therefore, the final quarry contour map approved during the 1995 five-year review indicates that drainage patterns in the southern portion of the quany will flow north along the east side of the quarry towards Mt Hermon Road, in conformance with the final quarry contour map approved in 1978/79.

As you may recall, a "Stop Work" notice was posted at Hanson's Felton Quarry on November 29,2001 as a result of over excavation at the southeastern portion of the quarry. This unauthorized work created an over steepened slope, jeopardizing utilities located along Worth Lane and sensitive habitat on the quarry property. The "Stop Work" notice required Hanson to immediately halt to all quarrying activities, including the further extraction of sand, and to obtain an emergency grading permit to immediately buttress the unstable slopes. An Emergency Grading Permit (43003S) was applied for and issued on December 3,2001, for the construction of a buttress fill approximately 70-foot in height consisting of approximately 300,000 cubic yards of fill placed against the slope up to an elevation of approximately 570 feet amsl. Grading to construct this fill was completed on January 25,2002.

The Emergency Grading Permit addressed the immediate concern of a large-scale slope failure of a 150-foot tall quarry slope, potential encroachment into a sensitive habitat, and possible involvement of neighboring properties at the south end of the quarry. It did not, however, address all the stability concerns required by the County Mining Ordinance. Therefore, an additional emergency grading permit (43412S) was applied for and subsequently issued on February 12,

2002 for expansion of the buttress fill to the top of the slope (maximum 680 ft. amsl & 722 ft. amsl). This phase II &III buttress fill grading, which was completed on May 15, 2002, consisted of approximately 600,00 cubic yards bringing the total volume for the entire buttress fill slope to approximately 900,000 cubic yards.

The Planning Department has submitted reports to your Commission regarding this matter, including execution of an agreement, and subsequent amendments to that document, to complete all corrective work on three separate occasions.

Hanson Quarry is nearing the end of mining operations, anticipated to be completed by the end of the year. Once the excavation, stockpiling, processing and shipping of sand ceases, activities at the site will consist of reclaiming the mined lands. Concurrent reclamation has been ongoing over the years. As the western slopes were mined and final slopes and benches were established, revegetation efforts were initiated. Revegetation efforts are underway on the buttress fill slopes and benches in the southern corner of the quarry. Once mining activities cease, revegetation will begin on the eastern slopes and on the quarry floor after removal of structures and equipment and preparation of final grades.

ANALYSIS AND DISCUSSION

Required Conditions and Standards for Amendment to Mining Plan and Reclamation Plan

The Santa Cmz County Mining Regulations (County Code Chapter **16.54)** contain a list of conditions and standards that must be met prior to approval of an amendment to a Mining or Reclamation Plan. The following is a discussion, by topic, of the amendments proposed under application 02-0046.

Noise and Vibration

The Amendment application does not have the potential to increase noise levels over maximum levels established by County Code and incorporated into existing conditions of approval. Quarry operations have been conducted in compliance with conditions of approval. See Permit Review section of this staff report (Exhibit D).

Air *Pollution*

The Amendment application will not cause a change in impacts related to air quality. The quarry operation has been conducted in compliance with the requirements of the Monterey Bay Unified Air Pollution Control District. Vegetation removal has occurred in compliance with the approved phasing plans. See Permit Review section of staff report for discussion of dust monitoring and abatement issues.

Water

The amendment application regarding the changes to the mining plan does not change the existing conditions regarding use and discharge of water associated with active mining operations. Currently all process water and storm water is retained on site in the settlement

ponds and is used in the sand washing process except for a small amount of runoff that accumulates on and flows down the entrance road to the quany. Hanson submits self-monitoring reports to the Regional Water Quality Control Board (RWQCB) pursuant to Monitoring and Reporting Program 87-11. Discussions with RWQCB staff indicate that the quarry is in general compliance with that agencies permit requirements.

The conditions of the existing COC state that no excavation shall take place below any water tables found to exist on the property other than those which can be shown to be due solely to locally perched water, and all final site contours shall be left with a minimum of ***5*** feet of sand covering the underlying "shale subsoil". The quarry has maintained compliance with these requirements during mining operations. It should be noted, however, based on historical well data, groundwater levels in the area have dropped over the years. For example, groundwater levels in Well **4A** (formerly well 4) in the southem comer of the quarry site have been as high as approximately 540 feet above mean sea level (amsl) in 1986, but groundwater pumping over the years by a variety of water users has caused the groundwater level to drop to 405 ft amsl in 2002, which represents a 135-foot drop over 16 years. The over-excavation in the southem comer of the quarry reached approximately 466 ft amsl and has been backfilled such that the lowest ground surface in the southern comer of the quarry has been recently surveyed at 517 ft. amsl. After cessation of mining and processing of sand, pumping of Well 4A to supply water for the sand washing process will cease and some infiltration of ponded water will occur through the proposed retention basin. Given that groundwater levels have been documented in the nearest well is 112 feet below the elevation of the basin, it is unlikely that groundwater levels will rise up into the retention basin.

As noted, the final quarry contour map approved during the 1995 five-year review indicates that drainage patterns in the southern portion of the quarry will flow north along the east side of the quarry towards Mt Hermon Road, similar to the final quarry contour map that was approved for the 1978/79 COC. The current application for Mining Approval Amendment includes changes to that drainage plan, including creation of a retention pond in the south comer of the quarry and conversion of the existing settling ponds into a series of detention ponds. In other words, the proposed amendment application proposes to detain and retain storm water runoff on site instead of allowing runoff to flow offsite, as indicated by the previously approved final quarry contour map.

The proposed amendment, therefore, does not include any changes to the existing approval that would deplete groundwater supplies or interfere with groundwater recharge. Indeed, the proposed detention ponds and retention pond will provide an increased potential for groundwater recharge on the site compared to the previously approved final quarry contour plan, which would route all surface drainage off the property and preclude recharge altogether.

The drainage calculations and observations indicate that the retention basin has adequate capacity to contain the runoff from its drainage area. The retention basin has an estimated capacity of approximately 800 acre-feet. Consultants for the quarry have estimated that the retention pond will easily contain the runoff from an average year. The consultant for the San Lorenzo Valley Water District has reviewed Hanson's drainage calculations and concludes that the basin capacity

appears to be adequate to contain runoff from an abnormally wet year such as 1982/83.

However, the issue of infiltration capacity within the retention basin area does not appear to be well understood. Observations of the retention basin during winter 2002103 and throughout the summer of 2003 indicated that the retention pond retains water for a longer period of time than predicted by the drainage calculations, even after the drainage calculations were revised utilizing a substantially lower assumed infiltration rate. In fact, this year the retention pond had to be pumped in order to completely dewater it and clean it out prior to October 15. It appears that reliance on natural infiltration of retained water into the ground through the bottom and sides of the pond is insufficient to dispose of all of the collected runoff. During the past year, one obvious reason for this is the observed siltation of the basin through erosion of the buttress fill and other areas of the quarry. It has been suggested that simply controlling erosion and the eventual revegetation of the basin's tributary area, in particularly the buttress fill, will resolve the problem of siltation and clogging of the basin. However, other factors may be contributing to clogging of the infiltration surface. These factors are discussed in a memo from hydrologist Nick Johnson to the San Lorenzo Valley Water District (SLVWD), which was submitted to the County as comments on the quarry's reclamation plan retention basin design. According to Mr. Johnson clogging is a common problem in infiltration basins, especially in relatively deep basins such as this one.

There are advantages to having the basin dry out each year prior to October 15. These include: 1) maintaining a large factor of safety in the capacity of the basin to prevent spillage, 2) to facilitate clean out if necessary, and 3) to aid in vegetation management for mosquito vector control. Assuming the infiltration capacity of the basin is lower than expected and/or clogging is a consistent problem, then the basin will have to be pumped, possibly each year, in order to maintain maximum capacity, clean out of clogging material, and accomplish vegetation management. The need to periodically pump the basin is not considered a significant environmental impact. Pumped water may be, 1) routed to the detention ponds, 2) used by water trucks for dust control, 3) used for irrigation if necessary or, 4) made available to other potential uses or users. The basin is not intended to be an artificial groundwater recharge facility and as long as any amount of runoff is recharged it is considered to be an improvement over the baseline condition, that of no on site retention or detention of runoff at all, which is what would have occurred under the previously approved final quarry contour plan.

Not withstanding the above discussion, better understanding of the actual infiltration capacity is necessary in order to effectively manage the retention basin to maintain maximum capacity, clean out accumulated sediment and manage vegetation. The timing and rate of any pumping will depend on the amount of water in the basin at a particular time of year. Sufficient time for drying is necessary to facilitate clean out and vegetation management tasks. A water budget model will help make the necessary predictions and schedule the necessary tasks. Therefore, Planning staff is recommending that Hanson submit a report by a qualified professional that provides the necessary information and management plan based on further subsurface investigation and adequate characterization of the dynamics of the retention basin. This recommendation has been incorporated into the project Conditions of Approval (Exhibit C)

Drainage and Erosion Control

The proposed Amendment to the Mining Plan and Reclamation Plan, including the proposed final grading and drainage plan, would alter the existing drainage pattern and the final drainage pattern approved under the 1978179 COC. The final quarry contour map approved with the 1978/79 COC indicates that drainage in the southern portion of the quarry will flow north along the east side of the quarry towards Mt Hermon Road. Drainage in the northern portion of the **quarry** would flow toward Conference Drive and ultimately Bean Creek. Currently all surface runoff is retained on site in the settlement ponds and is used in the sand washing process except for a small amount of runoff that accumulates on and flows down the entrance road to the quarry towards Conference Drive. The proposed final grading and drainage plan indicates creation of a retention pond in the south comer of the quarry and conversion of the existing settling ponds into a series of detention ponds and discharge of water off site through existing or new culverts. Due to the proposed drainage detention and retention facilities, discharge of water off-site is reduced significantly, along with associated erosion concerns, compared to the final quarry contour map approved with the 1978/79 COC.

Bowman & Williams Consulting Civil Engineers has completed a drainage analysis of the proposed final grading and drainage plan, including the sizing of new culverts proposed in the plan, and a review of the capacity of existing on-site culverts and downstream culverts that are to remain in place (Bowman & Williams August 15,2003). The analysis concludes that existing facilities and construction of the proposed drainage improvements will enable the drainage system to convey design storm events. The facilities that cross public roads have capacity to convey the required design flows. To ensure that the drainage system continues to function as designed following the closure of the quarry; the project civil engineer will conduct an annual inspection of all drainage-related facilities and provide the Planning Department with an annual report regarding the results of this inspection. Any recommendations for remedial work will be included in the annual report, along with a proposed schedule for accomplishing the work. The requirement for this annual inspection and report will continue until ~~the quarry reclamation has been deemed complete by the County~~ the drainage system has functioned as designed for three consecutive years as documented by the annual reports from the project civil engineer and verified by County inspection.

There are two culverts that are located off the Hanson property that convey runoff from off site sources and from Mt. Hermon Road into drainages that are tributary to Bean Creek. These two culverts may receive a negligible amount of additional drainage after the quarry is closed. Both culverts are currently in disrepair.

The north culvert, which conveys drainage under Conference Drive, is owned by the County of Santa Cruz. The applicant proposes to replace this culvert and install an overside drain. An encroachment permit and, if necessary, grading permit and riparian exception will be required to be obtained as a condition of approval of the project for this work.

The east culvert, which runs under Mt. Hermon Road near the east border of the quarry, is owned by the City of Scotts Valley. That pipe has broken through and a sizeable erosion gully has

developed in the sandy material of the hillside below the break. The incremental contribution of the quarry runoff to this culvert after closure will be de minimus because the vast majority of runoff will be contained within the detention and retention ponds. There is, therefore, no proposal to repair this culvert at this time. The City of Scotts Valley Department of Public Works has been contacted to inform them of the existing condition.

Sensitive Habitat Protection

The quarry property supports the following species, which are Federally listed as endangered: Mt. Hermon June beetle and Zayante band-winged grasshopper. The quarry property supports State and Federally listed endangered plant species: the Santa Cruz wallflower (Erysimum teretifolium) (State and Federal) and Ben Lomond spineflower (Chorizanthe pungens var. hartwegiana) (Federal). Following the designation in 1997 of the beetle and grasshopper as endangered species the quarry still had approximately 14 unmined acres in the southeastern portion of the quarry that provided habitat for the listed insects. In accordance with the Endangered Species Act the quarry applied for an incidental take permit and proposed to implement a Habitat Conservation Plan, which provides measures for minimizing and mitigating adverse impacts on the beetle and grasshopper. Since impacts to the plant species are not anticipated from continued mining activities these species were not considered in the HCP. The incidental take permit was issued in 1999 authorizing incidental take of the beetle and grasshopper species in the 14-acre mining area. That permit required establishment, monitoring, and management of two separate conservation areas, one 16.2-acre set-aside area on the quarry property and a five-acre off-site parcel purchased by the quarry operator as a mitigation area.

This proposed Mining Plan Amendment will not have an adverse impact on any of the above-described species. The proposed changes to the final grading and drainage plan and the remedial fill do not affect the conservation easements. The proposed revised revegetation plan represents a refinement of earlier approved revegetation plans, by incorporating a planting mix more conducive to the insect species in order to increase the revegetated area's value as habitat for the insect species (Native Vegetation Network, February 2, 2002 and June 10, 2003).

Reclamation Standards

Time Limitation

The quarry is nearing completion of mining operations. County Mining Regulations state that the reclamation process shall commence immediately upon cessation of mining in any given area, and a time schedule, including a final completion date for reclamation, shall be specified.

At the time of preparation of the 2002 Revegetation Plan, according to the revegetation specialist, the quarry operator had completely revegetated approximately 13 acres of mined area and was in the process of revegetating an additional approximately 27 acres of mined area. As of 2002 there remain approximately 110 acres to be revegetated. These areas include the eastern slopes and benches, the buttress fill area and the quarry floor.

According to the revegetation specialist, the remaining 110 acres will be revegetated over about a

12- to 13-year period with completion estimated in 2015 followed by 15 years of monitoring and remediation, as needed. Therefore, after completion of mining, revegetation activities will increase significantly with an expected average rate of approximately 8.5 to 9 acres planted per year as opposed to an average rate of approximately 1.5 acres per year over the past 27 years during active mining operations, Compliance with this timetable will be monitored through continuing quarterly and annual inspections, submittal of annual revegetation reports by the revegetation specialist and periodic permit review by the Planning Commission.

Performance Standards for Wildlife Habitat

The basic goal of revegetation plans for the quarry is to recreate an assemblage of native plants characteristic of the historical vegetation of the area. Implementation of the Revegetation Plan will provide associated wildlife habitat characteristic of the area before disturbance by the mining operation.

A revision and update of the Revegetation Plan was completed in 2002, which included changes to the planting lists based on field observation of strongly performing species and of species growing near habitat for the federally endangered Mt. Hermon June beetle and Zayante band-winged grasshopper. As noted above, in accordance with the Federal Endangered Species Act an Incidental Take Permit was issued in 1999 authorizing incidental take of the beetle and grasshopper species in the 14-acre mining area and establishing monitoring and management of two separate conservation areas.

The wetland habitat, and associated wildlife habitat, that currently exists on the site (associated with the existing ponds) will be retained and enhanced to the extent feasible, while revegetation of other areas capable of supporting riparian species will occur **as** appropriate. After the cessation of mining and utilization of the ponds to recirculate process water through the sand plant, some areas may *dry* out, while other areas, such as the retention basin, may become wetter. The extent of wetland habitat, both existing and created, will be determined through monitoring by the revegetation specialist.

Performance Standards for Backfilling, Regrading, Slope Stability and Recontouring

Conditions of Certificate of Compliance 75-0590-PQ and an Amendment issued in 1978179 state that final slopes shall not exceed an overall average slope gradient of 1.5:**1.** Individual cut slopes shall not exceed a gradient of 1:1 with benches 12.5 feet wide at 25-foot vertical intervals. The slopes along the western side of the **quany** have been excavated in accordance with these conditions.

In the south comer of the quarry the buttress fill above 570 ft amsl consists of 2:1 fill slopes separated by 17-foot wide benches at 25-foot vertical intervals, which complies with County Code requirements for final reclaimed fill slopes. Below 570 ft amsl the buttress consists of 3:1 fill slopes separated by a 15-foot wide bench. The slope was constructed with a reduced slope gradient below 570 ft. amsl to provide greater stability where the slope will be in periodic contact with ponded water. Completion Reports, acceptable to the County, dated May 24, 2002 and

February 26,2002, were submitted by the project geotechnical engineer. These reports state that the buttress fill has been constructed in accordance with the recommendations of the approved project plans and specifications. The Completion Reports state that the fill slopes meet the minimum factors of safety required by the Santa Cruz County Mining Regulations and current industry standards.

Along the east side of the quarry the final reclaimed cut slopes will be in compliance with the County Code requirement of minimum 1.5:1 slope gradient with benches every 25 vertical feet and will meet the minimum factor of safety.

Based on Hanson's efforts to correct the violations that occurred in 2001, Hanson and the Planning Director entered into an Agreement on May 3, 2002 that allowed for the lifting of the Stop Work Order and resumption of mining of the east quarry slopes in the south end of the quarry. Hanson agreed to restrict mining to 2:1 cut slopes separated by 15-foot wide benches every 25 vertical feet until the County's five-year review is completed (Interim Period); and to restrict mining to permanent cut slopes of 1.5:1 or flatter, separated by 15-foot wide benches every 25 vertical feet after the County's Five Year review.

Due to mining activity that occurred prior to the Notice of Violation and Stop Work Order, Hanson subsequently determined that it was not possible to comply with the requirement to maintain a 2:1 cut slope during the Interim Period in a limited area along the eastern slope. Planning Staff reviewed technical support data supplied by Hanson and concurred that it was appropriate to amend the Agreement to allow cut slopes steeper than 2:1 but no steeper than 1.5:1 in a very limited area of the eastern slope. This condition led to an amendment to the Agreement used to lift the Stop Work Order as reported to your Commission on September 24, 2003.

A slope stability analysis was completed (Cleary Consultants, February 28,2002) for the east quarry slopes where final mining is presently occumng. The results of the analysis indicate that, overall, 1.5:1 cut slopes separated by 12.5-foot wide benches every 25 vertical feet meet the minimum global factors of safety of the Santa Cruz County Mining Regulations.

Performance Standards for Revegetation

The basic goal of the Revegetation Plan, which has remained the same since 1988, is to recreate an assemblage of native plants characteristic of the historical vegetation of the area. Other goals include erosion control, maintenance of special status plant habitats, screening of the facility and long-term management. The quarry operator has been submitting yearly reports on the progress of the revegetation program. A further revision and update of the revegetation plan was completed in 2002. The revegetation plan was refined to include: 1) changes to the planting lists based on field observation of strongly performing species and species growing near habitat for the federally endangered Mt. Hermon June beetle and Zayante band-winged grasshopper; 2) a new base map reflecting the construction of the buttress fill in the south end of the quarry; and 3) revised performance standards based on historic field monitoring data.

As previously stated as of 2002 there remained approximately 110 acres of mined area left to revegetate, including the eastern slopes and benches, the buttress fill area and the quarry floor. The remaining ponds will be managed and revegetated with plant species characteristic of riparian woodland. It should be noted that the slope area above and west of the freshwater pond, which is highly visible from the City of Scotts Valley, has been planted with almost 1,000 ponderosa pine seedlings to create ponderosa pine forest habitat and eventual visual screening of the quarry. The mining setback area (natural area) along Worth Lane has also received additional plantings of trees and shrubs to provide a greater buffer between the neighborhood and quarry activities.

Although the revegetation program has generally been successful on the completed benches, the cut slopes need more tree and shrub cover. Efforts to increase vegetative cover on the slopes include more container stock planting (trees and shrubs) and more intensive seeding. The revegetation specialist will continue these efforts and will provide documentation in the Revegetation Program Annual Reports until the County is satisfied that revegetation goals and performance standards have been achieved. For revegetation of the entire quarry this program will continue until approximately 2030.

Performance Standards for Removal of Buildings Structures and Equipment

Structures on the site include the sand processing plant, the conveyor system, the load out facilities, the office and scale house and maintenance and storage buildings. Equipment includes various vehicles, pumps and other equipment necessary for the mining operations.

Hanson has obtained a Health Permit for Hazardous Materials, which allows them to store and utilize various substances such as hydraulic oil, unleaded gasoline, diesel, ethylene glycol, motor oil, propane, and others. The County Environmental Health Department issued the permit and conducts annual inspections to verify compliance with requirements for such things as types of materials on site and proper storage and disposal of materials. Environmental Health records indicate the permit is current and inspections have not found any problems.

All buildings, structures, equipment and hazardous material will be dismantled and removed prior to final mine closure or within ~~six months~~ one year of termination of the mining operation, including shipping of stockpiles (whichever is earlier) except those buildings, structures, and equipment necessary for the reclamation activities. For example, it may be necessary to retain the office and/or storage building to facilitate reclamation activities such as the revegetation program and pond management.

Performance Standards for Surface Drainage Control

To ensure that the drainage system continues to function as designed, following the closure of the quarry, the project civil engineer will conduct an annual inspection **of** all drainage-related facilities and will provide the Planning Department with a report regarding the results of this inspection. Any recommendations for remedial work will be included in the annual report, along with a proposed schedule for accomplishing the work.

It should be noted that the drainage calculations were performed under the assumption that all the ponds (for detention and retention) were full to the bottom of their respective overflow culverts so that the capacity of all the culverts could be checked. The detention ponds have enough capacity when dry to accept all of the runoff from the design storm event (10-year, 6-hour storm) without spilling into their respective overflow culverts. **As** explained in the Water section of this staff report, the retention basin has adequate capacity to contain a "worst case" storm event and the runoff from an entire "worst case" year of runoff. The conditions under which the retention basin will be managed will prevent this basin from remaining full over successive winters. In other words retention basin management will prevent the basin from spilling into its emergency overflow culvert. However, if such an event did occur, the drainage calculations show that the culvert is designed appropriately to accommodate these flows.

Financial Assurance

Hanson Quarry currently has an approved financial assurance in the amount of $1,266,000. The financial assurance is in the form of a surety bond payable to the County of Santa Cruz and California Department of Conservation, Office of Mine Reclamation to ensure that adequate reclamation is performed in accordance with the approved Reclamation Plan. This bond will he revised following approval of this Mining Plan and Reclamation Plan Amendment based on estimates for reclamation related work to be provided by **the** project civil engineer and revegetation specialist. Your Commission will be requested to approve this replacement bond at a future date.

Prior to County approval of a financial assurance, the Planning Director will submit the proposed financial assurance, including any existing financial assurance, to the Director, Department of Conservation for a forty-five (45) day review and preparation of written comments if the Director so chooses.

The financial assurance will remain in effect for the duration of the mining operation and any additional period necessary to complete adequate reclamation. However, a financial assurance will no longer be required and will be released upon written notification by the Planning Director to Hanson and Director, Department of Conservation upon documentation that reclamation has been completed in accordance with the approved Reclamation Plan.

Inspections, Reports and Review

The County will continue to conduct quarterly and annual inspections of the site to ensure compliance with all conditions of approval and applicable requirements of the Surface Mining and Reclamation Act, In addition, the results of the annual inspection are reported by the County to the Department of Conservation on a form approved by the State.

The quarry operator will continue to submit annual reports to the Department of Conservation with copies to the County. In addition, the quarry operator will continue to submit more specific and detailed annual reports to the County. These will include the basic information required by County Code 16.54.073, **the** civil engineer's report on the drainage system, the revegetation

report and the engineering geologists report

In addition, annual reporting on pond management is anticipated and will be determined based the final recommendations of the required retention pond report.

Permit Review

The County's Mining Regulations Section 16.54.074 states: New conditions shall not be imposed as part of a review process unless: a) there is a threat to public health and safety; b) there is a significant injurious threat to the environment; c) there is a nuisance; d) there is a violation of approval conditions; **e)** there is a change in the scope of operations; or, f) the ordinance in effect at the time of the Mining Approval, Certificate of Compliance or Reclamation Plan Approval being reviewed was originally approved, or **the** Approval itself, authorized imposition of new conditions by the Planning Commission, All permit conditions and quarry operations have been evaluated with respect to these parameters. The full text of this review is included as Exhibit D.

The results of the permit review indicate that the quarry is in general compliance with approval conditions ~~except in the area of dust abatement~~. The report required by the 1995 Review Conditions provided an initial recommendation for a high wind threshold (when wind speed reaches a certain velocity and operations have to cease) but stated that it is very difficult because many factors, not only wind speed, affect the generation and dispersion of fugitive dust. Therefore, the report recommended that the high wind threshold could be adjusted up or down based on observed fugitive dust (and/or complaints of fugitive dust) and wind data from the met station. The quarry dust abatement consultant offered to compare wind parameter data from the meteorological station on the quarry site to observations and/or complaint logs in order to determine if a statistically significant correlation exists. ~~At present, Planning staff is not aware that Hanson ever pursued such an effort.~~ Although the dust abatement consultant never performed this analysis Hanson reports that standard quarry operations have included observation of fugitive dust conditions, monitoring of data from the met station and complaint records to modify operations and reduce offsite dust impacts.

~~At this point in time, completion of such a comparative analysis may not be the most effective course of action to reduce potential off-site dust impacts.~~ When the quarry completes mining activity, which is anticipated by the end of 2003, the potential for generation and dispersion of fugitive dust will be reduced. However, large areas of the quarry **(up** to approximately 110 acres) will not be revegetated immediately and could continue to be the source of potential dust problems. Therefore, Planning staff **is** recommending a Review Condition that requires that prior to October 15, 2004 all unvegetated, disturbed areas of **the** quarry site be hydroseeded with a hydroseed mixture recommended by the revegetation specialist. In the interim, traditional dust control measures (i.e. monitoring of the site and the meteorological station, application of water and/or lignin sulfonate, etc.) will continue in order to minimize potential dust problems.

Finally, a 1995 Review Condition called for geologic monitoring of the quarry slopes. The condition states that monitoring shall continue until two years after final slopes **are** achieved.

Planning staff is recommending that this condition be modified to require the geologic monitoring of slopes to continue ~~until the County is satisfied that reclamation is completed~~ if, as a result of inspection, the County determines that geologic monitoring is necessary for an additional period of time beyond the two years after final slopes are achieved.

Conclusion

As proposed and conditioned, the project is consistent with all applicable codes and policies of the Santa Cruz County Mining Regulations and General Plan/LCP. Please see Exhibit "B" ("Findings") for a complete listing of findings and evidence related to the above discussion.

RECOMMENDATION

Staff recommends that your Commission take the following actions:

1. Certify the Mitigated Negative Declaration as complying with the requirements of the California Environmental Quality Act; and

2. **APPROVE** Application Number **02-0046,** based on the attached findings **and** conditions.

EXHIBITS

A. Project plans
B. Findings
C. Conditions
D. Permit Review
E. Mitigated Negative Declaration (CEQA determination)
F. Comments & Correspondence

SUPPLEMENTARY REPORTS AND INFORMATION REFERRED TO IN THIS REPORT ARE ON FILE AND AVAILABLE FOR VIEWING AT THE SANTA CRUZ COUNTY PLANNING DEPARTMENT, AND ARE HEREBY MADE A PART OF THE ADMINISTRATIVE RECORD FOR THE PROPOSED PROJECT.

Report **Prepared By:** David Carlson
Resource Planner
Environmental Planning

Report Reviewed By: Ken Hart
Principal Planner
Environmental Planning

FINDINGS FOR MINING APPROVAL AMENDMENT

1. The proposed location of the mining site and access thereto and the conditions under which it would be operated are not detrimental to the public health, safety, or welfare, or significantly injurious to the environment.

The quarry obtained its original Use Permit for the production of sand on August 6, 1958, Use Permit 69-U. In June 1975, the quarry operator at the time, Kaiser Sand & Gravel applied for a Certificate of Compliance (COC) to comply with a requirement of the Santa Cruz County Mining Regulations. As part of the COC review an Environmental Impact Report was prepared in 1976 by Environ (1976 EIR) and certified. The 1978/79 COC approval applied to phased mining of the entire quarry site subject to specified conditions.

In 1988 and 1995 the Planning Commission completed 5-year reviews of the quarry operations. At the conclusion of those reviews, the Commission again approved the continuation of mining operations subject to additional conditions imposed at the time

The application for a formal Mining Approval Amendment has been submitted to fulfill a requirement of the 1995 permit review, and to incorporate remedial grading and revised final quarry grading contours into the mining plan. It is not an application to expand the quarry beyond the final limits evaluated in the 1976 EIR and approved under the 1978/79 COC.

The Environmental Review process for the Mining Approval Amendment application has resulted in the preparation and circulation of an Initial Study. Based on the comments received during the public review period, the Environmental Coordinator has decided to make modifications to the Initial Study, which are indicated by shaded text in the Initial Study attached as Exhibit E. The Environmental Coordinator has determined that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because mitigation measures have been added to the project. A Mitigated Negative Declaration will be prepared.

The proposed location of the mining site and access thereto is unchanged from previous approvals. Subject to all existing Conditions of Approval (69-U, 75-0590-PQ and 1988 and 1995 Permit Reviews) and the Conditions of Approval of the Mining Approval Amendment 02-0046 and the Negative Declaration Mitigation Measures, the conditions under which the mining site would be operated are not detrimental to the public health, safety, or welfare, or significantly injurious to the environment.

2. The proposed mining operation complies with each of the applicable provisions of this Chapter and all applicable State and/or Federal law.

The proposed Mining Approval Amendment application has been evaluated with respect to the Santa Cruz County Mining Regulations (Chapter 16.54) and applicable State and Federal Law.

Currently, all process water and storm water is retained on site in the settlement ponds except for a small amount of runoff that accumulates on and flows down the entrance road to the quarry. Hanson submits self-monitoring reports to the State of California Regional Water Quality Control Board (RWQCB) pursuant to Monitoring and Reporting Program 87-11. Discussions with RWQCB staff indicate that the quarry is in general compliance with that agencies permit requirements. The Conditions of Approval of the Mining Approval Amendment application require that Hanson retain all water on site as described above until appropriate approval is obtain from Regional Water Quality Control Board (RWQCB) to discharge storm water off site.

The proposed Mining Plan Amendment will not have an adverse impact on any of the State and Federally listed endangered plant and insect species supported by the quarry property. The proposed changes to the final grading and drainage plan and the remedial fill do not affect the conservation easements. The proposed revised revegetation plan represents a refinement of earlier approved revegetation plans, by incorporating a planting mix more conducive to the insect species in order to increase the revegetated area's value as habitat for the insect species (Native Vegetation Network, February 2,2002 and June 10,2003).

Subject to all previous Conditions of Approval and the Conditions of Approval of the Mining Approval Amendment and the Negative Declaration Mitigation Measures, the mining operation will comply with each of the applicable provisions of the Santa Cruz County Mining Regulations (Chapter 16.54).

3. The proposed mining operation complies with any applicable specific plan, the County's General Plan and the Local Coastal Plan Land Use Element (if applicable).

There is no specific plan that applies to the mining site. The mining site is not located in the Coastal Zone.

The General Plan designation for the mining site is Quarry (Q) and Mountain Residential (R-M). The purpose of the Quarry designation is to allow the orderly economic extraction of mineral resources with conditions to require minimal adverse impacts on environmental and scenic resources, and surrounding residential land uses. Policy 2.19.2 allows continued operation of existing quarries but requires that all existing quarries meet the requirements of the County's Mining ordinance and that all mining operations maintain and implement a County approved reclamation plan as required under the California Surface Mining and Reclamation Act (SMARA), and ensure that the rehabilitation and future uses of depleted quarry sites are in accordance with conservation and open space values.

As note above, the application for a formal Mining Approval Amendment has been submitted to fulfill a requirement of the 1995 permit review, and to incorporate remedial grading and revised final quarry grading contours into the mining plan. It is not an application to expand the quarry beyond the final limits evaluated in the 1976 EIR and

approved under the 1978/79 COC. Subject to all existing Conditions of Approval (69-U, 75-0590-PQ and 1988 and 1995 Permit Reviews) and the Conditions of Approval of the Mining Approval Amendment 02-0046 and the Negative Declaration Mitigation Measures, the conditions under which the mining site would be operated minimize adverse impacts on environmental and scenic resources, and surrounding residential land uses. Subject to the same caveats, the mining site will comply with each of the applicable provisions of the Santa Cruz County Mining Regulations (Chapter 16.54). The mining operation will maintain and implement a County approved reclamation plan as required under the California Surface Mining and Reclamation Act (SMARA), to ensure that the rehabilitation and future **uses** of depleted quarry sites are in accordance with conservation and open space values.

4. That the proposed mining operation is consistent with all applicable County Ordinances, including without limitations Chapter 16.44, the Paleontological Resource Protection Ordinance.

As noted above, subject to all previous Conditions of Approval and the Conditions of Approval of the Mining Approval Amendment and the Negative Declaration Mitigation Measures, the mining operation will comply with each of the applicable provisions of the Santa Cruz County Code. Planning staff is not aware of any archaeological or paleontological finds on the mining site.

5. That significant surface and groundwater resources including springs and aquifers shall not be adversely affected as a result of the proposed mining operation.

The conditions of the existing COC state that no excavation shall take place below any water tables found to exist on the property other than those which can be shown to be due solely to locally perched water, and all final site contours shall be left with a minimum of 5 feet of sand covering the underlying "shale subsoil". The quarry has maintained compliance with these requirements during mining operations. It should be noted, however, based on historical well data, groundwater levels in the area have dropped over the years. For example, groundwater levels in Well **4A** (formerly well 4) in the southern comer of the quarry site have been as high as approximately 540 feet above mean sea level (amsl) in 1986, but groundwater pumping over the years by a variety of water users has caused the groundwater level to drop to 405 ft amsl in 2002, which represents a 135-foot drop over 16 years. The over-excavation in the southern comer of the quarry reached approximately 466 ft amsl and has been backfilled such that the lowest ground surface in the southern corner of the quarry has been recently surveyed at 517 ft. amsl. After cessation of mining and processing of sand, pumping of Well 4A to supply water for the sand washing process will cease and some infiltration of ponded water will occur through the proposed retention basin. Given that groundwater levels have been documented in the nearest well is 112 feet below the elevation of the basin, it is unlikely that groundwater levels will rise up into the retention basin.

As noted, the final quarry contour map approved during the 1995 five-year review indicates that drainage patterns in the southern portion of the quarry will flow north along the east side of the quarry towards Mt Hermon Road, similar to the final quarry contour map that was approved for

the 1978179 COC. The current application for Mining Approval Amendment includes changes to that drainage plan, including creation of a retention pond in the south comer of the quarry and conversion of the existing settling ponds into a series of detention ponds. In other words, the proposed amendment application proposes to detain and retain storm water runoff on site instead of allowing runoff to flow offsite, as indicated by the previously approved final quarry contour map.

The proposed amendment, therefore, does not include any changes to the existing approval that would deplete groundwater supplies or interfere with groundwater recharge. Indeed, the proposed detention ponds and retention pond will provide an increased potential for groundwater recharge on the site compared to the previously approved final quarry contour plan, which would route all surface drainage off the property and preclude recharge altogether.

6. That the Reclamation Plan has been reviewed pursuant to CEQA and the County's environmental review guidelines, and all significant adverse impacts from reclamation of the surface mining operations are mitigated to the maximum extent feasible.

The Environmental Review process for the Mining Approval Amendment application has resulted in the preparation and circulation of an Initial Study. Based on the comments received during the public review period, the Environmental Coordinator has decided to make modifications to the Initial Study, which are indicated by shaded text in the Initial Study attached as Exhibit E. The Environmental Coordinator has determined that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because mitigation measures have been added to the project. A Mitigated Negative Declaration will be prepared.

7. The project is compatible with available service infrastructure and surrounding uses.

As noted above, the application for a formal Mining Approval Amendment has been submitted to fulfill a requirement of the 1995 permit review, and to incorporate remedial grading and revised final quarry grading contours into the mining plan. It is not an application to expand the quarry beyond the final limits evaluated in the 1976 EIR and approved under the 1978179 COC. The project is not an application to expand the quarry beyond the final limits evaluated in the 1976 EIR and approved under the 1978179 COC. Therefore, the project does not affect available service infrastructure or compatibility with surrounding uses.

CONDITIONS OF APPROVAL

Exhibit A

Plans titled Final Grading and Drainage Plan at Completion of Mining by Bowman & Williams Civil Engineers consisting of three sheets dated August 15,2003. Other supporting technical reports and information sources listed in the Initial Study are on file in the Planning Department and are incorporated herein by reference.

Amendment to Mining Approval, Reclamation Plan and Financial Assurance

1. This permit authorizes a Mining Approval Amendment to include changes to the mining plan, reclamation plan and financial assurance for the existing mining site, which is operating pursuant to Use Permit 69-U and Certificate of Compliance 75-0590-PQ.

2. The conditions of this approval shall augment and supercede where in conflict with, the conditions of Use Permit 69-U and Certificate of Compliance 75-0590-PQ (and Amendment), and the conditions added during the Permit Reviews of 1988 and 1995.

3. Each recommended condition set forth in any statement, report, plan or other informational document submitted by the applicant as modified and/or approved by the Planning Commission, shall be incorporated as a condition of this approval.

4. Sign, date, and return to the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof.

5. The property owner of the mining site, the applicant and the operator shall execute, date and return to the Planning Director two copies of a Declaration of Restrictions binding each to comply with each and every term and condition of this approval. Each such Declaration of Restrictions regarding this approval, shall be executed by each signatory in such manner and formality as shall enable it's recordation with the County Recorder, binding each and any successor(s) to comply with this approval, and every term and condition thereof. Said Declaration of Restrictions shall be in the form prepared by the Planning Director and shall be filed for recordation within 90 days of the effective date of this approval. *No* map larger than 8-1/2 inches by 11 inches shall be recorded **as** part of said Declaration of Restrictions; rather, any such map may be referred to in the Declaration of Restrictions as being on file in the County Planning Department.

6. The standards and conditions set forth in section 16.54.050 of the Santa Cruz County Mining Regulations shall apply to this approval, as applicable, and to establishment, operation and maintenance of the uses approved or certified thereby.

7. All process water and storm water shall be retained on site in the settlement ponds except for a small amount of runoff that accumulates on and flows down the entrance road to the

quarry until appropriate approval is obtain from Regional Water Quality Control Board (RWQCB) to discharge storm water off site.

8. All drains, facilities and devices to control storm water runoff shown on Exhibit A plans and specifications shall be constructed prior to October 15, ~~2004~~ 2005 and maintained as required in order to prevent erosion and prevent the deposit of sand, silt or other materials into any natural watercourse or onto any property not owned or controlled by any owner or operator of the mining site.

9. The project civil engineer and geotechnical engineer shall observe the installation of all new drains, facilities and devices to control storm water runoff. All fill used for backfill and slope reconstruction required to install new culverts shall be compacted in accordance with standards set forth in the Santa Cruz County Grading Regulations. The civil engineer and geotechnical engineer shall each provide a written statement to the Planning Director that all grading was completed in conformance with the provisions of the Exhibit A and the Santa Cruz County Grading Regulations. Following installation of all new drainage facilities and completion of reclamation grading the project civil engineer shall submit as-built grading and drainage plans for the site.

10. **To** ensure that the replacement of the culvert under Conference Drive does not adversely affect riparian resources and does not allow sediment to reach Bean Creek, the applicant shall obtain a Riparian Exception and Biotic Approval from the County of Santa Cruz prior to the start of work and shall follow all the conditions thereof. The work shall only take place between April **15** and October **15.**

11. A civil engineer shall prepare improvement plans for the replacement of the culvert under Conference Drive and the extension of the culvert via downdrain to the base of the slope and the repair of the eroded slope. The engineered improvement plans shall be prepared in conformance with the application requirements for Riparian Exception and Biotic Report Approval contained in Santa Cruz County Code Sections **16.30.030** and 16.32.080. Plans for **the** slope repair shall be based on the recommendations of a geotechnical report. Plans for the revegetation of the slope repair shall be based on a Biotic Report and revegetation plan prepared by the revegetation specialist for the quarry

12. A complete application for Riparian Exception and Biotic Approval, including engineered improvement plans, geotechnical report and biotic report, shall be submitted no later than April **15,** 2004.

13. Obtain an Encroachment Permit from the Department of Public Works for all off-site work performed in the County road right-of-way.

14. **To** ensure that the drainage system continues to function as designed, following the closure of the quarry, the owner, applicant or operator shall provide for the project civil engineer to conduct an annual inspection of all drainage-related facilities and shall provide the Planning Department with a report regarding the results of this inspection. Any recommendations for remedial work shall be included in the annual report, along

with a proposed schedule for accomplishing the work. The requirement for this annual inspection and report will continue until the drainage system has functioned as designed for three consecutive years as documented by the annual reports from the project civil engineer and verified by County inspection. Each settling b sin, d i culvert, pump, pipeline and other drainage and erosion control features shall be maintained as necessary to assure that each is functioning properly as designed.

15. Erosion and sedimentation shall be controlled during construction, operation, reclamation, and closure of the mining operation to minimize siltation of lakes and watercourses, and to ensure that land and water resources are protected from erosion, gullying, sedimentation and contamination, as required by the Regional Water Quality Control Board or the State Water Resources Control Board.

16. To ensure that the mining site does not significantly contribute to erosion, the following requirements shall be met: 1) All recommendations of the revised revegetation plan (prepared by Native Vegetation Network, dated 2002 and addenda) shall be implemented; 2) Geoweb (a cellular confinement system) or geofabric shall be installed at the base of the buttress fill between the maximum and minimum expected pond water elevations; 3) the civil engineer and revegetation specialist shall inspect the slopes during the wet season a minimum of one time to check the performance of the area where damage of the 2002/03 wet season was repaired and to preventatively repair any drainage system problems, sources of concentrated water and/or small erosion rills before they worsen. Such maintenance visits shall occur more often if there are signs of erosion that require correction more frequently.

17. Reclamation shall be completed within the time schedule set forth in the Revegetation Plan by Native Vegetation Network dated March 2002 and addenda. All recontouring, revegetation and reclaiming efforts shall be phased to commence immediately upon completion of mining operation in any given area.

18. Reclamation of mined lands shall be implemented in conformance with the standards in Section 16.54.055 of the Santa Cruz County Mining Regulations, as applicable.

19. All buildings, structures and equipment shall be dismantled and removed within ~~six months~~ one year of termination of the mining operation, including shipping of stockpiles, except those buildings, structures and equipment necessary to implement the reclamation plan.

20. Prior to demolition of any structure on the mining site the owner, applicant or operator shall obtain a Demolition Permit from the Santa Cruz County Building Official.

21. Comply with all requirements of the Santa Cruz County Environmental Health Department regarding storage, use and disposal of hazardous materials, and operation; maintenance and abandonment of the sewage disposal system.

22. The owner, applicant or operator shall submit a report by a qualified professional that

provides the necessary subsurface information (including deep borings) to adequately characterize the infiltration capacity of the retention basin. Adequate data collection and observations shall be completed in order to adequately predict the dynamics of the basin. A water budget model shall be developed in order to enable the necessary decision making regarding management tasks such as timing of pumping, drying periods, vegetation management and clean out prior to October 15th of each year. **A** basin management plan shall be developed by the consultant, which provides the timelines, guidelines and procedures for basin management to ensure maximum capacity each year, adequate clean out, and vegetation management. The vegetation management component of the management plan shall be developed in collaboration with the quarry revegetation specialist and staff from the Santa Cruz County Mosquito Abatement and Vector Control District.

23. The basin management plan report shall be submitted to the Planning Department for review within six months of the effective date of this approval. The report shall be revised, if necessary, based the results of this review.

24. Each recommendation set forth in the final basin management plan report as modified and/or approved by the Planning Department, shall be incorporated as a condition of this approval.

Permit Review

1. Prior to October 15, 2004 all unvegetated, disturbed areas of the ~~quarry site~~ current mining area shall be hydroseeded with a hydroseed mixture recommended by the revegetation specialist. In the interim, current dust control measures (i.e. monitoring of the site and the meteorological station, application of water and/or lignin sulfonate, etc.) shall continue in order to minimize potential dust problems.

2. Condition E.1 of the 1995 Permit Review shall be modified to require the geologic monitoring of slopes to continue ~~until the County is satisfied that reclamation is completed~~ beyond two years after final slopes are achieved if, as a result of inspection, the County determines that geologic monitoring is necessary for an additional period of time.

Mitigation Monitoring Program

The mitigation measures listed under this heading have been incorporated into the conditions of approval for this project in order to mitigate or avoid significant effects on the environment. **As** required by Section 21081.6 of the California Public Resources Code, a monitoring and reporting program for the above mitigations is hereby adopted as a condition of approval for this project. This monitoring program is specifically described following each mitigation measure listed below. The purpose of this monitoring is to ensure compliance with the environmental mitigations during project implementation and operation. Failure to comply with the conditions

of approval, including the terms of the adopted monitoring program, may result in permit revocation pursuant to Section 18.10.462 of the Santa Cruz County Code.

Geology and Soils

1. Mitigation Measure: To ensure that the mining site does not significantly contribute to erosion, the following requirements shall be met: 1) All recommendations of the revised revegetation plan (prepared by Native Vegetation Network, dated 2002 and addenda) shall be implemented; 2) Geoweb (a cellular confinement system) or geofabric shall be installed at the base of the buttress fill between the maximum and minimum expected pond water elevations; **3)** the civil engineer and revegetation specialist shall inspect the slopes during the wet season a minimum of one time to check the performance of the area where damage of the 2002103 wet season was repaired and to preventatively repair any drainage system problems, sources of concentrated water and/or small erosion rills before they worsen. Such maintenance visits shall occur more often if there are signs of erosion that require correction more frequently. (Conditions 16)

   Monitoring Program: The owner of the mining site is responsible to accomplish the above tasks on an ongoing basis. Compliance will be monitored during regular quarterly and annual inspections by Planning staff. If excessive erosion is documented by inspection the owner is responsible to correct the problem within a specified timetable and to the satisfaction of Planning staff. Enforcement procedures are provided in the Santa Cruz County Mining Regulations.

2. Mitigation Measure: To ensure that the replacement of the culvert under Conference Drive does not adversely affect riparian resources and does not allow sediment to reach Bean Creek, the applicant shall obtain a Riparian Exception and Biotic Approval from the County of Santa Cruz prior to the start of work and shall follow **all** the conditions thereof. The work shall only take place between April 15 and October 15. (Conditions 10, 11, 12, 13)

   Monitoring Program: The owner of the mining site shall submit the required application materials described in Condition 11 prior to April 15,2004 (Condition 12). The application is subject to review and approval by Planning staff. Planning staff will verify by inspection that the installation is in accordance with all conditions of approval of the Riparian Exception and Biotic Approval.

Hydrology

1. Mitigation Measure: The owner, applicant or operator shall submit a report by a qualified professional that provides the necessary subsurface information (including deep borings) to adequately characterize the infiltration capacity of the retention basin. Adequate data collection and observations shall be completed in order to adequately

predict the dynamics of the basin. **A** water budget model shall be developed in order to enable the necessary decision making regarding management tasks such as timing of pumping, drying periods, vegetation management and clean out prior to October 15'' of each year. **A** basin management plan shall be developed by the consultant, which provides the timelines, guidelines and procedures for basin management to ensure maximum capacity each year, adequate clean out, and vegetation management. The vegetation management component of the management plan shall be developed in collaboration with the quarry revegetation specialist and staff from the Santa Cruz County Mosquito Abatement and Vector Control District. (Conditions **22)**

Monitoring Program: The basin management plan report shall be submitted to the Planning Department for review within six months of the effective date of this approval. The report shall be revised, if necessary, based the results of this review (Condition **23).** Each recommendation set forth in the final basin management plan report as modified and/or approved by the Planning Department, shall be incorporated as a condition of this approval (Condition **24).** Compliance with the basin management plan will be monitored during regular quarterly and annual inspections by Planning staff. Enforcement procedures are provided in the Santa Cruz County Mining Regulations.

2. Mitigation Measure: To ensure that the drainage system continues to function as designed, following the closure of the quarry, the owner, applicant or operator shall provide for the project civil engineer to conduct an annual inspection of all drainage-related facilities and shall provide the Planning Department with a report regarding the results of this inspection. Any recommendations for remedial work shall be included in the annual report, along with a proposed schedule for accomplishing the work. The requirement for this annual inspection and report will continue until the drainage system has functioned as designed for three consecutive years as documented by the annual reports from the project civil engineer and verified by County inspection. Each settling basin, drainageway, culvert, pump, pipeline and other drainage and erosion control features shall be maintained as necessary to assure that each is functioning properly as designed. (Conditions **14)**

   Monitoring Program: The owner of the mining site is responsible to accomplish the above tasks on an ongoing basis. Compliance will be monitored during regular quarterly and annual inspections by Planning staff. Any recommendations for remedial work by the project civil engineer and/or Planning staff shall be implemented within a specified timetable and to the satisfaction of the project civil engineer and Planning staff. Enforcement procedures are provided in the Santa Cruz County Mining Regulations.

Application #: 02-0046
APN: 067-011-07; 067-021-21; 067-021-22
Owner: Hanson Aggregates Mid-Pacific Inc

REVIEW FOR COMPLIANCE WITH CONDITIONS OF APPROVAL

1995 REVIEW OF PERMIT AND PHASED MINING PLAN

A. Mining Plan

1. At the time of the next five-year review, the Quarry shall **file** a complete application (and diligently pursue approval of such application) for *an* amendment to the Quarry's Mining Approval including a revised Final Contour Plan, revised Revegetation Plan, revised **Five** Year Mining Plan, and revised Reclamation Plan addressing changes to the Final Contour Plan which incorporate hydrology, drainage and any necessary revisions to the Revegetation Plan.

Review Comment: Application 02-0046 was submitted on February 1,2002 and was deemed complete on October 17, 2003. The proposed project is a Mining Approval Amendment that includes changes to the mining plan, reclamation pian, and financial assurance. The application for a formal Mining Approval Amendment was submitted to fulfill the requirement of the 1995 permit review, and to incorporate remedial grading and revised final quarry grading contours into the mining plan. Corresponding changes to the revegetation plan are also included in the application. The Mining Approval Amendment consists of changes to the drainage plan including creation of a retention pond in the south corner of the quarry and conversion of the existing settling ponds into a series of detention ponds. In addition, the Amendment recognizes the buttress fill and quarry pit backfill, constructed under emergency conditions, which were not evaluated in the 1976 EIR nor approved by the COC 75-0590-PQ.

B. Hydrology

1. A hydrogeologic report shall be prepared within one year of the final action by the County on this Review under a third party contract with the County. The Quarry shall mail a copy of this Report, immediately upon its completion, *to* County Planning Department, City of Scotts Valley, Scotts Valley Water District and San Lorenzo Valley Water *District.* The Planning Director shall present this Report to the Commission no later than January 31, 1997. This study shall include:

   a. An individual site water budget to include analysis of precipitation, run-off, evaporation, **and** recharge by the aquifer. This will also include an estimate of the recharge water reaching Bean Creek.

   b. Analysis of water quality samples obtained from each well. The analysis shall include:

      pH (units)

EXHIBIT D

Conductivity (micromhos/cm-20 degrees Celsius)
Carbonate Alk. (as CaC03) mg/l
Bicarbonate Alk. (as CaC03) mg/l
Total Alkalinity (as CaC03) mg/l
Total Hardness (as CaC03) mg/l
Total Dissolved Solids mg/l
Nitrate (NO 3)
Chloride (CI)
Sulfate (S04)
Fluoride (F)
Calcium (Ca)
Magnesium (Mg)
Potassium (K)
Sodium (Na)
Manganese (Mn)
Iron (Fe)

Review Comment: SECOR International completed a Hydrogeologic Study Report dated October 23 1997. The study included a quarry area water budget determination, water quality testing and an analysis of the recharge water reaching Bean Creek. The study report contains the following Summary and Conclusions:

*"The Monterey Shale underlies the entire portion of the Site and controls the migration of recharge water within the overlying Santa Margarita Sandstone and mining residuals. The total annual recharge to the quary surface from rainfall and groundwater pumped to the surface is estimated to be 946 acre-feet per year. Of this amount, approximately 405 acre-feet per pear may be recharging the Santa Margarita Sandstone to the north and east of the Site. This recharge may be predominantly entering the Santa Margarita Sandstone aquifer through the base of the clean water storage pond and be providing continued sourcing for production from Wells Nos. 2 and 3. Recharge to the Lompico Sandstone through the Monterey Shale is expected to be minimal in the vicinity of the Site. A very minor amount of site recharge estimated at **64.5** acre-feet per year is moving directly into Bean Creek via springs on the northern **Site** boundary.*

*Water levels in the Santa Margarita Sandstone around Well No. 2 on the north side of the Site have not shown a significant drop in water levels since monitoring began in 1986. Non-pumping water levels in the Well No. 3 area have shown a drop of approximately 35 feet. Non-pumping water levels in the Lompico Formation as measured in Well No. **4** have shown a decreasing trend with a total drop of approximately **94** feet since 1986.*

*The chemical quality of groundwater produced from Site wells is consistent with historical results for wells **in** Scotts Valley completed in the Santa Margarita Sandstone and indicate that no significant degradation of water quality is occurring in the vicinity of the Site. The chemical quality of Site well water is similar to waterjlowing in Bean Creek, but with several exceptions. Waterjlowing in Bean Creek contains more sulfate, calcium, sodium, and bicarbonate, and as a result has a significantly higher total dissolved solids content."*

EXHIBIT D

Subsequent to the SECOR study additional hydrogeologic investigation has been completed. Updated conclusions regarding hydrogeologic conditions underlying the quany site are contained in a report titled "Hydrogeologic Evaluation for Application 02-0046 Mining Plan Amendment at Hanson Quarry" by Weber-Hayes and Associates dated June 10, 2002.

The conclusion by Secor (1997) that Monterey Formation underlies the entire site has been accepted in the past and is the reason why a large closed depression in the south corner of the quany has not been recommended in the past. The Monterey Formation forms an aquitard and prevents infiltration of water into the underlying Lompico Formation aquifer. The quarry has largely removed the Santa Margarita formation, which overlies the Monterey formation throughout most of the site.

Weber-Hayes (2002) concluded that, in the south corner of the quany, the Monterey Formation is either, 1) absent, 2) contains fine-grained sandy interbeds similar to the Lompico Formation or, 3) is inter-fingered with the Lompico Formation within this locality. Therefore, Weber-Hayes concludes that a retention pond in that location has the potential to infiltrate water into the Santa Margarita Formation and sandy portions of the Monterey Formation and/or inter-fingering zones of the Lompico Formation. Based on observations of the excavation in the south corner of the quarry down to 466 ft. amsl County staff (Cloud, 2001) has concluded that Monterey formation is absent in the south corner of the quarry beneath the location of the proposed retention basin. Photographs taken from within the excavation indicate that the Santa Margarita formation directly overlies the Lompico Formation (Monterey Formation is absent) in the south corner. Therefore, a retention basin in the south corner has the potential to infiltrate water directly into the Lompico Formation aquifer.

2. The Quarry shall install totalizing flow meters on the discharge lines of all its groundwater extraction wells. Annual meter readings and usage will be included in the annual Quarry Report.

Review Comment: According to Hanson's annual reporting to the County, beginning with the Annual Report dated August 28, 1996, flow meters had been installed on the discharge lines of the wells. The report states that the annual readings will be included in the next report. The Annual Report dated July 26, 1999 is the first Annual Report to includes a table of meter readings and usage dating buck to July 1996. The Annual Report dated October 23, 2003 includes meter readings and usage up to and including December 2002.

3. The Quarry shall commence utilizing Tertiary Treated Wastewater as soon as it is available from the Scotts Valley Water District, or other reasonable source for the use of Tertiary Treated Wastewater for processing and washing sand. Should the Quarry **be** unable to successfully negotiate a contract for the use of Tertiary Treated Wastewater with the Scotts Valley Water District, the Quarry may **return,** without **fee** with a **report** to the Planning Director and Planning Commission to request change or removal of this condition in two years' time by the Planning Director. The Planning Director in his **or** her discretion may refer this review to the Planning Commission. The Planning Director shall report on the status of the Quarry's utilization of Tertiary Treated Wastewater no later than January 31,1998.

EXHIBIT D

Review Comment: The Planning Commission reviewed this condition on April 26, 2000. In the staffreport to your Commission Bruce Laclergue, Water Resources Manager, reviewed the status ofcompliance with this condition. At that time the Tertiay treatment unit at the Scotts Valley Wastewater Treatment Plant was nearing completion and representatives of the City of Scotts Valley, the Scotts Valley Water District, Hanson Aggregates, and the San Lorenzo Valley Water District were meeting to discuss technical issues related to initiation of this use. These meetings included discussions of a proposed water transfer whereby Hanson would begin using Tertiary Treated Wastewater and cease its use of well #4. In exchange, water previously pumped from well #4 would become availablefor water district use. Apparently, details ofthe proposed water transfer were ***never*** *agreed upon between the water districts.* ***In*** *addition, it was determined that the existing water line leading to the Hanson site was notfunctional due to age and breaks in a number of locations.*

C. Dust Abatement

1. The Quarry shall install a meteorological station, sited in a location determined by a qualified air quality professional and approved by the Planning Director and the Monterey Bay Unified Air Pollution Control District. Wind speed, wind direction, sigma theta of the wind direction, maximum wind speed, and air temperature data will be collected. **A** report of these data shall be included in the Quarry's annual report to the County. This descriptive report shall include a frequency analysis of wind speed and wind direction, as well as the number of hours that the wind speed exceeds a specified velocity; this velocity shall be determined by an air quality professional following the assessment of contributing fugitive dust sources.

Review Comment: The meteorological (met) station was installed on September 19, 1995 by Condor Earth Technologies (Condor) at a centrally located high point within the quary to measure winds that are representative of the general conditions in the areas where potential fugitive dust sources are located. ***A*** *report titled "Meteorological Data Analysis 1995/1996 Kaiser Sand & Gravel, Felton, California" was completed on January* ***25,*** *1997. The report provided an initial recommendationfor a high wind threshold but stated that it is very difficult because many factors, not only wind speed, effect the generation and dispersion offugitive dust. Therefore, the report recommended that the high wind threshold could be adjusted up or down based on observedfugitive* ***dust*** *(and/or complaints offugitive dust) and wind datafrom the met station. Condor offered to compare wind parameter data from the met station to observations and/or logs in order to , a statistically* ~~*At present, Planning staff is not aware that Hanson ever pursued such an effort.*~~ *Although the dust abatement consultant never performed this analysis Hanson reports that standard quarry operations have included observation of fugitive dust conditions, monitoring of data from the met station and complaint records to modify operations and reduce offsite dust impacts.*

~~*At this point in time, completion of such a comparative analysis may not be the most effective course of action to reduce potential off-site dust impacts.*~~ *When the quarry completes mining activity, which is anticipated by the end of 2003, the potential for generation and dispersion of fugitive dust will be reduced. However, large areas of the quarry (up to approximately 110*

acres) will not be revegetated immediately and could continue to be the source of potential dust problems. Therefore, Planning staff is recommending a Review Condition that requires that prior **to** *October* ***15, 2004*** *all unvegetated, disturbed areas of the quary site be hydroseeded with a hydroseed mixture recommended by the revegetation specialist. In the interim, traditional dust control measures (i.e. monitoring of the site and the meteorological station, application of water and/or lignin sulfonate, etc.) will continue in order to minimize potential dust problems.*

2. An assessment of all contributing fugitive dust sources shall be performed by a qualified air quality professional with recommendations to reduce off-site dust impacts. This report shall be submitted to the Planning Director for review and approval. The assessment shall be conducted between July 1 and October 15, during a typical season.

Review Comment: On February 11, 1997 Condor completed a Dust Assessment Report, which included a summary of meteorological data, observations and measurements relating to dust control and a recommended wind speed threshold. The report states that Condor's observations were made during a single day, July 15, 1996, and the observations may not be representative of either past or future conditions. The report goes on to state that the recommendations assume that July IS, 1996 is representative of a typical day. both in terms of production level and efforts to control dust. The report contains the following conclusions:

"Observations made at the Kaiser (Hanson) facility in Felton, California failed to identify any large or excessive sources of fugitive dust. Off-site inspection failed to find evidence of significant dustfallout in the residential neighborhoods adjacent to Kaiser. The use of water trucks, dust suppressants, and administrative controls appears to be highly effective in controlling fugitive dust. In accordance with Condition C-1 and C-5 of Kaiser's conditional use permit (1995 Review Conditions), an hourly average wind speed of 20 miles per hour and a corresponding maximum wind speed of 30 miles per hour is recommended as the thresholds at which mining activities should be limited. No modifications in operations or fugitive dust control measures are recommended at this time. Off-site impacts should be minimal if Kaiser continues to be attentive to dust control, using measures similar to what Condor observed."

In the report, Condor again recommends that complaints about dust, or observations about dust be compared with meteorological conditions and/or operational records to determine if a correlation exists. If so, the report recommends that adjustments to dust control measures including the high wind threshold may be necessary. ~~*At present, Planning staff is not aware that Hanson ever pursued such an effort.*~~

3. **As** recommended by the air quality professional's assessment, a program to reduce the off-site deposition of sand and dust shall be submitted to the Planning Director for review and approval. The Quarry shall diligently implement the results of said program as approved by the Planning Director. If complaints continue to be received due to Quarry mining activities, **an** air quality-monitoring program shall be implemented. An annual air quality report shall then be included in the Quarry's annual report to the County.

EXHIBIT D

Review Comment: The air quality professional concluded that no modifications in operations or fugitive dust control measures were needed at the time of their assessment. Therefore, an additional program to reduce off-site deposition of sand and dust was not submitted.

4. In periods of dry weather, the Quarry shall spray all haul roads worked during that day with lignin sulfonate or other tackifier approved by the Planning Director each evening prior to the close of the workday. On Fridays, hydromulching and/or spraying with lignin sulfonate or other tackifier approved by the Planning Director shall occur on open areas to prevent fugitive dust occurrences during the weekend periods when Quarry personnel is absent.

In the latest Annual Report Hanson states that all plant roads are sprinkled with water as needed to control dust and new cut slopes are sprayed with lignin sulfanate to eliminate wind blown dust.

Hanson has also reported as stated in the staff report for the 1995 permit review that during the Spring months when the wind is high and dust becomes a problem, the Quarry seals with lignin sulfonate or hydromulch all roadways and open areas on Fridays as a part of regular operation prior to closing for the weekend. On high wind days the Quarry uses two water trucks instead of one throughout the day. In the past, the quarry has worked with local residents by washing windows and/or cleaning out swimming pools when dust storms have occurred.

However, wind blown sand is a problem for neighbors of the Quarry as evidenced by the neighborhood petition submitted as part of the 1995 review and continuing complaints logged since then by both the quarry hotline and the Monterey Bay Unified Air Pollution Control District. Planning staff has also witnessed blowing sand at the quarry during high wind conditions. It appears that the quarry takes steps to address the blowing sand fugitive dust) situation as needed and step up these efforts after each complaint is received. However, blowing sand continues to be a problem under high wind conditions.

Mining activities will cease, probably by the end of 2003. In order to address the blowing sand problem during the reclamation process, Planning staff is proposing additional conditions as part of this review as noted above.

5. During periods of high wind, as determined by an air quality professional, the Quarry shall limit mining with scraper equipment to areas approximately 400 feet by 400 feet where feasible.

In the latest Annual Report Hanson states that, during high wind conditions, mining operations on exposed slopes are curtailed to avoid dust.

D. Noise Monitoring

1. Prior to beginning excavation in areas adjacent to residential neighborhoods within 100 feet of the Quarry setback, the quarry shall construct sound berms as shown on Exhibit SB-1 attached to this amendment to Mining Approval 75-590-PQ. The berming shall be

constructed for both the working area and the travel routes. The berming shall be sprayed with a tackifier approved by the Planning Director to preclude off-site fugitive dust. The berming shall be at least ten (10) feet in height and maintained. No berming is required during the final phase of mining, however the last berm built shall be adjacent to the Quarry setback. Construction of berms within the 100-foot setback is prohibited.

The berms were constructed. The quarry is completing the final phase of mining, therefore, the berming is no longer required.

2. Within 90 days of the final County action on this Review, and thereafter each year, as part of each annual report commencing with the annual report due on July 1, 1997, a noise report shall be prepared by an independent, qualified noise/acoustical consultant employed by the Quarry and approved by the County. Any draft noise report to be submitted by the consultant to the Quarry shall be simultaneously submitted to the Planning Director. All costs of such report shall be paid by the Quarry. Each report shall determine whether or not compliance with the noise conditions as added to this Mining Approval is occurring and shall investigate and make recommendations (relative to noise mitigation) regarding any mining equipment to be used on the site, the noise protection berming (existing and proposed), and shall identify and make recommendations regarding any equipment which is becoming excessively noisy due to age or other factors. The report shall include input from and responses to any concerned area resident relative to noise, and shall investigate and make recommendations on any other significant noise resulting from quarry operations on the site. The Quarry shall implement all recommendations of the noise consultant to the extent feasible and reasonable in cost to the size and conditions of the Quarry operations, and within a reasonable timetable as determined by the Planning Director.

Review Comment: Illingworth & Rodkin, Inc completed a noise report dated February 1, 1996, which addresses this condition of approval. The report states that quarry operations at that time were in compliance with the conditions of approval; the mining equipment was well maintained, equipped with mufflers and did not produce excessive noise; and the use of berms to mitigate the mining noise is effective. The report concluded that the older equipment was only slightly more noisy than newer equipment and the noise difference was barely detectable. ***Even*** *so, the older equipment was schedule to be replaced. The report included investigation of one complaint that had been received since installation of the complaint hotline. It was determined that, even though the noise was audible, the measured noise level was far below the allowable criteria. The report found that noise levels at the site's boundary did not exceed the allowable limit of an Ldn of 60 dBA for the operations at that time. Therefore. the consultant did not include recommendations to further reduce noise.*

Noise reports have been submitted in years since the 1996 report, which include noise level measurement at the property line, observations of equipment use at the site and other noise related observations. The reports have consistently concluded that noise levels ***at*** *the site's boundary do not exceed allowable levels and equipment used at the site is in good condition.*

EXHIBIT D

design of the quarry pit backfill and the buttress fills. This work continued into 2002, at which time the quarry CEG also performed slope stability analysis of the proposed final configuration of the east quarry slopes. Because of the specific focus on the south and east quarry slopes in the past two years, the annual reports, as they had been presented in the past, were not completed. The annual reporting required by this condition will continue starting **in** *2004. However, due to the recent concerns and remediation regarding slope stability in the quarry Planning staff is proposing that the annual reporting may continue longer than two years after final slopes are achieved. A modified condition is proposed, which requires the annual reporting to continue ~~until the County is satisfied that reclamation has been completed~~ if, as a result of inspection, the County determines that geologic monitoring is necessary for an additional period of time beyond the two years after final slopes are achieved.*

F. Mining Operations on Portion of Quarry Located in City of Scotts Valley

1. Prior to conducting any land use, including any form of mining operation (including but not limited to, ponds, drainage, or overburden storage) on the portion of the Quarry at that time located in the City of Scotts Valley, the Quarry shall file with the County Planning Director a final land **use** approval issued by the City of Scotts Valley authorizing such land use. Within one year thereafter, the County Planning Director shall be entitled to conduct a Review Proceeding as to the effect of the land use approval issued by the City of Scotts Valley on the Kaiser Quarry Mining Approval issued by the County. The County Planning Director may refer such Review Proceeding to the County Planning Commission.

Review Comment: In 1973 a 6.6-acre parcel on the southeastern edge of the property was deeded to the City of Scotts Valley for use as a sewage disposal percolation pond. The parcel was annexed into the City of Scotts Valley in 1974 and discharge of wastewater into this pond occurred until 1978. The property reverted back to Kaiser Sand & Gravel in 1987 and in 1997 the property was detached from the City of Scotts Valley and returned to County jurisdiction.

G. One Year Review of Hydrology, Noise and Dust Abatement

1. The implementation of the new Conditions imposed by the 1995 Review and Five-Year Future Mining Plan Approval regarding Hydrology, Noise, and *Dust* Abatement shall be reviewed by the Planning Commission at a public hearing within one year.

Review Comment: SECOR International completed a Hydrogeologic Study Report dated October 23 1997. Illingworth & Rodkin. Inc completed a noise report dated February 1, 1996. Condor Earth Technologies completed a Dust Assessment Report on February 11, 1997. These reports are discussed above under the respective Condition of Approval. The Planning Commission has not reviewed these reports until now. Planning staff is recommending a similar condition with a reduced time frame on the Amendment application regarding the report on the retention basin.

H. Complaint Call-In Line

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1988 REVIEW OF PERMIT AND PHASED MINING PLAN

1. Sand from quarrying activity and/or other truck traffic shall not be placed on Conference Drive or other public roads.

Review Comment: The Quarry has not maintained compliance with this condition. However the sand that is deposited on Conference Drive is periodically cleaned off the road. The quarry annual reports state that the water truck continues to wash the entrance driveway and the adjacent road (Conference Drive) as needed.

2. If requested, all well information shall be disclosed to public agencies or other interested parties.

Review Comment: The Quarry has supplied well information upon request. Also see 1995 Permit Review item B, Hydrology.

3. Kaiser Sand and Gravel to reimburse the County of Santa Cmz for all costs associated with the repair of Conference Drive.

Review Comment: Following the 1988 five-year review, the Quany repaved Conference Drive at its own expense, rather than reimbursing the County for the work.

4. When information from the Santa Margarita Aquifer Study is available, the Commission may reopen and reconsider conditions of Planned Quarry Permit 75-590-PQ (Kaiser Sand and Gravel).

Review Comment: As discussed in the staff report, the Santa Margarita Groundwater Basin Management Plan was postponed due to the 1989 earthquake, and was published in 1993. The Plan was presented to the Board of Supervisor's, which adopted objectives to guide water management for the basin. As a result of the 1995 Permit Review the quarry was required to prepare a hydrogeologic report. The scope of work incorporated the objectives adopted by the Board of Supervisors and the report was completed in 1997 (SECOR International, Hydrogeologic Study Report, October 23 1997). As part of the current application an additional hydrogeologic report was prepared by Weber-Hayes & Associates, which is discussed in the staff report.

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CERTIFICATE OF COMPLIANCE 75-590-PQ

I. EXHIBITS

1995 Review Comment: The Quarry operations conform to the exhibits listed on page one of the Final Certificate of Compliance, Exhibit "C".

II. GENERAL PROVISIONS

A. The conditions of this Final Certificate of Compliance shall augment and supersede where in conflict with, the provisions of Use Permit 68-U (sic) and shall supersede Interim Certificate of Compliance 75-590-PQ.

Review Comment: See the review of Use Permit, #69-U Conditions of Approval later in this exhibit.

B. This permit is for the extraction, processing, storage, and shipping of the sand resources obtained from the property, including the addition of facilities for marketing sand for glass production conducted in accordance with the descriptions in the exhibit documents and as modified by the conditions of this permit.

Review Comment: The Quarry has not implemented the provisions for the addition of glass sand.

It should be noted that recently (sometime during 2003) Hanson Quarry began processing sand imported from the Olympia Quarry, which is located across Mt Herrnon Road just north of the Hanson Quarry. Olympia Quarry, operated by RMC Pacific Materials, has removed their processing plant but needs to continue excavating a small area in the center of their quarry in order to achieve the final grades indicated in their approved final quarry contour plan. RMC has approval, as indicated in their approved mining plan, to mine the sand that is being exported. Hanson Quarry continues to process sand mined from Hanson property through their processing plant. Hanson also entered into a contract with RMC to excavate the portion of Olympia Quarry mentioned above and truck the sand to the Hanson site for processing.

Planning staff carefully considered this activity with respect to Conditions of Approval of the quarries respective permits and COC's and found nothing that would specifically prohibit this activity. With respect to the Hanson Quarry the above condition states, "This permit is for...processing ...of the sand resources obtained from the property", however, Planning staff did not interpret this as an absolute prohibition on the activity described herein. This interpretation is based on the specific circumstance of this case: the excavation at Olympia is confined to a very limited area; is necessary to achieve final grades at the Olympia Quany; and is not for the purpose of extending the life of the Hanson Quarry. As soon as Hanson achieves final grades proposed in their application for amendment and receives approval of the amendment, they intend to shut down their processing plant. Planning staff has verified by inspection that Hanson continues to work their Quarry to achieve final grades to the extent feasible prior to approval of

the amendment application. When all excavation is completed per the appropriate approve plan at both Hanson and Olympia, then import from Olympia to Hanson will cease. Additional, Planning staff considered potential traffic impacts of trucking from Olympia to Hanson and concluded that shipping sand out of Olympia Quary is allowed under their existing permits and importing sand to Hanson's property does not represent a significant increase in truck traffic assuming the same trucks would also be shipping sand out of the Hanson Quarry, which is allowed under their existing permits.

C. Minor variations to this permit requested by the applicant or staff and which do not change the general concept of use and operation, and which do not adversely affect the environment, may be approved by the Community Resources Agency Director following review and recommendation of the Environmental Review Committee and written approval of the applicant.

Review Comment: Minor variations to *the permit regarding operational drainage and the addition of a polymer water clarification system have been requested by the operator and approved by staff.*

D. This permit shall be subject to enforcement pursuant to Section 14.06.085 and Section 14.06.090 or subject to revocation pursuant to Section 13.04.046 of the Santa Cruz County Code at any time if the Planning Commission determines that the conditions of the permit are not being complied with.

Review Comment: As discussed in the staff report a major enforcement action occurred in 2001/2002 regarding the over-excavation of the quary floor and slopes in the southern end of the property.

E. The applicant shall indicate an acceptance and agreement to the conditions of this Final Certificate of Compliance by signing and returning two copies of this permit to the Community Resources Agency within Forty-five (45) days of the issuance of this permit. Payment of the remaining permit application fees shall be remitted concurrently.

Review Comment: A signed copy of the permit conditions is on file at the Planning Department.

F. Compliance with the permit conditions and regulations of the following regional agencies as they apply to the operations on this property shall be a condition of this permit. The applicant shall provide updated copies of the applicable permits and conditions to the Community Resources Agency in the event of any changes.

1. Central Coast Regional Water Quality Control Board.
2. Monterey Bay Unified Air Pollution Control District.

1995 Review Comment: Staff has communicated with both agencies to verify compliance with the existing permits. Hanson submits self-monitoring reports to the Regional Water Quality Control Board (RWQCB) pursuant to Monitoring and Reporting Program 87-11. Copies of these reports are included in Hanson's Annual Report to the County. The reports are brief and

simply state that all process water and storm water at the quarry is contained in settling and percolation ponds that are cleaned when necessary. Discussion with RWQCB staff indicates that the quarry is in general compliance with that agencies permit requirements.

Hanson Quarry operates equipment under four permits from The Monterey Bay Unified Air Pollution Control District (MBUAPCD). The permits allow Hanson to operate potential air emission-producing equipment as follow: the sand sizing and washing plant; the sand loadout facility; the sand mining, transport and process plant (conveyor system); and an internal combustion engine and water pump. Discussions with District staff indicate that the quarry is in general compliance with that agencies permit requirements.

G. The quarrying operations established under this permit shall be subject to a quarterly inspection by the County to insure compliance with the exhibits and conditions set forth in this permit. **A** fee established by the County for these regular inspections shall be due and payable as of their date of billing. Quarterly inspection fees for the remainder of the current year are due and payable upon the issuance of this permit.

Review Comment: Staff has been inspecting the quarry and its operation on a regular basis and the Planning Department has been reimbursed for the inspection expense by Hanson.

H. This permit shall be subject to review by the Planning Commission 5 years from its date of issuance and every 5 years thereafter for compliance with operating conditions and for possible amendment for mitigation of environmental and community impacts.

Review Comment: Your Commission reviewed the permit for this quarry in 1988, and found that its operation was in substantial compliance with its permit. Your Commission added several conditions to the operating requirements, which are reviewed earlier in this section. Your Commission again reviewed the permit for this quarry in 1995 at which time several additional conditions were added to the operating requirements, which are reviewed earlier in this section. This review is occurring in 2003 following approximately two years of significant attention to this quarry in the form of enforcement actions and environmental review of several versions of alternative proposals for a final contour plan.

I. Mining and rehabilitation activities on site shall correspond to those areas as indicated in exhibit plans **7700-1** and-2, "Current and **1983** Quarry Contours". Prior to mining in any areas beyond those shown on these exhibits, the applicant shall submit updated mining and rehabilitation plans and shall obtain approval of the plans from the Planning Commission.

Review Comment: Mining activities corresponded to the above-mentioned plans until the year 1983. In 1983, a new 5-year plan *was submitted to staff for review and approval. Again. pursuant to the Certificate of Compliance requirements. in 1988, your Commission approved a continuation plan for 1988 through 1993. Subsequently, in 1995, your Commission approved a continuation plan through the year 2000 that generally showed final quarry contours at the completion of mining. Mining did not proceed as quickly as envisioned in 1995 and in 2001, as Hanson was excavating the southern end of the property, Planning staff discovered the violations*

discussed in the staffreport. As a result of the violations, Hanson agreed to limit their excavations on the east side of the quarry until the completion ofthis Planning Commission review.

III. OPERATING REQUIREMENTS

A. NOISE

1. Maximum operating noise at the site boundaries (not including haul trucks or construction activities) shall not exceed the limits of Section 13.04.236(C) of the County Zoning Ordinance. Average noise levels at the site boundaries shall conform to an LDN (day/night weighted average) 60 dba.

Review Comment: The quary is in compliance with this condition. See item D – Noise Monitoring under 1995 review comments.

2. The applicant shall maintain an affirmative action program to inform haul operators of their obligation to comply with vehicle noise and traffic regulations.

Review Comment: The Quary reports that they continue to notify truckers twice a year familiarizing them about noise requirements and traffic regulations.

B. AIR QUALITY

1. The applicant shall maintain the entrance driveway and adjacent county roads free of dust and debris resulting from the site operations.

Review Comment: Staff has not noticed any significant violations of this requirement during regular inspections. Haul routes, entrance driveways or roads are watered on a regular basis, and Conference Drive is swept to remove sand which mayfall off of the haul trucks.

2. All roads on the property shall be either surfaced, treated, or sprinkled with water frequently enough to insure that windblown materials do not present a problem to adjacent properties or public roads.

Review Comment: Road treatment to reduce dust is consistent with thispermit condition. Water or Lignin sulfonate (an organic surfacing compound approved by the Forest Service and Fish and Game) is used to reduce dustfrom traffic.

3. Mining operations on exposed slopes shall be curtailed in high wind conditions so as to reduce the potential for the generation of dust from the site.

1995 Review Comment: Hanson reports that mining operations are curtailed duringperiods of high winds. See item C – Dust Monitoring under the 1995 review comments.

C. HYDROLOGY

1. All catchment basins, drainage ways, culverts, pumps, pipelines, etc. shall be maintained on a regular basis to insure proper functioning free of breakage, siltation deposit or malfunction.

Review Comment: Quarterly inspections show that the Quarry is operating in compliance with this condition.

2. No natural drainage from the mining or disturbed area or operational waters shall be allowed to leave the site except for the minor drainage area of the entrance driveway which is contained in a catchment basin adjacent to Conference Drive.

Review Comment: In 1991 a failure of a small section of settling basin levee caused water to leave the site. As a result, the Quarry was required to revise its drainage plan. The revised operational drainage plan was approved by staff in October 1992, and no further off-site drainage has occurred.

3. The applicant shall maintain and dispose of any petroleum products on the property in such a manner that no contamination of ground or surface waters will occur.

Review Comment: Hanson has obtained a Health Permit for Hazardous Materials, which allows them to store and utilized various substances such as hydraulic oil, unleaded gasoline, diesel, ethylene glycol, motor oil, propane. and others. The County Environmental Health Department issued the permit and conducts annual inspections to verify such things as types of materials on site and proper storage. Environmental Health records indicate the permit is current and inspections have not found any problems.

4. Final benched slopes shall be provided with adequate drainage systems to prevent erosion of the finished landform.

Review Comment: All previously approved benches that separate 1:1 cut slopes are shaped in such a way to permit "sheet flow" type of drainage. No major failures have occurred. Minor rills have been infilled with gravel, and maintained. Since 1995 the required annual inspections by the quarry's engineering geologist have documented erosion rills and gullies on bare areas of older quarry slopes and similar erosion on newer quarry slopes. Although the annual reports conclude that the quarry slopes have not experienced landslide or deep-seated slope failure, erosion of the 1:1 slopes is a persistent problem documented over the years with specific recommendations provided in the reports to control the problem. These efforts, such as repair of rills and gullies, repeated hydroseeding, installation of erosion control blankets and continued revegetation efforts will, if successful, ensure compliance with this condition.

See staff report for discussion of drainage and erosion issues related to the Mining Amendment application.

5. The applicant shall maintain a monthly log of well levels on the property and submit a summary report to the county Watershed Manager every year.

Review Comment: The Quarry is in compliance with this requirement.

6. Within ***6*** months of the issuance of this permit the drainage catchment basins along Conference Drive shall be relocated in conformance with Exhibit Plan 7800-2. An encroachment permit shall be obtained from the Department of Public Works for any work performed in the County right-of-way.

Review Comment: The relocation of the basins was done in accordance with the plans shown in Exhibit 7800-2.

D. DAYS AND HOURS OF OPERATION

1. All mining and processing activities at the site shall be confined to 6:OO a.m. and 8:00 p.m., Monday through Saturday. Maintenance operations shall be conducted from 6:OO a.m. to 1O:OO p.m. Monday through Friday and 6:OO **am.** through 8:OO p.m. on Saturday.

*Review Comment: No violation of this requirement has been noted. **An** amendment to this condition was added (see Amendment Section) to add maintenance operations at any time with the restriction that maintenance operations involving operation of heavy equipment, metal pounding or other major noise sources shall be noise shielded after 8:00 p.m. and prohibited after 10:OOp.m.*

2. All shipping activities shall be confined to between the hours of 5:OO a.m. and 8:00 p.m., Monday through Friday.

Review Comment: The Quarry is in compliance with this condition. However, there have been complaints from neighbors regarding back-up beeper noise. As discussed earlier, the Quarry has converted to strobe lights for back up warning.

3. Any stripping or berm construction operations near the property boundaries shall take place only during the hours of 8:00 a.m. to 5:OO p.m., Monday through Friday.

Review Comment: No violation of this requirement has been noted.

E. INSURANCE

1. Verification of insurance coverage in compliance with the requirements of the County Quarry Regulations shall be provided at the start of each calendar year.

*Review Comment: **A** certificate of insurance is submitted concurrent with each annual report.*

F. REVEGETATION, SCREENING, EROSION CONTROL

1. All unvegetated disturbed areas not actively involved in excavation activities shall be revegetated at the start of the rainy season each year in conformance with the Exhibit Revegetation Plans. All seeded areas shall be provided with fertilizer to stimulate growth and shall be imgated as necessary to insure proper growth.

Review Comment: In agreement with staff: Kaiser changed from the original revegetation plan shown in the exhibits of the Certificate of Compliance 75-590-PQ to a plan utilizing revegetation with native plants. Your Commission in 1988 approved the change from the approved revegetation plan. The 1988 plan was revised and updated in 1995. The basic goal of the plan. which has remained the same since 1988, is to recreate an assemblage of native plants characteristic of the historical vegetation of the area. Other goals include erosion control, maintenance of special status plant habitats, screening of the facility and long-term management. The quany has been submitting yearly reports on the progress of the revegetation program. A further revision and update of the revegetation plan was completed in 2002. The revegetation plan was refined to include: 1) changes to the planting lists based on field observation of strongly performing species and species growing near habitat for the federally endangered Mt. Hermon June beetle and Zayante band-winged grasshopper; 2) a new base map reflecting the construction of the buttress fill in the south end of the quarry; 3) and revised performance standards based on historic field monitoring data.

In general the revegetation plan consists of the following aspects: 1) the overall design considering site conditions, adjacent natural vegetation, slope and aspect of revegetation areas, wind erosion control, facility screening and results of previous revegetation efforts; 2) use of a variety of revegetation materials and methods, including stockpiled topsoil, seed, container stock, bare root stock and salvage and transplant of certain species, and installation according to the method appropriate for each species: 3) a field testing program to determine the most effective revegetation methods; 4) establishment period maintenance and monitoring, which typically spans up to five years; 5) long-term monitoring following the establishment period: 6) annual photodocumentation from fixed photo stations; 7) and annual reporting.

At the time of preparation of the 1995 revegetation plan, according to the revegetation specialist, over the past 20 years the quany had completely revegetated approximately 10 acres of mined area and was in the process of revegetating approximately 20 acres of mined area. At the time of preparation of the 2002 revegetation plan, according to the revegetation specialist, over the past 27 years the quany had completely revegetated approximately 13 acres of mined area and was in the process of revegetating approximately 27 acres of mined area. As of 2002 the quany had approximately 110 acres left to revegetate, including the eastern slopes and benches, the buttress fill area and the quarry floor. The remaining ponds will be managed and revegetated with plant species characteristic of riparian woodland. It should be noted that the slope area above and west of the freshwater pond, which is highly visible from the City of Scotts Valley, especially the Skypark residences, has been planted with almost 1,000 ponderosa pine seedlings to create ponderosa pine forest habitat and eventual visual screening of the quany. The mining setback area (natural area) along Worth Lane has also received additional plantings of trees and shrubs to provide more of a buffer between the neighborhood and quarry activities.

*According to the revegetation specialist, the remaining 110 acres will be revegetated over about a 12 **to** 13 year period with completion estimated in 2015 followed by 15 years of monitoring, and remediation as needed, Therefore, after completion of mining revegetation activities will increase significantly with an expected average rate of approximately 8.5 to 9 acres planted per year as opposed to an average rate of approximately 1.5 acres per year over the past 27 years prior to 2002 during active mining operations.*

Although the revegetation program has generally been successful on the completed benches, the cut slopes need more tree and shrub cover. Efforts to increase vegetative cover on the slopes include more container stock planting (trees and shrubs) and more intensive seeding.

2. Plantings of trees on the site perimeter, final benched slopes and where required elsewhere for screening purposes shall **be** provided with adequate fertilization and irrigation for a minimum of two years to insure proper establishment and growth of plants.

*Review Comment: Residents and the City of Scotts Valley have requested additional screening to buffer surrounding properties from noise, dust and **to** provide a visual barrier after the Quarry mines the hillside along Mt. Hermon Road. See the comments immediately above, however, additional trees have been planted along Worth Lane and on the slope west of and above the fresh water pond to provide screening and buffering.*

3. Within 1 year of the issuance of this permit the landscape screens on the site perimeter as shown in Exhibit Plan 7800-1 shall be planted.

*Review Comment: **The** Quarry is in compliance with this requirement.*

G. REPORTMG AND REVIEW

1. The applicant shall submit an annual report on operations as required by the County Quarry Regulations at the start of each calendar year. The report shall include a landscape rehabilitation monitoring report prepared by a qualified biologist. The applicant shall cooperate with the County staff to mitigate or eliminate any problem which may arise from the operations conducted on this site and to make adjustments to the landscape rehabilitation plans as recommended by the biologist's monitoring report.

Review Comment: Staff has received annual reports prepared by Kaiser together with a revegetation monitoring report by Habitat Restoration Group (now Native Vegetation Network) in conformance with this condition. By 2002 Hanson had corrected the violations that occurred and were discovered by County staff in 2001.

H. BONDING

1. Within three **(3)** months of the issuance of this permit, the applicant shall furnish to the County a faithful performance bond in the amount of $50,000, or other securities in lieu thereof to insure compliance with the laws and conditions relating to this permit, and to guarantee rehabilitation of the property in conformance with the exhibits and conditions of this permit. The bonding instrument shall be drawn up and submitted to the Planning Department for staff approval prior to its formal acceptance by the County. Evidence of bond renewal shall be submitted at the start of each calendar year.

Review Comment: A Financial Assurances, in the form of a Surety Bond, as required by the Surface Mining and Reclamation Act, in the amount of $1,266,000 has been submitted, reviewed, and approved by the County and State Office of Mine Reclamation. As discussed in the staff report, the financial assurance for this quany shall be recalculated to reflect the amended mining and reclamation plans for the entire quarry site. This will be implemented in conformance with the formula provided by the State Department of Mining and Geology for providing financial assurances pursuant to SMARA requirements.

1. EXCAVATION AND GRADING

1. Where physically possible, all mining and stripping operations shall take place behind berms on the property so as to protect adjacent properties and roadways from the noise and visibility of operations. Excavations shall be reoriented in conformance with Exhibit Plan 7700-1 within ***6*** months of issuance of this permit.

Review Comment: Mining areas were relocated in accordance with the plans shown in Exhibit 7700-1, which described mining through-1982 and a screening plan for Mt. Hermon Road. Current sand harvesting is in compliance with this condition in that all excavations take place below the grade levels at the property lines.

2. No excavation shall take place below any water tables found to exist on the property other than those which can be shown to only be due to locally perched water.

Review Comment: Please refer to the section on Hydrology in this staff report for further discussion of groundwater issues.

3. Final slopes shall not exceed an average slope of 1.5 horizontal to 1 vertical, and shall be benched at a maximum of 25-foot vertical intervals with a minimum of 12.5-foot benches. Individual side slopes shall not exceed 1 to 1 slopes. No requirement is hereby set for interim working faces.

Review Comment: All final workfaces have been graded in accordance with the above criteria. However, the buttress fill slopes and the east quarry cut slopes have a reduced slope gradient as described in the amendment application.

4. In the event that significant paleontological or archaeological finds are made on the quarrying site, all operations shall be halted within 200 feet of the find and the Community Resources Agency Director shall be immediately notified. Operations may be resumed in three working days following notification of the Community Resources Agency unless specific request is made to allow additional time for proper excavation of fossils or artifacts in accordance with the provisions of the County's Native American Cultural Sites Ordinance.

Review Comment: Planning staff is not aware of any archaeological or paleontological finds on the quary site.

5. All final site contours shall be left with a minimum of 5 feet of sand covering the underlying shale subsoil. Overburden stripping shall be distributed over the final ground level to provide a soil medium for revegetation plantings.

Review Comment: The Quarry is in compliance with both sections of this requirement. It should be noted that the underlying Montereyformation (shale) has constrained depth of mining throughout the quarry except in the south corner where the shale is absent. This is exactly where Hanson excavated the quary too deep in violation of the approved miningplan.

J. FENCING

1. A control fence shall be provided at the periphery of the property in those areas where steep working faces are located or where benched final slopes are created.

Review Comment: The Quarry hasfenced the entireperimeter of the site. Additional fencing will be required related to theproposed ponds.

IV. OFF-SITE IMPROVEMENTS

A. Prior to the operation of the glass-sand facilities, the applicant shall provide the following off-site improvements.

1. The applicant shall enter into an agreement with the County and post bonds or other securities to provide for a contribution of 18 percent towards the County costs of the reconstruction (not to include right-of-way costs) of the section of Mount Hermon between Lockwood Lane and Conference Drive. This commitment shall not exceed a maximum of $15,000. The applicant shall also dedicate to the County necessary right-of way across this site's frontage for the construction of roadway improvements, excluding the plant well site.

Review Comment: The operation of the glass-sandfacilities was never initiated.

CERTIFICATE OF COMPLIANCE 75-590-PQ AMENDMENT

The additional four conditions were stipulated in an amendment to Certificate of Compliance 75-590-PQ approved on April **3,** 1979 as follows:

1. The quarry operation shall offer to sound insulate residences adjacent to the quarry property where proof of a noise nuisance is jointly established by the operator and the complainant and a satisfactory solution is jointly agreed to.

Review Comment: No case has been filed which jointly establishes proof of a noise nuisance.

2. The operator shall work with the truck drivers and the Scotts Valley Police Department to control truck parking so that no trucks shall be allowed to enter Conference Drive prior to 5:OO a.m. and then only the number that the plant yard can hold and thereafter as one leaves, one more truck can enter; and provide other areas for temporary truck parking rather than Conference Drive.

Review Comment: No complaints regarding truck traffic along Conference Drive have been reported.

3. Maintenance operations may occur at any time with the restriction that maintenance operations involving operation of heavy equipment, metal pounding or other major noise sources shall be shielded after 8:OO p.m. and prohibited after 1O:OO p.m.

Review Comment: No noise complaints have been verified which would indicate non-compliance with this condition.

4. The quarry operator shall redesign and reconstruct the entrance to the plant to allow for the free flow of traffic onto and off Conference Drive in conformance with plans to be approved by the Department of Public Works.

Review Comment: Modifications to the entrance of the quarry were made in 1980/81 in accordance with plans approved by the Department of Public Works.

USE PERMIT 69-U

As stated in the above review, Condition II.A. reads that the conditions of the Final Certificate of Compliance shall augment and supersede where in conflict with, the provisions of Use Permit 69-U and shall supersede **the** Interim Certificate of Compliance.

1. Operations shall be conducted in such a manner as to avoid all creation of swamp like conditions, and the operator shall not leave sumps or pits which will permit the accumulation of standing water.

Review Comment: The Quarry operations include process and storm water retention and recirculation basins that prevent water from flowing offsite as required pursuant to the COC Condition III.C.2. The purpose of the amendment application is to allow permanent detention and retention basins at the completion of mining.

2. In the event that operations impair or contaminate the water supply of other property owners, the operator will **furnish** to such property owners unpolluted water equal in the amount to that which its operations have impaired or contaminated.

Review Comment: No impairment or contamination of any water supply has been documented to date.

3. Operations shall be conducted in such a manner as not to pollute the streams.

*Review Comment: No drainage from the quarry leaves the quarry site other than water from the entrance drive, which accumulates in **a** settling basin at the base of the driveway.*

4. There shall be no vertical cutting of land and cuts will be made at not more than a 45-degree angle.

Review Comment: This condition was superseded to allow the Quarry to maintain slopes at 1.5:1, which is consistent with the County Mining Ordinance for sand mining operations. Further, the buttress fill slopes and the east quarry cut slopes have a reduced gradient as described in the amendment application.

5. Operations shall be conducted in such a manner as to preserve the aesthetic value and scenic beauty of the area.

*Review Comment: There is no doubt that the operation has change the aesthetics of the area. The Quarry is implementing a revegetation plan which once fully implemented **will** recreate the assemblage of native plant species that are indicative of the historical vegetation of the area. Instead of the pre-existing natural landform the excavated quarry will consist of man-made landforms, such as slopes and benches, and therefore restoration of a natural habitat is not possible,*

6. Entrance roads shall be developed in such a manner as not to cause traffic congestion, and there shall be compliance with requirements imposed by the County Road Commissioner.

Review Comment: The Quarry has maintained compliance with this condition.

7. There shall be compliance with requirements imposed by the County Planning Commission with respect to preservation of the scenic value of the site.

Review Comment: The quarry is in compliance with this condition to the extent feasible considering the scenic values of the site is not based on preservation of natural landforms and habitats but is based on successful reclamation of the an approved quarry site. Also see Condition **5** *above.*

8. Operations shall be conducted only during daylight hours.

Review Comment: The Planning Commission set the operating hours in ***1979.*** *The Quarry is in compliance with the current operating hours condition.*

County of Santa Cruz

PLANNING DEPARTMENT
701 OCEAN STREET 4TH FLOOR SANTA CRUZ CA 95060-4000
(831) 454-2580 FAX (831) 454-2131 TDD (831) 454-2123
Tom Burns. DIRECTOR

NEGATIVE DECLARATION AND NOTICE OF DETERMINATION

Application Number: **02-0046** Hanson Aggregates Mid-Pacific Inc (Kaiser Sand & Gravel Company)
This is an application for a five-year review of an existing mining operation, and an amendment to an existing Mining Approval to include: changes to the mining plan, reclamation plan, and financial assurance. The project location is the southwest side of the intersection of Mt. Hermon Road and Conference Drive near Scotts Valley.
APN: **067-011-07, 067-021-21,** and **067-021-22** David Carlson, Staff Planner
Zone District: Special Use

ACTION: Negative Declaration with Mitigations
REVIEW PERIOD ENDS: November **12,2003**
This project will be considered at a public hearing by the Planning Commission. The time, date and location have not been set. When scheduling does occur, these items will be included in all public hearing notices for the project.

Findinas:

This project, if conditioned to comply with required mitigation measures or conditions shown below, will not have significant effect on the environment. The expected environmental impacts of the project are documented in the Initial Study on this project attached to the original of this notice on file with the Planning Department, County of Santa Cruz, 701 Ocean Street, Santa Cruz, California

Required Mitiaation Measures or Conditions:

_____ None

__XX__ Are Attached

Review Period Ends__November 12.2003

Date Approved By Environmental Coordinator__November 13, 2003

KEN HART
Environmental Coordinator
(831) 454-3127

If this project is approved, complete and file this notice with the Clerk of the Board:

NOTICE OF DETERMINATION

The Final Approval of This Project was Granted by _____

on _____. No EIR was prepared under CEQA.

THE PROJECT WAS DETERMINED TO NOT HAVE SIGNIFICANT EFFECT ON THE ENVIRONMENT

Date completed notice filed with Clerk of the Board:_____

EXHIBIT E

NEGATIVE DECLARATION MITIGATIONS

Application: 02-0046
Applicant Hansen Aggregates Mid-Pacific Inc.
APN: 061-011-07, 067-021-21,22

1. To ensure that the reclaimed quarry area does not significantly contribute to erosion, the following requirements shall be met:

    a) All recommendations of the revised revegetation plan (prepared by Native Vegetation Network, dated 2002 and addendum June 10,2003) shall be followed, including placement of straw wattles on the buttress fill area located on the south end of the quarry.
    b) Geo-web (a cellular confinement system) shall be installed at the base of the buttress fill between the maximum and minimum expected pond water elevations.
    c) The Civil Engineer and Revegetation Specialist shall inspect the slopes during the wet season a minimum of one time to check the performance of the area where damage of the 2002-2003 storms was repaired and to preventatively repair any drainage system problems, sources of concentrated water and/or small erosion rills before they worsen. Such maintenance visits shall occur more often if there are signs of erosion that require correction more frequently.

2. To ensure that the infiltration basin at the southern end of the quarry continues to function as designed, and to ensure that it is managed so that the three goals of maximum capacity, clean out and vegetation management can be accomplished, ~~prior to public hearing~~ *the applicant shall submit a report and management plan for the* basin prepared by a qualified professional. The report shall include a water budget that is based on further subsurface investigation as well as any other information necessary to characterize the dynamics of the retention basin and to specify~~ing~~ the timing and method for periodic removal of sediment. The report shall be submitted for review and approval within six months of the issuance of the Negative Declaration.

3. To ensure that the drainage system continues to function as designed, following the closure of the quarry, the applicant shall provide for the project civil engineer to conduct an annual inspection of all drainage-related facilities and shall provide the Planning Department with a report regarding the results of this inspection. Any recommendations for remedial work shall be included in the annual report, along with a proposed schedule for accomplishing the work.

4. To ensure that the replacement of the culvert under Conference Drive does not adversely affect riparian resources and does not allow sediment to reach Bean Creek, the applicant shall obtain a Riparian Exception and Biotic Approval from the County

EXHIBIT E

of Santa Cruz prior to the start of work and shall follow all the conditions thereof. The work shall only take place between April 15 and October 15.

5. In order to facilitate control of mosquitoes should that be required in the future, the applicant shall manage the vegetation in and on the margins of the ponds 'to preserve access for mosquito abatement and to minimize mosquito breeding opportunities.

EXHIBIT E

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT

Date: October 6, 2003
Staff Planner: David Carlson

ENVIRONMENTAL REVIEW
INITIAL STUDY

APPLICANT: Hanson Aggregates Mid-Pacific Inc

APN: 067-011-07
067-021-21
067-021-22

SUPERVISORY DISTRICT: 5" District
OWNER: Hanson Aggregates Mid-Pacific Inc (Kaiser Sand & Gravel Company)
APPLICATION NO: 02-0046
LOCATION: Southwest of the intersection of Mt. Hermon Road and Conference Drive
EXISTING SITE CONDITIONS
Parcel Size: 270 acres
Existing Land Use: Mineral Quarry
Vegetation: Ponderosa pine forest, northern maritime chaparral and mixed hardwood forest surrounding active mining areas
Slope: Mined slopes and quarry floor
Nearby Watercourse: Bean Creek
Distance To: Approximately 350 feet north of north property line
Rock/Soil Type: Santa Margarita Formation / Zayante Coarse Sand soil type

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Groundwater Supply: Yes
Water Supply Watershed: Yes
Groundwater Recharge: Yes
Timber or Mineral: Both yes
Agricultural Resource: None mapped
Biologically Sensitive Habitat: Yes
Fire Hazard: Critical Fire Hazard Area
Floodplain: No
Erosion: Yes
Landslide: Yes

Liquefaction: No Potential
Fault Zone: None mapped
Scenic Corridor: Mt. Hermon Rd
Historic: None mapped
Archaeology: None mapped
Noise Constraint: None mapped
Electric Power Lines: No
Solar Access: N/A
Solar Orientation: N/A
Hazardous Materials: No

SERVICES

Fire Protection: Scotts Valley
School District: Scotts Valley Unified
Sewage Disposal: Septic System

Drainage District: None
Project Access: Conference Dr.
Water Supply: Private Wells

PLANNING POLICIES

Zone District: Special Use (Attachment 1)
General Plan: Quarry/Mountain Residential (Attachment 2)
Coastal Zone: No

Within USL: No
Special Designation: None

EXHIBIT E

PROJECT SUMMARY DESCRIPTION:

Note: This initial study is the second revision of an initial study originally dated March 10, 2003. The *first* revision was dated June 30, 2003. This second revised initial study, as well as the first revised initial study, was prepared in response to revised plans and additional information submitted by the applicant, which changed the detailed project description. In addition, ongoing observations of field conditions and additional information submitted by the applicant resulted in changes to the evaluation of potential environmental impacts. See the detailed project description below for further explanation.

The proposed project consists of the following:

- Five-year review of the existing mining operation;
- Mining Approval Amendment to include changes to the mining plan, reclamation plan, and financial assurance.

PROJECT SETTING AND BACKGROUND:

The existing quarry is located southwest of the intersection of Mt. Hermon Road and Conference Drive and encompasses three separate parcels with a total area of 270 acres (Attachment 3, Vicinity Map). The property consists of hilly terrain, which generally slopes from south to north towards Bean Creek, which flows approximately east to west and is located approximately 350 feet north of the property. The highest elevations on the property are located along the west and east boundaries. Mining over the years has created a "quarry pit" with high walls along the west, south and east boundaries and a broad quarry floor in the central portion of the property that opens to the north. The processing plant, office and load out facilities are located in the northern portion of the site near the entrance along Conference Drive (Attachment **4,** Site Map).

To the west of the quarry is the **Mt.** Herrnon Conference Center, which contains single-family dwellings as well as the conference center. Southwest of the quarry is the Santa Cruz County Probation Center. Along the southeasterly and easterly boundary the quarry is adjacent to residential development along Worth Lane and Twin Pines Drive. Kaiser Sand & Gravel owns all except one of the properties adjacent the quarry immediately southwest of the intersection of Conference Drive and Mt. Hermon Road, which include five homes and a small office building. The one exception is a private residence. Kaiser Sand & Gravel owns several parcels on the north side of Conference Drive opposite the quarry, which are vacant and total approximately 12 acres. Other parcels on the north side of Conference Drive are either vacant or contain residential development.

The Quarry obtained its original Use Permit for the production of sand on August 6, 1958, Use Permit 69-U. Mining operations began in January of 1959 and generally consist of excavating, washing, classifying and shipping of sands, which occur within the Santa Margarita Formation underlying the property. The top 3-5 feet of material is removed as overburden and is used to construct levees around settling ponds or is distributed over mined areas. Sand is excavated and transported short distances to belt conveyors that transport the raw material to the processing plant. Washing separates the sand by grain size for production of sand products of specific gradational specifications. The process water also separates out finer grained material, which makes up approximately one percent of the raw material: and the resulting fine silt and clay is settled out of the process water in the settling ponds. This fine silt and clay material is

EXHIBIT E

also distributed over mined areas. The process water is recycled through the settling ponds and eventually makes it into the clean water storage pond where it is re-used in the sand-washing process. The primary source of the process water is groundwater pumped from on-site wells.

In 1969, continued movement of a landslide located on Quarry property caused temporary closure of a portion of Conference Drive. This slide, which was re-activated in a 1959 earthquake, had a long history of damage to Conference Drive, eventually resulting in the construction of the Mt. Hermon road bypass in the early 1970's and **the** barricading of Conference Drive.

In 1973 a 6.6-acre parcel on the southeastern edge of the property was deeded to the City of Scotts Valley for use as a sewage disposal percolation pond (Attachment 4, Assessor's Parcel Map). The parcel was annexed into the City of Scotts Valley in 1974 and discharge of wastewater into this pond occurred until 1978. The property reverted back to Kaiser Sand & Gravel in 1987 and in 1997 the property was detached from the City of Scotts Valley and returned to County jurisdiction.

In June 1975 Kaiser Sand & Gravel applied for a Certificate of Compliance (COC, then referred to as a Planned Quarry Permit). As part **of** the COC review an Environmental Impact Report was prepared in 1976 by Environ (1976 EIR) and certified, allowing for an Interim COC 75-0590-PQ to be issued on January 11,1977. The Final COC 75-0590-PQ was approved on March 9, 1978 after Kaiser Sand & Gravel had completed several studies at the request of the Planning Commission. In April 1979, an amendment was added, which included minor changes to hours of operation and shipping.

The 1976 EIR and the 1978/79 COC approval applied to phased mining of the entire quarry site subject to specified conditions. The exhibits include maps showing final quarry contours and 1983 quarry contours, which were specifically approved. The 75-0590-PQ COC stipulated that the Planning Commission must review and approve each five-year continuation or phasing plan beyond the 1983 limits. In addition, prior to the approval of the 1978/79 COC staff recommended revision of the proposed phased mining plan, which showed a proposed area at the south corner of the site without external drainage, which would result in seasonal impoundments of storm water. The final quarry contour map approved with the COC resolves this concern and indicates that drainage patterns in the southern portion of the quarry will flow north along the east side of the quarry towards Mt Hermon Road (Attachment 5, Final Quarry Contours, 75-0590-PQ).

In November 1988 the Planning Commission (PC) completed the first 5-year review of the quarry operations. At this hearing the quarry was found to be in substantial compliance with the conditions of COC 75-0590-PQ and the PC approved the continuation of mining operations and approved the 5-year mining plan for 1988 through 1993 with additional conditions regarding sand spillage onto Conference Drive and other public roads, disclosure of well information, reimbursement of County costs for repair of Conference Drive and future follow-up on a study of the Santa Margarita groundwater aquifer.

In November of 1995 the PC completed a subsequent 5-year review of the quarry operations. After several public hearings and analysis of a number of issues the PC again approved the continuation of mining operations and approved the 5-year mining plan through the year 2000 subject to additional conditions regarding the mining plan, hydrogeology and the use of tertiary treated wastewater, measures to reduce off-site dust and noise impacts, geologic monitoring of quarry final slopes and maintenance of a telephone complaint line. The current application

EXHIBIT

reflects a condition from the **1995** review requiring the quarry to apply for a Mining Approval Amendment at the time of the next 5-year review. The reason that this condition was imposed was that a revised final contour plan was proposed by the quarry during the **1995** five-year review that again showed a closed depression in the south corner of the quarry that would impound water, which is a change to final quarry contours that were approved by COC 75-0590-PQ. The final quarry contour map approved during the **1995** five-year review was again revised to indicate that drainage patterns in the southern portion of the quarry will flow north along the east side of the quarry towards Mt Hermon Road, similar to the final quarry contour map that was approved in 1978/79.

Beginning in early 2001, Planning staff noticed discrepancies with operations at the quarry and the approved five-year mining plan. The first problem was the over-excavation of the southern quarry floor by a depth of up to 33 feet. There were immediate concerns of Planning staff that the over-excavation could potentially destabilize the quarry slopes. Hanson staff devised a plan for engineered backfill; Planning staff agreed with the plan, and the over-excavated area was filled in by late summer reestablishing the quarry floor in the southwest corner of the quarry at an elevation of approximately 500 feet (El. 500').

During this same period (spring and summer **2001)** the final quarry slope benches were being established at the southem end of the quarry. In late September **2001** it became apparent to Planning staff that the final quarry benches had not been established as approved in the five-year mining plan. In fact, the lowest benches had been completely removed by quarrying. As with the over-excavation of the quarry floor this created a situation where the stability of quarry slopes had been compromised. On November **26, 2001** Hanson submitted a geotechnical investigation and stability analysis of the southern quarry slopes, by Cleary Consultants, dated November **13, 2001.** This analysis revealed that the final slopes, which had been established, were indeed unstable. A buttress fill was proposed to increase the stability of the slope.

A "Stop Work notice was posted at Hanson's Felton Quarry on November **29, 2001.** This notice required an immediate halt to all quarrying activities that included the further extraction of sand, and that Hanson obtain an emergency grading permit to immediately buttress the unstable slopes. An Emergency Grading Permit (43003S) was applied for and issued on December 3, **2001,** for the construction of a buttress **fill** approximately 70-foot in height consisting of approximately 300,000 cubic yards of **fill** placed against the slope up to an elevation of approximately **570** feet (El. **570).** Grading to construct this fill was completed on January **25, 2002.**

The Emergency Grading Permit addressed the immediate concern of a large-scale slope failure of a 150-foot tall quarry slope, potential encroachment into a sensitive habitat, and possible involvement of neighboring properties at the south end of the quarry. It did not, however, address all the stability concerns required by the County Mining Ordinance. Therefore, an additional emergency grading permit (43412S) was applied for and subsequently issued on February 12, **2002** for expansion of the buttress fill to the top of the slope (maximum El. 680' & **722').** This phase II &III buttress fill grading, which was completed on May **15,** 2002, consisted of approximately 600,00 cubic yards bringing the total volume for the entire buttress fill slope to approximately **900,000** cubic yards.

A report on the violations and the remedy, including the emergency grading permit, was brought before the Planning Commission on January **9, 2002.** Following the hearing, on January 11, **2002** an amended stop work order was posted at the quarry, which further prohibited sale, export, import and processing of materials; and all activities under the COC of 75-0590-PQ,

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except the work necessary to implement the emergency grading permit. The County also installed a lock on the electrical breaker that powers the conveyor system that supplies materials to the processing plant.

On January 18, 2002 Hanson and the County Planning Director entered into an agreement outlining, among other things, certain milestones for Hanson to achieve in order to allow a partial resumption of operations at the quarry. An emergency slope monitoring system was installed and data regarding existing stockpiles was submitted, which allowed resumption of shipping of up to fifty percent of the stockpile materials.

Following establishment by Hanson of a reporting system for public access and neighbor notification and the submittal of the current application for a five-year mining plan, a mining plan amendment, revised financial assurance, and a reclamation plan amendment, the Planning Director, on February 22, 2002, allowed shipment of the remainder of the previously stockpiled materials.

Based on Hanson's efforts to correct the violations and comply with the previous agreement Hanson and the Planning Director entered into a new agreement on May 3, 2002 that allowed for the lifting of the stop work order and resumption of mining. Hanson agreed to: **1)** complete the remedial fill work in a timely manner (grading completed May 15, 2002); 2) submit requested information for the five-year review in a timely manner; 3) continue the monitoring and alarm procedures until the remedial fill work is completed; **4)** restrict mining to a 2:1 cut slope until the County's five-year review is completed; 5) restrict mining to a minimum permanent cut slope of 1.5:1 after the County's five year review.

Requested information has been submitted for the application for the five-year review, mining plan amendment, reclamation plan amendment, and a revised financial assurance and the application was deemed complete on October 17, 2002.

DETAILED PROJECT DESCRIPTION:

The proposed project is a Mining Approval Amendment that includes changes to the mining plan, reclamation plan, and financial assurance. This application for a formal Mining Approval Amendment has been submitted to fulfill a requirement of the 1995 permit review, and to incorporate remedial grading and revised final quarry grading contours into the mining plan. Corresponding changes to the revegetation plan are also included in the application. The Mining Approval Amendment consists of changes to the drainage plan including creation of a retention pond in the south corner of the quarry and conversion of the existing settling ponds into a series of detention ponds. In addition, the Amendment recognizes the buttress fill and quarry pit backfill, constructed under emergency conditions, which were not evaluated in the 1976 EIR nor approved by the COC 75-0590-PQ (Attachment 6, Proposed Final Grading and Drainage Plan). The project is located southwest of the intersection of Mt. Herrnon Road and Conference Drive, and encompasses three separate parcels with a total area of 270 acres.

An initial study dated March 10, 2003 was previously circulated for public and agency comment. One comment letter was received during the review period. See Attachment 8. During the quarterly inspection of the quarry on March 27, 2003, following completion of the first Initial Study, it became apparent that the proposed retention pond in the south corner of the quarry actually retains water for a longer period of time than predicted by the drainage calculations, which provided the basis for the analysis in the March 10, 2003 initial study. The quarterly

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inspection also raised concerns regarding the slope'conditions and the proposed culvert outlet on the north side of Conference Drive. Meanwhile, Hanson completed further exploration of sand resources in the southeast portion of the quarry. Based on the information obtained Hanson decided to revise the proposed final grading and drainage plan, which changed the configuration of the proposed retention basin. Therefore, a revised Initial Study dated June 30, 2003 was prepared for the revised proposal. The revised location for the retention basin was proposed to extend from the south corner up the east side of the quarry with the primary recharge area located in the southeast corner of the quarry. Hanson submitted revised plans and reports to reflect the changes. These include revised final grading and drainage plans, drainage analysis, soil investigation and percolation testing and addendum to the final revegetation plan.

A revised initial study dated June 30, 2003 was circulated for public and agency comment. Two comment letters were received during the review period. See Attachment ***8.*** During the comment period Hanson indicated a desire to again revise the proposed final quarry contour plan to reflect essentially the original proposal on which the March **10,** 2003 initial study was based. Therefore, the current proposal, reflected in revised plans and drainage calculations dated August 15, 2003, indicates a retention pond in the south comer of the quarry. However, based on the observation that the proposed retention pond in the south corner of the quarry actually retains water for a longer period of time than predicted by the original drainage calculations, the applicant was directed to have their civil engineer prepare revised drainage calculations based on an appropriate lower infiltration rate.

It should be noted that the Mining Approval Amendment and the Five-Year Review of the Hanson Quarry will be the subject *of* a public hearing at the Planning Commission. This initial study is limited to an evaluation of the potential environmental impacts associated with the aspects of the project that constitute the Mining Approval Amendment. **All** other aspects of the ongoing quarry operation will be evaluated during the Five-Year Review. In connection with the Five–Year Review of the Hanson Quarry Certificate of Compliance 75-0590-PQ the Planning Commission will take public testimony or otherwise investigate permit compliance. Further, the County's current Mining Code Section 16.54.074 states:

"New conditions shall not be imposed as part of a review process unless:

- there is a threat to public health and safety;
- there is a significant injurious threat to the environment;
- there is a nuisance;
- there is a violation of approval conditions;
- there is a change in the scope of operations; or,
- the ordinance in effect at the time of the Mining Approval, Certificate of Compliance or Reclamation Plan Approval being reviewed was originally approved, or the Approval itself, authorized imposition of new conditions by the Planning Commission."

All permit conditions and quarry operations will be evaluated with respect to these parameters during the Five-Year Review process, which follows the current Environmental Review of the proposed Mining Approval Amendment.

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	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact

ENVIRONMENTAL REVIEW CHECKLIST

A. Geology and Soils

Does the project have the potential to:

1. Expose people or structures to potential adverse effects, including the risk of material loss, injury, or death involving:

   A. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or as identified by other substantial evidence? — — — X

Active orpotentially active earthquake faults are not known to exist either on published maps or through field investigation on the quarry property. Faulting was observed on the quany slopes in the southwest corner of the quarry by the quarry's consulting engineering geologist during the 2001 annual report. The engineering geologist concluded that the faults impact on slope stability is considered negligible (Cleary Consultants, Inc. 8/20/01). The faulting observed in the quarry slopes is not active or potentially active.

   B. Seismic ground shaking? — — X —

All of Santa Cruz County is susceptible to severe seismic shaking in the event of a major earthquake along any one of a number of faults in the region.

The buttress fill slopes, as designed and constructed, meet the minimum overall, global factors of safety, under static and seismic conditions, of the Santa Cruz County Mining Regulations (Cleary Consultants / 1/29/01, 1/29/02, 2/26/02 & 5/24/02).

In the May 3,2002 agreement between the Hanson and the Planning Director Hanson agreed to restrict mining of the east quarry slopes to 2:1 cut slopes separated by 15-footwide benches every 25 vertical feet until the County's five-year review is completed; and to restrict mining to minimum permanent cut slopes of 1.5:1 separated by 15-foot wide benches every 25 vertical feet after the County's five year review. Currently, mining of the east quany slopes is proceeding per the agreement (2:1 cut slopes). Hanson's consultant completed a slope stability analysis for the proposed east quarry slopes (1.5:1 cut slopes). The results of the analysis indicate that, overall, 1.5:1 cut slopes separated by 12.5-foot wide benches every 25 vertical feet meet the minimum global factors of safety, under both static and seismic conditions, of the Santa Cruz County Mining Regulations (Cleary Consultants, 2/28/02).

See A4 below for a discussion of the buttress fill slopes and the east quany slopes (Revised Final Quarry Grading Contours) and the potential for soil erosion.

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	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
C. Seismic-related ground failure, including liquefaction?	__	__	__	_X_
D. Landslides?	__	__	__	_X_

Existing Landslide:

The landslide at the north side of the quarry was in evidence prior to the construction of paved roadways across the slide and operation of the Hanson quarry. The slide will continue to experience episodic and increased activity due to the ongoing undermining and erosion of the toe of the landslide from Bean Creek and heavy, extended periods of rain causing saturation of the upper slide materials. The Hanson quarry final grading and drainage plan, combined with the new drainage swale, referred to as the "north side swale: should not have adverse impacts on the existing landslide, or result in increased slide activity. The north side swale is designed to collect runoff and direct it away from the upper portion of the landslide area. In addition, the final grading and drainage plan indicates no significant cuts or fills are planned in the vicinity of the landslide. (Cleary Consultants, Inc. 4/5/02)

The proposed final drainage and grading plan will realign a culvert under the entrance driveway that currently directs runoff towards the active landslide beyond the barricaded section of Conference Drive. The realigned culvert will direct the runoff away from the landslide to the base of the slope on the north side of Conference Drive, which could potentially improve slope stability.

Overexcavation/Buttress Fill:

The over-excavation of fhe southern quarry floor by a depth of up to 33 feet, which did not comply with the approved five-year mining plan and could potentially destabilize the quarry slopes, was corrected by filling in the pit with engineered fill to reestablish the quarry floor in the southwest corner of the quarry at an elevation of approximately 500 feet (El. 500').

During this same period (spring and summer 2001) the final quarry slope benches were being established at the southem end of the quany and it became apparent to Planning staff that the final quarry benches had not been established as approved in the five-year mining plan. As with the over-excavation of the quarry floor this created a situation where the stability of quarry slopes had been compromised. On November 26, 2001 Hanson submitted a geotechnical investigation and stability analysis of the southern quarry slopes, by Cleary Consultants, dated November 13, 2001. This analysis revealed that the final slopes, which had been established, were indeed unstable. A buttress fill was proposed to increase the stability of the slope.

An Emergency Grading Permit (43003S) was applied for and issued on December 3, 2001, for the construction ***of*** *a buttress fill approximately 70-foot in height consisting of approximately 300,000 cubic yards of fill placed against the slope up to an elevation of approximately 570 feet (El. 570'). Grading to construct this fill was completed on January 25, 2002.*

Emergency Grading Permit 43003S addressed the immediate concern of a large-scale slope failure of a 150 foot tall quarry slope, encroachment info a sensitive habitat, and possible involvement of neighboring properties at the south end of the quarry. It did not, however,

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address all the stability concerns required by the County Mining Ordinance. Therefore, an additional Emergency Grading Permit (43412S) was applied for and subsequently issued on February 12, 2002 for expansion of the buttress fill to the fop of the slope (maximum El. 680' &722'). This phase II & III buttress fill grading, which was completed on May 15, 2002, consisted of approximately 600,00 cubic yards bringing the total volume for the entire buttress fill slope to approximately 900,000 cubic yards.

The buttress fill above El. 570' consists of 2:1 fill slopes separated by 17-foot wide benches at 25-foot vertical intervals. Below El. 570' the buttress consists of 3:1 fill slopes separated by a 15-foot wide bench.

*The buttress fill slopes, as designed and constructed, meet the minimum global factors of safety of the Santa Cruz County Mining Regulations (Cleary Consultants 11/29/01, 1/29/02, 2/26/02 & 5/24/02). An analysis has been completed of the effect of the proposed retention pond in the southern corner of the quarry on the adjacent buttress fill slopes. The results of the analysis indicate that the buttress fill slopes will remain stable and have acceptable factors of safety with water in the adjacent pond (Cleary Consultants, Inc. 4/5/02). To further ensure that that the buttress fill will remain stable a geo-web (cellular confinement system) shall be installed at the based of the buttress fill between the maximum and minimum expected pond water elevations. See **A4** below for a discussion of the proposed quarry slopes and the potential for soil erosion.*

Revised Final Quarrv Grading Contours:

The 1976 Environmental Impact Report included recommendations for final slopes based on recommendations by a civil engineer and consideration of revegetation goals. Subsequently, Shannon & Wilson, Inc completed an investigation of the stability of proposed permanent cut slopes at the quarry in 1977. The purpose of the investigation was to develop design criteria for excavation slopes, which will remain permanently in place at the property boundaries at the completion of mining. The report pertained to the proposed slopes near the southwest corner of the site and along the west property line and was inferred to apply to proposed slopes elsewhere on the property.

Based on these earlier studies the conditions of Final Certificate of Compliance 75-0590-PQ and Amendment issued in 1978/79 state that final slopes shall not exceed an overall average slope of 1.5:1. Individual cut slopes shall not exceed a gradient of 1:1 with benches 12.5 feet wide at 25-foot vertical intervals. The benches were required to enhance slope conditions by controlling drainage and erosion and provide for the establishment of vegetation.

During the 1995 Five-Year Review of the permit County staff reviewed the completed quarry slopes and the slope stability work completed for the 1976 EIR and by Shannon & Wilson in 1977. Staff reported that the completed quarry slopes had remained stable although several erosion rills needed repair. All information available at that time indicated that the quany's final southern slopes should be stable. However, to confirm this expectation a condition was added to the permit during the 1995 review requiring the quarry to have the final slopes inspected annually by a Certified Engineering Geologist (CEG) and documented in annual reports.

Since 1995 the required annual inspections by the quarry's engineering geologist have documented erosion rills and gullies on bare areas of older quarry slopes and similar erosion on newer quarry slopes. Although the annual reports conclude that the quarry slopes have not experienced landslide or deep-seated slope failure, erosion of the 1:1 slopes is a persistent

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	Significant or Potentially Significant impact	Less Than Significant Wilh Mitigation Incorporation	Less Than Significant Impact	No Impact

problem documented over the years with specific recommendationsprovided in the reports to control the problem. It should be noted that the annual reports further state that the sand deposits in the south end of the quarry appear to be finer grained and potentially more erosive than those at the north end.

Based on Hanson's efforts to correct the violations that occurred in 2001, Hanson and the Planning Director entered into an agreement on May 3, 2002 that allowed for the lifting of the stop work and resumption of mining of the east quarry slopes in the south end of the quarry. Hanson agreed to restrict mining to 2:1 cut slopes separated by 15-foot wide benches every 25 vertical feet until the County's five-year review is completed (Interim Period): and to restrict mining to minimum permanent cut slopes of 1.5:1 separated by 15-foot wide benches every 25 vertical feet after the County's five year review.

A slope stability analysis was completed (Cleary Consultants, 2/28/02) for the east quarry slopes where final mining is occurring per the agreement (2:1 cut slopes separated by 15-foot wide benches every 25 vertical feet). The results of the analysis indicate that, overall, 1.5:1 cut slopes separated by 12.5-footwide benches every 25 vertical feet meet the minimum global factors of safety of the Santa Cruz County Mining Regulations.

Hanson subsequently discovered that if was not possible to comply entirely with the requirement to maintain 2:1 cut slopes during the Interim Period due to mining activity that has occurred in 1999, prior to the Notice of Violation and Stop Work Order. Staff reviewed technical support data and concurred that an amendment was appropriate. On December 20, 2002 an Amendment to the May Agreement was executed between the Planning Director and Hanson allowing cut slopes steeper than 2:1, but no steeper than 1.5:1 in a very limited area of the southeastern quany slope that was defined in that December Amendment to Agreement as the "Transition Area".

More recently Hanson informed the Planning Director that, in addition to the Transition Area authorized in the December Amendment to Agreement, and again due to mining activity that occurred prior to the Notice of Violation and Stop Work Order, Hanson has discovered that it is not possible to comply with the requirement to maintain a 2:1 cut slope during the Interim Period in another limited area of fhe southeastern quarry slope. Staff reviewed the technical support data supplied by Hanson and concurred that an amendment was again appropriate. This limited area is referred to as the "Extended Transition Area". In September, 2003 a Second Amendment to Agreement was executed between the Planning Director and Hanson allowing cut slopes steeper than 2:1 during the Interim Period, so long as the slope steepness conforms to plans submitted by Hanson, and so long as the slope steepness will only be steeper than 2:1 slope in the areas identified as the Transition Area and the Extended Transition Area, until the Five-Year Review is complete.

See A4 below for a discussion of the buttress fill and east quany slopes and the potential for soil erosion.

2.	Subject people or improvements to damage from soil instability as a result of on- or off-site landslide, lateral spreading, subsidence, liquefaction, or structural collapse?	—	—	—	X

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	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact

See A I D above.

3. *Develop land with a slope exceeding 30%?* __ _X_ __ __

The buttress fill has been constructed with a slope steeper than 30% gradient. The buttress fill slopes are in accordance with the Santa Cruz County Mining regulations, which specify that final reclaimed fill slopes shall not exceed 2:1 slope gradient and the buttress fill was constructed in accordance with the recommendations of the project geotechnical engineer and the project plans and specifications. Overall, the buttress fill slopes, as constructed, meet the minimum global factors of safety of the Santa Cruz County Mining Regulations.

Similarly, the cut slopes of the future mining area will be steeper than 30% gradient. The proposed cut slopes along the east side of the quarry are in accordance with the Santa Cruz County Mining regulations, which specify that final cut slopes of a sand mining operation shall not exceed 1.5:1 slope gradient. All proposed slopes (buttress fill and east quarry slopes) meet the minimum global factors of safefy of the Santa Cruz County Mining Regulations.

*See the response to A I D above for amore detailed discussion of overall slope stabilify and **A4** below for a discussion of erosion control and revegetation on the man-made slopes of both the buttress fill and the east quarry slopes.*

*In order to increase the stability of final slopes, increase revegefation success and reduce the potential for erosion, mitigation measures will be incorporated into the project as follows: slope gradients shall not exceed the minimum gradients discussed above in **A.**1.D; all recommendations of the approved revegetation plan shall be followed; repair of erosion damage on the buttress fill; and installation of a cellular confinement system at the base of the buttress fill to prevent erosion between the minimum and maximum expected pond water elevations.*

4. Result *in* soil *erosion* or *the substantial* loss of *topsoil?* __ _X_ __ __

There is a potential for soil erosion associated with the buttress fill slopes, the east quarry slopes and the final drainage plan.

***A** Final Revegetation Plan (Native Vegetation Network, March 2002) has been developed for the amendment application. The plan represents a refinement of earlier (1995) revegetation plans based on field observations and monitoring data collected over the years. The goals of the Final Revegetation Plan, as stated in the plan are to: recreate native plant species typical of the area on the slopes and benches; stabilize slopes and benches to reduce erosion; recreate native scrub species on the quarry floor; screening; and long term management of the revegetated areas. The plan includes programs to achieve these goals including: stockpiling and application of topsoil on benches; yearly seeding and planning programs; yearly maintenance of revegetation areas; periodic monitoring of revegetation efforts; periodic removal and control of invasive, non-native species.*

Fill Slope:

The 2:1 *and* 3:1 *buttress* fill slope *surfaces are susceptible* to *wind and water erosion prior* to *the establishment* of *vegetation* on *the slopes. The graded buttress* fill *slopes were treated for*

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erosion control prior to the winter rains of 2002/03 but strong early winter storms overwhelmed the erosion control measures and caused significant erosion of the surface of the fill slopes. The quarry operator was diligent in actively monitoring the slopes and maintaining the drainage system throughout the winter to reduce further erosion as much as possible. It will be critical in the spring, summer, and fall of **2003** for the quarry operator to implement the recommendations of the Final Revegetation Plan (Native Vegetation Network, March 2002) to establish a vegetative cover on the fill slope that will resist the erosive forces of next winter rains. Successful implementation of the revised revegetation plan will reduce the erosion hazard to **a** less than significant level. Currently, the quarry appears to be on track to complete this work in a timely manner.

Revised Final Quarry Grading Contours:

See **AID** above for background discussion on overall, global stability of existing quarry slopes and documentation of erosion problems over the years. During the **1995** Five Year Review County staff reported that the completed quarry slopes had remained stable although several erosion rills needed repair. Since **1995** Hanson's engineering geology consultant has documented erosion rills and gullies on bare areas of older quarry slopes and similar erosion on newer quarry slopes. Erosion of the 1:1 slopes is a persistent problem documented over the years with specific recommendations provided in the reports to control the problem. It should be noted that the annual reports further state that the sand deposits in the south end of the quarry appear to be finer grained and potentially more erosive than those at the north end.

While application of topsoil, hand broadcast seeding, hydroseeding and container stock planting has been the method of achieving revegetation success on the quarry benches, hydroseeding and container stock'planting has been the method of revegetation on the slopes because the slopes are *too* steep and inaccessible without special equipment to implement other revegetation methods. The container planting on the slopes has been limited to those species that are most hardy, such as pines, because of the harsh conditions on the 1:1 slopes. Repeated hydroseeding has been recommended and applied to 1:1 cut slopes on the west side of the quarry having poor vegetative cover, erosion rills and gullies.

Based on observation of the slopes and review of revegetation plans and annual engineering geologic and revegetation monitoring reports, revegetation and erosion control on the 1:1 cut slopes is problematic. Soil erosion is a continuing problem on both older and newer 1:1 quarry slopes. Topsoil application, which has been the primary means of successful revegetation on benches, is not possible on 1:1 slopes and repeated hydroseeding, gully repair and jute netting have been applied to 1:1 slopes in an effort to repair and prevent erosion.

On the other hand, recent efforts were undertaken to revegetate a slope southwest of pond F that had experienced severe erosion. The slope was regraded *to* achieve gradients ranging from 2:1 to 3:1 and revegetation efforts included application of topsoil and straw wattles. These efforts have been very successful at establishing vegetation on the slope and preventing erosion.

Hanson agreed to restrict mining to 2:1 cut slopes separated by 15-foot wide benches every **25** vertical feet until the County's five-year review is completed; and to restrict mining to minimum permanent cut slopes of 1.5:1 separated by 15-foot wide benches every 25 vertical feet after the County's five year review. Hanson subsequently discovered that it was not possible to comply entirely with the requirement to maintain 2:1 cut slopes during the Interim Period due to mining

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activity that has occurred in **1999,** prior to the Notice of Violation and Stop Work Order. Staff reviewed technical support data and concurred that an amendment to the agreement was appropriate. Subsequently, *two* amendments to agreement were executed between the Planning Director and Hanson allowing cut slopes steeper than **2:1,** but no steeper than **1.5:1** in a very limited area of the southeastem quarry slope defined as "Transition Area" and the "Extended Transition Area". (See **1.D.** above) Hanson has submitted revised plans indicating their intention to maintain **2:1** cut slopes on the remainder of the east quarry slope outside the "Extended Transition Area". The Department of Conservation's Office of Mine Reclamation has reviewed the five-year work plan and inspected the site and supports a requirement for **2:1** slope gradients at the site to ensure success of future reclamation efforts at the site. (Attachment 8, OMR letter dated **5/2/02)**

Hanson's revegetation specialist has provided an opinion that revegetation of cut slopes as steep as **1.5:1** gradient could be successfully revegetated, and meet the criteria that have been established in the Final Revegetation Plan (Attachment **7,** Native Vegetation Network letters dated **8/9/02** and **9/4/03).**

Final Drainage Plan:

See Attachment 6 for a site map with area designations. Except for the proposed retention pond, the potential for soil erosion around the perimeter of the ponds from wave action is expected to be negligible due to the small size of the ponds. Areas around the proposed ponds will be planted with appropriate riparian plant species according to the recommendation of the revised revegetation plan, which will help reduce the potential for erosion. Regarding the retention pond, the quarry's engineering geologist has recommended that the lower slope of the buttress fill located within a zone of potential fluctuating water levels in the retention basin be reinforced with a cellular confinement system to reduce the potential for erosion.

The revised drainage plan includes energy dissipation structures at pipe outlets, diversion berms and arrnoring of concentrated flow areas to reduce the erosive forces of the drainage patterns created by the plan.

It is noted that there are *two* culverts that are off the Hanson property that convey drainage from off site sources and from Mt. Hermon Road into drainages that are tributary to Bean Creek. These *two* culverts may receive some incremental additional drainage after the quarry is closed. Both culverts are currently in disrepair.

The north culvert, which conveys drainage under Conference Drive, is owned by the County of Santa Cruz. The applicant proposes to replace this culvert. An encroachment permit and, if necessary, grading permit and riparian exception will be required to be obtained as a condition of approval of the project.

The east culvert, which runs under Mt. Hermon Road near the east border of the quarry, is owned by the City of Scotts Valley. The pipe has broken through and a sizeable erosion gully has developed in the sandy material of the hillside below the break. The incremental contribution of the Quarry to this culvert after closure will be de minimus because the vast majority of runoff will be percolated at the proposed recharge pond. There is, therefore, no proposal to repair this culvert at this time. The City of Scotts Valley Department of Public Works will be contacted to inform them of the existing condition.

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	Significanl or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
5. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code(1994), creating substantial **risks** to property?	—	—	—	X
6. Place sewage disposal systems in areas dependent upon soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative waste water disposal systems?	—	—	—	X
7. Result in Coastal cliff erosion?	—	—	—	X

B. Hydrology, Water Supply and Water Quality

Does the project have the potential to:

1. Place development within a 100-year flood hazard area?	—	—	—	X
2. Place development within the floodway resulting in impedance or redirection of flood flows?	—	—	—	X
3. Be inundated by a seiche or tsunami?	—	—	—	X
4. Deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit, or a significant contribution to an existing net deficit in available supply, or a significant lowering of the local groundwater table?	—	—	—	X

The 1976 EIR and the 1978/79 COC (75-0590-PQ) approval applied to phased mining of the entire quarry site subject to specified conditions. The exhibits include maps showing final quarry contours and 1983 quarry contours, which were specifically approved. The 1978/79 COC stipulated that the Planning Commission must review and approve each five-year continuation ***or*** *phasing plan beyond the 1983 limits. In addition, prior to the approval of the 1978/79 COC staff recommended revision of the proposed phased mining plan, which showed a proposed area at the south comer of the site without external drainage, which would result in seasonal impoundments of storm water. The final quarry contour map approved with the COC resolves this concern and indicates that drainage patterns in the southem portion of fhe quarry will flow north along the east side of the quarry towards Mt Hermon Road (Attachment 5, Final Quarry Contours, 75-0590-PQ).*

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The current application reflects a condition from the 1995 review requiring the quarry to apply for a Mining Approval Amendment at the time of the next 5-year review. The reason that this condition was imposed was that a revised final contour plan was proposed by the quarry during the 1995 five-year review that again showed a closed depression in the south comer of the quarry that would impound water (retentionpond), which is a change to final quarry contours that were approved by COC 75-0590-PQ. The final quarry contour map approved during the 1995 five-year review was again revised to indicate that drainage patterns in the southern portion of the quarry will flow north along the east side of the quarry towards Mt Hermon Road, similar to the final quarry contour map that was approved in 1978/79.

The current application for Mining Approval Amendment includes changes to the drainage plan including creation of a retention pond in the south corner of the quarry and conversion of the existing settling ponds into a series of detention ponds. It is important to note that the retention basin is not intended to be an artificial groundwater recharge facility. It is intended to maintain some level of groundwater recharge on the site above the level that would have occurred under the previously approved final quarry contour plan, which would have allowed all runoff to leave the site. For the purpose of this environmental review the previously approved plan, which included no recharge, is the baseline condition to which the current plan must be compared.

Therefore, the proposed Mining Approval Amendment does not include any changes to the existing Mining Approval COC 75-0590-PQ that would deplete groundwater supplies or interfere with groundwater recharge. Indeed the proposed detention ponds and retention pond will provide an increased potential for groundwater recharge on the site compared to the previously approved final quarry contour plan, which indicated drainage patterns that would not detain or retain any runoff on the property. Furthermore, the cessation of groundwater pumping for sand washing and processing will incrementally reduce current the impact on the groundwater resource

The over-excavation of the southern quarry floor by a depth of up to 33 feet, which did not comply with the approved five-year mining plan and which could have potentially destabilized the quarry slopes, was corrected by filling in the pit with engineered fill to reestablish the quarry floor in the southwest comer of the quarry at an elevation of approximately 500 feet (El. 500). As with the quarry floor, the quarry slopes at the southern end of the quarry were excavated too steep resulting in an unstable slope. A buttress fill was constructed to increase the stability of the slope. The completion of the buttress fill brought quarry floor in the southern corner of the quarry up to an approximate elevation of 525 feet (El. 525).

A soils investigation for the quarry pit backfill was completed to provide recommendations for backfilling the pit (Cleary Consultants, Inc. 7/6/01). The investigation also analyzed the proposed backfill material and compaction criteria for comparison of permeability of in-place material and proposed fill material, and total dissolved solids. The report concluded that the compacted quarry pit backfill material would have similar permeability characteristics to the undisturbed in-place soils. Weber, Hayes & Associates completed a hydrogeologic evaluation of the proposed final grading and drainage plan (Weber, Hayes &Associates 6/10/02), which included infiltrometer testing beneath the retention basin. Bowman & Williams has completed drainage calculation based on infiltration rates determined by the aforementioned reports, which provide a prediction of the residence time of storm water in the retention basin.

EXHIBIT E

*However, based on the observation that the proposed retention pond in the south comer of the quarry actually retains water for a longer period of time than predicted by the original drainage calculations, the applicant was directed to have their civil engineer prepare revised drainage calculations based on an appropriate lower infiltration rate. Bowman & Williams drainage calculation dafed August 15, **2003,** utilizing a significantly lower infiltration rate, predicts that an average year of rainfall accumulated in the pond would have a residency time of approximately 3 **1/2** months. It should be noted that during the winter of 2002/03 strong early winter storms overwhelmed the erosion control measures and caused significant erosion of the surface of the fill slopes and resulted in significant siltation of the refention pond. This siltation very likely caused a significant decrease in the infiltration capacity of the retention basin, which can be partially corrected by controlling erosion control and revegetation of the buttress fill and annual removal of accumulated silt in the retention basin. Additional infiltration testing within the retention basin will also be required to facilitate long-term management of the basin.*

To further elaborate on the conditions of the retention basin, it is noted that the infiltration capacity is not well understood. Observations of the basin during winter 2002/03 and throughout the summer of 2003 indicated that the basin retains water for a longer period of time than predicted by the drainage calculations, even after the drainage calculations were revised utilizing a substantially lower assumed infiltration rate. In fact, this year the basin had to be pumped in order to dry it out and clean it prior to October 15, which is a benchmark that the County has established for the retained runoff to completely infiltrate the ground. It appears that natural infiltration through the bottom and sides of the pond is insufficient to dispose of all of the collected runoff. During the past year, one obvious reason for this is the siltation of the basin caused by erosion of the buttress fill and other areas of the quarry. The applicant has suggested that simply controlling erosion and eventual revegetation of the drainage area, in particularly the buttress fill, will resolve the problem of siltation and clogging of the basin. However, other factors may be contributing to clogging of the infiltration surface. These factors are discussed in a memo from hydrologist Nick Johnson to the San Lorenzo Valley Water District, which was submitted during the comment period and is attached to this initial study. According to Mr. Johnson clogging is a common problem in infiltration basins, especially in relatively deep basins such as this one.

Assuming the infiltration capacity of the basin is lower than expected and/or clogging is a consistent problem, the basin will have to be pumped, possibly each year, in order to accomplish the goals of maintaining maximum capacity, clean out of clogging material, and vegetation management. The need to periodically pump the basin is not considered a significant environmental impact. Pumped water may be, 1) routed to the detention ponds, 2) used by water trucks for dust control, 3) used for irrigation if necessary or, 4) made available to other potential uses or users. Again, the basin is not intended to be an artificial groundwater recharge facility and as long as any amount of runoff is recharged it is considered to be an improvement over the baseline condition, that of no recharge at all, which is what would have occurred under the previously approved final quarry contour plan.

Not withstanding the above discussion, better understanding of the actual infiltration capacity is necessary in order to effectively manage the retention basin to maintain maximum capacity, clean out and vegetation management. Timing and rate of any pumping will depend on the amount of water in the basin at a particular time of year. Sufficient time for drying is necessary to facilitate clean out and vegetation management tasks. A water budget model will help make the necessary predictions and schedule the necessary tasks. Therefore, Planning staff is recommending that the applicant submit a report by a qualified professional that provides the

EXHIBIT I

	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	NO Impact

necessary information and a management plan based on further subsurface investigation and adequate characterization of the dynamics of the retention basin.

In general summary, the detention and retention of surface water at the quarry will facilitate infiltration and recharge to the Santa Margarita Formation aquifer and has a significant potential to recharge the Lompoc Formation aquifer. Both of these aquifers have been under increased pumping stress for several years and have had a substantial decline of groundwater levels. This is considered to be a beneficial environmental impact.

5. Degrade a public or private water supply? (Including the contribution of urban contaminants, nutrient enrichments, or other agricultural chemicals or seawater intrusion).	—	X	—	X

*The over-excavation of the southern quarry floor by a depth of up to 33 feet, which did not comply with the approved five-year mining plan and which could have potentially destabilized the quarry slopes, was corrected by filling in the pit with engineered fill to reestablish the quarry floor in the southwest comer of the quarry at an elevation of approximately 500 feef (El. 500'). **As** with the quarry floor, the quarry slopes at the southern end of the quarry were excavated too steep resulting in an unstable slope. A buttress fill was constructed to increase the stability of the slope. The completion of the buttress fill brought quarry floor in the southern corner of the quarry up to an approximate elevation of 525 feet (El. 525').*

A soils investigation for the quarry pit backfill was complefed to provide recommendations for backfilling the pit (Cleary Consultants, Inc. 7/6/01). The investigation also analyzed the proposed backfill material and compaction criteria for comparison of permeability of in-place material and proposed fill material, and total dissolved solids. A groundwater sample obtained from an on-site well (well 4A) was tested in 1996 for total dissolved solids and found to have a concentration of 117 mg/l. Groundwater having a total dissolved solids concentration of 1,000 mg/l or less is classified as fresh water. The study concluded that the potential for an increase in total dissolved solids concentration in the site vicinity due to the proposed quarry pit backfill is considered very low because the source material for pit backfill originates from the same parent geological formation and is therefore expected to produce similar total dissolved solids concentration in the groundwater as the in-place soils.

The Mining Plan Amendment including the proposed reclamation plan consisting of the final grading and drainage plan and revegetation plan does not have the potential to degrade a public or private water supply through the introduction of contaminants in that all surface water runoff on the site that enters into the drainage system of detention and retention ponds will be collected from revegetated areas only.

6. Degrade septic system functioning?	—	—	—	X
7. Alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner which could				

EXHIBIT E

	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	NO Impact
result in flooding, erosion, or siltation on or off-site?	__	_X_	__	__

At the time of preparation of the 1976 EIR the proposed final configuration of the site would have resulted in a large basin at the southern end of the property. There was a concern that water would not drain out of the basin and a significant adverse impact would result from the hazard created during ensuing winters. To mitigate for this impact the proposed final grades were modified to avoid impounding water in a contained depression, but the EIR stated that possible future use could make a pond desirable at that location. The final grading and drainage plan approved by COC 75-0590-PQ indicates that runoff from throughout the quarry will sheet flow off the site to the north and northeast.

The Mining Plan Amendment including the proposed final grading and drainage plan would alter the existing drainage pattern and the final drainage pattern approved by COC 75-0590-PQ. Currently all surface runoff is retained on site in the settlement ponds and is used in the sand washing process except for a small amount of runoff that accumulates on and flows down the entrance road to the quarry. The proposed final grading and drainage plan indicates creation of a retention pond in the south corner of the quarry and conversion of the existing settling ponds into a series of detention ponds and discharge of water off site through existing or new culverts.

Bowman & Williams Consulting Civil Engineers has completed a revised drainage analysis of the proposed final grading and drainage plan, which supports the sizing of new culverts proposed in the plan, reviews the capacity of existing on-site culverts and downstream County-maintained culverts that are to remain in place (Bowman & Williams August 15, 2003). The analysis concludes that existing facilities and construction of the proposed drainage improvements will enable the drainage system to convey design storm events. The facilities that cross County roads have capacity to convey the required design flows. To ensure that the drainage system continues to function as designed, following the closure of fhe quarry, the project civil engineer shall conduct an annual inspection of all drainage-related facilities and shall provide the Planning Department with a report regarding the results of this inspection. Any recommendations for remedial work shall be included in the annual report, along with a proposed schedule for accomplishing the work.

Bowman & Williams drainage analysis dated 8/15/03 estimates that the average year of rainfall accumulated in the pond would have approximately 3 ½ months of storage. The retention basin has over 7 times the capacity to contain the combined volume from the 25 year – 24 hour and the 100 year-24 hour storms.

The original 1976 EIR for the quarry has been evaluated and none of the threshold contained in CEQA guidelines section 15162 would be met by the proposed Amendment. Therefore, a mitigated negative declaration **is** *an appropriate environmental document.*

The Santa Cruz County Mosquito and Vector Control District Concern has expressed concern that the drainage plan as proposed, incorporating detention and retention ponds, may produce conditions suitable for mosquito breeding. If is anticipated that the property owner and the District staff will work together to address any pond design and maintenance issues to reduce mosquitoes in a manner that does not adversely affect the objective of groundwater recharge or groundwater quality.

EXHIBIT E

	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No impact
8. Create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems, or create additional source(s) of polluted runoff?	__	__	_X_	__

See final paragraph of B7 above.

9. Contribute to flood levels or erosion in natural water courses by discharges of newly collected runoff?	__	__	__	_X_

See B7 and B8.

10. Otherwise substantially degrade water supply or quality?	__	__	__	_X_

*See B4 and **B5.***

C. Biological Resources

Does the project have the potential to:

1. Have an adverse effect on anv s ecies identified as a candidate, sensitive, or special status species, in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, or U.S. Fish and Wildlife Service?	__

The quarry property supports the following species, which are Federally–listed as endangered: Mt. Hermon June beetle and Zayante band-winged grasshopper. The quarry property supports State and Federally listed endangered plant species: the Santa Cruz wallflower (Erysimum teretifolium) (State and Federal) and Ben Lomond spineflower (Chorizanthe pungens var. hartwegiana) (Federal). Following the designation in 1997 of the beetle and grasshopper as endangered species the quarry still had approximately 14 acres of area approved for mining in the southeastem portion of the quarry that had not yet been mined that provided habitat for the insects. In accordance with the Endangered Species Act the quarry applied for an incidental take permit and proposed to implement a Habitat Conservation Plan, which provides measures for minimizing and mitigating adverse effects on the beetle and grasshopper. Since impacts to the plant species are not anticipated from continued mining activities these species were not considered in the HCP. The incidental take permit was issued in 1999 authorizing incidental take of the beetle and grasshopper species in the 14-acre mining area and monitoring and management of two separate conservation lands, one 16.2-acre set-aside area on the quarry property and a five-acre off-site parcel purchased by the quarry.

The proposed Mining Plan Amendment will not have an adverse effect on any of the above-described species. The proposed changes to the final grading and drainage plan and the

EXHIBIT E

remedial till do not effect the conservation easements and the proposed revised revegetation plan represents a refinement of earlier approved revegetation plans to incorporate a planting ***mix*** *more conducive to the insect species to increase the revegetated area's value as habitat for the insect species (Native Vegetation Network, 2/20/02 & 6/10/03).*

	Significant or Potentially Significant Impact	Less Than significant With Mitigation Incorporation	Less Than Significant Impact	NO Impact
2. Have an adverse effect on a sensitive biotic community (riparian corridor), wetland, native grassland, special forests, intertidal zone, etc.)?	__			

See C1.

	Significant or Potentially Significant Impact	Less Than significant With Mitigation Incorporation	Less Than Significant Impact	NO Impact
3. Interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native or migratory wildlife nursery sites?	__	__	__	_X_
4. Produce nighttime lighting that will illuminate animal habitats?	__	__	__	_X_
5. Make a significant contribution to the reduction of the number of species of plants or animals?	__			
6. Conflict with any local policies or ordinances protecting biological resources (such as the Significant Tree Protection Ordinance, Sensitive Habitat Ordinance, provisions of the Design Review ordinance protecting trees with trunk sizes of 6 inch diameters or greater)?	__	__	__	_X_
7. Conflict with the provisions of an adopted Habitat Conservation Plan, Biotic Conservation Easement, or other approved local, regional, or state habitat conservation plan?	__			

See C1.

D. Energy and Natural Resources

Does the project have the potential to:

	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1. Affect or be affected by land designated as "Timber Resources" by the General Plan?	—	—	—	_X_
2. Affect or be affected by lands currently utilized for agriculture, or designated in the General Plan for agricultural use?	—	—	—	_X_
3. Encourage activities that result in the use of large amounts of fuel, water, or energy, or use of these in a wasteful manner?	—	—	—	_X_

Although the quarry uses large amounts of water in the sand washing process, the proposed Mining Plan Amendment does not require use of water beyond the current levels. In fact, it should be noted that the hydrogeologic evaluation of the proposed final grading and drainage plan (Weber, Hayes & Associates 6/10/02) concluded that the surface water retained at the quarry will infiltrate and recharge the Santa Margarifa Formation aquifer and has a significant potential to recharge the Lompico Formation aquifer, which is considered a net benefit to public and private water supplies. Furthermore, the quarry has nearly completed mining in areas approved for mining, which will, within the next few years, eliminate pumping of groundwater from quarry wells for the sand washing process.

4. Have a substantial effect on the potential use, extraction, or depletion of a natural resource (i.e., minerals or energy resources)?	—	—	—	_X_

E. Visual Resources and Aesthetics

Does the project have the potential to:

1. Have an adverse effect on a scenic resource, including visual obstruction of that resource?	—	—	—	_X_

The proposed Mining Plan Amendment will not have an adverse effect on any officially designated scenic resources.

2. Substantially damage scenic resources, within a designated scenic corridor or public view shed area including, but not limited to, trees, rock outcroppings, and historic buildings?	—	—	—	_X_

The proposed Mining Plan Amendment will not substantially damage scenic resources within the

EXHIBIT E

	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact

Mt. Hermon Road scenic corridor.

3.	Degrade the existing visual character or quality of the site and its surroundings, including substantial change in topography or ground surface relief features, and/or development on a ridge line?	—	—	—	_X_

The proposed Mining Plan Amendment will not degrade the existing visual character of the site and its surroundings. To the extent that the buttress fill slope and the required 2:1 cut slopes with 15-foot wide benches at 25-foot vertical intervals will be more easily revegetated than the previously approved, steeper slopes, revegetation efforts may be more successful, sooner, and thus improve the visual character and quality of the site over the previously approved plan and in a shorter period of time.

4.	Create a new source of light or glare which would adversely affect day or nighttime views in the area?	—	—	—	_X_
5.	Destroy, cover, or modify any unique geologic or physical feature?	—	—	—	_X_

F. Cultural Resources

Does the project have the potential to:

1.	Cause an adverse change in the significance of a historical resource as defined in CEQA Guidelines 15064.5?	—	—	—	_X_
2.	Cause an adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines 15064.5?	—	—	—	_X_
3.	Disturb any human remains, including those interred outside of formal cemeteries?	—	—	—	_X_
4.	Directly or indirectly destroy a unique paleontological resource or site?	—	—	—	_X_

G. Hazards and Hazardous Materials

Does the project have the potential to:

EXHIBIT E

	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	NO Impact
1. Create a significant hazard to the public or the environment as a result of the routine transport, storage, use, or disposal of hazardous materials, not including gasoline or other motor fuels?	__	__	__	_X_
2. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	__	__	__	_X_
3. Create a safety hazard for people residing or working in the project area as a result of dangers from aircraft using a public or private airport located within *two* miles of the project site?	__	__	__	_X_
4. Expose people to electro-magnetic fields associated with electrical transmission lines?	__	__	__	_X_
5. Create a potential fire hazard?	__	__	__	_X_
6. Release bioengineered organisms or chemicals into the air outside of project buildings?	__	__	__	_X_

H. Transportation/Traffic
Does the project have the potential to:

1. Cause an increase in traffic that is substantial in relation to the existing and capacity of the street system (i.e., substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at inter	__	__	__	_X_
2. Cause an increase in peak demand which cannot be accommodated by existing parking facilities?	__	__	__	_X_

EXHIBIT E

	Significant or Potentially Significant Impact	Less Than Signifram Wilh Mitigation Incorporation	Less Than Significant Impact	NO Impact
3. Increase hazards to motorists, bicyclists, or pedestrians?	__	__	__	_X_
4. Exceed, either individually (the project alone) or cumulatively (the project combined with other development), a level of service standard established by the county congestion management agency for designated intersections, roads or highways?	__	__	__	_X_

I. Noise

Does the project have the potential to:

1. Generate a permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	__	__	__	_X_
2. Expose people to noise levels in excess of standards established in the General Plan, or applicable standards of other agencies?	__	__	__	_X_
3. Generate a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	__	__	__	_X_

J. Air Quality

Does the project have the potential to:
(Where available, the significance criteria established by the MBUAPCD may be relied upon to make the following determinations).

1. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	__	__	__	_X_
2. Conflict with or obstruct implementation of an adopted air quality plan?	__	__	__	_X_
3. Expose sensitive receptors to substantial pollutant concentrations?	__	__	__	_X_

EXHIBIT E

	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than significant Impact	NO Impact

The revisions to the closure plan that are part of this application, relocation of a drainage pond and changes to slope gradient, will not cause a change in impacts related to air quality.

4.	Create objectionable odors affecting a substantial number of people?	__	__	__	_X_

K. Public Services **and** Utilities

Does the project have the potential to:

1.	Result in the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
	1. Fire protection?	__	__	__	_X_
	2. Police protection?	__	__	__	_X_
	3. Schools?	__	__	__	_X_
	4. Parks or other recreational facilities?	__	__	__	_X_
	5. Other public facilities; including the maintenance of roads?	__			
2.	Result in the need for construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	__	__	__	_X_

Bowman & Williams Consulting Civil Engineers has completed a drainage analysis of the proposed final grading and drainage plan, which supports the sizing of new culverts proposed in the plan, reviews the capacity of existing on-site culverts and downstream County-maintained culverts that are to remain in place (Bowman & Williams 8/15/03). The analysis concludes that existing facilities and construction of the proposed drainage improvements will enable the drainage system to convey design storm events. The facilities that cross County roads have capacity to convey the required design flows.

3.	Result in the need for construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which				

		Significant or Potentially Significant impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
	could cause significar . environmental effects?	—	—	—	_X_
4.	Cause a violation of wastewater treatment standards of the Regional Water Quality Control Board?	—	—	—	_X_
5.	Create a situation in which water supplies are inadeauate to serve the project or provide fire protection?	—	—	—	_X_
6.	Result in inadequate access for fire protection?	—	—	—	_X_
7.	Make a significant contribution to a cumulative reduction of landfill capacity or ability to properly dispose of refuse?	—	—	—	_X_
8.	Result in a breach of federal, state, and local statutes and regulations related to solid waste management?	—	—	—	_X_

L. Land Use. Population, and Housing

Does the project have the potential to:

1.	Conflict with any policy of the County adopted for the purpose of avoiding or mitigating an environmental effect?	—	—	—	_X_
2.	Conflict with any County Code regulation adopted for the purpose of avoiding or mitigating an environmental effect?	—	—	—	_X_
3.	Physically divide an established community?	—	—	—	_X_
4.	Have a potentially significant growth inducing effect, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	—	—	—	_X_
5.	Displace substantial numbers of				

EXHIBIT E

	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
people, or amount of existing housing, necessitating the construction of replacement housing elsewhere?	__	__	__	_X_

EXHIBIT E

M. Non-Local **Approvals**

Does the project require approval of federal, state, or regional agencies? Yes _X_ No__

Which agencies? *California Regional Water Quality Control* ***Board***

The proposed revised final grading and drainage plan, which includes discharge of water off-site, will require approval from the RWQCB.

N. Mandatory Findings **of Significance**

1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal Community, reduce the number or restrict the range of a rare or endangered plant, animal, or natural community, or eliminate important examples of the major periods of California history or prehistory? Yes __ No _X_

2. Does the project have the potential to achieve short term, to the disadvantage of long term environmental goals? **(A** short term impact on the environment is one which occurs in a relatively brief, definitive period of time while long term impacts endure well into the future. Yes— No_X_

3. Does the project have impacts that are individually limited, but cumulatively considerable ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, and the effects of reasonably foreseeable future projects which have entered the Environmental Review stage)? Yes— No _X_

4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? Yes— No _X_

EXHIBIT **E**

TECHNICAL REVIEW CHECKLIST

	REQUIRED	COMPLETED	N/A
APAC REVIEW	_____	_____	_X_
ARCHAEOLOGIC REVIEW	_____	_____	_X_
BIOTIC ASSESSMENT	_____	see below	___
GEOLOGIC HAZARD ASSESSMENT	_____	see below	___
GEOLOGIC REPORT	_____	see below	___
RIPARIAN PRE-SITE	_____	_____	_X_
SEPTIC LOT CHECK	_____	_____	_X_
SOILS REPORT	_____	see below	___

Other technical reports or information sources used in preparation of this initial study, which are on file in the Planning Department:

- Use Permit 69-U
- Certificate of Compliance 75-0590-PQ & Amendment
- Environmental Impact Report; Environ, 1976
- Slope Stability Investigation; Shannon & Wilson, Inc., 1977
- Planning Commission Five-Year Review file; 1988
- Planning Commission Five-Year Review file: 1995
- Hydrogeologic Report; Secor International, Inc., 1997
- Planning Commission Staff Report; January 9, 2002 and follow-up reports to the PC
- 2001/2002 Stop Work Orders and Emergency Grading Permit files
- 2002 Agreements between Hanson and the Planning Director
- Annual Engineering Geologic Monitoring Reports; Cleary Consultants
- Engineering Geologic and Geotechnical Reports, Pit backfill, Buttress Fill, East Quarry Slope, Final Grading and Grading Plan; Cleary Consultants, 2001/2002
- Hydrogeologic Reports; Weber Hayes and Associates, 2000/2002
- Drainage Analysis and Final Grading and Drainage Plan at the Completion of Mining; Bowmen & Williams Consulting Civil Engineers, 2002
- Habitat Conservation Plan and related documents; The Habitat Restoration Group, 1998
- Final Revegetation Plan; Native Vegetation Network, 2002
- Erosion Control Reports; Ifland Engineers, Native Vegetation Network, Metamorphosis Erosion Control, Inc., 2001
- Olympia Quarry, 1995 Amended Revegetation Plan; Greening Associates
- Olympia Quarry Slope Failure Investigation; Kane Geotech, Inc., 2001
- Drainage Analysis and Final Grading and Drainage Plan at the Completion of Mining: Bowmen & Williams Consulting Civil Engineers, June 10, 2003

EXHIBIT E

- Soil Investigation and Percolation Testing for Retention Pond, Cleary Consultants, 2003
- Addendum to Hanson Aggregates Felton Plant Final Revegetation Plan, Native Vegetation Network, 2003
- Letter Regarding Revegetation on the Eastside of the Quarry, Native Vegetation Network. 2003
- Drainage Analysis and Final Grading and Drainage Plan at the Completion of Mining: Bowmen & Williams Consulting Civil Engineers, August 15, 2003

EXHIBIT E

ENVIRONMENTAL REVIEW ACTION

On the basis of this initial evaluation:

— I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

✓ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described below have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

— I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

11-28-03
Date

Signature

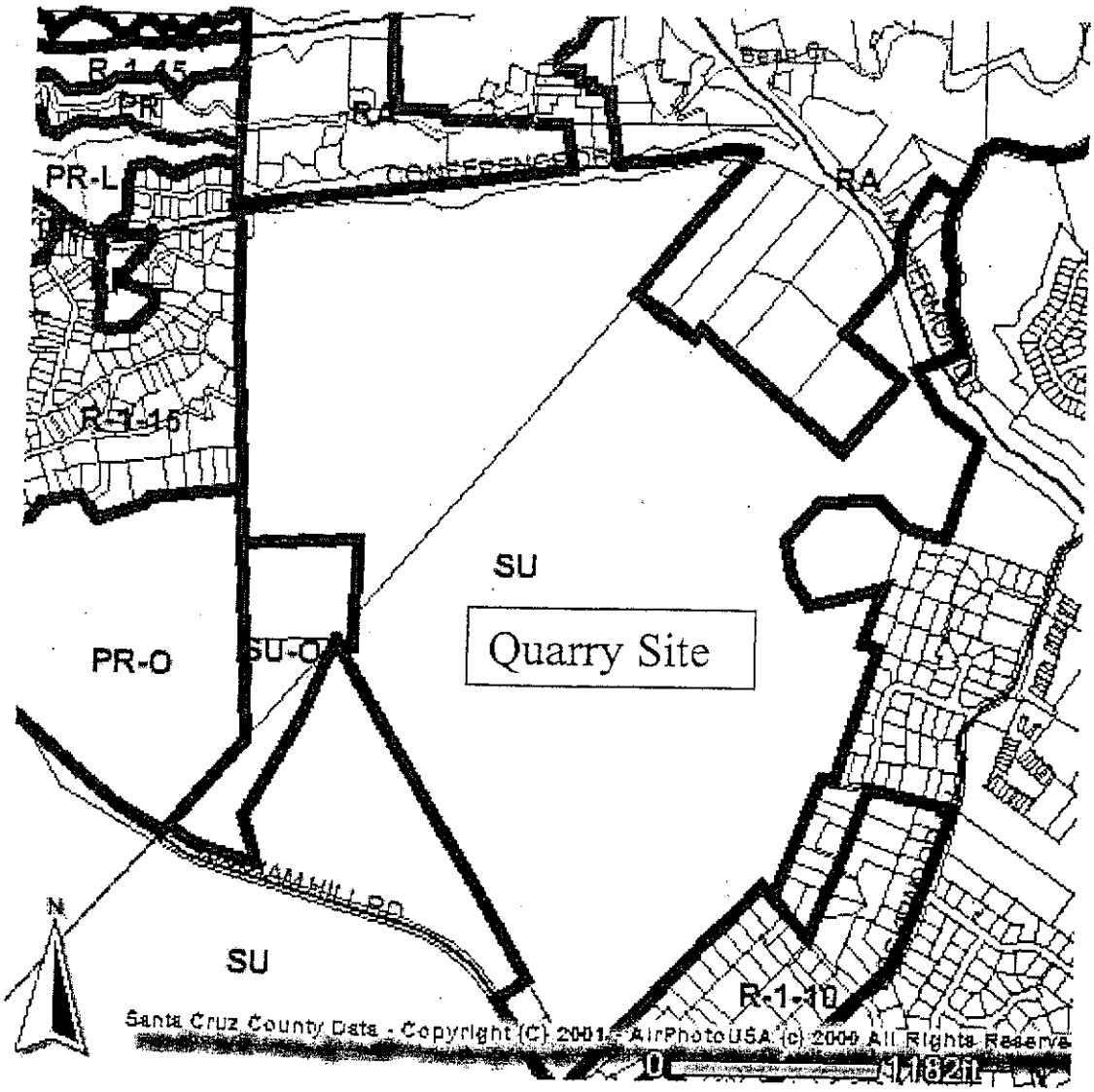
For: Ken
Environmental Coordinator

Attachments:

1. Zoning Map
2. General Plan Map
3. Vicinity Map
4. Assessor's Parcel Map
5. Final Quarry Contours COC 75-0590-PQ
6. Site Map with Area Designations
7. Native Vegetation Network letter dated 8/9/02
8. Department of Conservation, Office of Mine Reclamation letter dated 5/2/02
9. Comments received during review periods.

EXHIBIT E

Zoning Map



Environmental Review Inital Study
ATTACHMENT 1
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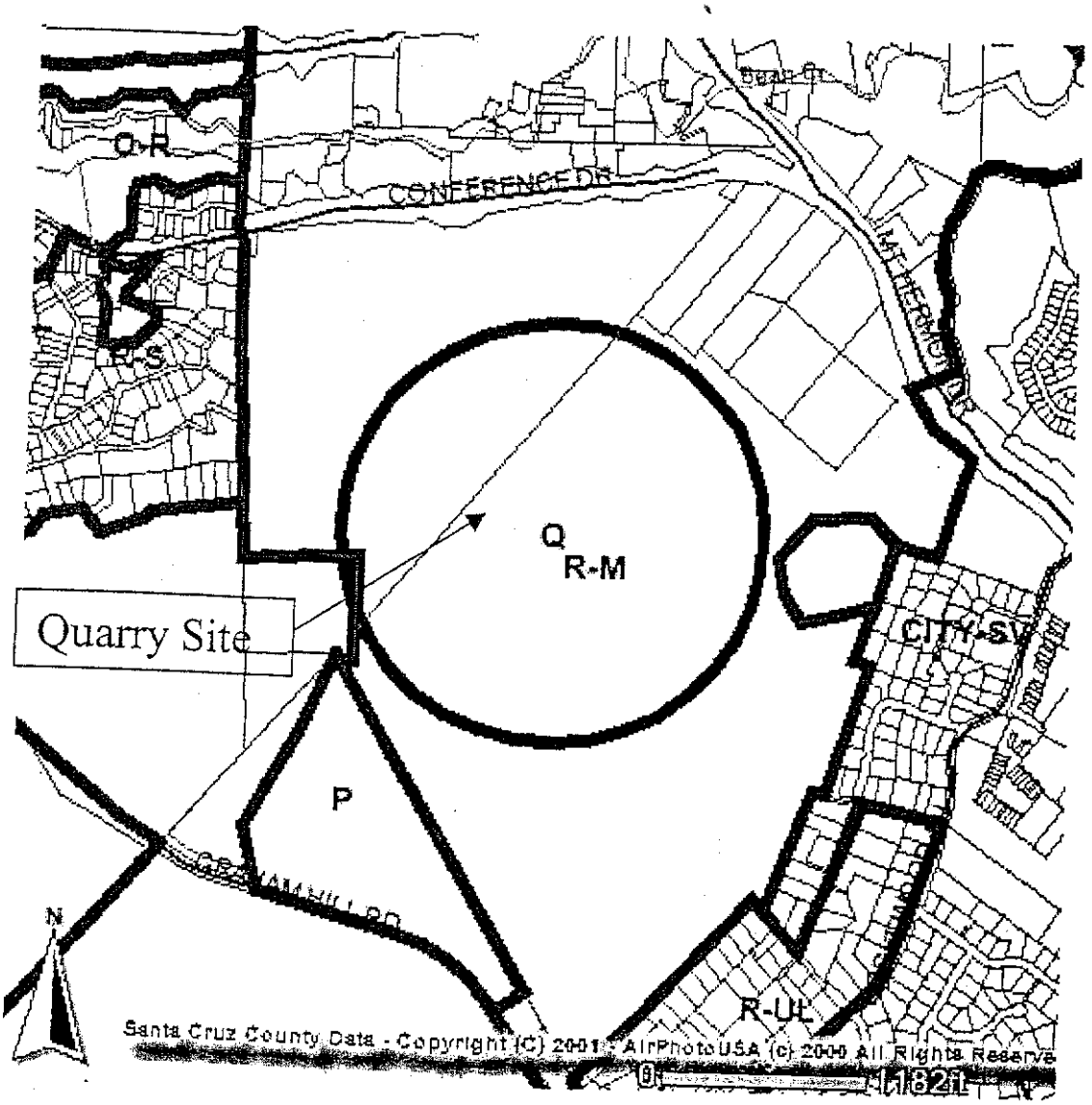
EXHIBIT E

General Plan Map



Environmental Review Initial Study
ATTACHMENT 2
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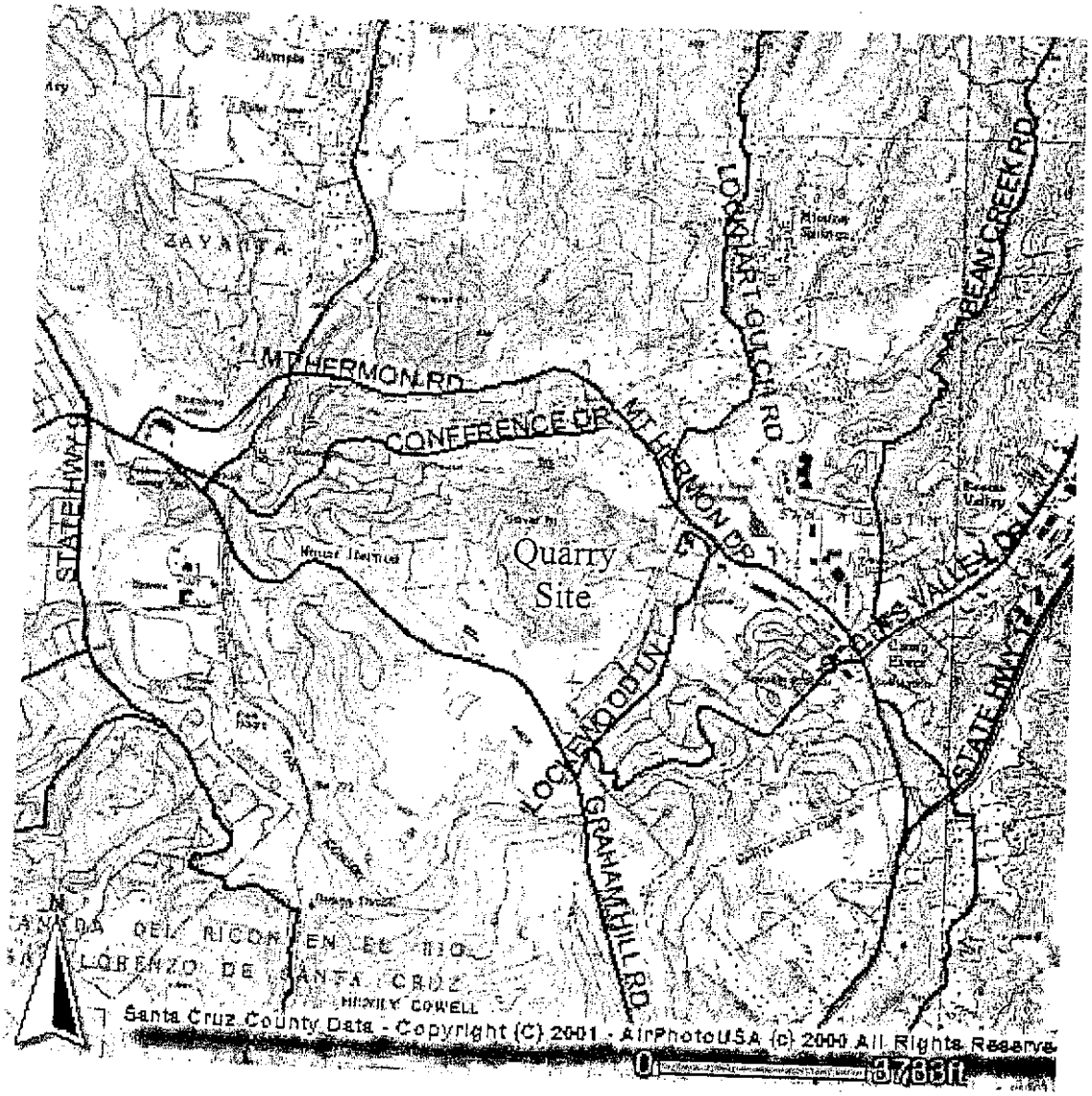
EXHIBIT E

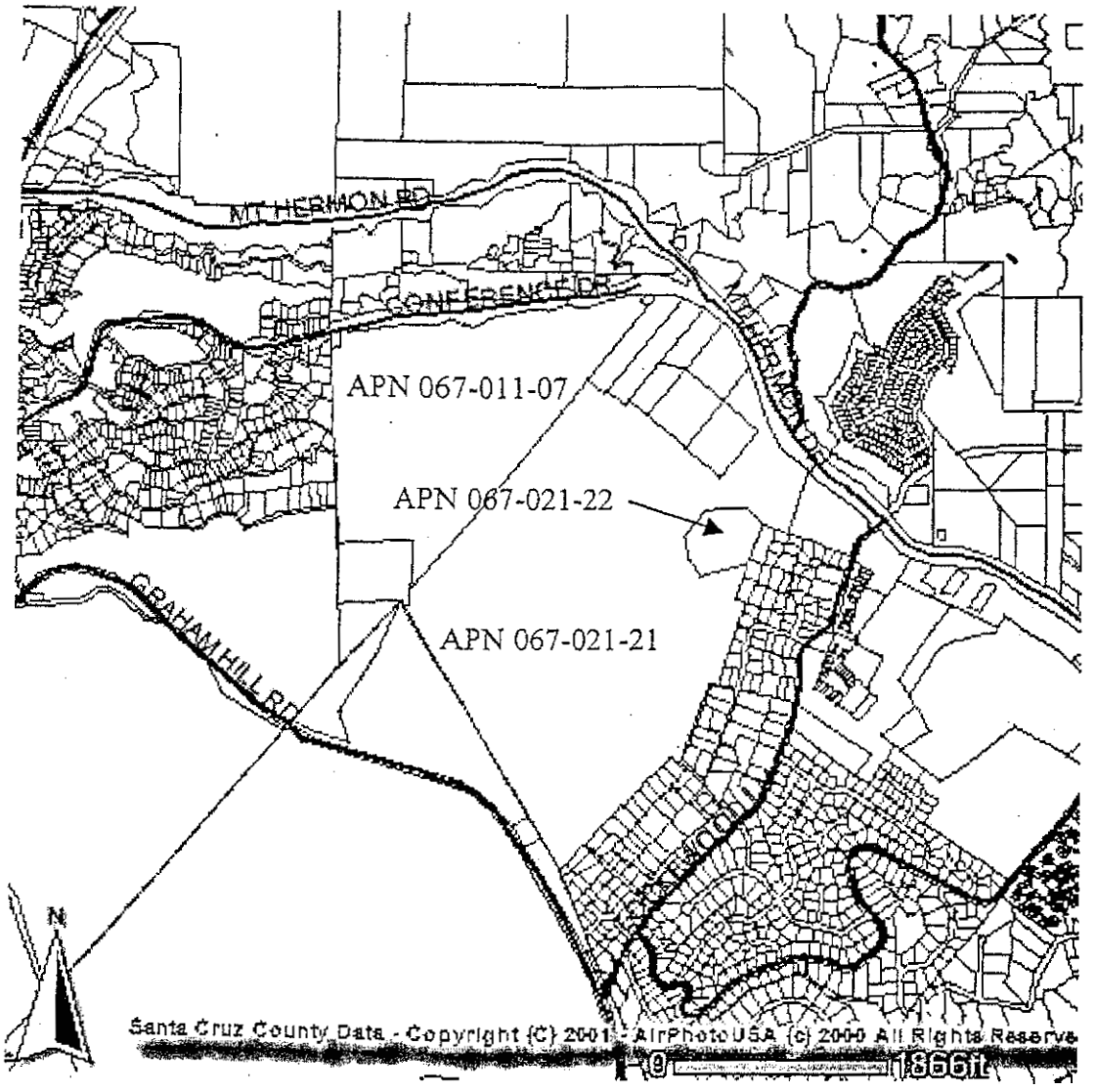
Vicinity Map



Environmental **Review Inital Study**
ATTACHMENT 3
APPLICATION 02-0046

EXHIBIT E

Assessor's Parcel Map



Environmental Review Inital **Study**
ATTACHMENT 4
APPLICATION 02-0046

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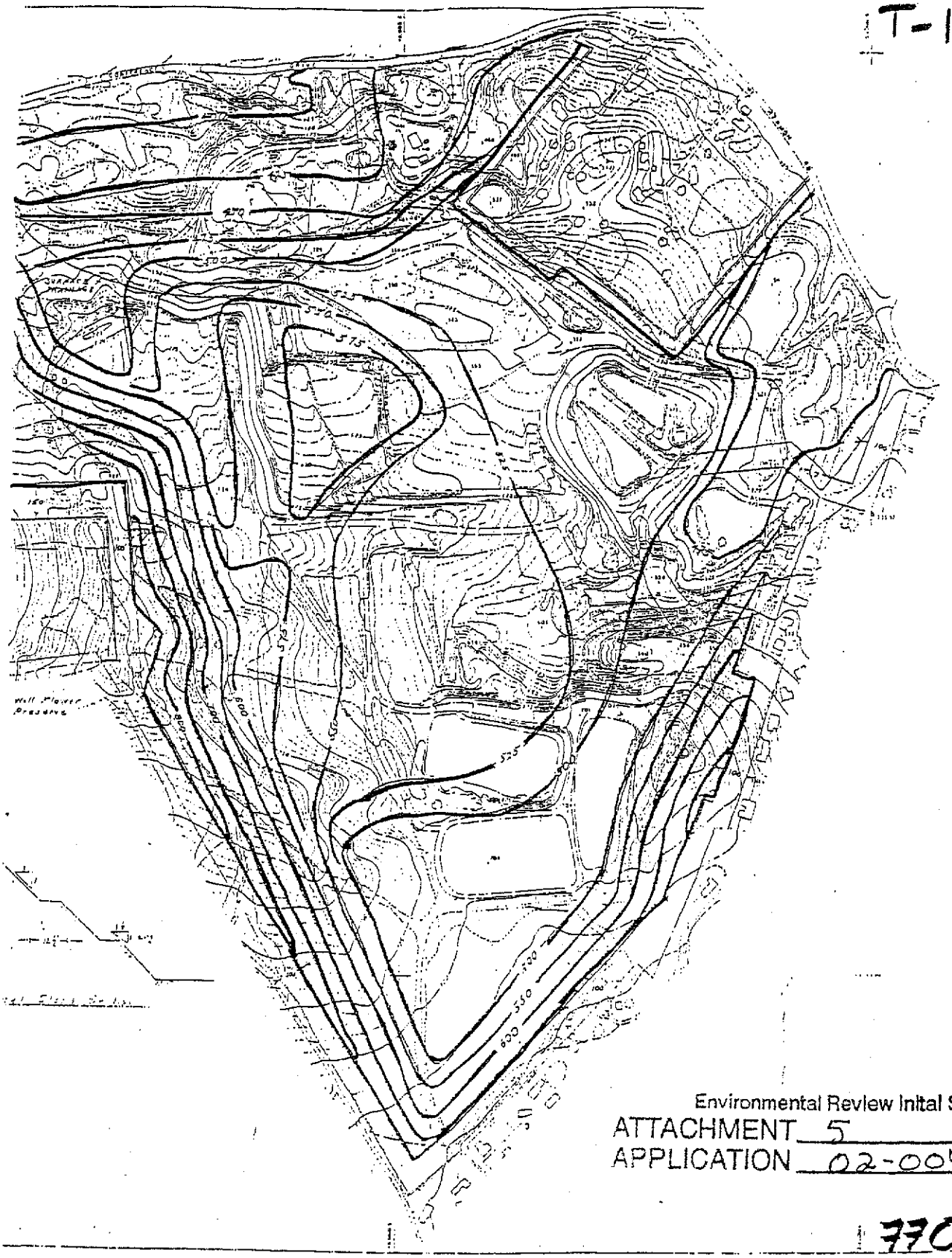
T-1



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ATTACHMENT 5
APPLICATION 02-0046

7700-4

KAISER QUARRY
CERTIFICATE OF COMPLIANCE
T5-590-PQ
EXHIBIT T100-4
FINAL QUARRY CONTOURS

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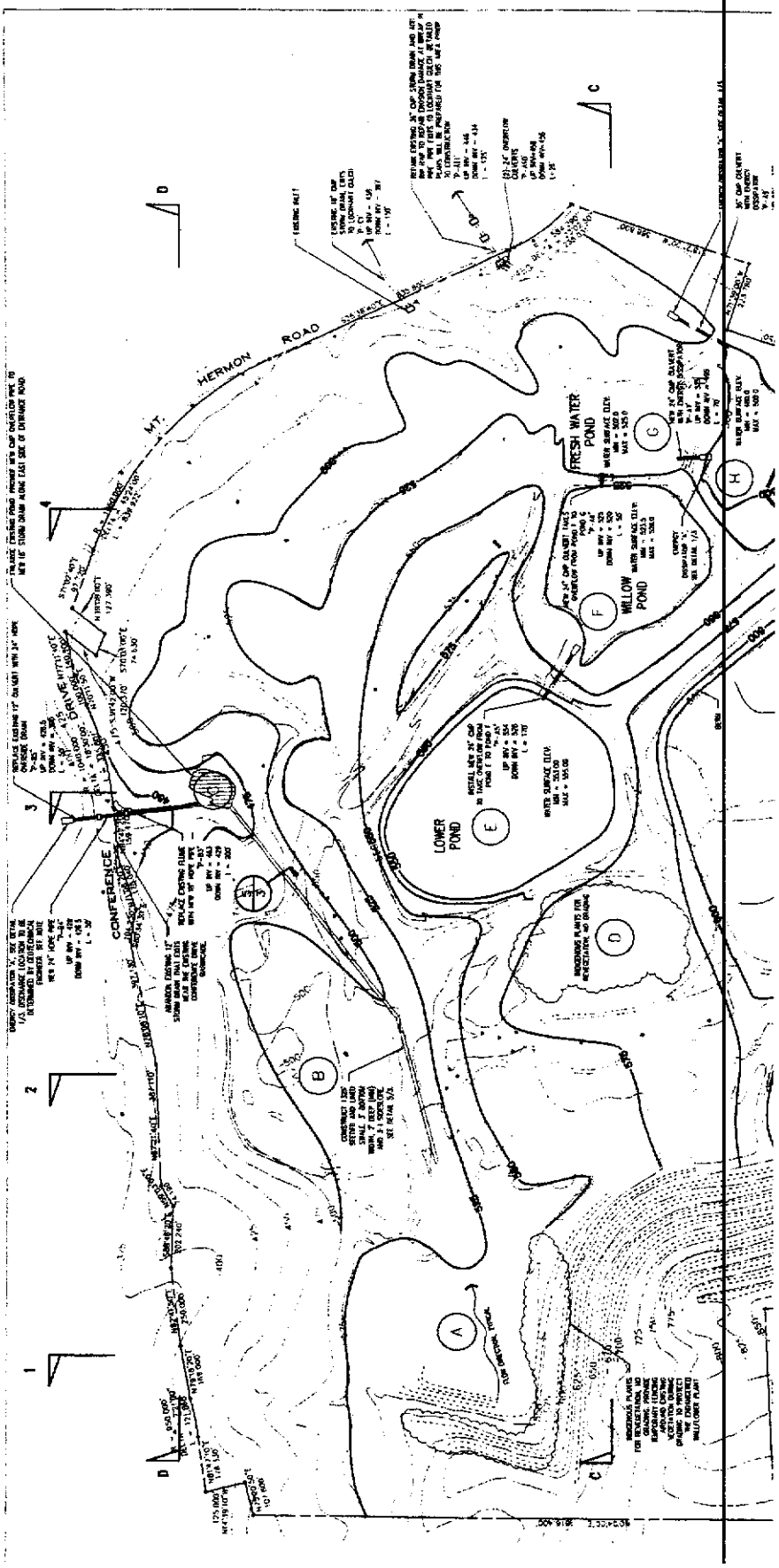
EXHIBIT E
~~EXHIBIT~~ C

Attachment 6
Pg 1 of 2
02-0046



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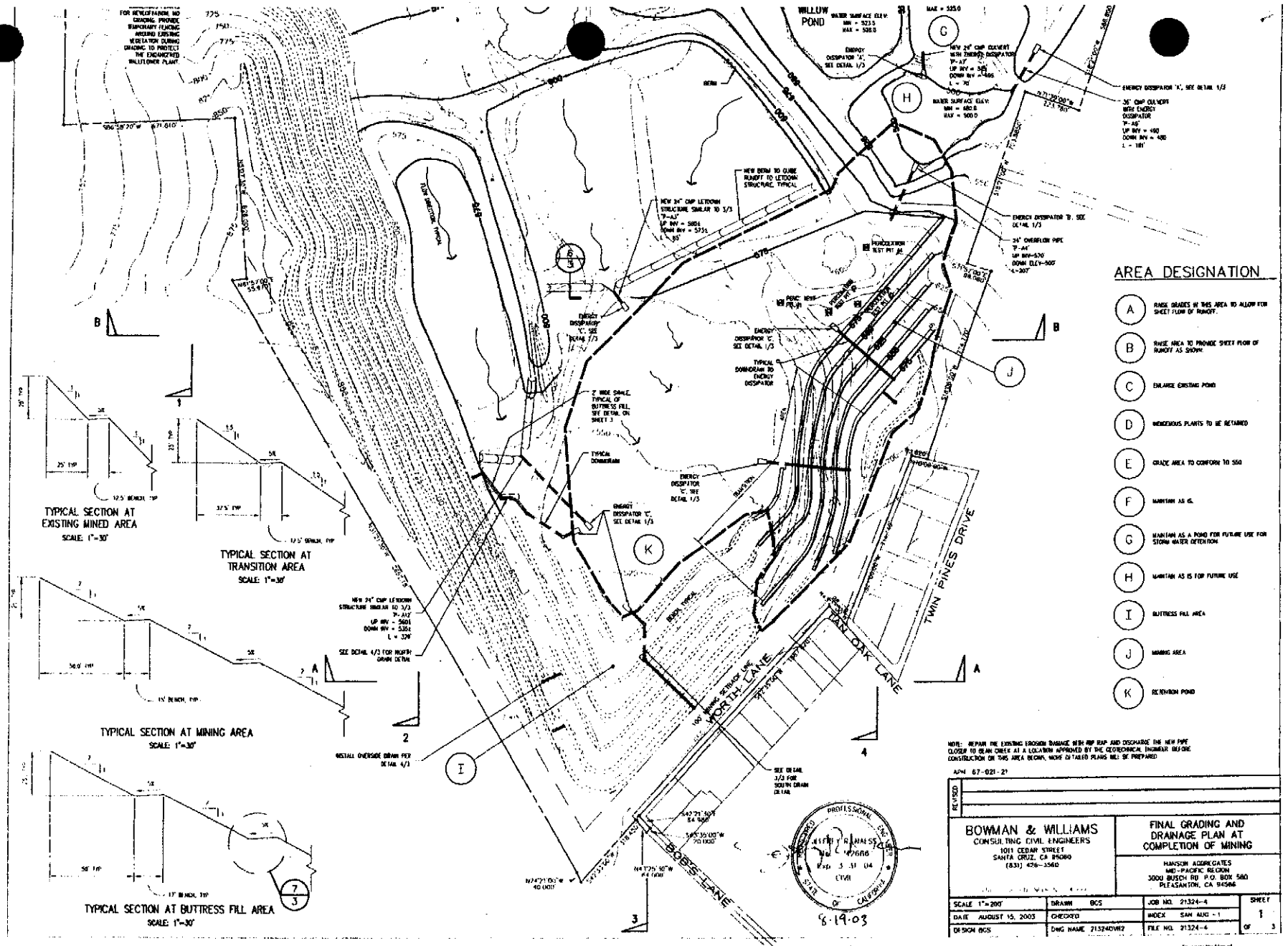

EXHIBIT E pg 2 of 2
02-0046
Attachment 6
90

Native Vegetation Network

August 9, 2002

FV-102

Mr. Dennis Ripple
Hanson Aggregates
10249 Eastside Road
Healdsburg CA, 95448-9490

RE: Revegetation at the Felton Plant

Dear Mr. Ripple,

It is my understanding that Hanson Aggregates is considering the construction of 1.5 to 1.0 slopes on the remaining eastern mining area. In my opinion, the 1.5 to 1.0 slopes could be successfully revegetated, and meet the criteria that have been established in the Final Revegetation Plan (Native vegetation Network, March 2002).

Sincerely,

Val Haley

Val Haley, Botanist
and Revegetation Specialist

cc: Mr. Larry Appleton, Hanson Aggregates
Mr. Al Monser, Hanson Aggregates

Environmental Review Inital Study
ATTACHMENT 7
APPLICATION 02-0046

653 Quail Drive • Santa Cruz, CA 95060 • Phone/Fax 831-425-0687 • E-mail vegnet@cruzio.com

EXHIBIT E

8

DEPARTMENT OF CONSERVATION
STATE OF CALIFORNIA

OFFICE OF MINE RECLAMATION

801 K STREET
MS 09-06
SACRAMENTO
CALIFORNIA
95814

PHONE
916/323-9198

FAX
916/322-4862

TOD
916/324-2555

INTERNET
consrv.ca.gov

GRAY DAVIS
GOVERNOR

May 2,2002

Matt Baldzikowski
Santa Cruz County
Planning Department, Room 400
701 Ocean Street
Santa Cruz, CA 95060

Dear Mr. Baldzikowski:

Hanson Felton Plant Site Inspection - CA Mine ID# 91-44-0002

The Department of Conservation's Office of Mine Reclamation (OMR) has reviewed the five-year work plan for the Felton Plant and conducted an inspection of the site on March 25,2001.

From observation and discussion with Felton's revegetation specialist, revegetation of the 1:1 gradient slopes is problematic and only marginally successful, at best. Even the oldest quarry slopes at this steep angle exhibit minimal plant cover. Although plants may establish, it was evident that soil erosion of the 1:1 slopes exposed the roots and the plants were swept away.

On the other hand, the gentle, approximately 3h:1v gradient slope southwest of pond F demonstrates exemplary revegetation success.

We recommend that every opportunity be taken to revise future slopes to be constructed at lesser gradients. A 2h:1v slope gradient will ensure success of future reclamation efforts at the site.

If you have any questions on these comments or require any assistance with other mine reclamation issues, please contact me at (916) 323-8565.

Sincerely,

James S. Pompy, Manager
Reclamation Unit

Environmental Review Inital Study
ATTACHMENT 8
APPLICATION 02-0046

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EXHIBIT E

MONTEREY BAY
Unified Air Pollution Control District
serving Monterey, San Benito, and Santa Cruz counties

AIR POLLUTION CONTROL OFFICER
Douglas Quetin

24580 Silver Cloud Court • Monterey, California 93940 • 831/647-9411 • FAX 831/647-8501

April 21,2003

Ken Hart
County of Santa Cruz
701 Ocean St., Suite 410
Santa Cruz, CA 95060

SUBJECT: MND FOR HANSON AGGREGATES MINING/RECLAMATION PLAN

Dear Mr. Hart:

Staff was informed about this project through the AMBAG Clearinghouse Newsletter. In the future, we would appreciate receiving copies of all environmental documents which could affect air resources. Staff has reviewed the notice and has the following recommendations for the scope of work for the air quality section:

1. Project construction PM_{10} emissions should be quantified. If emissions would exceed 82 lb/day, the project would have a significant impact on air quality. However, PM_{10} modeling could be undertaken to verify or dispute this finding per the District's CEQA Air Quality Guidelines.
2. If the project might expose sensitive receptors to air quality problems such as odors or toxic air contaminants (e.g., diesel exhaust) from adjacent land uses, the DEIR should include an assessment of these impacts.
3. Mitigation measures should be identified for any significant impacts on air quality. The EIR should quantify the emission reduction effectiveness of each measure, identify agencies responsible for implementation and monitoring, and conclude whether mitigation measures would reduce impacts below significance levels.
4. Project consistency with the 2000 Air Quality Management Plan for the Monterey Bay Region should be addressed. Consistency is used by the District to determine a project's cumulative impact on regional air quality (i.e., ozone levels).
5. District permit requirements, if any, should be identified.

The District's CEQA Air Quality Guidelines can be used to help prepare the air quality analysis. The Guidelines were recently amended; and an updated copy is available at the District's website - www.mbuapcd.org. Please do not hesitate to call if you have any questions.

Sincerely,

Janet Brennan
Supervising Planning

EXHIBIT E

Environmental Review Inital St.
ATTACHMENT 9 of 19
APPLICATION 02-0046

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SAN LORENZO VALLEY WATER DISTRICT
13060 Highway 9 • **Boulder Creek, CA** 95006-9119
(831) 338-2153 • **FAX** (831) 338-7986

COPY

August 4,2003

Paia Levine
Environmental Coordinator
County of Santa Cmz
701 Ocean Street, Suite 400
Santa Cruz, CA 95060

Subject: Hansen Aggregates Mid-Pacific Inc.
Application No. 02-0046

Dear Ms. Levine:

Please consider this correspondence as written comments in response to the Notice of Environmental Review Period for the subject application. The San Lorenzo Valley Water District (District) is in receipt of the Initial Study dated July 1,2003 conducted for the subject application, which provides a preliminary determination that the proposed project qualifies for a Mitigated Negative Declaration.

The District respectfully submits the following documentation as evidence that the proposed project has the potential to cause significant adverse impacts relative to groundwater recharge, which require additional review. Pursuant to oral communications between District staff and County staff, an artificial winter storm water pond is currently present in the southerly comer of the quarry. The presence of this artificial storm water pond provides factual evidence of the potential adverse impacts on soil transmissivity (permeability) in this area associated with corrective actions taken with respect to the over-excavation of the southern quarry floor and buttress fill slope stabilization projects. Any reduction in soil transmissivity has the potential to adversely impact groundwater recharge, and public or private water supply.

The proposed project includes changes to the final quarry reclamation plan. The final grading and drainage plan changes the location and configuration of the proposed onsite retention basin from the southern comer of the quarry to the southeast comer of the quarry. A soils report prepared by Cleary Consultants, Inc. (7/6/01) concluded that the compacted back fill material utilized in the corrective action projects would have similar permeability characteristics to the undisturbed in-place soils. The existence of the artificial storm water pond provides factual evidence that soil transmissivity has been adversely impacted

Environmental Review Inital Study
ATTACHMENT 9, 2 of 19
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EXHIBIT E

The Initial Study does not identify nor discuss the potential adverse impacts of the aforementioned corrective action projects on groundwater recharge, and public or private waster supply. The District is solely reliant in its Southern Distribution System on groundwater well sources that are located within close proximity (approximately 1,000 feet or less) of the buttress **fill** project and proposed retention basin. The potential adverse impacts on groundwater recharge associated with the apparent use of a finer grain material and engineered compaction backfill for the corrective action projects and final reclamation plan need further review. No stated mitigation in the proposed Negative Declaration addresses this issue. The District supports the efforts to provide a final reclamation plan that has a potential to benefit public and private water supply. However, adequate efforts must be undertaken to ensure that full discussion and review occurs, and that documentation of a factual basis is provided for the finding in the proposed Negative Declaration.

Your review and consideration of these comments will be greatly appreciated. If you have any questions or need additional information regarding this matter please do not hesitate to contact at 831/430-4625.

Sincerely,

James **A.** Mueller
District Manager

JAM

cc: David Carlson
Resources Planner

Environmental ***Review*** **Inital Study**
ATTACHMENT 9, 3 of 19
APPLICATION 02-0046

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EXHIBIT E

August 6,2003

David Carlson
Staff Planner
Santa Cruz County
701 Ocean Street
Santa Cruz, CA 95060

Dear Mr. Carlson and Planning Staff,

Thank you for the opportunity to comment on Hanson Aggregate's Felton Quarry five-year review and amended plan. I would like to address a single issue: the future potential for blowing sand.

The revised reclamation plan should include both short-term and long-term measures to address prevailing winds which historically have blown disturbed sand from mined slopes into residential neighborhoods along Worth Lane and Twin Pines Drive. Prior to the last five-year review, when control measures were lax, blowing sand was a significant health hazard and general nuisance to the neighborhood. After the neighbors banded together, took videotapes, and spoke at the Planning Commission hearing, new more aggressive measures were instituted. These included active wind monitoring, cessation of mining when winds rose, a neighborhood hotline, and the spraying of an organic compound onto exposed slopes. Even with these measures, clouds of sand blew over our house for several days this spring.

After the mining closes, there will nobody on-site to deal with this problem. It may be many years before revegetation adequately stabilizes the sand. The reclamation plan should also include interim measures such as mulching or jure to protect exposed areas. Failure to implement these sorts of interim measures will inevitably result in years of problems for everybody involved.

Sincerely,

Sheryl Ainsworth
400 Twin Pines Dr.
Scotts Valley, CA
sla@cruzio.com

Environmental Review Initial Study
ATTACHMENT 9, 4 of 11
APPLICATION 02-0046

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EXHIBIT E

David Carlson

From: Paul Binding
Sent: Friday, October 03, 2003 12:22 PM
To: David Carlson
cc: Paia Levine; David Moeller; Bob Kennedy; Lowell Rau
Subject: Hanson Quarry shutdown

Follow Up Flag: Follow up
Flag Status: Flagged

Application Number: 02-0046 **Hanson Aggregates Mid-Pacific Inc (Kaiser Sand & Gravel Company)**

This is an application for a five-year review of an existing mining operation, and an amendment to an existing Mining Approval to include: changes to the mining plan, reclamation plan, and financial assurance. The project location is the southwest side of the intersection of Mt. Hermon Road and Conference Drive near Scotts Valley.

APN: 067-011-07,067-021-21, and 067-021-22 **David Carlson, Staff Planner**
Zone District: Special Use

David,
In regards to the above application to the Environmental Review committee, I believe that the presence of un-managed ponds on the property could present a significant hazard to the community by serving as breeding sources for mosquitoes of public health and wildlife health significance. Particularly as West Nile virus is expected to become active in California next summer, some means of providing for inspection and paying for possible treatments and vegetation maintenance may be required, possibly for the long term, as we discussed earlier. Please advise as to how the decommissioning and maintenance requirements will be met by Hanson, and how this will be enforced.

Thank you,
Paul Binding
Manager
Santa Cruz County Mosquito and Vector Control District (831) 454-2590

Environmental Review Inital Study
ATTACHMENT 9, 5 of 19
APPLICATION 02-0046

EXHIBIT

SAN LORENZO VALLEY WATER DISTRICT
13060 Highway 9 • Boulder Creek, CA 95006-9119
(831) 338-2153 • FAX (831) 338-7986

COPY

November 7,2003

Claudia Slater
Environmental Coordinator
County of Santa Cruz
701 Ocean Street, Suite 400
Santa Cruz. CA 95060

Subject: Hansen Aggregates Mid-Pacific Inc.
Application No. 02-0046

Dear Ms. Slater:

Please consider this correspondence as written comments in response to the Notice of Environmental Review Period for the subject application. The San Lorenzo Valley Water District (District) is in receipt of the Initial Study dated October 9,2003 conducted for the subject application, which provides a preliminary determination that the proposed project qualifies for a Mitigated Negative Declaration.

The District respectfully submits the following documentation and comments as substantial evidence that additional review is necessary *to* determine whether the proposed project may have a significant effect on the environment.

1) Nicholas M. Johnson, Water Resources Consultant, was retained by the District to review the proposed project. A copy of Mr. Johnson's October 31,2003 report relative to the subject project is attached hereto and incorporated herein. Mr. Johnson's report concludes that the proposed retention basin has not been designed to optimize percolation capacity. Subsurface characteristics of the proposed retention basin and percolation capacity have not been adequately addressed. Stated benefits relative to groundwater recharge have not been adequately quantified.

2) The Initial Study, Section B, Hydrology, Water Supply and Water Quality (page 16) states "Additional infiltration testing within the retention basin will also be required to facilitate long term-management of the basin." There is no respective mitigation measure to ensure compliance with the stated required infiltration testing and monitoring.

3) Mitigation Measure No. 2 states "To ensure that the infiltration basin at the southern end of the quarry continues to function as designed, prior to the hearing on the project

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EXHIBIT E

the applicant shall submit a maintenance plan specifying the timing and method for periodic removal of sediment". Said mitigation measure is *too* limited and should be expanded to include the development of a comprehensive operations, maintenance, reporting and/or monitoring program to ensure compliance with stated benefits relative to groundwater recharge.

The District supports in concept the efforts of Hansen Aggregates to provide a final reclamation plan that has a potential to benefit public and private water supply. However, adequate efforts must be undertaken to ensure that full discussion and review occurs, and that documentation of a factual basis is provided €or the finding in the proposed Negative Declaration.

Your review and consideration of these comments **will** be greatly appreciated. If you have any questions or need additional information regarding this matter please do not hesitate to contact at 831/430-4625.

Sincerely,

James A. Mueller
District Manager

JAM

cc: David Carlson
Resources **Plar**

Environmental Review Inital Study
ATTACHMENT 9, 7 of 19
APPLICATION 02-0046

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EXHIBIT E

Nicholas M. Johnson, PhD, RG, CHg
Water Resources Consultant

MEMORANDUM

To: Jim Mueller, General Manager, San Lorenzo Valley Water District

FROM: Nicholas M. Johnson, Water Resources Consultant

DATE: October 31, 2003

SUBJECT: Hanson Quarry's proposed reclamation plan retention basin

Reviewed Documents

For this review of the proposed Hansen Quarry retention basin I was provided the following documents:

Weber, Hayes & Associates, September 2000, *Surface Water Runoff Estimate and Recharge Basin Volume, Felton Quarry,* letter report prepared for Hanson Aggregates.

Cleary Consultants, July 2001, *Soils Investigation, Proposed Quarry Pit Backfill, Hanson Felton Quarry,* letter report prepared for Hanson Aggregates.

Weber, Hayes & Associates, June 2002, *Hydrogeologic Evaluation for Application 02-0046 Mining Plan Amendment at Hanson Quarry,* report prepared for Hanson Aggregates.

Bowman and Williams, Consulting Civil Engineers, August 2003, *Drainage Analysis for Hanson Felton Quarry Reclamation and Mining Plan Amendments,* prepared for Hanson Aggregates.

Santa Cruz County Planning Department, October 2003, *Environmental Review Initial Study,* for Hanson Quarry.

Of the two reports by Weber, Hayes & Associates, the latter essentially supersedes the former.

Background

The proposed retention basin is within an existing quarried depression at the southern end of the 270-acre property. Relative to the approved mining plan, this area was over-excavated by a depth of 33 feet and subsequently backfilled with stockpiled materials in 2001. Furthermore, the sideslopes were over excavated and required approximately 900,000 cubic yards of buttress fill in 2002.

The retention basin has a planned drainage area of 115 acres. As designed, it has a base elevation of 525 feet above mean sea level (ft amsl) and an overflow elevation of 570 ft amsl. At capacity, the basin is expected to have a water surface area of 35 acres, a maximum depth of 45 feet, and a volume of nearly 800 acre-feet.

The reason for including the retention basin in the *quany* reclamation plan is not explicitly stated in the reviewed documents, but implicitly is one or a combination of the following:

- Its existence is a "given" due to past excavation; the remaining availability of fill material; and planned uses for the remainder of the property.
- It limits off-site runoff.
- Percolation of retained runoff will achieve beneficial groundwater recharge

Although groundwater recharge is a claimed benefit, the basin has not been professionally designed to optimize this objective. Rather, the retention basin appears to be an incidental feature with *ad hoc* recharge benefits, which the reviewed documents attempt to characterize.

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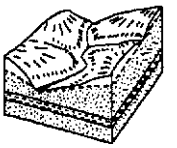
662 Connecticut Street, San Francisco, CA 94107 415/282-8751 Fax: 415/282-8750 nickmj@hotmail.com



Hydrostratigraphy

As stated by Weber, Hayes &Associates (2002). the conventional geologic interpretation has been that the Monterey Formation occurs as an aquitard between the Santa Margarita and Lompico sandstone aquifers in the quany area. As such, there has been some uncertainty regarding the potential of the retention basin to beneficially recharge the Lompico aquifer.

A reinterpretation of available information by Santa Cruz County staff has challenged the area's conventional geologic interpretation (Cloud, 2001). This new interpretation indicates that the Monterey Formation is absent beneath the area of the proposed retention basin, such that the Santa Margarita aquifer directly overlies the Lompico aquifer (Figure 8, Johnson, 2002; Figure 12, Todd Engineers, 2003). Thus, percolation at the proposed site has a reasonable potential to recharge the Lompico aquifer.

Groundwater Levels

Cleary Consultants provide a table of 2000-2001 groundwater elevations for Hansen Quarry well 4A, about 550 ft south of the proposed retention basin. Based on a peak level of 445 ft amsl during this period, Cleary Consultants conclude that groundwater levels will not rise up into the retention basin backfill above elevation 466 ft amsl. However, levels in the original well 4 were as high as 540 ft amsl prior to 1987 (Figure 1). Also, groundwater levels in nearby shallow zones above the Monterey Formation have stayed high since the mid-1980s. Thus, it should be acknowledged that future efforts to replenish the groundwater basin, if successful, could cause groundwater levels to rise up into the retention basin.

Infiltration Rates

Table 1 summarizes infiltration rates that have been both assumed and measured for the proposed retention basin. Initially, relatively high rates were assumed based on soil-survey estimates (Weber, Hayes & Associates, 2000). However, those values are representative of short-term infiltration, such as during a rainfall event, and not sustained pond percolation. Furthermore, those values unreasonably approach or exceed typical estimates of horizontal hydraulic conductivity for the Santa Margarita Sandstone (Johnson, 2001).

Cleary Consultants (2001) performed lab permeability tests on three re-formed samples and concluded that their two samples of stockpiled quarry fines had essentially similar infiltration capacities as their one sample of native sandstone. Such testing, however, was limited by the small number and size of samples and sample disturbance.

Weber, Hayes & Associates (2002) performed field infiltrometer tests at 11 locations in the vicinity of the proposed retention basin. Ten of the sites were clustered near the southern end of the basin. Compared to their one test just outside the quany perimeter, they concluded that the infiltration capacity of the basin backfill is essentially equivalent to the native sandstone. However, their testing omitted large areas of the basin floor and sideslopes.

Neither consultant acknowledged the small number and size of samples relative to the basin area and depth of backfill. Low permeability zones at depth within either the placed fill or native sandstone can significantly constrain downward percolation. Nor did the consultants adequately acknowledge the clogging layers that form in percolation basins as a result of physical, biological, and chemical processes. The standard procedure for evaluating a percolation site involves the use of a shallow test basin over an extended period. Because of the uncertain heterogeneity of the fill, several such tests may be appropriate.

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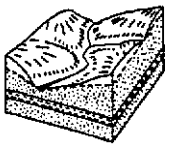

During late summer 2003 it became evident that the site's current percolation capacity was much lower than expected. Runoff from the preceding wet season, most of which occurred way back in December 2002, remained ponded in the basin. Total rainfall during the season had been barely average. To reconcile this observation with their drainage calculations, Bowman & Williams (2003) revised their assumed infiltration rate downward by a factor of six relative to the lowest infiltration-test value.

County staff (2003) have speculated that the late-season ponding was due to siltation ensuing from overwhelmed erosion control measures. While this was probably a contributing factor, the poorly characterized nature of the basin backfill must be considered. It seems reasonable to assume that the quarry's over-excavation removed clean, coarse-grained sand relative to the waste piles left behind and used for backfill. What other explanation accounts for the unpermitted over-excavation and significant remedial re-grading with rejected material?

County staff (2003) vaguely acknowledge that additional infiltration testing is needed within the basin "to facilitate its long-term management" (p. 16). However, they do not stipulate any timing, scope, or responsibility for this testing, or how such testing will contribute to improved percolation.

Estimated Runoff

As summarized in Table 2, the quarry's consultants have calculated that the basin's volume is sufficient relative to the estimated runoff volumes associated with the following conditions:

- A "back-to-back" succession of 25-year and 100-year 24-hour storms
- Annual average rainfall

The justification for assuming that a succession of one 25-year and one 100-year 24-hour storms represents "worst case" conditions is unclear, especially given their assumption of no siltation. Furthermore, they apply a runoff coefficient equal to the estimated ratio of total annual runoff to total annual rainfall. During storm conditions, runoff coefficients are significantly greater because of high soil moisture.

Weber, Hayes & Associates (2002) also estimate instantaneous peak flows for this succession of storms. Assuming a triangular hydrograph with a 24-hour base for each storm, these peak flows suggest a runoff volume six times greater than the volume they estimate (Table 2).

As another worst-case condition, Bowman & Williams (2003) consider the total estimated runoff from an average year's rainfall. Their attached worksheet, however, indicates that they assumed total annual rainfall for a 25-year event (72 inches), and of this assumed 61 inches become runoff. Because this suggests only 11 inches of annual evapotranspiration (ET), this is indeed a rather conservative, "worst-case" assumption.

For comparison, I estimate total recharge across the basin drainage area during a wet year such as 1982-83 as follows:

- Annual rainfall of 83 inches (estimated by correlation with the Ben Lomond record)
- Annual ET of 23 inches outside the ponded area (slightly higher than average-year ET estimated for exposed Santa Margarita Sandstone [Johnson, 2001])
- Annual evaporation of 35 inches from the ponded area (as assumed by Bowman & Williams, 2003)

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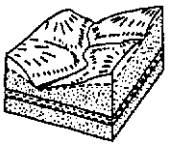
662 Connecticut Street, San Francisco, CA 94107 415/282-8751 Fax: 415/282-8750 nickmj@hotmail.com



- Resulting recharge of approximately 560 acre-feet, which includes both areal recharge and percolation of ponded runoff.

Time Required for Percolation

Given its estimated 800 acre-foot volume, the retention basin appears adequate for containing a worst-case volume of annual runoff. However, can this volume percolate during the dry season or will some of it spill from the basin as runoff during the next wet season? Ensuring high recharge rates during wet years is essential given the relatively little or no recharge that occurs during average and dry years.

As summarized in Table 2, Bowman & Williams (2003) estimated that 104 days would be needed to percolate their worst-case estimate of annual runoff into the basin. It is unclear why this is only **30** percent longer than their other runoff estimate which had a volume only one fifth as large. In any event, these estimates and observed conditions indicate that percolation may require the entire *dry* season or longer. Not only is there a potential to lose some runoff as spillage, access to the basin for maintenance will be severely limited given that substantial additional time will be needed before the basin floor dries sufficiently to allow access.

Estimated runoff during a wet year such as 1982-83 should be routed through the basin in order to evaluate whether sufficient percolation will occur.

Basin Design, Clogging, and Maintenance

Weber, Hayes & Associates (2002) stated that the retention basin would require annual maintenance (e.g., summertime scraping of the top 6 inches). However, none of the reviewed documents indicate any maintenance access, plans, or procedures.

The County's negative declaration for the quarry reclamation plan requires mitigation measures to ensure that the retention basin continues to function as designed. A maintenance plan specifying the timing and method for periodic sediment removal is to be submitted to the County prior to the upcoming hearing on the project. The County also anticipates that the basin may be suitable for recharging additional water diverted from other sources.

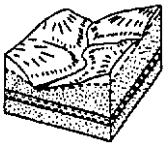
The *ad **hoc*** basin design, undefined maintenance procedures, and poor characterization of site conditions reflect a nearly complete lack of any technical understanding and experience with state-of-the-art artificial recharge.

The following is paraphrased from Bower (2002), a world-renowned expert in artificial recharge:

> Clogging of the infiltrating surface and resulting reductions in infiltration rates are the bane of all artificial recharge systems. Clogging is controlled by periodically drying a basin and thereby letting the clogging layer dry, decompose, shrink, crack, and curl up [which often then blows or floats away]. If clogging materials continue to accumulate, they must be periodically removed at the end of a drying period. Drying and cleaning may be needed after each flooding period, which might be as frequently **as** every few days.
>
> An increase in water depth compresses the clogging layer, making it less permeable. In that case, infiltration rates do not increase linearly with water depth and may actually decrease. If the water depth increases without a corresponding increase in the infiltration rate, the water residence time increases, leading to increased algal growth, and an increase in the bottom clogging layer. Also, a high algal concentration increases the pH of the water due to the uptake **of** dissolved CO_2 for photosynthesis. This causes calcium carbonate to precipitate and

EXHIBIT E

662 Connecricut Street, San Francisco, CA 94107 415/282-8751 Fax: 415/282-8750 nichJ'@fiotmail..com



accumulate on the bottom, thus aggravating the clogging problem and causing further declines in the infiltration rate.

These processes explain why increasing water depth in an attempt to increase infiltration and reduce clogging actually causes further reductions in infiltration rates, to the surprise and dismay of operators who thought that providing more "head" on the clogging layer would overcome infiltration reductions. For this and other reasons, such as easier and quicker drying for restoring infiltration rates, shallow recharge basins with water depths of about 0.5 meter [1.5 feet] or less are generally preferred over deep basins.

The proposed retention basin has a maximum depth of 45 feet. As shown in Figure 2, the water depth increases rapidly as the basin fills. It is reasonable to expect that such conditions will lead to accelerated clogging and problematic maintenance.

A properly designed recharge facility at this site would consist of several large basins across the proposed 115-acre drainage area with nominal water depths. Each basin could be operated independently according to its percolation characteristics and maintenance needs. Such a facility would be significantly more capable of accepting additional recharge water from other sources. Before constructing such a facility, the subsurface needs to be characterized with a suitable number of borings and one or more test basins should be evaluated. As necessary, reductions in percolation capacity due to backfilling should be remediated prior to constructing the facility.

Conclusion

The capacity of the proposed retention basin appears adeauate for capturing annual runoff from the planned drainage area. However, the uncertain subsurface conditions, the basin's *ad hoc* design, and the as yet undefined maintenance plan are reasons for concern regarding the long-term success of the site as arecharge facility.

References

Bower, H., 2002, *Artificial Recharge of Groundwater: Hydrogeology and Engineering,* Hydrogeology Journal, 10:121-142.

Cloud, M., 2001, *Santa Margarita Groundwater Basin Structural Analysis,* maps, photos, and cross sections provided by Santa Cruz Co. Flood Control & Water Conservation District in March 12 and April 23 transmittals and July 23 presentation to Santa Margarita Groundwater Basin Advisory Committee technical group.

Johnson, N.M., Water Resources Consultant, September 2001, *Conceptual Hydrogeologic Model of the Quail Hollow Area,* report prepared for San Lorenzo Valley Water District.

Johnson, N.M., Water Resources Consultant, June 2002, *Conceptual Hydrogeologic Model of the Pasatiempo Area,* draft report prepared for San Lorenzo Valley Water District.

Todd Engineers, July 2003, *Groundwater Management Program 2002-2003 Annual Report,* draft report prepared for Scotts Valley Water District.

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Table 1
Measured and Assumed Infiltration Rates for the Proposed Retention Basin

Consultant	Method	Sample	Measured or Assumed Value (reported units)	(ft/day)
Associates, September **2000**		Zayante Soils (generic)	6 to 20 in/hr	12 to 40
Cleary Consultants, July 2001	compacted samples	quarry samples		
		native pit	$2x10^{-3}$ cm/sec	5.7
		fines pile	$4x10^{-3}$ cm/sec	11.3
		fines pile	$1x10^{-3}$ cm/sec	2.8
Cleary Consultants, May **2003** (as cited by Bowman &Williams, 2003)	permeability tests	**4** unspecified **samples**	low	
			3.4 in/hr	6.8
			high	
			10.9 in/yr	22
Weber, Hayes & Associates, June **2002**	field infiltrometer	quany sites		
		6 sites over buttress fill (samples 1,2,4,5,6,&7)	mean	12.2
			min	6.7
			max	22
		4 sites at southern edge of pit floor (samples 3,8,9,&10)	mean	6.8
			min	1.8
			max	12
		native sandstone adjaent to quany (#11)		6.6
Bowman &Williams, August **2003**	literature value* (Terzaghi and others, **1996)**	lacustrine and marine offshore deposits, very fine uniform sand	$1x10^{-6}$ m/sec or 0.14 in/hr	0.28

*Intended to represent the effect of a silt layer on the bottom of the basin

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Table 2
Estimated Runoff Volumes and Percolation Times

Consultant	Method/Assumptions	Runoff Volume (ac-ft)	Time to Percolate (days)
Weber, Hayes & Associates,	back-to-back succession of 25-yr and 100-yr 24-hr storms 42% of 10 and 14 inches of runoff over 160 acres	134	
Weber, Hayes & Associates.	back-to-back succession of 25-yr and 100-yr 24-hr storms 38% of 10 and 14 inches of runoff over 116 acres	*90*	14
	peak flows of 210 and 337 cfs *(assuming triangular hydrographs with a 24-hr base)*	*542*	-
Bowman & Williams,	10-yr 6-hr storm (4.3 inches of rainfall)	10	35
	back-to-back succession of 25-yr and 100-yr 24-hr storms (10 and 12 inches of rainfall; *unclear how runoff was proportioned)*	101	79
	total runoff *from* average year rainfall *(calculation sheet suggests that B&W assumed annual rainfall for the 25-yr event* (72 *inches), not the average year as stated, and that this produced 61 inches of total runoff).*	586	104*
this memo	*estimated rainfall of 83 inches for 1982-83, minus 23 inches of ET over non-ponded area and 35 inches of evaporation over average pond area.*	*560***	*??*

* *Seems questionable that, compared to the case immediately above, a 480 % increase in runoff requires only 30% more time for percolation.*

** *Includes amount percolated as rainfall recharge across drainage area as well as runoff percolated in retention basin.*

Italics indicate *my* comments, assumptions, and calculations.

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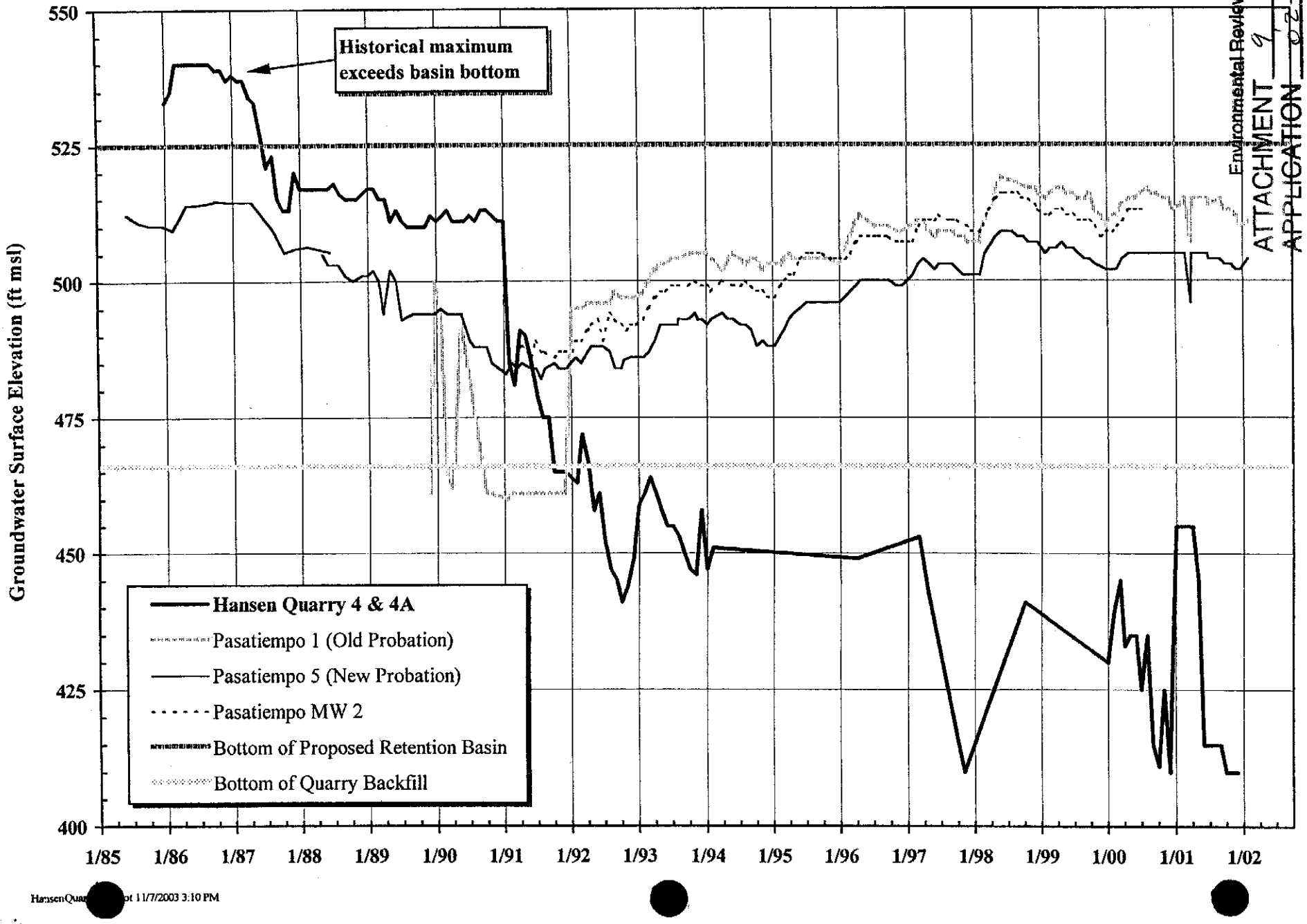
Figure 1

Groundwater Levels Relative to Quarry Backfill and Proposed Basin Bottom



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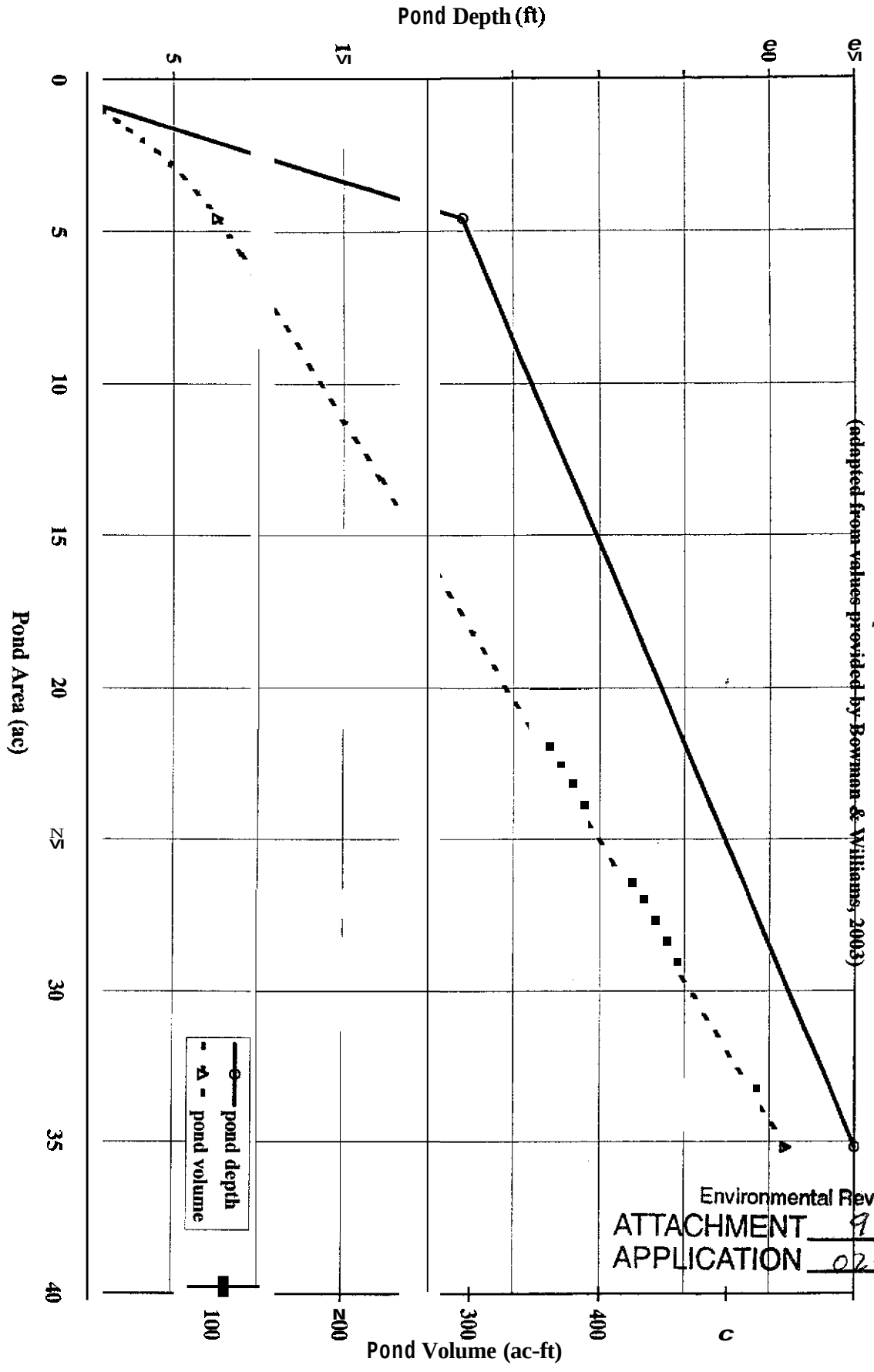

Figure 2
Basin Depth-Area-Volume Curves
(adapted from values provided by Bowman & Williams, 2003)

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Scotts Valley Water District

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(831) 438-2363 • FAX (831) 438-6235
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Office Addess
2 CIVIC CENTER DR
SCOTTS VALLEY, CA

November 12,2003

VIA FACSIMILE AND **U.S.** MAIL

David Carlson, Staff Planner
County of Santa Cruz Planning Dept
701 Ocean Street, Fourth Floor
Santa Cruz, CA 95060

Subject: Comments on Environmental Review Initial Study and Preliminary Determination **of** Mitigated Negative Declaration for Hanson Aggregates (Application **02-0046)**

Dear Mr. Carlson:

Thank you for the opportunity to review the October 6, 2003 Environmental Review-Initial Study (second revision to March 10, 2003 Initial Study) for Hanson Aggregates Mid-Pacific, Inc., proposed project including review and amendment to the existing mining plan, reclamation plan and financial assurance.

First of all, in the most general sense, the District is concerned with the limited scope of a Mitigated Negative Declaration for a project that has the potential to significantly impact both public and private water supplies in the area. This site is acknowledged as a key to area recharge of the Santa Margarita Groundwater Basin (see attached map printed from County's Web-Posted Interactive Planning Map). The Santa Margarita Groundwater Basin is the sole source of supply not only for the Scotts Valley Water District but also for other private and public groundwater users.

Former operations at the Hanson Quarry Site resulted in the over-excavation of the southern quarry floor by a depth of up to 33 feet. While the over-excavation was filled with "engineered fill," it is unclear whether engineering alternatives were even considered at the time (i.e., was it "engineered" for slope stability, recharge enhancement or some other purpose). To complete an Environmental Review, one must consider cumulative effects not just of the present proposal but in connection with past, present and reasonably foreseeable probable future projects.[1] To retroactively approve the "engineered fill" without considering either cumulative effects or alternatives that might better enhance recharge is

[1] *See* 14 CCR §758; *see* **also** *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98,119-120.

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to abuse the CEQA process associated with an Initial Study and Mitigated Negative Declaration.

Before the County approves this application, the Scotts Valley Water District urges the County to require a full Environmental Impact Report so that these omissions might be corrected before further damage to this crucial site may occur. In fact, it is my understanding that the County just approved hiring a grant writer to apply for funds to study some of the possible recharge alternatives for the site. To approve this projectwithout any more information than is in the current draft of the Environmental Review would be to do a disservice to the County's very limited water resources.

We hope that these comments are useful. Please feel free to call me if you have any questions.

Sincerely,
SCOTTS VALLEY WATER DISTRICT

G. F. Duerig

cc: Michael Cloud (fax, only)

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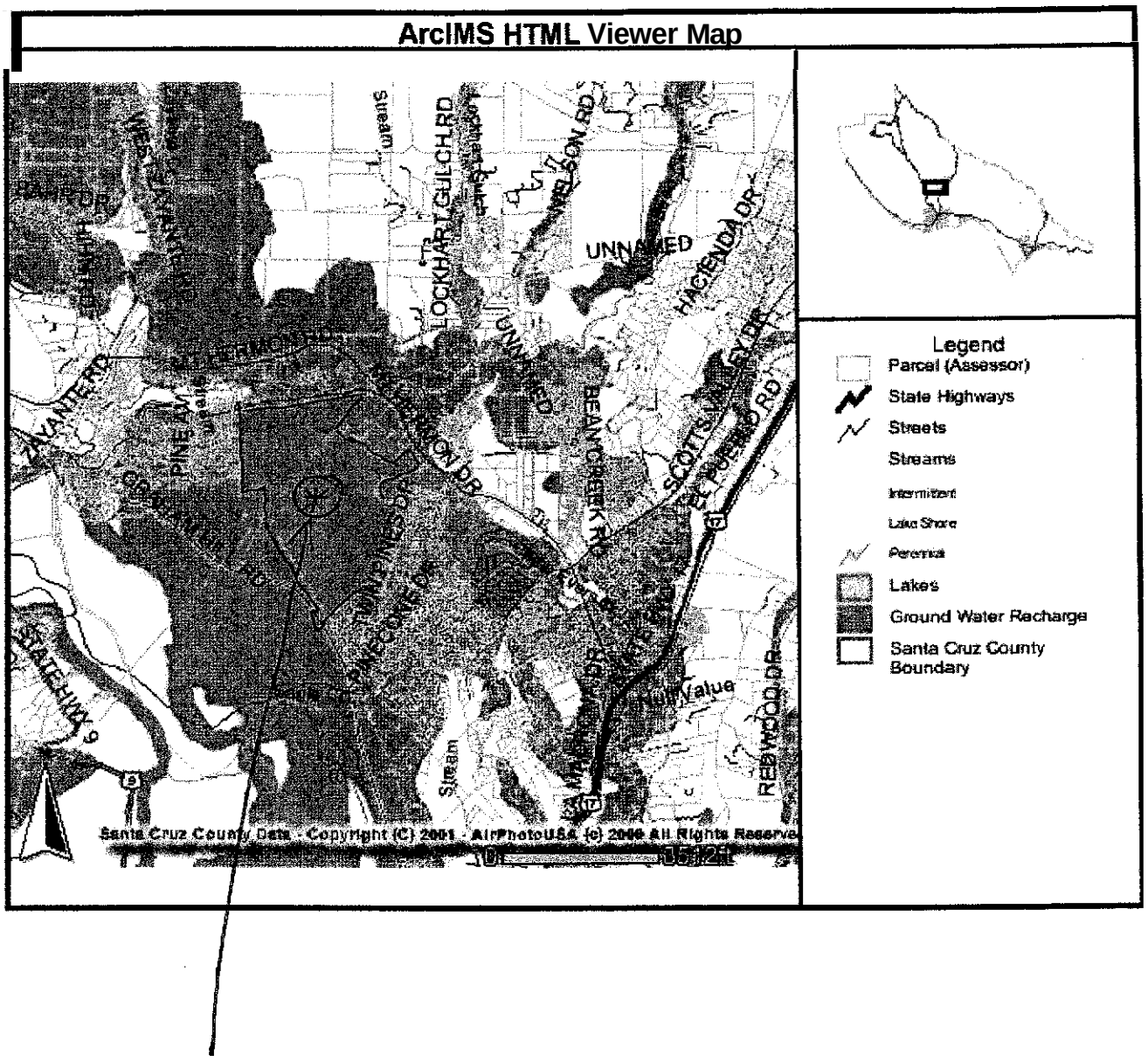

HANSON **QUARRY SITE**

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December 10,2003

County of Santa Cruz Planning Department
701 Ocean Street
Santa Cruz, CA 95060

Re: Hanson Aggregates Felton Plant

We would like the county to require future owners of the property at Hanson Aggregates Felton Plant to be responsible for maintaining perimeter slope stability and vegetation. The county should establish some sort of periodic monitoring of this to help maintain the integrity of adjacent property.

Overall site security, especially on the slopes, and perimeter fence maintenance should also be specified so that this area does not become a paint-ball, target shooting, dirt bike, or other nuisance area.

Alexis & Richard Landsman
631 Worth Lane
Scotts Valley, CA 95066

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