

11-15-07: 3:22PM:DEPT OF CONSERVATION

:322+4144

# 1. 6

STATE OF CALIFORNIA, RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, GOVERNOR



# DEPARTMENT OF CONSERVATION

## OFFICE OF MINE RECLAMATION

801 K STREET • MS 09-06 • SACRAMENTO, CALIFORNIA 95814  
PHONE 916 / 323-9198 • FAX 916 / 448-1066 • TDD 916 / 324-2555 • WEBSITE conservation.ca.gov

Post-It™ brand fax transmittal memo 7671 # of pages 8

To: John Hecht	From: Rodriguez
Co.	Co.
Dept.	Phone #
Fax # (805) 644-5929	Fax #

November 8, 2007

Steve Rodriguez  
Santa Barbara County Planning and Development  
123 E. Anapamu St.  
Santa Barbara, CA 93101-2058

Dear Mr. Rodriguez:

**DIAMOND ROCK SAND AND GRAVEL MINE 03CUP-00037, 03RPP-00002**

The Department of Conservation's Office of Mine Reclamation (OMR) has reviewed the reclamation plan for Diamond Rock Sand and Gravel Mine. The applicant, Troesch Materials, Inc., is proposing to mine sand and gravel on a 132.64-acre site near the community of Ventucopa. The applicant estimates that up to 750,000 cubic yards of material will be removed annually. OMR staff conducted a site visit on October 29, 2007 to discuss reclamation issues.

The Surface Mining and Reclamation Act of 1975 (SMARA) (Public Resources Code Section 2710 et seq.) and the State Mining and Geology Board Regulations (California Code of Regulations (CCR) Title 14, Division 2, Chapter 8, Subchapter 1) require that specific items be addressed or included in reclamation plans. The following comments prepared by Beth Hendrickson, Restoration Ecologist, and John Wesling, Senior Engineering Geologist, are offered to assist in your review of this project. We recommend that the reclamation plan be supplemented to fully address these items.

### Mining Operation and Closure

(Refer to SMARA sections 2770, 2772, 2773, CCR sections 3502, 3709, 3713)

1. SMARA 2772(c)(3) requires that the dates of initiation and termination of mining be stated in the plan, e.g. January 1, 2008 to December 31, 2038.
2. SMARA Section 2772(c)(4) requires that the maximum anticipated depth of the surface mining operation be indicated in the reclamation plan. The depth of mining is given on page 16 of the reclamation plan as 90 feet. The depth of mining appears to be shown in terms of elevation on the topographic maps

*The Department of Conservation's mission is to protect Californians and their environment by: Protecting lives and property from earthquakes and landslides; Ensuring safe mining and oil and gas drilling; Conserving California's farmland; and Saving energy and resources through recycling.*

Steve Rodriguez  
November 8, 2007  
Page 2

accompanying the reclamation plan; however, the datum is undefined, and what appear to be final contours are not defined on the map "Legend" (see comment #3 below). We recommend that the depth of mining be clearly stated as an elevation in the text and tied to a verifiable bench mark that can be referenced in the field for compliance monitoring.

3. SMARA Section 2772(c)(5) requires that the reclamation plan include a map with boundaries and information pertinent to the reclamation of the site. The plot plan for this site should clearly show boundaries of active and future mining areas, topographic details, geology, streams, utilities, haul roads, and stockpile areas (topsoil and material) to scale. The maps included in the reclamation plan generally appear adequate, except for the following:
  - a. The numbering on the topographic contour lines is illegible on many maps (i.e., Figures 4, 4a, 6, and 7). The labels and/or maps should be enlarged.
  - b. The different colors of the topographic contours should be fully defined in the "Legend" for each map.
  - c. The maps do not show the soil berm that will be placed to prohibit low flows from entering the pit. The maps should be modified to depict the soil berm placement.
  - d. As discussed during the site visit, maps should be included to show the slope configurations for the "Modified Mine Pit Boundary" as appropriate.
  - e. The maps should be modified to give the topographic and geographic datum (e.g. mean sea-level in NAD27, NAD 83) and show real-world geographic coordinates (e.g. California State Plane, latitude-longitude, Universal Transverse Mercator).

**Geotechnical Requirements**  
(Refer to CCR sections 3502, 3704)

4. CCR Section 3704(f) requires that the final quarry cut slopes have a minimum factor of safety that is suitable for the proposed end use. The reclamation plan indicates that the maximum depth of excavation will be 90 feet with a maximum final individual slope gradient of 2 horizontal to 1 vertical (2H:1V) and an overall slope gradient of 3H:1V. The accompanying geotechnical report in Exhibit 6 prepared by Hilltop Geotechnical, Inc., dated August 31, 2005 (project no. 521-A05), evaluated the stability of slopes to a maximum height of 100 feet. No subsurface data were collected for the Hilltop report; assumed conditions for the slope stability analyses included loose, poorly to well graded sand (SP/SW) with no ground water. The results of the analyses indicate that slopes are stable under static condition (i.e., factors of safety [FOS] of 1.4 to 2.0); however, slopes are only marginally stable under conditions of earthquake loading (i.e., pseudostatic FOS of 1.0 to 1.3). Given the marginal stable conditions indicated by the pseudostatic analyses (i.e., FOS for several profiles of 1.0), the reclamation plan should be revised to provide for observation and evaluation of subsurface conditions by a registered geologist or engineer as the pit

Steve Rodriguez  
November 8, 2007  
Page 3

excavation proceeds and reevaluation of slope stability.

The geologic report prepared by West Coast Environmental and Engineering (June 2003) indicates that the project site is underlain by weakly consolidated to unconsolidated alluvial sediments (conditions also assumed by Hilltop Geotechnical) that may have a moderate to high susceptibility for liquefaction when groundwater levels reach 20 to 40 feet below ground surface. Large seismic events are particularly relevant, because the site is located in a region of high seismicity with numerous active faults, such as the Big Pine and San Andreas faults. The West Coast study estimates a peak horizontal acceleration of 0.5-0.6g with a 10 percent probability of exceedance in 50 years for the site, indicating a high opportunity for liquefaction. Thus, the probability of liquefaction for the site also may be relatively high. The slope stability analysis and final design of slopes in the reclamation plan does not address liquefaction and lateral spreading, which can occur on slopes inclined as low as three degrees (i.e., ~19H:1V). The revised slope stability report also should address the potential effects of liquefaction and lateral spreading.

5. The mining and reclamation plan indicates that about 657,000 tons and 262,800 tons of excess sand and fines (i.e., waste materials), respectively, will be generated during the lifetime of the operation. Using the project estimate of 1.5 tons/cubic yard (c.y.), the mining operation will generate approximately 613,200 c.y. of excess material. The reclamation plan indicates that the excess materials may be sold as soil amendments or stockpiled in the processing areas for use in reclamation. The reclamation plan indicates that no backfilling is proposed (Section 7.3, page 37), and no spoils should be placed where they could enter the stream per the draft CA Department of Fish and Game 1602 agreement. If the excess fines and sand are not sold as soil amendments, the only area to place the fines is the approximately 19-acre processing area. This would result in backfilling of an average of 10 feet with the excess materials, which would violate the statement that no backfilling is proposed. The reclamation plan should be modified to specifically describe the disposition of the excess fines and sand.

#### Hydrology and Water Quality

(Refer to SMARA sections 2772, 2773, CCR sections 3502, 3503, 3706, 3710, 3712)

6. Groundwater levels in the project area are described as being 40 to 50 feet below ground surface (bgs) during wet years (page 8). This estimate comes from several agricultural wells that are located on farmland adjacent to the Cuyama River. Static water levels of 53 feet, 54 feet, and 66 feet bgs are reported from three separate wells, which occur 10 feet topographically above the river bed. Water levels in one of the wells (Exhibit 3 – Water Well Data) had attained a depth of roughly 100 feet bgs, apparently during dry years; however, no data were presented that indicate the other wells ever had static water levels lower than 67 feet bgs.

11-15-07: 3:26PM; DEPT OF CONSERVATION

: 2224144

E 4.7 F

Steve Rodriguez  
November 8, 2007  
Page 4

No groundwater level data come from the area of the proposed pit; however, the operator's representatives described apparent anecdotal reports from the GPS Mine indicating that no groundwater has been observed in pits as deep as 100 feet. If the absence and/or presence of groundwater in the GPS pits have been systematically recorded, then it is a valuable dataset that should be presented in the mining and reclamation plan and/or other project documents. If it has not been systematically recorded, it is interesting information that may or may not be indicative of groundwater levels beneath the proposed mine site.

The anecdotal reports of no groundwater from the GPS Mine pits appears to be consistent with the water level shown for a well adjacent to the GPS pit on Figure 3-11 of the Final Environmental Impact Report. The figure also indicates that water levels in wells adjacent to the proposed Diamond Rock Mine pit are 40 to 75 feet bgs. This information may indicate that water levels are somewhat different from beneath the GPS Mine and the proposed Diamond Rock Mine. The groundwater system seems more complex than presented in the project documents. Faults acting as groundwater barriers have been described in other parts of the Cuyama groundwater basin. Perhaps a small fault, such as the one observed in stream cuts directly west of the proposed mine, forms a groundwater barrier between the two mine sites.

The above discussion and the discussion in the reclamation plan documents indicate that there is a large uncertainty in the groundwater levels beneath the site. The operator proposes to mine to a depth of 90 feet bgs, and if groundwater shallower than 90 feet bgs is encountered in the pit, they will simply move over and mine in dry areas of the pit. This trial-and-error mining approach assumes that the deepest groundwater conditions exist at the site. However, groundwater shallower than 90 feet bgs is likely in any given year, and groundwater likely will be intersected. This approach appears to be in conflict with requirements of the California Department of Fish and Game 1602 agreement (Exhibit 9 – CDFG, Draft 1602 Agreement) that states on page 3 of 11: "15. The pit shall not be excavated to the level of groundwater, and shall stay at least 6 feet above water level." The reclamation plan should be modified to state that groundwater will not be intersected by mining, and it should describe how mining will be accomplished on an annual basis so that it remains in compliance with CA Fish and Game requirements.

7. Section 4.2 (page 15) describes the requirement for a 900-foot wide open channel area between the west bank of the Cuyama River and the western edge of the mining pit for the first three years of operation. Troesh is to monitor river flows for the first three winters after mining has been initiated and document the effect of the low-flow berms on river flows. The County Planning Department will evaluate the data to determine the amount of setback is considered necessary to avoid impacts to the Cuyama River. This requirement raises several concerns regarding the reclamation plan:

11-15-07 3:26PM:Dept Of Conservation

:522+1144

" 5/ 8

Steve Rodriguez  
November 8, 2007  
Page 5

- a. No plan to monitor flows/discharge in the river is included in the reclamation plan. A detailed plan for monitoring river flows and its effects on the berm and fluvial system should be included in the revised reclamation plan.
  - b. The CA Department of Fish and Game Draft 1602 agreement (Exhibit 9) Item 14 on page 3 of 11 indicates that there shall be a minimum 50-foot setback from the low-flow channel and the excavation pit. It further indicates that there shall be no impacts such as roads, to the setback/buffer zone, and the area shall be left undisturbed. Project documents indicate that the main low-flow channel of the Cuyama River traverses the western part of the proposed mine area. The 900-foot setback appears to be needed to stay in compliance with CA Fish and Game 1602 agreement requirements. Additionally, smaller ("other") low-flow channels traverse the central part of the proposed mine pit area. The reclamation plan should describe how mining will be accomplished on an annual basis so that it remains in compliance with CA Fish and Game 1602 agreement requirements.
  - c. As described above, the modified mine pit boundary is shown as a line on Figure 4. A separate figure should show finished slopes associated with the modified mine pit boundary.
8. CCR Sections 3706 and 3710 require that surface and ground water be protected in accordance with the Porter-Cologne and Clean Water Acts as implemented by the Regional Water Quality Control Board and the State Water Resources Control Board. Regulations approved by the State Water Resources Control Board require that a mine site which discharges storm waters that may have contacted any overburden, raw material, intermediate products, by-products, or waste products on the mine site obtain a general industrial activities storm water permit and submit a Storm Water Pollution Prevention Plan (SWPPP). No SWPPP was included with the reclamation plan package, although the plan referred to a SWPPP that had been developed for the site. The relevant erosion control measures and monitoring requirements of the SWPPP should be incorporated into the reclamation plan to satisfy SMARA, and a copy of the final SWPPP should be included with the reclamation plan.
9. CCR 3710(c) requires that in-stream channel elevations and bank erosion be evaluated annually using extraction quantities, cross-sections, and/or aerial photos. The reclamation plan indicates that biannual monitoring will consist of surveying river bottom elevations at three cross sections: (1) 1,000 feet upstream of the current mine pit; (2) in the middle of the current mine pit; and (3) 1,000 feet downstream of the current mine pit. It is uncertain what is meant by "the current mine pit," but it apparently refers to the GPS mine directly downstream of the proposed mine. Thus, the upstream monitoring point would be above the GPS mine but through the middle of the proposed Diamond Rock mine. At a minimum, the combined monitoring program should have the following cross section profiles: (1) 1,000 feet upstream of the proposed

Steve Rodriguez  
November 8, 2007  
Page 6

Diamond Rock mine; (2) through the proposed Diamond Rock mine; (3) between the two mines; (4) through the GPS mine; and (5) 1,000 feet downstream of the GPS mine. Additionally, at least two profiles that approximate the thalwegs of the low flow channels should be run to monitor the longitudinal profile of the fluvial system and tie together the cross section profiles.

The approximate locations of cross section and longitudinal profiles should be shown on revised project maps, and the initial biannual surveying of the profiles should be required prior to mining. Additionally, the monitoring plan should specify the precision and accuracy of the surveying and that the survey should be completed by a Professional Land Surveyor registered in California.

The monitoring plan also refers to review of the topographic data by the County and the potential for modifying the mine pit layout, width, and/or depth if adverse hydraulic conditions are evident. The plan indicates that it may take several years to address adverse hydraulic conditions because of uncertainty in ascribing the impacts on the fluvial system to the presence of the mine pit. Performance criteria are needed in the reclamation plan to define what and when actions will be taken to mitigate "adverse hydraulic conditions." Scientific studies should be completed to develop a better understanding of the behavior of the fluvial system prior to mining so that what constitutes expected/natural variability in the fluvial system versus what is meant by "adverse hydraulic conditions" can be clearly defined in the monitoring plan. For example, geomorphic studies, such as interpretation and analysis of channel patterns, bed and bank erosion, and sedimentation on sequential historical aerial photographs and maps that predate mining, will likely give an enormous amount of data on the long-term behavior of the fluvial system above, through, and below the mine sites.

10. CCR 3502(b)(6) requires that temporary stream and water diversions be shown. As indicated above, the flood-control berm is not shown on project maps. The revised reclamation plan should show the location of the flood-control berm and include details of its construction.
11. The reclamation plan refers to a grade-control structure to eliminate uncontrolled downcutting by Deer Park Creek where it intersects the proposed mine pit. The location of the grade-control structure is shown along the east side of the proposed mine on project maps; however, no details about the design of the grade-control structure or hydrologic modeling of expected flows in Deer Park Creek are given in the reclamation plan. This information should be included in the reclamation plan prior to its approval.

The reclamation plan does not describe that the grade-control structure will be removed as part of final reclamation. If it will be removed as part of reclamation, the reclamation plan should state that it will be removed. If the grade-control

Steve Rodriguez  
November 8, 2007  
Page 7

structure will remain as a permanent engineered structure, the justification/need for the structure when reclaiming to open space should be described in the revised reclamation plan. Permanent engineered structures should be properly designed by registered professionals, and plans and specifications of the construction should be included with the revised reclamation plan.

### Resoiling and Revegetation

(Refer to SMARA section 2773, CCR sections 3503, 3704, 3705, 3707, 3711)

12. Topsoil on the processing plant site is to be salvaged (one-foot depth). The plan describes stockpiling part of the topsoil in landscape berms and spreading the rest over the adjacent farm field. While this concept has merit in terms of improving agricultural production, OMR is concerned that storing topsoil on the adjacent field may necessitate including that area within the reclamation plan boundary. This issue should be resolved before proceeding with such a plan.
13. The plan describes planting native trees and shrubs on the topsoil berms for screening. The plan should also provide for seeding the berms, both for erosion control and to prevent weeds from establishing. A standard erosion control mix as recommended by the County Agricultural Department should be adequate for this area, since the soil will be returned to agricultural use.
14. A seeding method was not specified in the plan, although the Financial Assurance Cost Estimate (FACE) lists a backhoe loader with spreader attachment to be used for the seeding. The method of seeding should be specified within the reclamation plan.
15. The reclamation plan should clearly indicate which areas are to receive the native seed mix. The text describes the use of the mix on the riverbank restoration area, however the revegetation task in the FACE calls for seeding 22 acres with the native mix. The riverbank restoration area is surely much less than 22 acres in size. The reclamation plan should clarify where the remaining seed mix will be applied.
16. One of the weed control measures described is to pre-germinate weed seeds by irrigation, and then kill the emerging seedlings using herbicide. OMR points out that such a procedure would have to be carefully timed (perhaps done the previous autumn while temperatures are still high enough to germinate the weeds) to avoid a late application of the native seed mix and ensuing potential failure.
17. The shrub cover criterion for the riverbank restoration is stated to be 5%, but the density of native shrubs is set at 1 shrub per square meter. This would seem contradictory since, if the shrub density is really that high, cover would be much higher than 5%, at least when the shrubs are grown. During the site visit, it was observed that the density of shrubs in the naturally occurring vegetation was probably much lower than 1 per square meter. OMR suggests that the density

11-15-07: 3:26PM: Dept of Conservation

:522+4144

" 8' 6

Steve Rodriguez  
November 8, 2007  
Page 8

criterion be set to a more reasonable level tied to the baseline shrub density on the site.

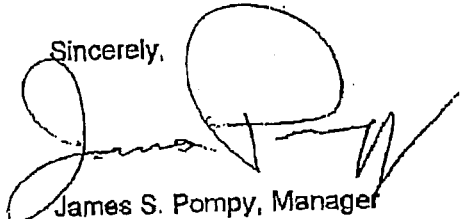
### Administrative Requirements

(Refer to SMARA sections 2772, 2773, 2774, 2776, 2777, PRC section 21151.7)

18. SMARA 2772(c)(10) requires that an applicant's signed statement accepting responsibility for reclamation per the reclamation plan be included. Page 28 of the reclamation plan refers to a Statement of Responsibility signed by Troesh on the last page of the Reclamation Plan; however, no such statement was found in OMR's copy. This statement should be added to the revised reclamation plan.
19. Recent legislation (Senate Bill 688, Chapter 869, Statutes of 2006) amended PRC Section 2774 with respect to lead agency approvals of reclamation plans, plan amendments, and financial assurances. These new requirements are applicable to the reclamation plan. Once OMR has provided comments on the reclamation plan, a proposed response to the comments listed above must be submitted to the Department at least 30 days prior to lead agency approval. The proposed response must describe whether you propose to adopt the comments. If you do not propose to adopt the comments, the reason(s) for not doing so must be specified in detail. At least 30 days prior notice must be provided to the Department of the time, place, and date of the hearing at which the reclamation plan is scheduled to be approved. If no hearing is required, then at least 30 days notice must be given to the Department prior to its approval. Finally, within 30 days following approval of the reclamation plan, a final response to these comments must be sent to the Department. Please ensure that you allow adequate time in your approval process to meet these new SMARA requirements.
20. Two typographical errors were noted in Section 7.9 on page 41. The text refers to Section 4.5.11 regarding the SPCC Plan and Section 4.5.12 regarding the SWPPP. The section numbers should be changed to read 4.5.12 when referring to the SPCC and 4.5.13 when referring to the SWPPP.

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