



## **ATTACHMENT A**

Appeal to the Santa Barbara County Board of Supervisors  
of Santa Barbara County Planning Commission Decision Dated June 8, 2011

### **Reasons for Appeal:**

#### **A) Acceptance of the Planning Commission's recommendations in this case would be a clear violation of responsibility.**

One of the primary responsibilities of the Santa Barbara County Board of Supervisors (Board) is to protect their community (Cuyama Valley) and its environment and natural resources.

The Planning Commission's mandate also requires it to protect, among other things, the water resources that supply the area surrounding the mine pits. The permit accepted by the Commission on June 8, 2011 can irreparably jeopardize water quality and supply to the Ventucopa and Cuyama Valley areas by compromising the water table. River channel stability imbalance is already clearly evidenced by the GPS Mine pit as a result of historic mining and failure of the Cuyama River to replenish aggregate that GPS extracted without a permit in 2007 and 2008. In short, the scope and duration of the excavation activities the Planning Commission would permit will destroy or seriously compromise the natural water supply to the area for decades to come.

#### **B) The Planning Commission has violated the Supremacy Clause by recommending granting permission of activities specifically prohibited by the Army Corps of Engineers, an agency of the Federal Government.**

By a split 3 to 2 vote, the Santa Barbara County Planning Commission and Board of Supervisors are permitting a scope of activity that the Federal Government has already, after a substantial study, found to be unsafe. There is a direct conflict between what the County as a sub-agency of the State Government is willing to allow, and what the Federal Government has already forbidden, in violation of the Supremacy Clause. The section 404 permits issued by the United States Army Corps of Engineers (USACOE), after considering the documentation the Applicants submitted to them, imposed much stricter limits upon the Applicants' activities than those the Planning Commission proposes. The USACOE order constitutes a new regulatory landscape within which Diamond Rock and GPS will be unable to implement the mining projects that the Planning Commission proposes to permit. It is important to remember that the USACOE is not only a Federal regulatory body, it is just what

its name implies, an engineering body with special competence in these matters that the Planning Commission lacks.

We suggest it would be highly irresponsible for this Board to permit activities with a scope and length of time that conflict directly with the rulings and determinations of the USACOE and the U.S. Environmental Protection Agency (EPA).

The following are differences between what the Planning Commission would have the Board, approve and what the USACOE found to be consistent with safety to the water supply and the environment.

Extraction Rate: The Commission would allow an average extraction Rate of 500,000 tons per year. The maximum the Army Corps of Engineers would permit is 200,000 tons per year.

Maximum Mine Pit Depth: This issue impacts directly upon the danger of compromising the underground water supply in the area. The Commission would allow a maximum pit depth of 90 feet. The USACOE would allow only half that pit depth, or 45 feet.

Project Footprint: This is also a water-critical issue. The Planning Commission would permit a footprint of 84 acres. The USACOE would permit a maximum of one-sixth of that area, or 14 acres.

Permit Duration: The Planning Commission would allow the permit to extend for 30 years. The USACOE would permit a maximum of 5 years, with renewal to be reviewed by the Corps before approval.

Monitoring Plan: The Planning Commission's approval requires no monitoring program. The USACOE requires an independent surveyor to inspect the site semi-annually in April and October of each year.

**C) Because of new information and circumstances, pursuant to CEQA Guideline §15162(3), the County must consider preparing a subsequent or supplemental EIR.**

The new information includes the United States Army Corps of Engineers (USACOE) Section 404 permit and the Corps' Environmental Analysis (EA) which, in order to mitigate the project's potential for causing hydraulic, biological and water quality damage, significantly reduced the size and depth of mining pits and limited the overall permit duration and maximum yield. Diamond Rock and the County should

reconsider its own analysis and conclusions in light of this new information. The limitations imposed by the USACOE permit also constitute “changed circumstances” which also compel further analysis and reconsideration by the County. The section 404 permit constitutes a new regulatory landscape within which Diamond Rock will be unable to implement the mining project as permitted by the County.

New information compelling a supplemental or subsequent EIR also includes new evidence of erosion that has resulted from the historical operation of GPS. As explained in Dr. Curry’s June 6, 2011 report, photographs of the area in the vicinity of the mines show that the ongoing mining operations are causing significant erosion that the Diamond Rock EIR concluded would not occur. Dr. Curry’s report explains that these photographs show hydraulic river channel erosion far in excess of rates predicted by the EIR. The County did not meaningfully consider any evidence of erosion on the Cuyama River in the course of its environmental review of the Diamond Rock Mine project or the cumulative effect of the two mines operating side by side. Please refer to USACOE project limitations listed above in item B).

**D) The Board should keep in mind that it is dealing with the mine operator, GPS, who has a history of illegal activities and violations of law in the past and they need to be monitored more closely than an operator who does not have the same history.**

The permit that you are being asked to approve provides for totally inadequate supervision of an operator, GPS Mine, already found by several agencies to be undependable; to have excavated without appropriate permits; to have operated without due regard for environmental concerns; and to have operated in a way that endangered the environment and in particular the water supply and water table. The USACOE Environmental Assessment (EA) prepared for GPS substantially limits their activity in a manner similar to the limitations in scope imposed on the Diamond Rock Mine.

In 2004 and 2005 GPS was cited by the EPA for discharge of dredge or fill material that resulted in alteration of approximately 22 acres of watershed under the jurisdiction of the United States.

In 2008 the Federal Environmental Protection Agency (EPA) determined GPS had encountered ground water in 2007 and 2008, in the unpermitted pit, where they began excavation in 2007. County Planning and Development staff allowed the unpermitted excavation and expansion to take place. Planning and Development has not protected the water resources in the vicinity of the mines in the past.



The pit still has water in it that GPS claims is rainwater held in place by a clay barrier. The clay barrier is preventing water from percolating downward to recharge ground water. Please refer to USACOE Environmental Assessment prepared for Diamond Rock Mine dated April 15, 2010.

It is of utmost importance that the operations of both mines be strictly monitored.

**E) The project you are asked to approve jeopardizes Cuyama Valley's single source water supply in a way that cannot be remediated.**

The primary problem with multiple in-stream mining in the Cuyama River, although not the only environmental problem, is the danger to the water quality and supply. That is precisely the reason why the California Department of Fish and Game (CDFG) and the United States Army Corps of Engineers (USACOE) have severely limited the project compared to what the Commission has proposed that you allow to take place.

The following paragraphs outline some of the dangers to the environment that you are permitting (we are addressing only the dangers to the water environment, you are already aware of the rest of the environmental dangers).

E.1. The Planning Commission ignored or did not review reports and evidence submitted by the appellant demonstrating that the existing GPS Mine in-channel deflection berms are directing the Cuyama River westward, resulting in severe upstream and mine-site bank erosion. Riverbed and bank erosion will result in degradation of water quality by the addition of impermissible levels of salt to the river at and below the mine sites and recharge of the water system will be reduced by increased sand sediment deposited in the riverbed.

E.2. The Revision to the Diamond Rock Mine and Processing Facility will exacerbate existing damage to the river channel because the proposed new Diamond Rock Mine must also build in-channel deflection berms just upstream of the GPS site. The combined negative impact to the river channel caused by the two mines together is greater than the sum of its parts and severely endangers the water table and water supply to the area.

E.3 There are two different kinds of water supply impacts: 1) Damage from evaporatively concentrated water quality degradation may take decades to be diluted to prior concentrations, and 2) Damage to recharge may not be restored until a 50-100 year recurring interval flood event takes place in the Cuyama River.

**F) The proposed action, as pointed out by experts' reports submitted by Appellant, will allow damage to the Cuyama River underflow, river water that flows in the gravels and sands in the bed of a river, that supplies vital recharge water to agricultural and domestic users near and below the mine sites.**

Contrary to claims accepted by the Planning Commission, the water in the mine excavation pits is, in part, underflow of the river, not just rainwater. Historic groundwater levels in the mine-site Observation/Domestic Well #1, as measured by SB County Floods Control, Water Conservation District, and Water Agency vary from a depth of 111 feet below ground surface (BGS) in 1975 to 12 feet BGS (river bed level) in 1990. Water level in 1995 was 34 ft BGS [p. 15, Reclamation Plan, Southwest ReadyMix (now GPS), Sept 30, 1997 – RAM Consultants]. Agricultural water recharged from the Cuyama underflow is critical to upper Cuyama Valley. This is part of the Cuyama River and part of the Waters of the United States. Exposure of these flowing waters degrades water quality through evaporative concentration and reduces adjacent and down-stream recharge.

Please refer to Dr. Curry's Professional Geologists' reports for June 6, 2011 and 2009. See US Geological Survey preliminary online data for Zannon well and others at the Cuyama River Project website.

**G) The Planning Commission has approved breaking up an environmental assessment into separate parts that can be evaluated individually (piecemealing), rather than looking at the impacts of the sum of the parts, which may exceed the individual impacts. Under CEQA, piecemealing is not permitted for impact assessment.**

To allow piecemealing of impact assessments for the 5-year Federal (USACOE and F&G) regulatory periods will obscure the cumulative damages to the watershed at and in the area of the mine pits.

Federal and State regulators all concur with limiting the Joint Venture between Diamond Rock and GPS mines to excavation of only one mine at a time for a 5-year period. The Planning Commission has misinterpreted this to suggest that both mines may operate after 5 years. Environmental assessment of this already severely imbalanced riverbed site, as noted in the down-cutting of river banks and in the laterally migrating river channel, cannot be delayed until after mining occurs for several more years. The evidence of channel damage is readily visible in the riverbed above, at and below the GPS mine site.

**H) The County must establish that the proposed processing of Diamond Rock aggregate could be lawfully undertaken at the GPS site consistent with GPS's Conditional Use Permit (CUP.)**

It appears that aggregate that is processed at the Diamond Rock site would be processed at the existing GPS processing facility. Without any discussion, proponent Diamond Rock assumes that GPS can lawfully transport, process and ship out aggregate under its existing County permit. We disagree with this analysis.

**I) The County must explain how water from the Diamond Rock site would be transported to the GPS site for processing.**

The Diamond Rock EIR stated that water needed for aggregate processing, dust suppression, etc. would be pumped from Well #4 along the southern boundary of the Diamond Rock mine site. Surprisingly, the Staff Report/Addendum for the Proposed Revised CUP claims that water for aggregate processing at the GPS site would also be pumped from the same well. Construction of a pipeline would likely create substantial environmental impacts and require a different or revised CDFG Code 1604 Streambed Alteration agreement and a new or revised Army Corps Sec. 404 permit. These potential impacts have not been addressed or even considered.

**J) Before the County can conclude that the proposed revisions to the Diamond Rock CUP will not result in a significant impact on groundwater, the County must carefully consider whether processing Diamond Rock's excavated aggregate at the GPS site would result in a greater net water consumption and therefore a significant impact on groundwater.**

The main purpose of the proposed modifications to the Diamond Rock CUP ostensibly is to save the cost of constructing a new processing facility at the Diamond Rock site by taking advantage of the existing processing facility at the GPS mine site. The County claims this change will not result in any environmental impacts, but there is no evidence to show that the County has actually considered the potential environmental impacts of aggregate processing at this "new" site. Careful review of the Staff Report for the proposed revisions to the Diamond Rock CUP reveals that Staff has simply copied its description of the aggregate processing at the proposed Diamond Rock site word for word, and figure for figure.

This evidence proves beyond any doubt that the County has not even considered whether moving aggregate processing from the Diamond Rock site to GPS will result in any different or more intense environmental impacts. Also, the County's conclusion that the operation of the Diamond Rock mine would not result in a significant impact on groundwater resources was based on the specific details of the

proposed Diamond Rock processing facility and the County's conclusion that 74% of the processing groundwater would be recycled and reused. Based on the project description and assumptions unique to the proposed Diamond Rock site, the County concluded that during peak production, the Project would use water at the maximum net rate of 28.1 acre feet/yr. EIR at 3.3-6. Based on this calculation, the County concluded that Diamond Rock would not result in a significant adverse impact on groundwater because the net consumption would be less than the County's 31 acre-feet per year threshold. ibid.

**K) The County and Diamond Rock have entered into an agreement that is not enforceable with respect to GPS who will be operating both the GPS mine and the Diamond Rock mine.**

**L) The County has proposed an addendum to the California Environmental Quality Act and modifications to the Diamond Rock CUP operating agreement between the Diamond Rock Mine and the County, but failed to consider any changes requested by local property owners and residents.**

**M) The Planning Commission fails to modify mitigations of approval by the Army Corps of Engineers and the Supremacy Clause.**

RE: Appeal to the Board of Supervisors / County of Santa Barbara

Specific conditions being appealed are:

1. The County has failed to adopt conditions of approval consistent with conditions mandated by the Army Corps of Engineers under the "Supremacy Clause" of the United States Constitution.
2. The County has not adopted an independent monitoring program for public site and record review of material extraction rates, water usage, water quality, water depth and disposition of fines nor any action to be taken if DR or GPS falls out of permit compliance.
3. The County has failed to review current mitigation to reflect new mine thresholds, i.e.:
  - a. Night mining
  - b. Maximize truck trips per day
  - c. Caps on emergency conditions declared by the planning director

The County should allow public review of the contract between Diamond Rock and GPS before being adopted.



November 4, 2011

Clerk of the Board of Supervisors and  
Santa Barbara County Board of Supervisors  
105 E. Anapamu Street, Suite 407  
Santa Barbara, CA 93101

RE: Diamond Rock Mine Administrative Appeal  
November 8, 2011

Dear Members of the Board,

Please add the following issues and documents to the Appeal:

- 1) The County adopted a standard for determining whether the impact of aggregate mining in the Cuyama River (i.e. scouring, headcutting) would be significant. The county "modified" the standard that is generally provided in CEQA. The standard states that if a project causes morphological changes to the river, the impact would be considered significant. The County took this standard and watered it down by including a provision that the impact on the river bottom is significant only if it potentially affects manmade structures. The County did not explain or provide evidence to support modification of this CEQA standard.
- 2) The County adopted a standard for water supplies in Cuyama 20 years ago, and their own more recent tri-annual report and the Cuyama Groundwater study cast doubt on some of the earlier assumptions about the amount of groundwater being used for agriculture. Technically it is not proper to use the same threshold for both direct impacts and cumulative impacts. Ordinarily the threshold for cumulative impacts is much lower.
- 3) There is also the question of the reliability of evidence the County used for both the Diamond Rock and GPS projects. The County readily accepted anecdotal evidence conveyed by the operators of GPS but dismissed out of hand photographic evidence submitted at the Diamond Rock Board of Supervisors Hearing.

Please find attached Page 3.1-18 of the Diamond Rock Mine Final Environmental Impact Report, which reflects the modification of the CEQA standard in the 5<sup>th</sup> paragraph from the top, and the May 13, 2008 letter from Gary Kaiser to Sarah Bartling which indicates how the modified CEQA standard was used to allow GPS Mine to expand out of its originally permitted 80 acres and mine in the Cuyama River without the required permits or a completed Environmental Impact Report.

Thank you for your time and attention to these matters.

Sincerely,

Jennifer Lee



May 13, 2008

RRR

RAM Environmental  
ATTN: Sarah Bartling  
2103 20<sup>th</sup> Street  
Bakersfield, CA 93301

RE: Continued and On Going Mining Operations at GPS Mine/Ventucopa Rock Plant  
Expansion 03CUP-00000-00059, 03RPP-00000-00003  
APN # 149-170-036, 149-210-011, -022

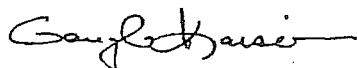
Dear Ms. Bartling:

As I mentioned during our recent meeting, it is common for surface mining operations to continue work while permits for expansion are being processed, even if the work is occurring outside the limits of an earlier permit. This is especially true for the older vested operations. The time that it takes to get through the permit process is largely beyond the control of the mine operator, yet the operator must continue to implement safety measures (i.e., flatten slopes that are too steep) and make the payroll. This type of cooperative approach based on a good faith commitment to diligently pursue the necessary permits is reasonable and necessary.

In general, it has always been the Planning and Development Department's practice to suspend active enforcement efforts while the owner is making "good faith" and reasonable efforts to obtain the necessary permits. Structures that have been built without permits; unpermitted but permissible uses that are occurring are usually allowed to remain/continue onsite until the permit process is exhausted. The decision to require removal of an unpermitted structure or require that a use cease until action is taken on the permit is up to the discretion of the enforcement planner in consultation with the Supervising Planner and Deputy Director based upon the facts of the case and the potential for impacts to the public's health or safety of the environment. In the GPS case, there is no such potential.

If you have any questions regarding this letter, please call me at (805) 934-6259.

Sincerely,



Gary Kaiser, Supervising Planner  
Development Review Division

### SECTION 3.0 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION

is derived from the USGS topographic map (100,000 foot scale), and as such, is an approximation of the profile. The profile is relatively uniform and does not display any major vertical departures at convergence points with tributaries.

A more localized profile of the river at the project site is shown in Chart 3-8, based on the USGS 7.5 minute map. The profile displays a moment in time, as the river profile changes with flood events and the re-distribution of sediment along the flow line. However, this more local profile does not show any evidence of headcutting from over 30 years of excavation at the GPS mine.

Nevertheless, the combined new excavations at Diamond Rock mine and an increase in production at GPS mine may cause headcutting upstream of the two mines due to the substantially higher mining rate in the study reach compared to the predicted natural replenishment rate.

In summary, the proposed projects, individually and cumulatively, will create a sediment deficit over time resulting in mine pits that will increase in size and depth until the mine pits are almost fully excavated. Significant flood events would replenish the mine pits during the early years of excavation when the pit volumes are similar to the sediment inflows from large storms. However, as the mining progresses, the amount of sediment inflow required to fill both pits will become greater, and therefore, the time required to replenish the mine pits would become longer compared to the current conditions at the GPS mine. Eventually, both mine pits would fill with sediment once mining has ceased. The amount of time to replenish both pits at the end of mining is dependent on many factors, but could be 10 years or more.

Under CEQA, hydraulic impacts are considered adverse if they cause channel bed degradation and/or bank erosion that: 1) damage public infrastructure such as bridges or pipeline crossings; 2) damage or destroy adjacent developed land uses or structures due to bank erosion or flooding; 3) disturb, convert, or destroy valuable in-channel riparian habitat; or 4) expose people to a new flooding hazard.

The creation of a sediment deficit over time by the two mines would be a temporary effect because the pits will eventually be filled by flood events. Loss of sediment in the downstream areas would likely result in only a local hydraulic impact. The nearest downstream river crossing is about 1.2 miles from Diamond Rock mine and about 1,500 feet from GPS mine (see Figure 3-7). The crossing is an at-grade dirt road on the river bed that is re-graded every year to provide access across the river for several ranches. Downstream channel degradation, if any, would not prevent this road from being established and used each year. This crossing was examined in September 2005 for evidence of channel degradation on the banks due to flood flows in the past 10 years. No obvious evidence of channel scour or erosion at the toe of the banks was observed.



June 6, 2011

Joe H. Valencia, Chair  
Santa Barbara County Planning Commission  
c/o Santa Barbara County Planning and Development Hearing Support  
123 East Anapamu Street,  
Santa Barbara, CA 93101

**Subject:** Santa Barbara County Planning Commission Hearing  
Agenda Items:

1) Case No.: 11APL-00000-00006

Appeal of a Time Extension for the Previously Approved Diamond Rock Mine and Processing Facility, and Staff Report for Appeal of Time Extension and Acceptance of EIR as Adequate under CEQA

2) Case No.: 11RVP-00000-00032

Revision to Previously Approved Diamond Rock Mine and Processing Facility, and Staff Report on Proposed Revision to Previously Approved Diamond Rock Mine

Dear Chairman Valencia and Ladies and Gentlemen of the Santa Barbara County Planning Commission,

I request that this letter and attachments be included in the decision-making process and added to the "record" for **both** agenda items listed above.

I also request that the documents supplied to the Planning Commission for review on March 24, 2011 included with the Appeal Letter and Forms, which were misplaced by the County, and resubmitted on May 13, 2011, be added to the "record" for **both** agenda items listed above.

The following is a brief chronology of events:

June 17, 2003, Troesh (Diamond Rock Mine (DRM)) submitted its application to the Santa Barbara County Planning and Development Department.

September 25, 2003, the County deemed the application complete and began environmental review of the Diamond Rock Mine Project.

2004 and 2005 the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE) officials found GPS Mine was discharging dredged and fill material into the Cuyama River and had degraded 22 acres of river habitat.

February 4, 2005, a draft Environmental Impact Report (EIR) for Diamond Rock Mine was released for public comment. The Draft EIR was made available to the Cuyama Valley community approximately one week before the 45-day public review period expired and the County granted an extension for public comment to be submitted.

November 2006, the County released a Revised Draft EIR for Diamond Rock Mine.

January 2007, Ventucopa GPS Rock Plant (GPS) began unpermitted expansion of its operations and excavated approximately 18 acres in the Cuyama River to a depth of approximately 50 feet below ground surface. Ground water was exposed and is still standing exposed as of June 6, 2011.

May 2007, the County released the Final EIR for Diamond Rock Mine and the Santa Barbara County Planning Commission held the first hearing on the Project.

July 11, 2007, the Planning Commission held a second hearing on the Diamond Rock Mine Project. The Project was “conceptually” approved and the final action was tabled until after the Office of Mining and Reclamation (OMR) approved the Diamond Rock Mine Reclamation Plan.

February 28, 2008, Santa Barbara County Planning and Development Staff met with members of Save Cuyama Valley to discuss questions about the final EIR for Diamond Rock Mine. A six-page summary of this meeting is included as an attachment to this letter.

May 14, 2008, the Santa Barbara County Planning Commission approved the Diamond Rock Mine and Processing Facility Project. Save Cuyama Valley/Cuyama Valley Conservancy appealed the Planning Commission’s approval to the Santa Barbara County Board of Supervisors.

September 23, 2008, the Santa Barbara County Board of Supervisors denied the Appeal and adopted the required findings for the Diamond Rock Mine Project, approved the Conditional Use Permit (CUP) and Reclamation Plan subject to the conditions of approval, and certified the Final EIR.

October 31, 2008, Save Cuyama Valley/Cuyama Valley Conservancy filed a Petition for a Peremptory Writ of Mandate (Petition) pursuant to Code of Civil Procedure section 1094.5, Santa Barbara Superior Court Case No. 1272650.

March 2009, GPS issued the first draft of their Environmental Impact Report (DEIR).

April 29, 2009, the GPS DEIR was made available for review and comment and presented to the Cuyama Valley community at a public hearing held at the Cuyama High School Library.

November 16, 2009 USACE issued an Environmental Assessment and Permit for GPS River Rock Products.

April 15, 2010, USACE issued an Environmental Assessment and Permit for Diamond Rock Mine.

March 2, 2011, Santa Barbara County Planning and Development (P&D) published a Notice of Planning Director's Decision in local Santa Barbara County newspapers, which stated that on March 14, 2011 P&D would approve a time extension for the Diamond Rock Mine and Processing Facility (DRM). The notice stated: "No substantive changes are proposed for the project, which has already been approved by the County."

March 14, 2011, P&D wrote a letter to Mr. Steve Troesh stating that the Director of Santa Barbara County Planning and Development had:

- A) Approved an economic hardship time extension for the proposed Diamond Rock Mine and Processing Facility (10TEX-00000-00014 to 03CUP-00000-000370), from March 23, 2010 to January 12, 2012.
- B) Accepted the Findings and Conditions of Approval for 03CUP-00000-00037, including the Final Environmental Impact Report (EIR) 05EIR-00000-00001, approved by the Board of Supervisors on September 23, 2008.

March 24, 2011, Cuyama Valley Conservancy filed an Appeal of the Director's Decision Dated March 14, 2011 (Case No.: 11APL-00000-00006).

March 29, 2011 Judge Rigali Denied the Petition for Peremptory Writ of Mandate in Civil Case No.1272650.

April 28, 2011, I went to the P&D office in Santa Maria and obtained copies of some of the documents for both the Appeal (1) and Revision (2). We had

previously emailed (P&D) with questions and were told we could review the County's files.

May 4, 2011, Staff Reports for both the Appeal and Revision became available to the public. Some of the reasons for the Appeal of the Director's decision were that changes have been proposed to the Diamond Rock Mine Conditional Use Permit and an addendum is proposed to the Diamond Rock Mine EIR. This information became available to the public at the same time the Planning Commission Hearing for the Appeal was scheduled.

May 11, 2011, Santa Barbara County Planning Commission decisions on Items 1 and 2 were postponed because supporting documents submitted with the Appeal form were inadvertently misplaced by the County. Commissioners unanimously agreed to reschedule the Planning Commission Hearing on Items 1 and 2 until June 8, 2011.

The Cuyama Basin is the largest in Santa Barbara County and is currently operating at a deficit of at least 30,000 acre-feet per year. U.S. Geological Survey studies indicate the groundwater deficit is becoming more severe. I ask that you wait to make a final decision on in-stream mining operations in the Cuyama River until the U.S. Geological Survey/Santa Barbara county Water Study is completed in 2012.

The Mines will provide few new jobs to the Cuyama Valley community at a potential cost of destroying and degrading the public water resources in the Ventucopa area and possibly the larger area of Cuyama Valley. The Cuyama River and aquifers are the Valley's **natural infrastructure** created by God and the Universe.

If the natural barrier between the aquifer in the Ventucopa area and the main Cuyama aquifer is breached or damaged due to excessive in-stream mining by Diamond Rock and GPS mines in the Cuyama River, the **damage will be irreversible.**

Please pay attention to the overall situation and do not make decisions concerning the cumulative effects of multiple aggregate mines, in close proximity to each other, within the Cuyama River in a piecemeal manner. The proposed joint venture between Diamond Rock and GPS mines constitutes piecemealing and is in violation of the California Environmental Quality Act (CEQA).

In addition, GPS Mine does not have a good track record. Their EIR has not been completed or approved and they have had at least two violations with resulting penalties and fines assessed by the Federal Environmental Protection Agency.

If decisions are made piece by piece, the overall situation is ignored, and the water table is irreversibly damaged “we will have let the cow out of the barn and then closed the barn door.” As decision makers for Santa Barbara County you are held responsible for making decisions, which may have disastrous effects on the lives and livelihoods of residents and farmers in the Ventucopa area and in the Cuyama Valley.

Please find 102 pages of attachments of photos and documents included with this letter.

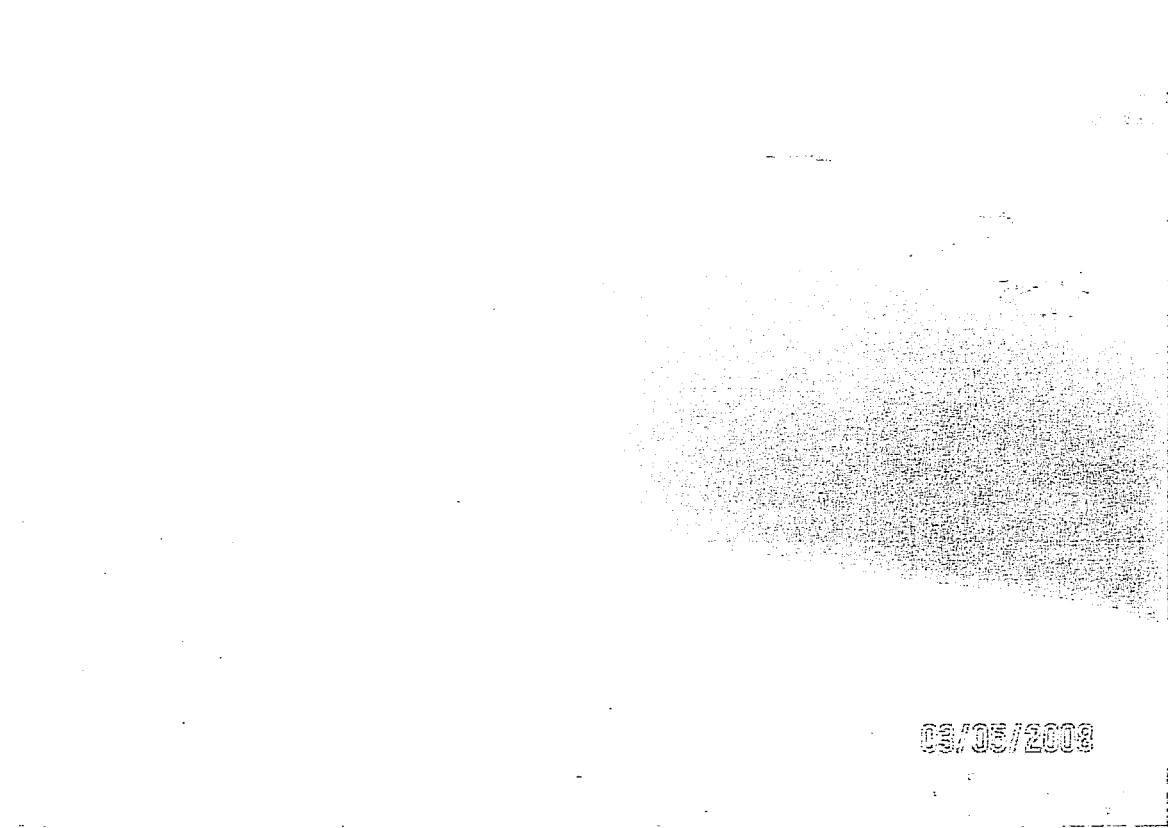
Thank you for your time and attention to these matters.

Sincerely,

Jennifer Lee  
for Cuyama Valley Conservancy



Looking north (upstream) at flooded pit.



Looking east at the upstream side of the berm located at the upstream side of the pit.



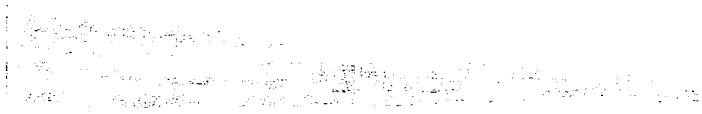
Looking west from the center of the Cuyama River at the pit and berm. The photo was taken at the edge of the recently degraded channel, notice the sharp drop off (approximately 5 feet in front of where the photo was taken).

03/05/2003

Looking south (upstream) at headcutting. This photo was taken from the same position as the previous photo. Notice the upstream berm on the upper right of photo. The difference in elevation between the grade of the river immediately upstream of a berm and current elevation of the degraded channel bed is approximately 60 feet.

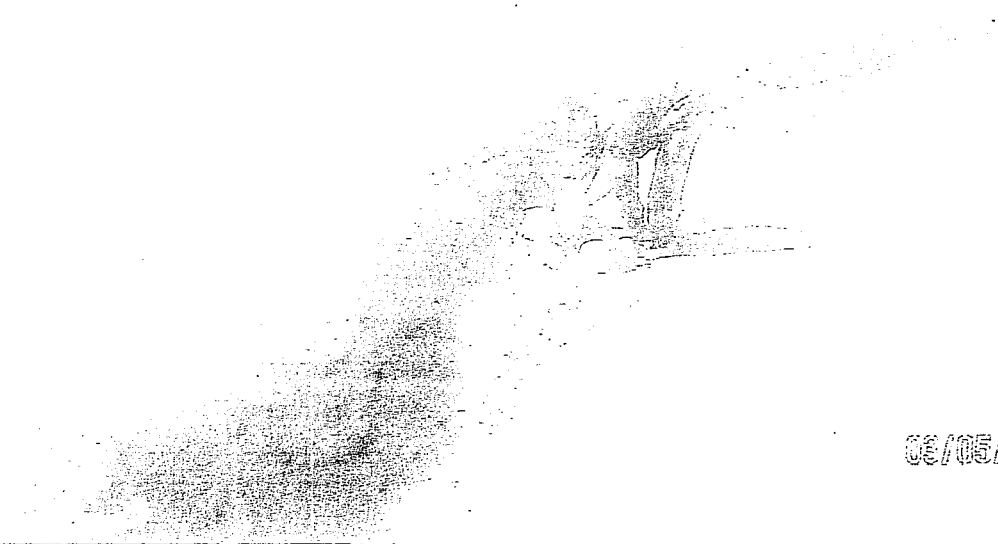
03/05/2003

Looking downstream (north) at headcutting. Notice the upstream berm at the center top of the photo. The berm is approximately 1000 feet away.



03/05/2008

Looking downstream (north) from the center of the Cuyama River at minor channel degradation relative to the adjacent terrace



03/05/2008

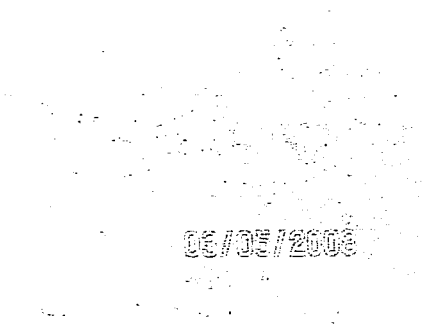
2006-2068-MWV Site visit to GPS mine (photo sheet 2)

Looking upstream (south) at Phase 1 revegetation area at north side of the property. The revegetation is located on the top of the terrace.



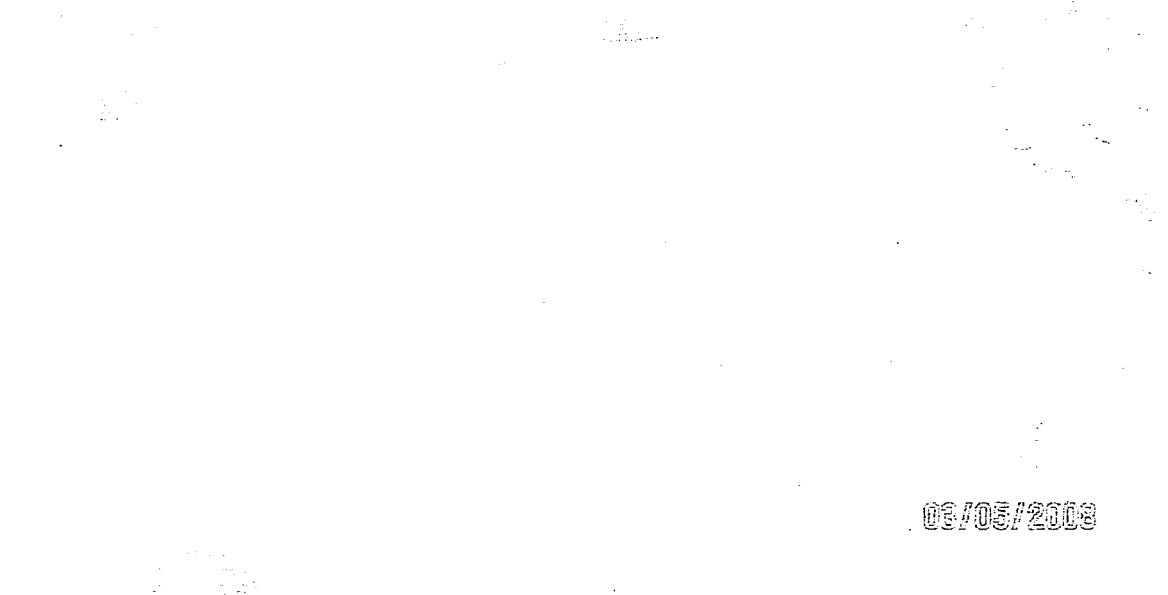
03/05/2008

Looking downstream from same location as previous photo.




03/05/2008

Looking east at "Natural Restoration" area. The area was graded several years ago (notice furrows) and the vegetation colonized the area naturally.



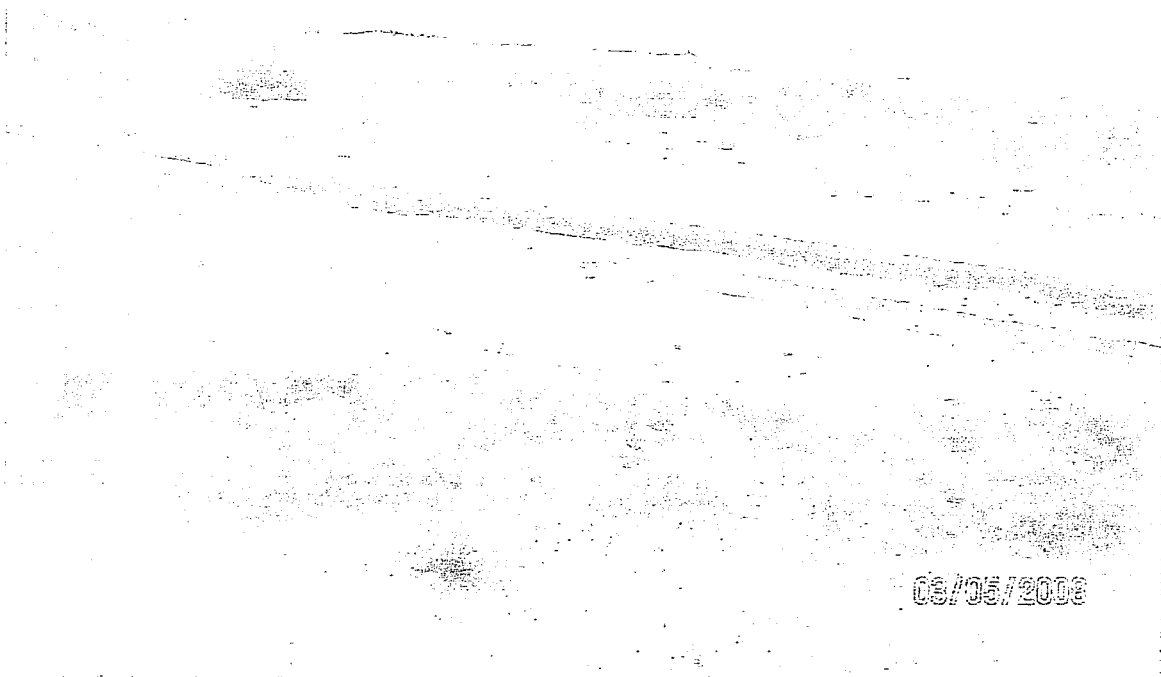
03/05/2008

Looking east from center of the Cuyama River at the "Natural Restoration" area on the left and the Phase 1 revegetation area (on the upstream side of the property) on the right sloping bank.



03/05/2008

Looking upstream (south) at channel (extension of the OHWM) that runs along the base of the Phase 1 revegetation area on the upstream section.



Looking downstream (north) at the upstream berm of the mine pit. Notice the difference between the vegetation on the left and right sides of the photos. These vegetation types are clearly evident in aerial photographs of the terrace.



Memorandum to the File  
GPS River Rock  
April 24, 2008

On April 24, 2008, EPA inspector Wilson Yee visited the GPS River Rock processing facility and mining pit sites along the Cuyama River. EPA had received communications from the Army Corps in March 2008 that unpermitted activities had occurred at the GPS facilities. The purpose of this site visit was to assess the status of these sites regarding compliance with 404 and 402 regulations, and to assess compliance with EPA's Administrative Order on Consent (AOC) and Consent Agreement and Final Order (CAFO). Both of these documents are enforcement actions against GPS River Rock (GPS), a sand and gravel mining operation located within the Cuyama River. EPA inspectors met with Sarah Bartling of RAM Environmental (RAM), representing GPS.

EPA first visited the mining pit. Yee observed an open excavated pit to a depth that exposed the water table, berms alongside the pit and in the Cuyama River bed, access/haul roads and ramps between the pit and the processing facility, and extensive headcutting (vertical erosion) extending to at least 1400' upstream of the pit. At the time of EPA's inspection, it did not appear that this headcutting was an imminent threat to private or public property, as the headcut was not migrating laterally toward either of the riverbanks, which might be undercut and sapped by this type of erosion. The difference in elevation between the river bottom and the water table was approximately 40 feet at the point where the headcut originated. In other locations, the depth to the water table from the surrounding river bed is approximately 60 feet. EPA believes that headcutting will continue with subsequent moderately high flows until the elevation differences are equalized, due to the high erodibility of the sand-dominated substrate.

EPA discussed the problems caused by the unauthorized activities, including the discharges of riverbed material to create the berms and access roads and ramps, as well as the extensive headcutting. RAM expressed that there was some confusion on GPS's part regarding whether extraction and processing activities were restricted under the terms of the AOC, and requested that the unauthorized activities be processed under an after-the-fact permit. RAM expressed frustration over the alleged conflicting information presented by various Corps project managers past and present, alleged conflicting information given by the Corps and EPA, and the length of time that this enforcement action has required. Yee reminded Ms. Bartling that the initial Corps correspondence was not based on a site visit which might include site-specific information and requirements, but did contain clearly spelled-out restrictions to activities which should have been clear to GPS. Yee stated that upon a Corps site visit, the subsequent project manager realized that GPS's activities, which by then had been ongoing for a number of years, should have required a permit. Yee reminded that this is also the position of the present project manager.

Yee explained that under the enforcement MOA between the Corps and EPA, the

processing of any new permits could not occur while an EPA enforcement action remains active. RAM again requested that EPA allow the unauthorized activities to be processed under an after-the-fact permit instead of an EPA enforcement action. Yee explained that further mitigation for the additional unauthorized activities would be likely required under a new EPA enforcement action, based on the findings of my inspection of the site. RAM stated that if EPA were to initiate another enforcement action, GPS would likely go out of business. Yee stated that the parties should next schedule a conference call to discuss the appropriate plan of action based on the findings of my inspection.

GPS processing facilities were also inspected for compliance with 402 requirements. There were no noteworthy concerns for stormwater protection.

See attached photo log and site map with EPA GPS point locations.

EPA's assessment of the GPS sites confirms the Corps' general description of the unauthorized activities and their environmental impacts.



04.24.2008 11:18

DSCN0029.JPG

04.24.2008 11:25

DSCN0030.JPG

04.24.2008 11:28

DSCN0031.JPG

04.24.2008 11:42

04.24.2008 11:47

DSCN0033.JPG

04.24.2008 11:47

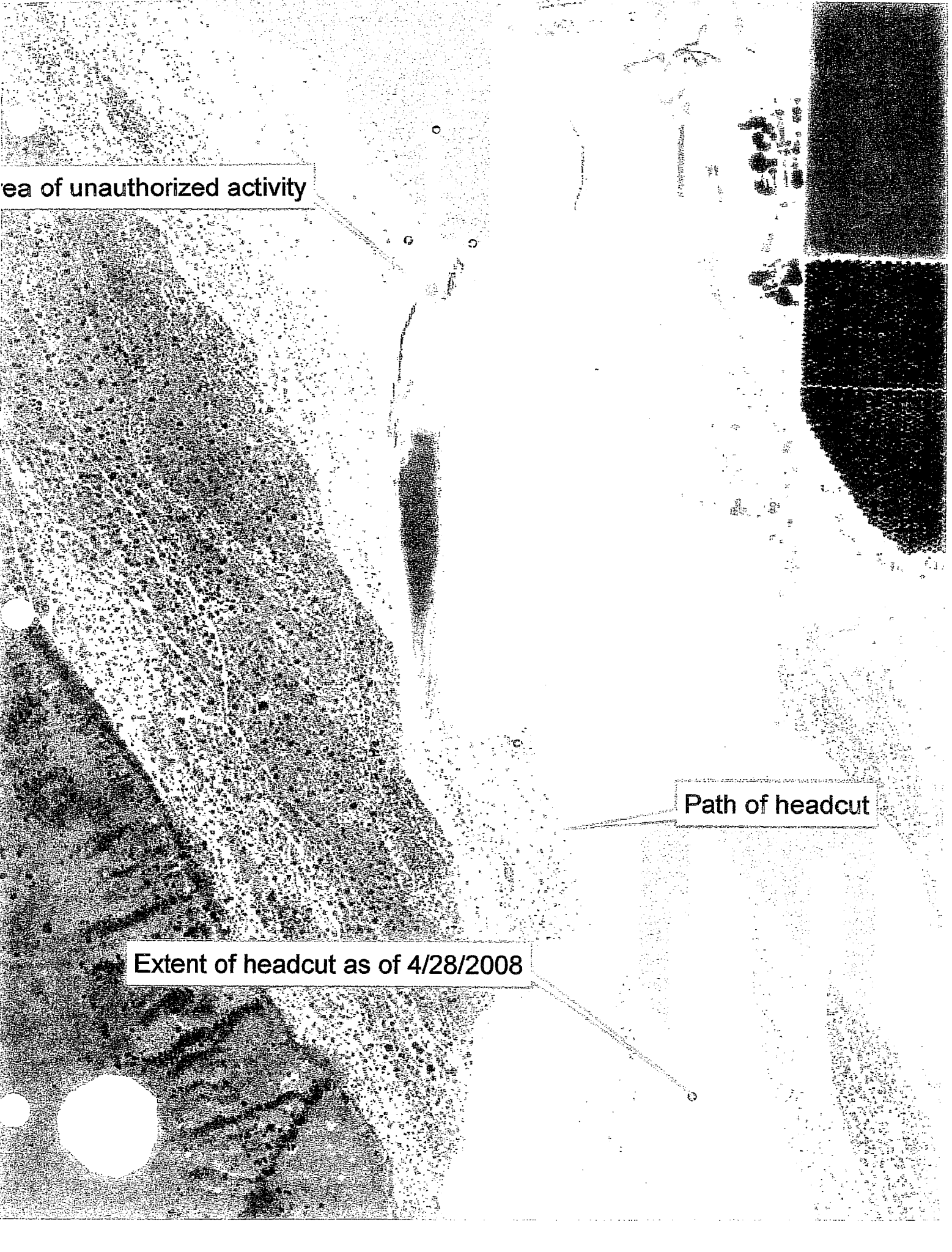
04.24.2008 11:47

DSCN0035.JPG

Area of unauthorized activity

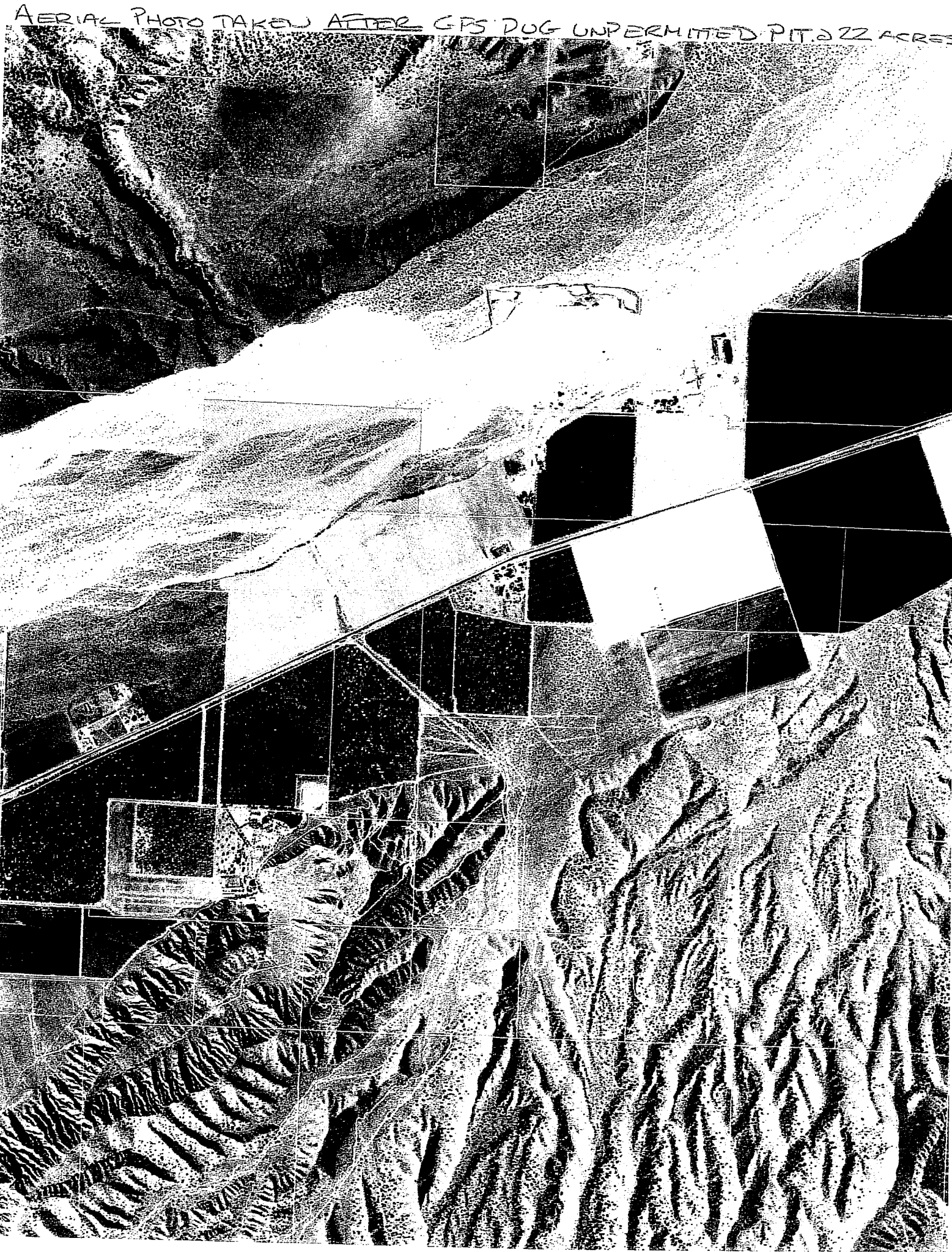
Path of headcut

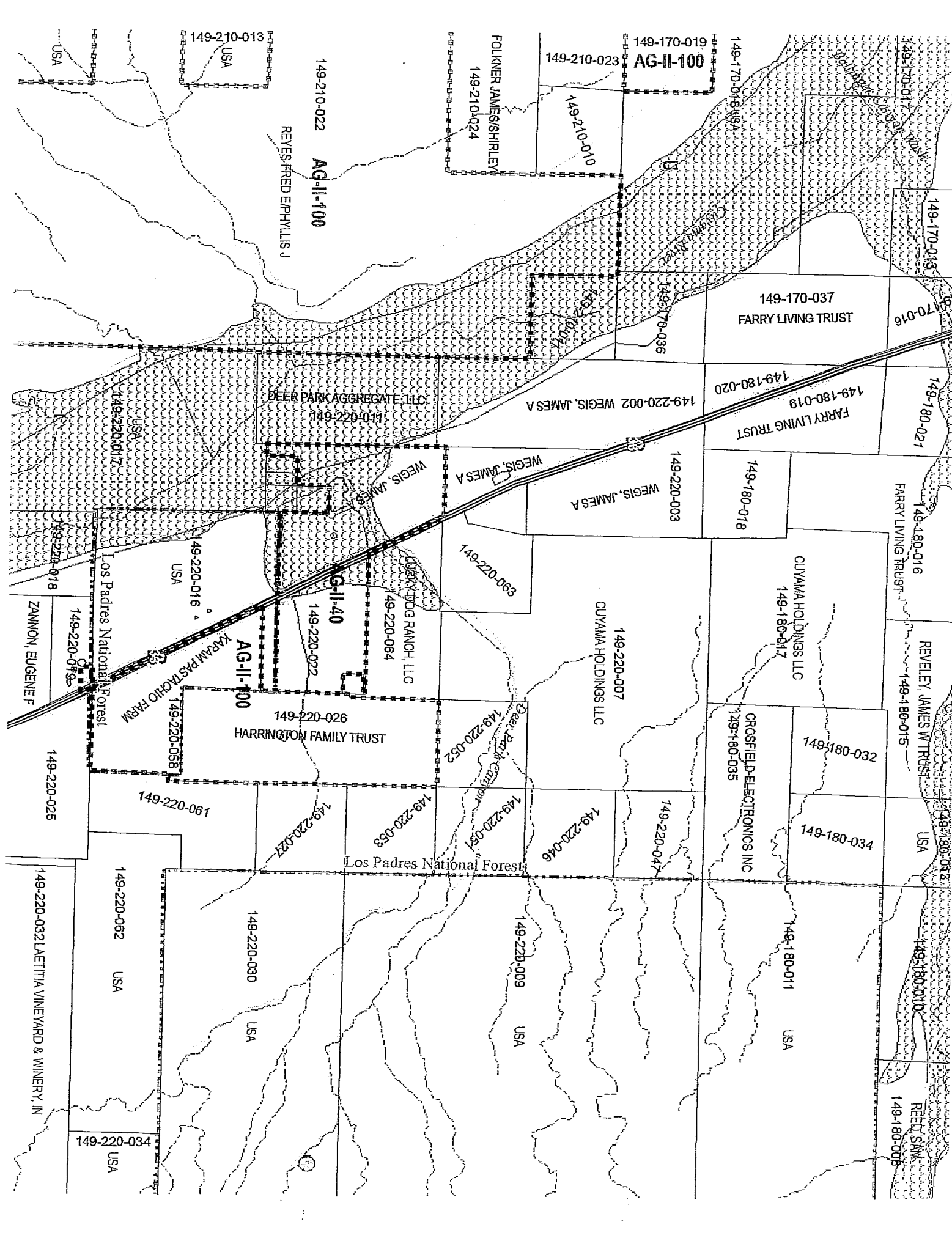
Extent of headcut as of 4/28/2008





AERIAL PHOTO TAKEN AFTER GPS DOG UNPERMITTED PIT 22 ACRES





149-170-019  
**AG-II-100**

149-210-022  
**AG-II-100**

REYES, FRED EPHYLIS J

149-170-037  
FARRY LIVING TRUST

149-180-019  
FARRY LIVING TRUST

BEER PARK AGGREGATE, LLC  
149-220-022

149-220-002 WEGIS, JAMES A

149-220-003  
WEGIS, JAMES A

149-180-018  
FARRY LIVING TRUST

CUYAMA HOLDINGS LLC  
149-180-047

149-220-007  
CUYAMA HOLDINGS LLC

REVELEY, JAMES W TRUST  
149-180-015

149-180-032

CROSFIELD-ELECTRONICS INC  
149-180-035

149-180-034

**AG-II-100**

**G-II-40**

149-220-026  
HARRINGTON FAMILY TRUST

LUCKY DOG RANCH, LLC  
149-220-064

Los Padres National Forest

Los Padres National Forest

KARAHU PASTORCHO FARM

149-220-061

149-220-030  
USA

149-220-062  
USA

149-220-032 LAETTITIA VINEYARD & WINERY, INC

149-220-034  
USA

REED, SAM  
149-180-005

USA

149-180-010  
USA

149-180-005  
USA

149-210-013  
USA

USA

FOLKNER, JAMES SHIRLEY  
149-210-024

149-210-023

149-210-010

149-170-018 USA

149-170-017

149-170-013

149-170-016

149-180-021

149-180-016  
FARRY LIVING TRUST

149-180-015

149-180-033

149-180-010

149-180-005

USA

USA

USA

USA

149-220-018

ZANNON, EUGENE F

149-220-025

149-220-062

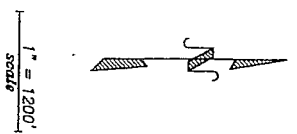
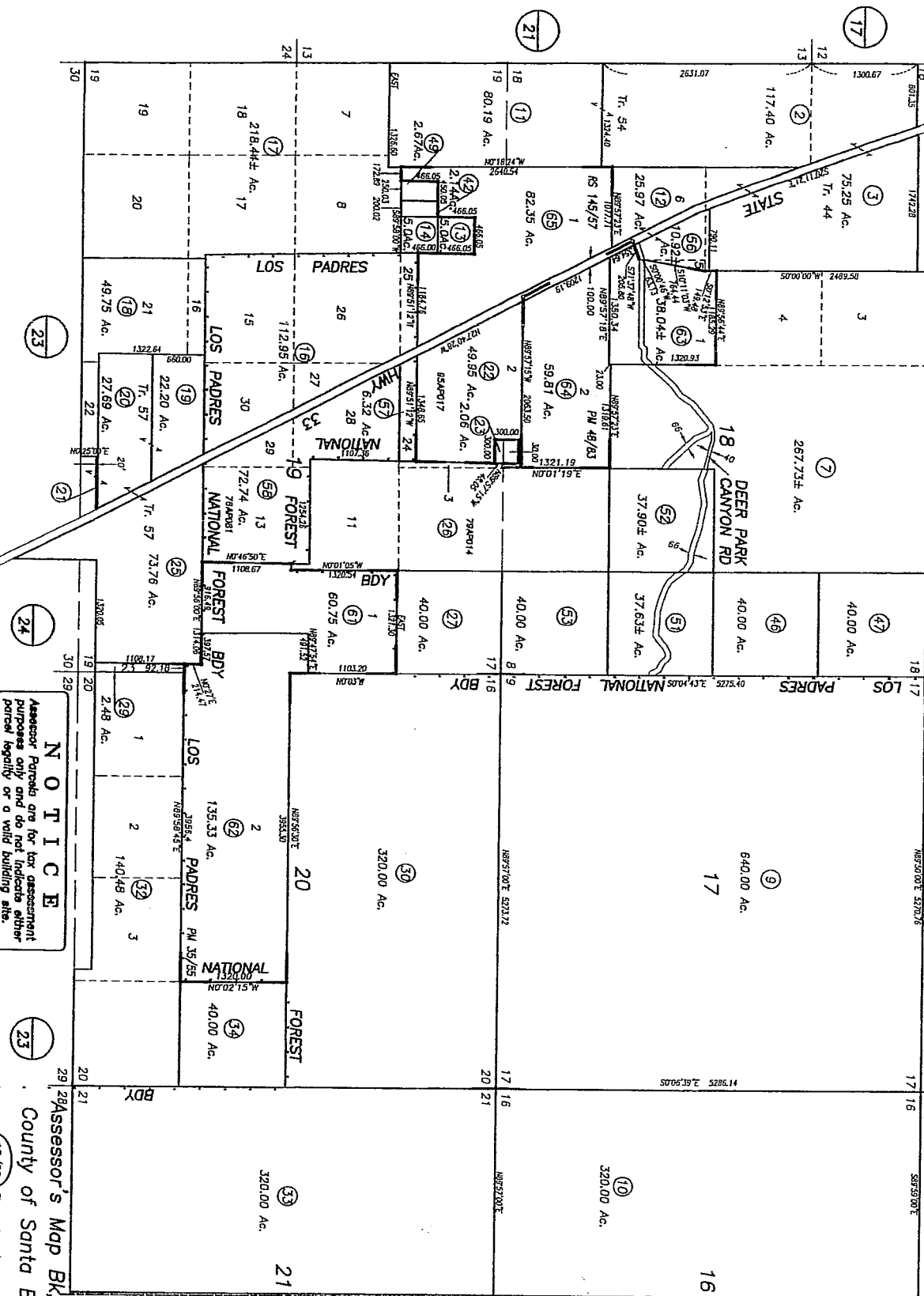
149-220-032



R25W  
R24W

POR. T9N R24W SBB&M

149-22

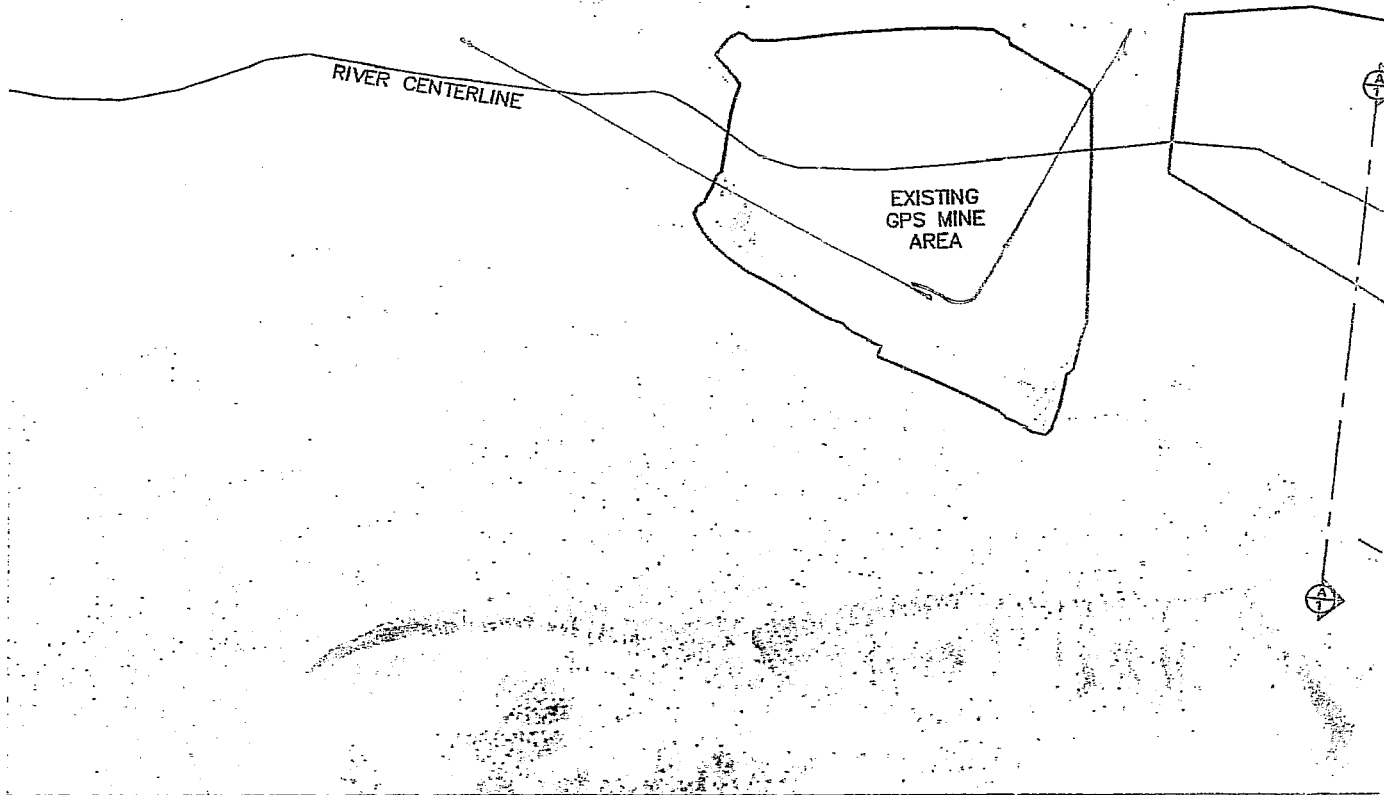


**NOTICE**  
Assessor's Parcels are for tax assessment purposes only and do not indicate either parcel legality or a valid building site.

Assessor's Map BK, 149-Pg, 22

County of Santa Barbara, Calif.

12/09 Show calc. R/S coverage on 58



DATUM:      HORZ= NAD83  
               VERT=NAVD88

PHOTOGRAPHY: GOOGLE EARTH JAN. 22, 2007



D	REVISION	DESCRIPTION	APP	DATE
C				
B				
A				
Δ				

DESIGNED BY: B. O'BRIEN

DRAWN BY: G. CAMUS

CHECKED BY:           

PROJ. NO.

459-14

A FIG 2

Cuyahoga Rr

EXISTING GPS MINE AREA

CUP BOUNDARY

INITIAL 5 YEAR EXTENT OF DIAMOND ROCK MINE

100 FT OPEN CHANNEL AREA

WEST BANK



DESIGNED BY: B. O'RIEN

DRAWN BY: G. CAMUS

CHECKED BY: -

PROJ. NO.

459-14

### DIAMOND ROCK MINE

SHEET 2

OF

DRAWING NO.

PREPARED

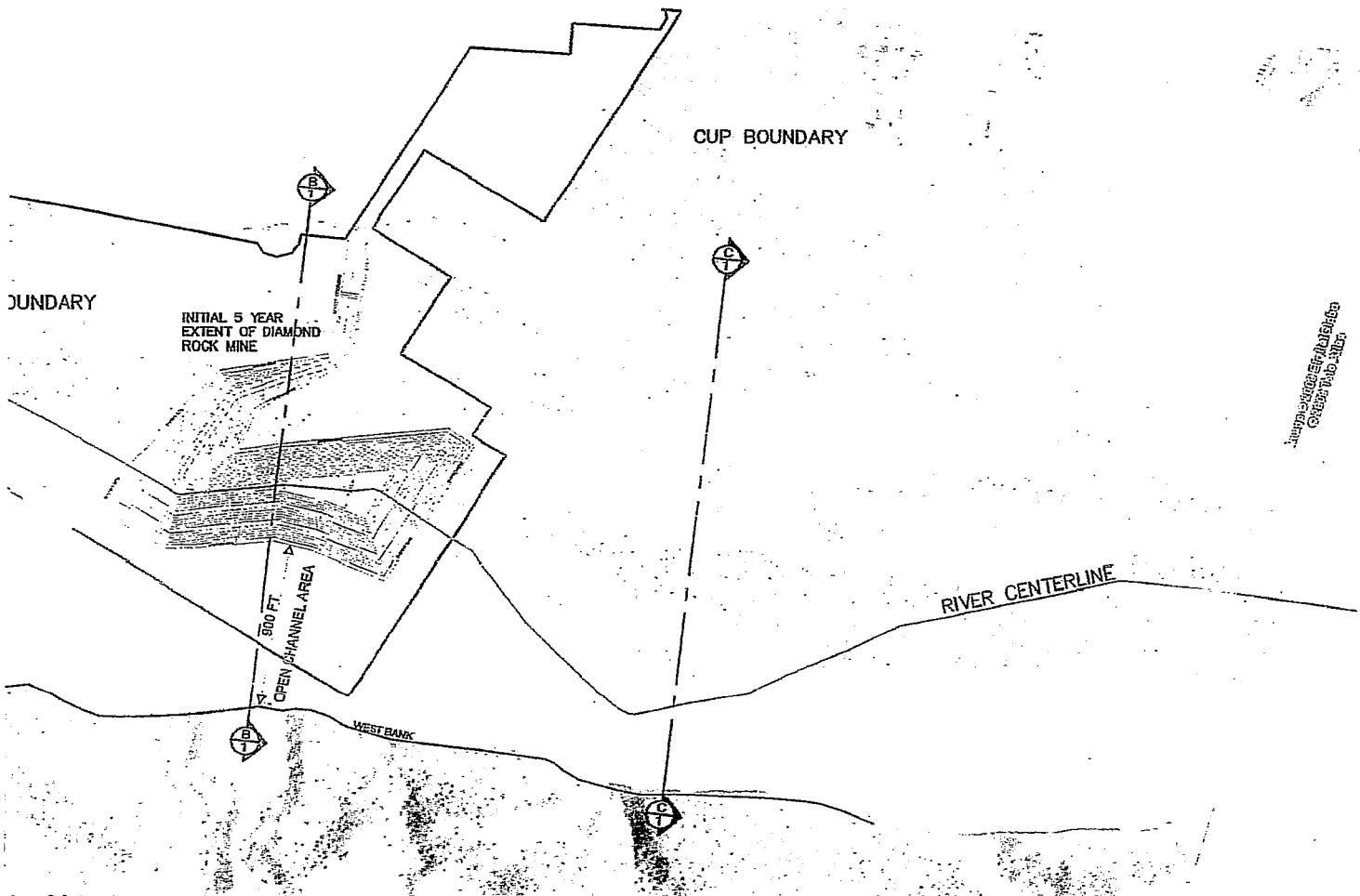
HAWK

BY

DATE

B FIG 2

Cuyama Rv



Approved: [Signature]  
Checked: [Signature]

# DIAMOND ROCK MINE

SHEET 2  
OF       
DRAWING NO.     

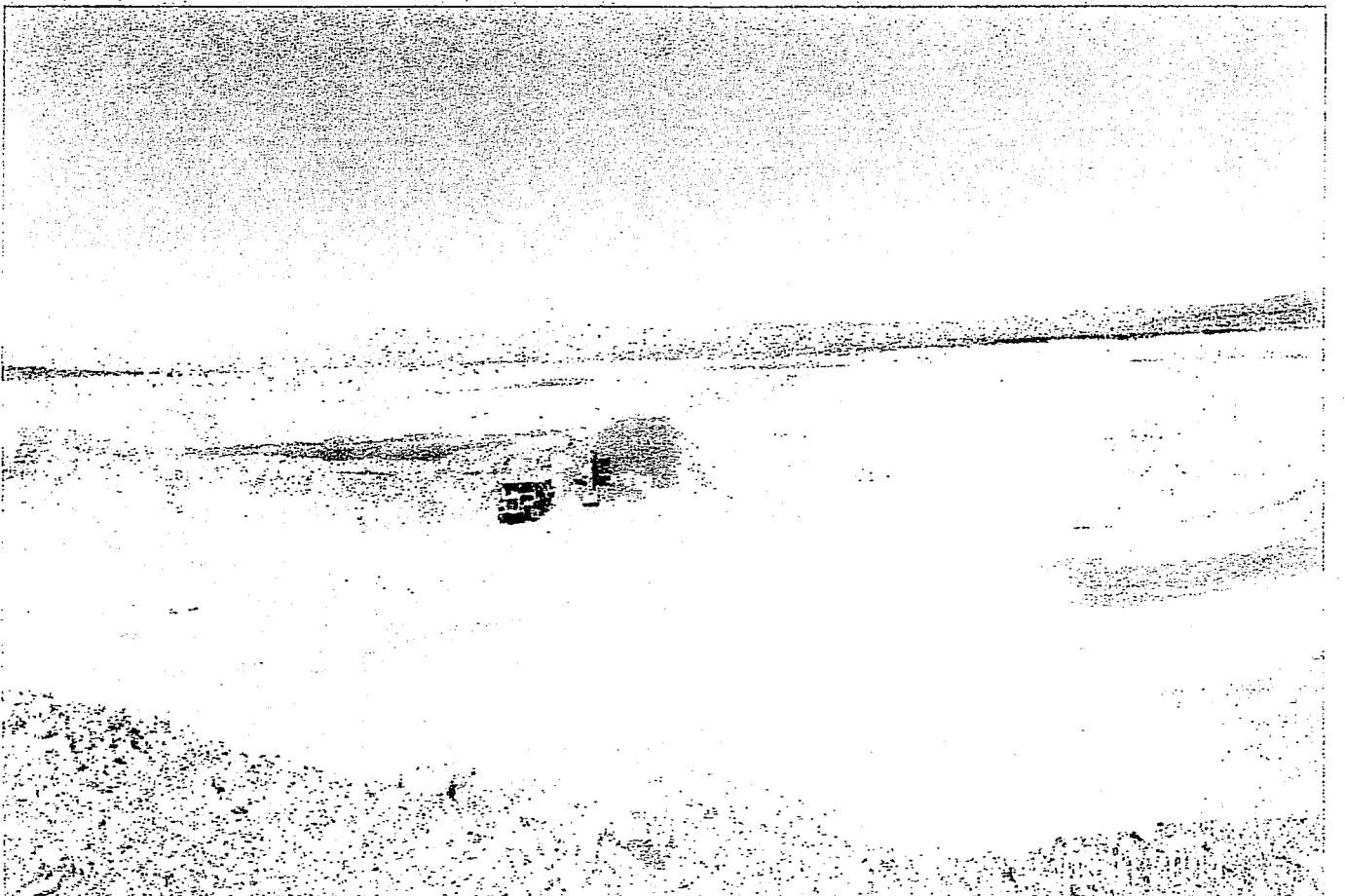
PREPARED BY:



**HAWKS & ASSOCIATES**  
2250 PUEBLO BLVD SUITE B  
ESSEX, CA 92026 (951) 262-2111

 <b>WEST COAST ENVIRONMENTAL AND ENGINEERING</b>		<b>Diamond Rock Mine</b>	
		PROJECT: TR0190-001-06	FIGURE 2
DRAWN BY: JLT	DATE: 02/24/09	REVISION: 02/24/09 JLT	
APPROVED BY: JJP	DATE: 02/24/09	PRINTED: 02/24/09	

C FIG 2

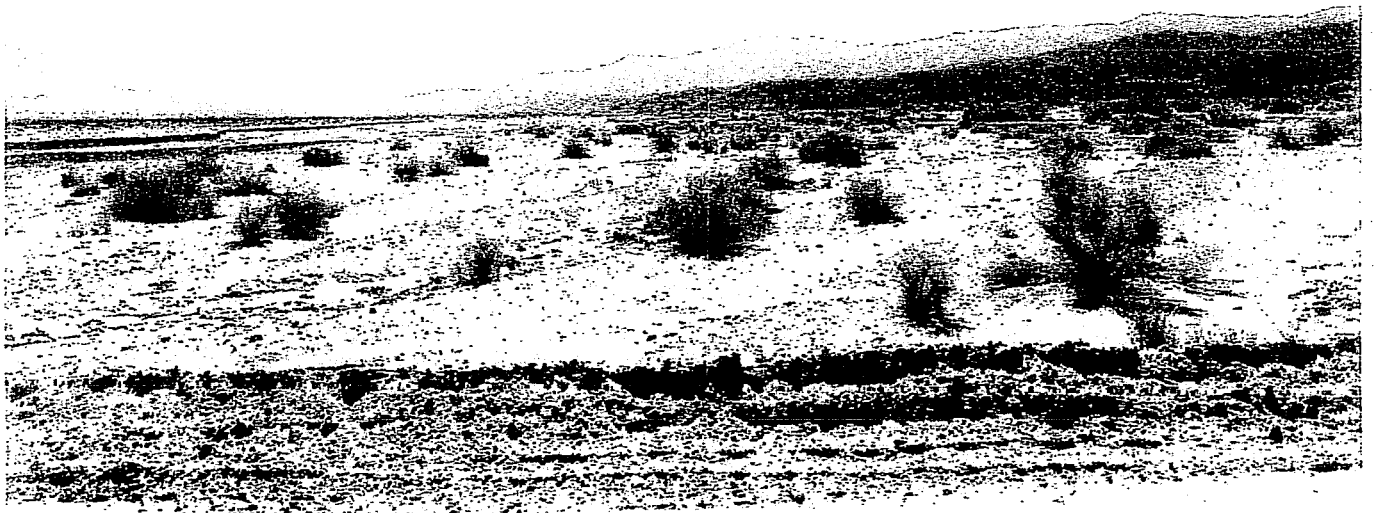
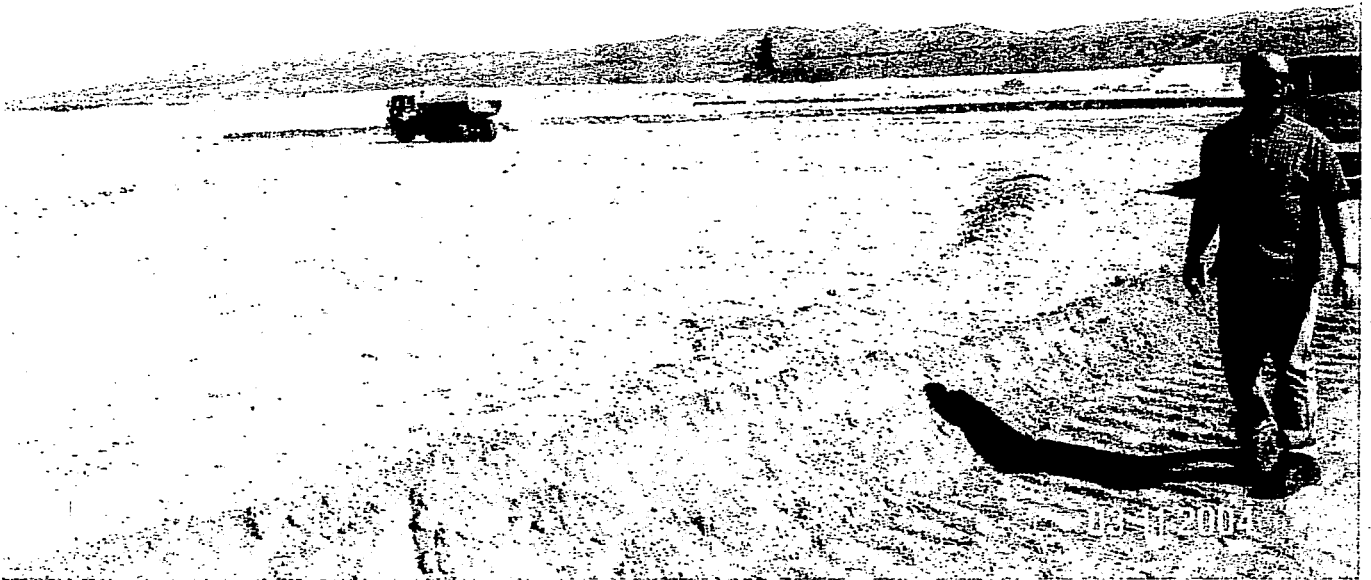




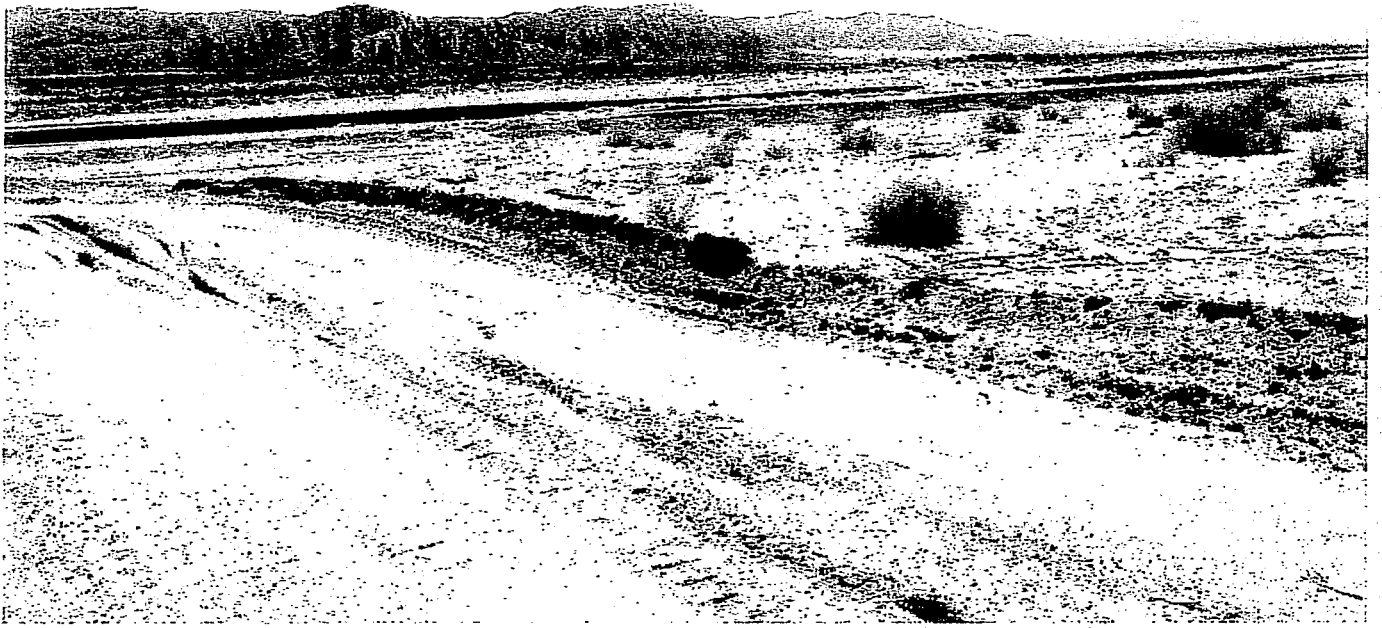


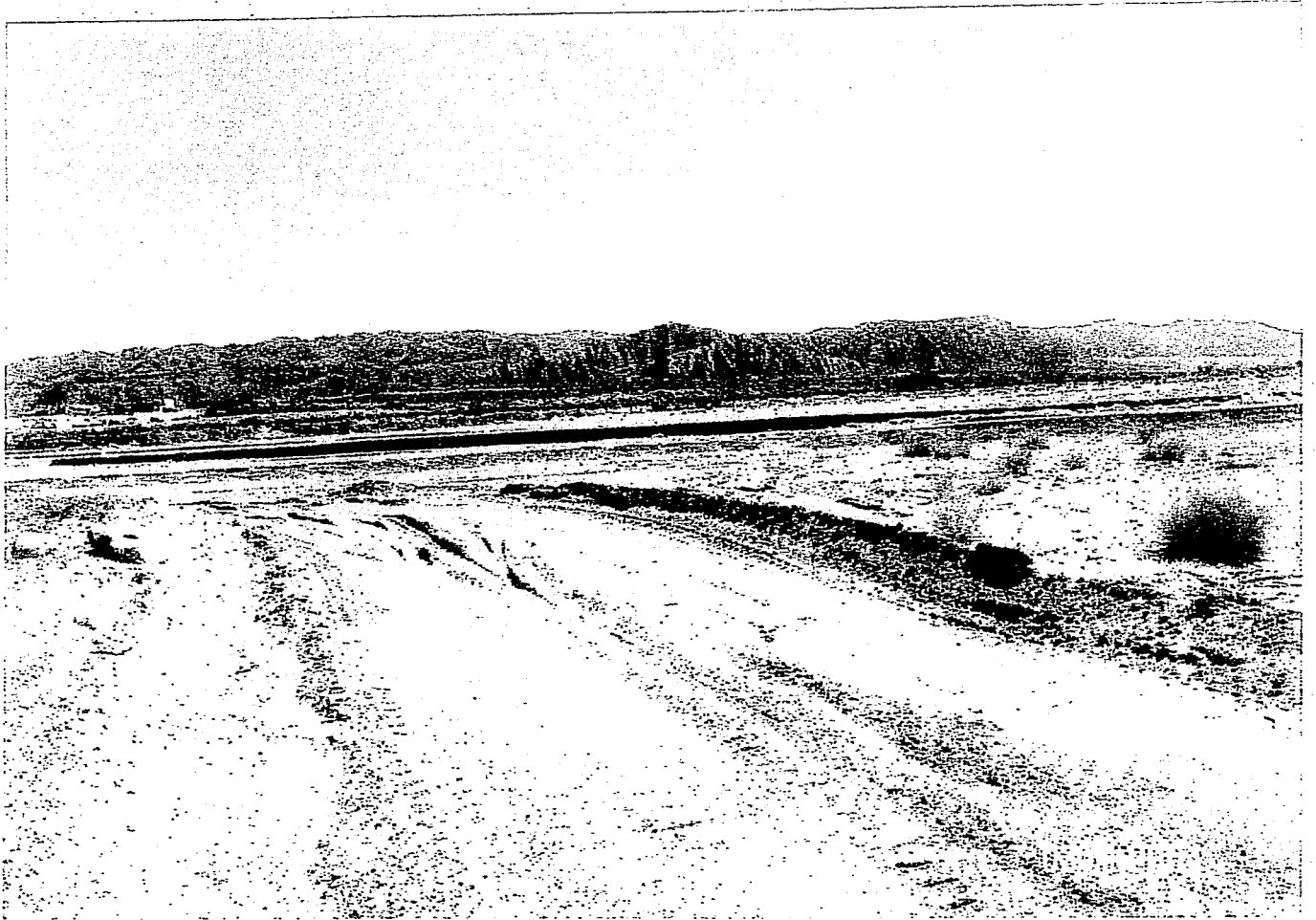


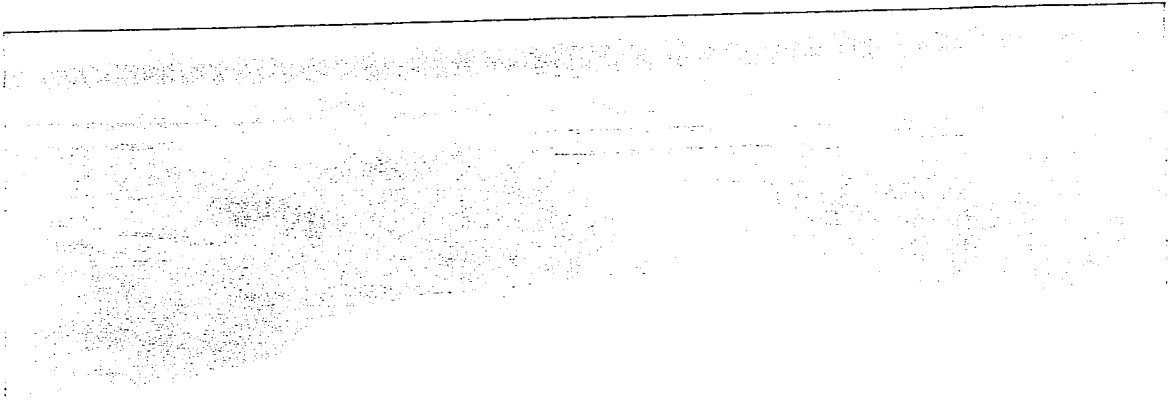










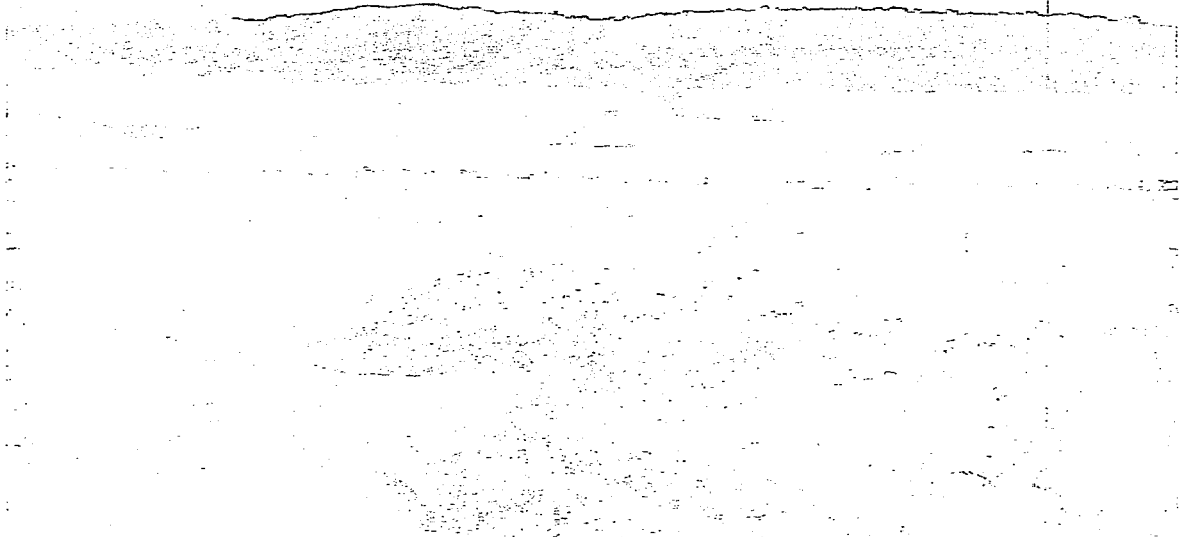


1. View to the east from the pit showing flooding back up the access ramp, January 2003.

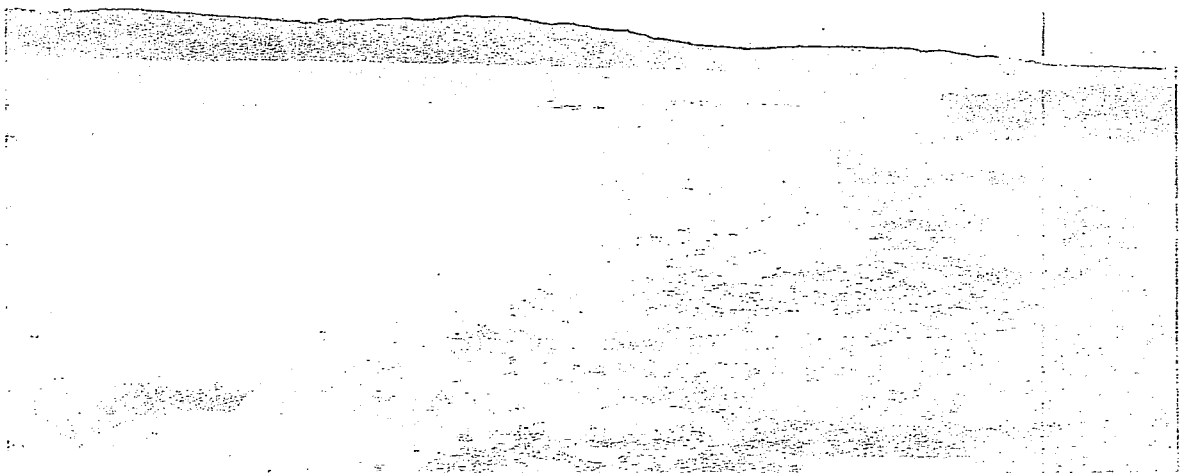


2. View of flooded Cuyama River looking South (upstream), January 2003.





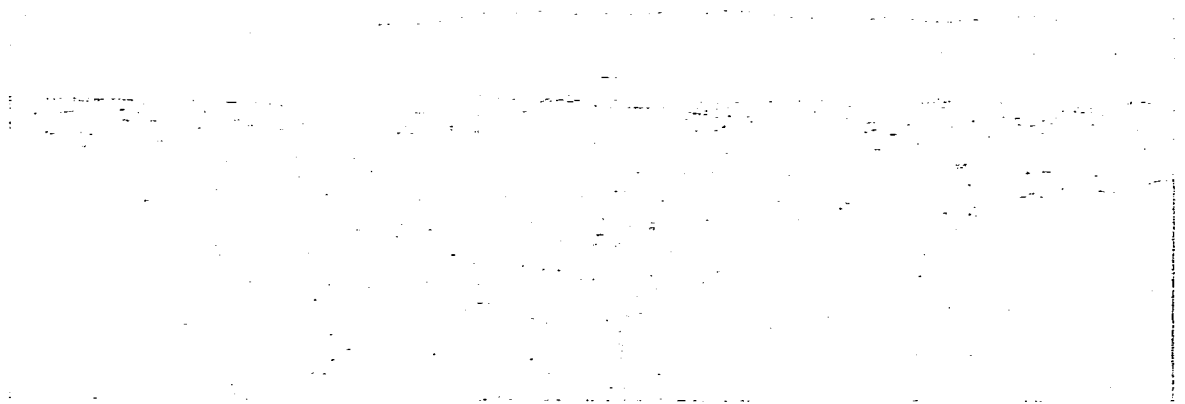
3. View to the west across Phase III pit showing flooding, January 2003. Pit depth was approximately 74 feet below grade.



4. View looking west across Cuyama River, January 2003 flooding.



5. View west across the Cuyama River following January 2003 rain. Flooding washed out Foothill Blvd, shown heading west across the river approximately 2 miles downstream from the Ventucopa Rock Quarry.



6. View of flooded Cuyama River looking north (downstream), January 2003.

# EPA: United States Environmental Protection Agency

[A-Z index](#)

## **News Releases By Date**

### **EPA orders mining company to comply with Clean Water Act in Santa Barbara County**

Release date: 5/10/2005

Contact Information: Margot Perez-Sullivan 415-947-4149

SAN FRANCISCO – The U.S. Environmental Protection Agency recently ordered GPS River Rock Products, Inc. to improve stormwater controls and submit a mitigation plan to restore 22 acres of river habitat in the Cuyama River watershed to compensate for environmental damage caused by mining activities in Santa Barbara County.

During inspections in 2004 and 2005, EPA and U.S. Army Corps of Engineers officials found the company was discharging dredged and fill material into the Cuyama River without the required federal Clean Water Act permit. Inspectors determined the activities were responsible for degrading 22 acres of river habitat in the Cuyama River. EPA inspectors also found the company in violation of the California stormwater permit.

"The Cuyama River is an important aquatic resource that protects water quality and provides habitat for wildlife," said Alexis Strauss, director of the EPA's Pacific Southwest Water Division. "We will continue to work with GPS to ensure their activities comply with the Clean Water Act."

The order requires GPS River Rock Products to retain an independent contractor to prepare an off-site mitigation project plan. The mitigation plan must preserve and enhance 22 acres of waters within the Cuyama River watershed. Also GPS must comply with existing California stormwater permits by revising and submitting a stormwater pollution prevention plan and improving storm water controls.

GPS River Rock Products operates an 80-acre site in Ventucopa for a variety of industrial activities including, excavating sand and rock, crushing gravel, and handling raw materials.

Failure to comply with the order could result in fines up to \$32,500 per day per violation.

###

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX**

IN THE MATTER OF:	)	Docket No. CWA-404-309(a)-06-011
	)	
GPS River Rock Products, Inc.	)	ADMINISTRATIVE ORDER ON
PO Box 344	)	CONSENT (Second Order)
Taft, CA 93268	)	
	)	Proceeding under Sections 308(a) and
	)	309(a) of the Clean Water Act
Respondent	)	
_____	)	

**I. INTRODUCTION**

1. This Administrative Order on Consent (“Consent Order” or “Order”) is entered into voluntarily by the United States Environmental Protection Agency, Region IX (“EPA”) and GPS River Rock Products, Inc. (hereinafter “Respondent”). Respondent owns and operates a sand and gravel mine and associated facilities located at 2370 Highway 33, Ventucopa, California 93268 (“Facility”). The Facility is located along the Cuyama River. EPA alleges that certain filling, grading, and construction activities within the waters of the Cuyama River were in violation of Section 301(a) of the Clean Water Act (the “Act” or “CWA”), 33 U.S.C. § 1311(a), in that these activities caused discharges of dredged or fill material into waters of the United States without authorization under Section 404 of the Act. 33 U.S.C. § 1344. This Consent Order directs the Respondent to undertake specified measures to compensate for the adverse environmental impacts resulting from the alleged unauthorized discharges.

**II. JURISDICTION**

2. EPA issues this Consent Order under the authority vested in the Administrator of the EPA by Sections 308 and 309(a) of the CWA, 33 U.S.C. §§ 1318 and 1319(a). This authority has been delegated to the EPA Region IX Administrator, and re-delegated by the Regional Administrator to the Director of the Water Division.
3. Respondent agrees not to contest EPA’s jurisdiction or authority to enter into or enforce this Consent Order. Respondent also agrees not to contest the validity of any terms and conditions of this Consent Order in any action to enforce, or in any action arising from, the Consent Order.
4. Respondent enters into this Consent Order without trial or adjudication of any of the factual or legal allegations or issues contained herein. The execution of this Consent Order by Respondent and Respondent’s subsequent compliance with its terms does not constitute and shall not be construed as an admission of liability or an admission of any

fact or conclusion of law or the applicability of any law relating to any of the allegations contain herein.

5. EPA's decisions or actions in entering into, and pursuant to this Consent Order are not subject to judicial review prior to EPA's initiation of judicial action to compel Respondent's compliance with the Clean Water Act.

### **III. DEFINITIONS**

6. Unless defined herein, terms used in this Consent Order shall have the meaning as assigned in the CWA, or in regulations promulgated by EPA or the U.S. Army Corps of Engineers under the CWA. The following definitions shall apply to this Consent Order:
  - a. "Consent Order" or "Order" shall mean this document, all attachments hereto, all subsequent modifications, and all submissions, including, but not limited to, deliverables, plans, schedules, reports (other than progress reports), maps, technical memoranda and specifications which are required by this Consent Order. Upon EPA approval, Respondent's submissions are incorporated and enforceable as part of this Consent Order.
  - b. "Corps" shall mean the U.S. Army Corps of Engineers.
  - c. "Day" shall mean a calendar day unless otherwise specified to be a working day. "Business Day" shall mean a day other than a Saturday, Sunday, or Federal legal holiday. In computing a prescribed period of time, the day of the event shall not be included. If a stated time period expires on a Saturday, Sunday or Federal legal holiday, it shall be extended to include the next working day.
  - d. "EPA" shall mean the U.S. Environmental Protection Agency.
  - e. "Respondent" shall mean GPS River Rock Products, Inc.
  - f. "Parties" shall mean the EPA and Respondent.
  - g. "Site" shall mean the location depicted in Attachment A.

### **IV. PARTIES BOUND**

7. This Consent Order shall be binding on Respondent and its elected officials, officers, boards, directors, agencies, authorities, departments, employees, attorneys, successors and assigns, and on all persons, independent contractors, contractors, and consultants acting in concert with Respondent.

8. Respondent shall provide a copy of this Consent Order to any successor to its ownership, control, operation, or any other interest in any portion of the Site at least thirty (30) days prior to the transfer, and shall simultaneously notify EPA in writing that such notice has been given. Within fourteen (14) days after the effective date of this Consent Order or the date of contracting, whichever is later, Respondent shall provide a copy of this Consent Order to all persons, including all contractors, subcontractors and consultants, retained to do work on the Site, and to all other persons who are in a position to ensure or affect compliance with this Consent Order. Respondent shall condition the transfer of ownership, control, operation, or any other interest in any portion of the Site, and any contract related to the performance of work at the Site, upon the successful execution of this Consent Order. No transfer or contract shall in any way affect Respondent's obligation to comply fully with all of the terms and conditions of this Consent Order.
9. The undersigned signatory for Respondent certifies that he or she is authorized to execute this Consent Order and legally bind Respondent.

#### **V. STATEMENT OF PURPOSE**

10. The Parties enter into this Consent Order to correct certain alleged violations of the CWA and offset the environmental impacts to waters of the United States by purchasing and transferring the Site in accordance with the terms specified herein.

#### **VI. FINDINGS OF FACT**

11. GPS River Rock Products, Inc. ("Respondent"), is a California corporation which owns and operates an 80-acre sand and gravel mining facility ("Facility") located at 2370 Highway 33, Ventucopa, California 93268. The Cuyama River runs through the western portion of the Facility.
12. On March 11, 2004, the Corps conducted an inspection at the Facility and determined that discharges had occurred below the ordinary high water mark ("OHWM") of the Cuyama River, including stockpiles of earthen material, berms and roads. The Corps determined that GPS was required to have Clean Water Act Section 404 permit.
13. On April 8, 2004, GPS applied for a Section 404 permit for both the existing discharged material and the discharges to be made in connection with the proposed mine expansion.
14. On November 24, 2004, EPA sent to GPS a request for information under Section 308 of the CWA. On January 15, 2005, GPS responded stating that between June 2002 and the present, it had constructed and maintained ramps, roads, perimeter safety berms, excavation benches and drainage berms below the OHWM. These activities caused the discharge of dredged or fill material into waters of the United States.
15. On January 28, 2005, EPA conducted an inspection of the Facility. EPA estimated that Respondent's discharges of dredged or fill material resulted in the alteration of

approximately 22 acres of waters of the United States.

## **VII. CONCLUSIONS OF LAW AND DETERMINATIONS**

16. Under Sections 301(a) of the CWA, 33 U.S.C. § 1311(a), it is unlawful for any person to discharge any pollutant, including dredged or fill material, from a point source into any “navigable waters” without a permit issued under the CWA.
17. Section 404 of the CWA establishes a program under which the U.S. Army Corps of Engineers (“Corps”) has the authority to issue permits for the discharge of dredged or fill material into navigable waters. The discharge of dredged or fill material into navigable waters without a Corps permit, or not in compliance with a Corps permit, violates Section 301(a) the CWA, 33 U.S.C. §§ 1311(a).
18. The term “navigable waters” is defined by Section 502(7) of the CWA, 33 U.S.C. § 1362(7), to mean “waters of the United States,” and includes all waters which are, were, or may be, used in interstate commerce, including tributaries and wetlands adjacent to these waters. 33 C.F.R. § 328.3(a); 40 C.F.R. § 230.3(s).
19. The Cuyama River is a tributary to the Santa Maria River, which is a tributary to the Pacific Ocean, a navigable-in-fact water and water of the United States within the meaning of Section 502(7). The Cuyama River is therefore itself a water of the United States.
20. The term “person” is defined in Section 502(5) of the CWA, 33 U.S.C. § 1362(5), to include any individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body.
21. Respondent is a California corporation, and thus a “person” under Section 502(5) of the Act. 33 U.S.C. § 1362(5).
22. The term “discharge of a pollutant” includes any addition of any pollutant to navigable waters from any point source. 33 U.S.C. § 1362(12). The term “pollutant” includes, but is not limited to, dredged spoil, solid waste, earthen materials, rock and sand. 33 U.S.C. § 1362(6).
23. The term “point source” means any discernible, confined and discrete conveyance, from which pollutants are or may be discharged, 33 U.S.C. § 1362(14), and includes bulldozers and other earth-moving equipment.
24. The earth moving equipment used by Respondent to place the materials into the waters of the United States are “point sources” as defined by Section 502(14) of the CWA. 33 U.S.C. § 1362(14). The soil, rock and other earthen materials that Respondent placed into these waters are “dredged or fill materials” under Section 404 of the CWA, 33

U.S.C. § 1344, and are “pollutants” under Section 502(6) of the CWA. 33 U.S.C. § 1362(6). Respondent’s use of earth moving equipment to place dredged or fill material into the waters of the United States constitutes a “discharge of pollutants” under Section 502(12) of the CWA. 33 U.S.C. § 1362(12).

25. At no time did Respondent have a permit issued pursuant to Section 404 of the CWA. 33 U.S.C. § 1344.
26. By discharging dredged and fill material into the Cuyama River, Respondent has discharged pollutants to waters of the United States within the meaning of Section 301(a) of the CWA. 33 U.S.C. § 1311(a). It is unlawful under Section 301(a) of the CWA for any person to discharge dredged or fill material into waters of the United States without a Section 404 permit issued by the Corps, or not in compliance with such a permit.
27. Based on the foregoing, EPA finds that Respondent discharged dredged and fill material from point sources into waters of the United States in violation of Sections 301 and 404 of the CWA.

#### **VIII. CESSATION OF UNAUTHORIZED DISCHARGES**

28. Respondent shall not discharge dredged or fill material or other pollutants into the Cuyama River, or any other waters of the United States, except in compliance with the CWA.

#### **IX. WORK TO BE PERFORMED**

29. Within ninety (90) days of signature of this Consent Order, Respondent shall acquire approximately eighty (80) acres of land as described below. The Site is shown on Attachment 1, “Figure 2: Area Topographic Map and Acreage Blocks.”

The Compensatory Mitigation Site is located approximately 0.75 miles due south of the southern boundary of the existing mine property. The approximate 22-acre area will include the north half of the northeast quarter of the northeast quarter [N/2 of NE/4 of NE/4] of Section 24, T. 9 N, R. 25 W, SBB&M. The 22-acre site is part of a larger 80-acre parcel that will be transferred to BLM for conservation purposes under GPS sponsorship.

30. Within thirty (30) days of the purchase of the property described in Paragraph 28 and Attachment A, Respondent shall protect the property with a deed restriction. The deed restriction shall contain the following language: [will be included once we agree on the deed restriction language].
31. Within fifteen (15) days of placement of the deed restriction on the property, Respondent shall transfer the property, with the attached deed restriction to the Bureau of Land



Management (“BLM”) for management as a Jewelflower Preserve in perpetuity. Transfer of the land to BLM shall be completed no later than June 15, 2006.

#### **X. REPORTING**

32. Within three (3) business days of performance of each task laid out in Paragraphs 28, 29 and 30, Respondent shall submit to EPA a report describing its compliance with the specified paragraph.

#### **XI. ACCESS TO SITE AND DATA**

33. This Consent Order shall in no way affect EPA’s authority to enter, inspect, sample or monitor compliance under any law, permit, court order or agreement, and Respondent shall use its best efforts to arrange for access by EPA or its authorized representatives for determining compliance with this Consent Order. For purposes of this Consent Order, EPA’s authorized representatives shall include all EPA employees and contractors, all Corps employees and contractors, and such other persons as EPA may designate.

#### **XII. MODIFICATION OF CONSENT ORDER**

34. Modification of this Consent Order shall be in writing and shall take effect only when agreed to and signed by the Parties, except that extensions of time granted by EPA need only be signed by EPA.

#### **XIII. SUBMISSIONS AND NOTIFICATIONS**

35. All submissions required by this Consent Order shall be signed by Respondent’s duly authorized representative. The authorization must be in writing and specify either an individual or a position having responsibility for the overall operation of the activities being reported or for Respondent’s environmental matters.
36. The person signing Respondent’s submissions shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared by direct supervision or in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

37. Unless otherwise specified or requested by EPA, Respondent shall provide each

deliverable required by this Consent Order by first-class mail or express mail, and, whenever feasible, shall also transmit the deliverable by electronic mail. Submissions by Respondent shall be deemed made on the date they are postmarked.

#### **XIV. FORCE MAJEURE**

38. "Force Majeure," for purposes of this Consent Order, is any event entirely beyond the control of Respondent or any entity controlled by Respondent that delays or prevents performance of any obligation under this Consent Order notwithstanding Respondent's best efforts to avoid the delay. The best efforts requirement includes using best efforts to anticipate any such event and minimize the delay caused by any such event to the greatest extent practicable. Examples of events that are not force majeure events include, but are not limited to, increased costs or expenses of any work to be performed under this Consent Order, financial or business difficulties of Respondent's, and normal inclement weather.
39. If any event may occur or has occurred that may delay the performance of any obligation under this Consent Order, whether or not caused by a force majeure, Respondent shall notify by telephone the EPA Project Coordinator or, in his or her absence, the Team Leader of the Clean Water Compliance group (WTR-7), EPA, Region IX, within two business days of when Respondent knew or reasonably should have known that the event might cause a delay. Within fifteen (15) days thereafter, Respondent shall provide in writing the reasons for the delay, the anticipated duration of the delay, the measures taken or to be taken to prevent or minimize the delay, and a timetable by which those measures will be implemented. Respondent shall exercise its best efforts to avoid or minimize any delay and any effects of a delay. Failure to comply with the notice requirement of this paragraph shall preclude Respondent from asserting any claim of force majeure.
40. If EPA agrees that an actual or anticipated delay is attributable to force majeure, the time for performance of the obligation shall be extended by written agreement of the parties and it is EPA's sole discretion to determine whether or not Respondent shall be relieved of the obligations of the CAFO. An extension of the time for performing an obligation directly affected by the force majeure event shall not, of itself, extend the time for performing a subsequent obligation.
41. Respondent shall have the burden of demonstrating, by a preponderance of the evidence, that the actual or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay was or will be warranted under the circumstances, that Respondent did exercise or is using its best efforts to avoid and mitigate the effects of the delay, and that Respondent complied with the requirements of this section.

#### **XV. SCOPE OF CONSENT ORDER**

42. This Consent Order is not and shall not be construed to be a permit under the CWA, nor shall it in any way relieve or affect Respondent's obligations under the CWA, or any

other applicable federal, state or local laws, regulations, and permits. Compliance with this Consent Order shall be no defense to any actions commenced pursuant to such applicable laws, regulations, or permits, nor does it constitute a release.

43. This Consent Order shall in no way affect the rights of EPA or the United States against any person not a party hereto.

**XVI. FAILURE TO COMPLY WITH CONSENT ORDER**

44. EPA reserves all available legal and equitable remedies to enforce this Consent Order, and the right to seek recovery of any costs and attorney fees incurred by EPA in any actions against Respondent for non-compliance with this Consent Order.
45. EPA expressly reserves its right to seek civil, administrative or criminal penalties for any and all alleged violations of the CWA, including violations of this Consent Order.
46. Violations of the CWA, including violations of this Consent Order, may subject Respondent to an action for civil penalties up to \$32,500 per day of violation under Section 309(d), 33 U.S.C. § 1319(d) and 40 C.F.R. Part 19. In addition, EPA expressly reserves all rights to seek injunctive relief pursuant to Section 309(b), 33 U.S.C. § 1319(b), or take any action pursuant to Section 504 of the Act.

**XVII. SEVERABILITY**

47. The provisions of this Consent Order shall be severable. Should any provision be declared by a court of competent jurisdiction to be unenforceable, the remaining provisions shall remain in full force and effect.

**XVIII. TERMINATION AND SATISFACTION**

48. This Consent Order shall terminate when EPA issues a written approval of Respondent's written certification that Respondent has fully completed all requirements under this Consent Order. Respondent's certification of completion shall comply with requirements set forth in Section XV above.

**XIX. EFFECTIVE DATE**

49. This Consent Order shall take effect upon signature by the parties.

IT IS SO AGREED AND ORDERED:

For US ENVIRONMENTAL PROTECTION AGENCY  
REGION IX

Date: \_\_\_\_\_

\_\_\_\_\_  
Alexis Strauss, Director  
Water Division

For GPS River Rock Products, Inc.

Date: \_\_\_\_\_

\_\_\_\_\_  
[Name / Title]

February 27, 2008

Questions and Answers from Meeting between "Save the Cuyama Valley" (SCV), stakeholders in the Cuyama Valley Water Basin, and Santa Barbara County Planning Staff to discuss the 12 questions posed by SCV regarding the Final EIR for the Diamond Rock Mine (Troesh) project.

**Present:** Gordon Hensley from San Luis Obispo COASTKEEPER and Save the Cuyama Valley members Jolaine Gorilla, Jenny Lee, Ann and Harold Pender, and Jane Slama Mackenzie met with Gary Kaiser and John Baker of the Santa Barbara County Planning and Development Department (SBPD) and 5<sup>th</sup> District County Supervisor Joe Centeno. Centeno was present from 9:45 to 10:30. The meeting was held from 9:45 to noon.

After considering the 12 questions the County feels that more environmental work needs to be done on the Diamond Rock Mine FEIR. John Baker said he felt the FEIR answered most of the 12 questions but the County would ask their environmental consultant to make some changes to the FEIR in the areas of hydrology, geology and biology so that the document will be able to "stand alone". Supervisor Centeno says the FEIR has to be sound and present the "facts" so the Planning Commission can make a decision based on those facts. Gary Kaiser said the County is addressing CEQA issues presented by the proposed mining project, and they keep up to date on the most recent CEQA related court cases.

### **1. Water and Hydrology:**

**Q:** Does the county believe the hydrological model for Diamond Rock is appropriate in assuming fixed riverbanks?

**A:** The FEIR used topographic maps to project changes to riverbanks. Harold Pender elaborated on the complex hydrological/geological structure of the proposed mine site, the two vast differences in water depth between wells upstream and downstream of the site, and the fault line that runs through the river at the center of the proposed mine site. Mr. Kaiser and Mr. Baker asked for clarification on "fixed riverbanks". Harold and Ann said that the model for the FEIR was wrong because the Cuyama River does not have fixed riverbanks. The river takes the path of least resistance and has been known to wash out fields and roads in wet years. The FEIR study should be redone because the model was not adequate for the Cuyama River Basin. We asked how Troesh would monitor the condition of the riverbanks. Gary Kaiser answered "by sight," and that it would be the sole responsibility of the mine staff. Ann and Harold Pender also pointed out that the FEIR had not adequately addressed the fault area where the proposed mining operation is to take place. When the study was updated and pictures of the area were included in the FEIR and submitted to the Planning Commission, the FEIR noted the fault but claimed it was "not active." Mr. Baker and Mr. Kaiser asserted there are many mines on or near fault lines and this is not an issue of concern. Gary Kaiser talked about limiting mine activity to the southwest end of the proposed mine site.

**Q:** Does the county agree with the estimated water use of the project?

**A:** No, although the County feels the applicant's (Troesh's) estimate of the 35 acre-feet per year net water usage for the mine is a "good faith" estimate, County staff's calculations produced estimated net annual use at 77 acre-feet per year.

Gordon Hensley reminded staff that Dr. Loaiciga had been unable to reproduce hydrological projections as presented in the FEIR. Mr. Kaiser asked for a copy of Dr. Loaiciga's letter explaining his findings. Supervisor Centeno also brought up the proposed hydrology study for the Cuyama Water Basin. Gordon Hensley questioned if the mining permit could be written with a clause which would shut the mine down if the hydrology report indicated the mine would be a bad idea and not economically feasible.

Supervisor Centeno refused to agree to this. Mr. Baker and Mr. Kaiser said that they would consult County Counsel about the clause, claiming it had never been done before. Ann mentioned that there are many conditions for many projects that include reconfiguring and/or revisiting permits to reflect new information and data that may affect a project. For example, in Paso Robles, Walmart had to remodel and widen Spring St. Bridge to accommodate increased traffic in order to build their store. Why could we not do the same with Troesh? Mr. Kaiser and Mr. Baker stated again that they (meaning SBPD) had never done anything like this before. Again, Ann asked "Isn't that what conditional use permits are designed to do...place conditions on projects to detour any unforeseen problems?" Mr. Baker said that planning staff would consult County Counsel on the matter.

**Q:** Does the county believe the EIR claim that the standing water at the bottom of the mine pit will be 20-30 feet below the pit or 120 feet below ground level? (Members are concerned the depth of the mine pit will exceed the standing water level due to higher existing ground-water levels than those mentioned in the FEIR.)

**A:** Harold Pender stated that the Office of Mining and Reclamation letter of November 8, 2007 sent to SBPD says that no mining should be done within 6 feet of standing water levels.

**Q:** Does the county believe the proponent is the only pumper on the Diamond Rock aquifer?

**A:** Kaiser said he was not sure that he understood this question, especially as there is not a Diamond Rock aquifer, but he said that County staff believed that the project water usage was comparable to the historic threshold of 31 acre-feet per year.

**Q:** Since the mine is receiving credit for the water in the ground as a recharge value, is the material removed from the site then counted as a water debit?

**A:** The County may consider water being taken out of the mine pit with the sand and gravel as an increase in the net water used by the mining operations.

**Q:** Does the county still maintain that there is no head cutting above or below the GPS mine?

**A:** There was a lot of discussion about GPS and the recent deep pit GPS dug. The FEIR uses the currently operating GPS mine as a model and for historical data. The Army Corps of Engineers has given GPS an "exemption" to operate in the Cuyama River and the mine pit has at least doubled in size in the last year. Harold and Anne Pender reported that in the last minor storm the GPS mine pit was completely filled in and sand berms around the pit had washed away.

## **2. Cumulative Impacts:**

**Q:** Why has the staff not accounted for the cumulative impacts of Diamond Rock, GPS, Richard's Holding (pending), Lima Co. Gyp Mine, Ozena Sand & Gravel as required under county, state and federal rules?

**A:** Baker and Kaiser said that the County's study was done prior to the Richard's Holding Company proposal, and so did not consider the proposal in its study. Baker and Kaiser claimed that section 3.5 of the FEIR addressed this question. But later in the meeting Kaiser and Baker agreed that the County needed to "revisit" the study on the cumulative regional effects of the existing mines along with the Diamond Rock proposal. The issues of traffic, safety, and air quality will be re-examined.

## **3. Need the Gravel:**

**Q:** Who are "we" in proponents' statement: "We need the gravel?"

**A:** County staff does not determine this. Only looks at whether or not the proposal fits within County's criteria for such a project.

## **4. Quality of Life:**

**Q:** At an April 10, 2007 meeting between members of "Save the Cuyama Valley" and staff we were told that quality of life was again going to be identified as an immitigable Class 1 event. Why in the final EIR was it determined to be subjective and not reviewed despite specific county guidelines to the contrary?

**A:** Kaiser and Baker claimed this issue was considered by the Planning Commission and was not deemed immitigable and/or significant. They also said it is an issue that will be considered by the Board of Supervisors if and when the project is appealed.

## **5. Economics:**

**Q:** Given the latest traffic distribution plan and the projects location in relation to other sand and gravel mines, is the project economically feasible and environmentally consistent with county guidelines?

**A:** Again, Kaiser and Baker said this is not an issue within the Planning Staff's sphere of interests.

## **6. Traffic and Safety:**

**Q:** Ojai's concern over traffic and safety is to be mitigated by item # 34. Why have Cuyama's more serious concerns about traffic and safety not been addressed?

**A:** \*

## **7. Regional Impacts:**

**Q:** Since mine traffic, safety and truck pollution involves four counties, why hasn't the EIR addressed these regional impacts?

**A:** \*

\* These issues are going to be reviewed and reconsidered by County Staff. Baker said that his understanding of the agreement between lawyers for Ojai Valley's 'Stop the Trucks' group and Troesh was that Diamond Rock Mine would not send any trucks south on Highway 33 through Ojai. Also, there was a new limit set: 100 total trucks per day on 166: 50 out + 50 in. When asked if a written copy of the agreement between Troesh and 'Stop the Trucks' was available Kaiser stated the agreement was not available in writing. Both Kaiser and Baker agreed that the new agreement put new burdens on 166 and that a new traffic study needs to be done. Jenny Lee pushed for a verified traffic count; Baker and Kaiser insisted only estimates are available. They claimed any increase would still be well within County thresholds and acceptable levels of service.

## **8. Air Quality:**

**Q:** If air quality is immitigable class 1 event, how does that address our rights under AB 32 and CEQA requirements?



**A:** AB 32 is a state program and provides no specific rights for citizens and places caps on emissions at 1990 levels. These are to be in effect by 2012.

#### **9. Traffic Study:**

**Q:** The study to determine average daily traffic on Hwy 33 does not account for the 200 truck trips to the GYP mine, periods when access roads are closed, times when trucks cannot travel due to inclement weather, seasonal truck traffic, etc. Can the traffic study be revisited to reflect the above conditions?

**A:** See #7

#### **10. Self-enforcement:**

**Q:** Is there any concern by staff that self-enforcement of the EIR will be inadequate and dishonest as is the case with other local mines?

**A:** County will conduct an annual inspection; otherwise County does not monitor the mine. Kaiser said that mine owners were likely to comply because they wanted to avoid confrontation with County and the danger of fines and/or closure. Kaiser also said that the County would respond to public complaints, at mine owners' expense, and would conduct an investigation following a series of steps. Gordon Hensley recommended that there be a specific list of conditions that the County needs to enforce and that the group needs to determine these.

#### **11. Recycled Material:**

**Q:** In a meeting with staff, the Troesh family and the public the question of recycling came up—proponent Steven Troesh said it was only for local material and he was more than willing to not process recycled material. Staff however, insisted this condition remain. What was the reason for this response from staff?

**A:** Kaiser was unaware of what would be recycled. County Staff said the State of California requires the mine to recycle. Members showed concern about having contaminated material trucked in for recycling. Harold and Anne Pender explained the danger of high winds in the area making contaminants airborne. Kaiser noted the concern about allowing hazardous materials to be recycled at Diamond Rock and that this was a condition that needed to be enforced.

#### **12. Change of Ownership Standards:**

**Q:** The Goleta City Council recently voted to “establish standards for a change in ownership, operator or guarantor” vis-à-vis oil processors. Does staff think that

equated standards could be imposed for like kind changes for mine ownership transfers?

**A:** County Staff says the land use permit will require that if the Mine changes ownership the new owners need to re-sign the permit to agree to the County's conditions.



California Natural Resources Agency  
DEPARTMENT OF FISH AND GAME  
South Coast Region  
4949 Viewridge Avenue  
San Diego, CA 92123  
(858) 467-4201  
[www.dfg.ca.gov](http://www.dfg.ca.gov)

EDMUND G. SNOW, JR., Governor  
JOHN McCAMMAN, Director



May 19, 2011

Steven M. Troesh  
Troesh Materials Inc.  
305 Cuyama Lane  
Nipomo, CA 93852

Subject: Final Lake or Streambed Alteration Agreement  
Notification No. 1600-2009-0104-R5

Dear Mr. Troesh:

Enclosed is the final Streambed Alteration Agreement (Agreement) for the Diamond Rock Sand and Gravel Mine (Project). Before the Department of Fish and Game (Department) may issue an Agreement, it must comply with the California Environmental Quality Act (CEQA). In this case, the Department, acting as a responsible agency, filed a notice of determination (NOD) on the same date it signed the Agreement. The NOD was based on information contained in the final Environmental Impact Report the lead agency prepared for the Project.

Under CEQA, filing a NOD starts a 30-day period within which a party may challenge the filing agency's approval of the project. You may begin your project before the 30-day period expires if you have obtained all necessary local, state, and federal permits or other authorizations. However, if you elect to do so, it will be at your own risk.

If you have any questions regarding this matter, please contact Natasha Lohmus, Environmental Scientist at (805) 684-6281 or [nlohmus@dfg.ca.gov](mailto:nlohmus@dfg.ca.gov).

Sincerely,

  
For Helen Birss  
Environmental Program Manager

*Conserving California's Wildlife Since 1870*

**CALIFORNIA DEPARTMENT OF FISH AND GAME**  
SOUTH COAST DISTRICT  
4949 VIEW RIDGE AVENUE  
SAN DIEGO, CA 92123



**LAKE or STREAMBED ALTERATION AGREEMENT**  
NOTIFICATION NO. 1600-2009-0104-R5  
Cuyama River

STEVEN M. TROESH  
DIAMOND ROCK SAND AND GRAVEL MINE FACILITY

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Game (DFG) and Steven M. Troesh of Troesh Materials Inc. (Permittee).

#### **RECITALS**

WHEREAS, pursuant to Fish and Game Code (FGC) Section 1602, Permittee notified DFG on December 16<sup>th</sup>, 2009, that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC Section 1603, DFG has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with the Agreement.

#### **PROJECT LOCATION**

The project is located southwest of State Route 33, Maricopa Highway, approximately 5.9 miles southeast of the intersection with State Route 166, in the Cuyama River, within the County of Santa Barbara, State of California; Latitude 34: 51' 34.72", Longitude 119: 29' 36.36" or Section 18, Township 9N, Range 24W, U.S. Geological Survey (USGS) map: Cuyama Peak. (Thomas Brothers Guide page 346, grid 9E).

#### **PROJECT DESCRIPTION**

The Permittee intends to alter the river to extract aggregate of various sizes to produce up to a daily production of an average of 500,000 tons per year but not to exceed

750,000 tons per year. Aggregate extraction consists of removal of flood-washed alluvial material from the Cuyama River. Extraction will be conducted with excavators, bulldozers, loaders and dump trucks. Aggregate would be scraped or excavated from the river surface and hauled to an approved rock crushing and separating facility, which is located at GPS, a neighboring mining facility, located one mile north of Troesh. The trucks shall use the existing farm road located at the eastern project boundary and travel north of the GPS processing facility. Mining will occur in the bed of the river from a 14 acre pit in the center of the 84 acre project site, and will have a maximum depth of 45 feet. If the water table is contacted, the Permittee shall reestablished a cap of 6 feet above the water table and shall stay a minimum of 6 feet above the water table at all times. The pit shall have a slope of 5:1 on the upstream side, and a 3:1 slope for the rest of the pit, to allow for any wildlife to escape. Surveys for the depth of the water table shall be done once a year, just prior to the first day of excavation of the year. Survey data may be obtained from existing wells located on the property. The haul road will be moved 450 feet north of the approved location to avoid impacts with crossing Deer Park Creek. Fencing for the blunt nosed leopard lizard will erected along the western portion of the existing haul road. Fencing may be made of aluminum or hard plastic material so that the lizards can not climb over the fence. Four culverts shall be placed in the access road to direct flows from Deer Park Creek, downstream and to allow the blunt nosed leopard lizards movement within the project boundary, but not within the construction area. Restoration includes 1.5 acres of vegetation of Deer Park Creek, a sandbag grade control structure at the mouth of the creek, and 1,000 linear feet of the east bank of the Cuyama River. For more information, contact Jane Farkas, Consultant Sespe Consulting Inc, at 805-275-1515.

## PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: **amphibians:** southwestern pond turtle (*Emys marmorata pallida*); **reptiles:** side-blotched lizard (*Uta stansburiana elegans*), blunt-nosed leopard lizard (*Gambelia sila*), coast horned lizard (*Phrynosoma coronatum*) San Joaquin whipsnake (*Masticophis flagellum ruddocki*), kingsnake (*Lampropeltis getula californiae*), Pacific rattlesnake (*Crotalus viridis helleri*); **birds:** California condor (*Gymnogyps californianus*), LeConte's thrasher (*Toxostoma lecontei*), Lawrence's goldfinch (*Carduelis psaltria*), golden eagle (*Aquila chrysaetos*), prairie falcon (*Falco mexicanus*), loggerhead shrike (*Lanius ludovicianus*), burrowing owl (*Athene cunicularia*), turkey vulture (*Cathartes aura*), crow (*Corvus brachyrhynchos*), raven (*Corvus corax*), cliff swallow (*Petrochelidon pyrrhonota*), sage sparrow (*Amphispiza belli*), dove (*Streptopelia risoria*); **mammals:** San Joaquin kit fox (*Vulpes macrotis mutica*), American badger (*Taxidea taxus*), Coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), desert cottontail (*Sylvilagus audubonii*), blacktail jackrabbit (*Lepus californicus*), black tail deer (*Odocoileus hemionus*), mountain lion (*Felis concolor*); **native plants:** arroyo willow (*Salix lasiolepis*), cottonwood (*Populus fremontii*), coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), deerweed (*Muhlenbergia rigens*), **insects:** Kern primrose sphinx moth (*Euproserpinus euterpe*); and other aquatic and wildlife resources in the area.

These resources are further detailed and more particularly described in the reports entitled "Supplemental Biological Resources Assessment" dated June 2009, prepared by West Coast Environmental; the Alternatives Analysis (WCE), dated February 26, 2009, River Channel Survey and Monitoring Plan (WCE), dated February 26, 2009, Potential for Head Cutting and Erosion, Hawks & Associates, dated February 20, 2009 and the Notification Package for the Troesh Materials Inc., Diamond Rock Aggregate Mine, and shall be implemented as proposed unless directed differently by this Agreement.

## **MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES**

### **1. Administrative Measures**

Permittee shall meet each administrative requirement described below.

- 1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to DFG personnel, or personnel from another state, federal, or local agency upon request.
- 1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.
- 1.3 Notification of Conflicting Provisions. Permittee shall notify DFG if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, DFG shall contact Permittee to resolve any conflict.
- 1.4 Project Site Entry. Permittee agrees that DFG personnel may enter the project site at any time to verify compliance with the Agreement.

### **2. Avoidance and Minimization Measures**

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

#### **Vegetation removal and restoration**

- 2.1 Tree removal: Any oaks, CA black walnuts, alders and sycamores which are damaged or removed during construction operations shall be replaced in kind at a 10:1

ratio. Valley oaks shall be replaced in kind at a 15:1 ratio. Elderberry, cottonwood, and willows shall be replaced at 5:1.

2.2 Success ratios: All planting shall have a minimum of 80% survival the first year and 100% survival thereafter and/or shall attain 75% cover after 3 years and 90% cover after 5 years for the life of the project. Prior to the mitigation site(s) being determined successful, they shall be entirely without supplemental irrigation for a minimum of 2 years, no single species shall constitute more than 50% of the vegetative cover, no woody invasive species shall be present, and herbaceous invasive species shall not exceed 5% cover. If the survival, cover and other requirements described in this Agreement and in the submitted documents have not been met, the Permittee is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting.

2.3 Irrigation: The Permittee shall provide irrigation when natural moisture conditions are inadequate to ensure survival of plants. Irrigation shall be provided for a period of at least two years from planting. Irrigation shall be phased out during the fall/winter of second year unless unusually severe conditions threaten survival of plantings. All plants must survive and grow for at least three years without supplemental water for the restoration phase of the project to be eligible for acceptance by the Department. All planting shall be done between October 1 and April 30 to take advantage of the winter rainy season.

2.4 Plant sources: Any replacement tree stock, which cannot be grown from cuttings or seeds, shall be obtained from a native plant nursery, and shall be ant free. The Permittee shall provide a list of all materials which must be obtained from other than onsite sources.

2.5 Exposed areas: Restoration shall include the revegetation and/or reseeding of all stripped or exposed work areas with vegetation native to the area, if applicable.

2.6 Limits of disturbance: Disturbance or removal of native vegetation shall not exceed the limits approved by the Department.

2.7 Project delineation: The work area shall be flagged or marked to identify its limits within the stream and reservoir. Vegetation shall not be removed or intentionally damaged beyond these limits.

2.8 Vegetation removal: In areas of temporary disturbance, where vegetation must be removed, native trees and shrubs, with DBH of 3 inches or less, shall be cut to ground level with hand operated power tools rather than by grading.

2.9 Vegetation stock piles: Vegetation removed from the stream shall not be stockpiled in the stream bed or on its bank. The sites selected on which to push this material out

of the stream should be selected in compliance with the other provisions of this Agreement.

2.10 Oak root protection: No equipment shall be operated within the dripline of oaks. Protective fencing shall be placed around the dripline of oaks to prevent compaction of the root zone, if applicable.

### **Wildlife protection**

2.11 Bird nesting season: The Permittee shall not allow any vegetation removal or mining operations within the site from March 1<sup>st</sup> to August 15<sup>th</sup>, the recognized breeding, nesting and fledging season for most bird species. If vegetation has to be removed or mining has to occur within these dates, a qualified biologist shall conduct bird surveys for nesting birds. If a listed species is found, a qualified biologist shall conduct 8 bird surveys, 10 days apart, in compliance with Fish and Wildlife Service protocols. If listed bird species, such as least Bell's vireo, are found, the Permittee shall not allow any activity within the site from March 1<sup>st</sup> to September 1<sup>st</sup>. If no breeding/nesting birds are observed, site preparation and construction activities may begin. If breeding activities and/or an active bird nest is located, the breeding habitat/nest site shall be fenced or flagged a minimum of 300 feet (500 feet for raptors) and this area shall not be disturbed until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, and the young will no longer be impacted by the project.

2.12 Storm season: The Permittee's activities within the stream course shall be limited to the dry period of the year from May 1 to December 1 or when the stream is not actively flowing, or at its lowest flow, and no measurable rain is forecasted within 48 hours. If measurable rain is predicted within 48 hours during construction, all activities shall cease for the season, or if before December 1<sup>st</sup>, until storm flows have returned to pre-storm conditions, and protective measures to prevent siltation or erosion shall be implemented/maintained.

2.13 T&E species surveys: The Permittee certifies by signing this agreement that the project site has been surveyed and shall not impact any rare, threatened or endangered species; or the Permittee certifies that such a survey is not required for the proposed project. If it is determined later that rare, threatened or endangered species occur within the proposed work area, within 500 feet, or could be impacted by the work proposed, the Permittee shall cease immediately, all activities and consult with the Department and obtain any required State and/or Federal permits, and/or submit plan to avoid any impacts.

2.14 Monitoring: A qualified biological monitor, having the appropriate permits, shall be on site at least once a month during normal operations and shall survey for species prior to construction. The monitor shall be on site on a daily basis during the start of construction, during water diversion, and if listed species are present within 500 feet of



any work. If any species are found in the path of construction, the monitor shall relocate the species to a safe location. Relocation areas shall be identified prior to the start of construction, and are subject to the Department's approval. If any species are found in the path of construction, the monitor shall relocate the species to a safe location. The monitor shall have the ability to stop activities if continued activities will impact resources.

**2.15 Exclusionary fencing:** Exclusionary fencing or sheet piling shall be erected to prevent the migration into or the return of species into the work site. Exclusionary fencing for the blunt-nosed leopard lizard and the kit fox shall be erected to prevent the migration into or the return of species into the work site. Passages for the lizard shall be located under the haul roads per the designs approved by the Fish and Wildlife Service Biological Opinion. Fencing of the pits shall be installed and maintained after March 15 or after three consecutive days of ground temperatures reaching 77 degrees, whichever is first. Fencing of the pits will continue until the extraction is completed for the year. Field notes shall be kept and submitted to the Department after the first week of operations and upon completion of the project.

**2.16 Aquatic organisms:** Vehicles shall not be driven or equipment operated in water covered portions of a stream or lake, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, except as otherwise provided for in the Agreement.

#### **Wildlife passage**

**2.17 Water flows:** When any temporary dam or other artificial obstruction is being constructed, maintained, or placed in operation, sufficient water shall at all times be allowed to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code Section 5937.

**2.18 Barriers:** When any structure/culvert placed within a stream where fish or other aquatic organisms do/may occur, shall be designed, constructed and maintained such that it does not constitute a barrier or a trap to upstream or downstream movement of aquatic life, or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes but is not limited to the supply of water at an appropriate depth, temperature, and velocity to facilitate upstream and downstream migration.

#### **Equipment and access**

**2.19 Ramps:** Access to the work site shall be via existing roads and access ramps. If no ramps are available in the immediate area, the Applicant may construct a ramp or a road in the footprint of the project. Any ramp shall be removed upon completion of the project.

2.20 Contaminated equipment: All equipment shall be washed and free of weed seeds prior to delivery to the site.

### **Structures**

2.21 Obstructions: Any temporary dam, diversion or other artificial obstruction shall only be built from materials such as clean gravel/rock/boulders which will cause little or no siltation, and shall be approved by the Department prior to construction. A grade control structure, made of sand bags, may be constructed at the mouth of Deer Park Creek, but shall not become a barrier to wildlife migration. The structure shall not be higher than 12 inches above the invert. If a greater height is required, then two or more small structures shall be placed in the creek instead of one.

### **Sedimentation**

2.22 Spoil sites: Permanent spoil storage sites shall not be located within a stream, where spoil can be washed back into a stream/lake, or where it will cover aquatic or riparian vegetation.

2.23 Disturbed soils: Areas of disturbed soils with slopes toward a stream or lake shall be stabilized to reduce erosion potential. Planting, seeding and mulching is conditionally acceptable. Where suitable vegetation cannot reasonably be expected to become established, non-erodible materials, such as coconut fiber matting, shall be used for such stabilization. Any installation of non-erodible materials not described in the original project description shall be coordinated with the Department. Coordination may include the negotiation of additional Agreement provisions for this activity.

2.24 Wash water: Water containing mud, silt, or other pollutants from equipment washing or other activities, shall not be allowed to enter a lake or flowing stream or placed in locations that may be subjected to high storm flows.

### **Pollution and clean up**

2.25 Waste: No debris, soil, silt, sand, bark, slash, sawdust, rubbish, construction waste, cement or concrete (wet or dry) or washings thereof, asphalt, paint, oil or other petroleum products or any other substances which could be hazardous to aquatic life, or other organic or earthen material from any logging, construction, or other associated project related activity shall be allowed to contaminate the soil and/or enter into or placed where it may be washed by rainfall or runoff into, waters of the State. Any of these materials, placed within or where they may enter a stream or lake, by the Permittee or any party working under contract, or with the permission of the Permittee, shall be removed immediately. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any stream or lake.

2.26 Clean up: The clean-up of all spills shall begin immediately. The Department shall be notified immediately by the Permittee of any spills and shall be consulted regarding clean-up procedures. If vacuum trucks or pumps are used to clean up any contamination in water, or for any other use, the vacuum hose shall be placed in a 3 to 4 square foot area, protected on all side by exclusionary fencing to lower velocities and to prevent the uptake of any aquatic life.

2.27 Dust control: No stream water may be used in construction, such as in dust control. All construction water shall be from developed sources.

2.28 Litter: The Permittee shall comply with all litter and pollution laws. All contractors, subcontractors and employees shall also obey these laws and it shall be the responsibility of the operator to insure compliance.

2.29 Equipment checks: Any equipment or vehicles driven and/or operated within or adjacent to the stream/lake shall be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life.

2.30 Staging areas: Staging/storage areas for equipment and materials shall be located outside of the stream/lake.

2.31 Stationary equipment: Stationary equipment such as motors, pumps, generators, and welders, located within or adjacent to the stream/lake shall be positioned over drip pans. If welders are used, fire suppression equipment shall be on site at all times the welder is being used.

2.32 Equipment maintenance: No equipment maintenance shall be done within or near any stream channel or lake margin where petroleum products or other pollutants from the equipment may enter these areas under any flow.

2.33 Debris: The Permittee shall remove all human generated debris, such as yard and farm cuttings, broken concrete, construction waste, garbage and trash. The Permittee shall remove washed out culverts, and other construction materials, that the Permittee places within, or where they may enter the stream.

### **Diversion**

2.34 Buffer zone for the low flow channel: An earthen berm shall be constructed and maintained between the active pits and the low flow channel. This berm shall have no less than a 20 foot buffer from the structure, to the water. A 50 foot buffer zone shall be retained from the toe of the berm facing the pit, to the active pit area. The berm shall be wide enough to prevent the low flow channel from migrating into the pit areas. No temporary dams or other artificial obstructions shall be built in the river which will impede or obstruct water flows.

**2.35 Flow diversion specifications:** When work in a flowing stream is unavoidable, the entire stream flow shall be diverted around the work area by a barrier, temporary culvert, new channel, or other means approved by the Department. Location of the upstream and downstream diversion points shall be approved by the Department. Construction of the barrier and/or the new channel shall normally begin in the downstream area and continue in an upstream direction, and the flow shall be diverted only when construction of the diversion is completed. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area. Diversion berms shall be constructed of onsite alluvium of low silt content, inflatable dams, sand bags, sheet pile, or other approved materials. The enclosure and the supportive material shall be removed when the work is completed and removal shall normally proceed from downstream in an upstream direction. The Permittee shall obtain all written approvals from the Department prior to initiation of construction activities. The Department will have up to 30 days to review all plans.

**2.36 Flows through diversions:** Flow diversions shall be done in a manner that shall prevent pollution and/or siltation and which shall provide flows to downstream reaches. Flows to downstream reaches shall be provided during all times that the natural flow would have supported aquatic life. Said flows shall be sufficient quality and quantity, and of appropriate temperature to support fish and other aquatic life below the diversion and the flows shall meet or exceed baseline conditions. Baseline conditions shall be established prior to construction and monitored upstream of any work area. Normal flows shall be restored to the affected stream immediately upon completion of work at that location.

#### **Exotic species control**

**2.37 Non-native plant removal:** The Permittee shall remove any non-native vegetation (tree tobacco, castor bean, giant cane), from the work area and shall dispose of it in a manner and a location which prevents its reestablishment. Removal shall be done at least twice annually during the spring/summer season, as needed, through the term of restoration. Giant cane (*Arundo*), if present, shall be cut to a height of 6 inches or less, and the stumps painted with an herbicide approved for aquatic use within 5 minutes of cutting. Herbicides shall be applied at least three times during the period from May 1 to October 1 to eradicate these plants. Where proposed methods for removing giant cane deviate from this procedure, the Permittee shall present the alternate methods, in writing, to the Department for review and approval, prior to construction.

**2.38 Herbicide use:** Invasive species shall be removed by hand or by hand-operated power tools rather than by chemical means.

**2.39 Non-native wildlife:** The Permittee shall remove all non-native aquatic animals from the work area, if present, as part of the restoration of the site. Target animals include bullfrog, African clawed frog, non-native turtles, and crayfish. Compliance with this condition may be subject to a sport fishing license from the Department.

## **Maintenance**

2.40 Maintenance of berm: The Permittee may repair the diversion berm during operations if needed.

### **3. Compensatory Measures**

To compensate for adverse impacts to fish and wildlife resources identified above that cannot be avoided or minimized, Permittee shall implement each measure listed below.

3.1 Mitigation for permanent disturbance: The Permittee shall mitigate for permanent impacts, if any occur to wetland habitats by restoring or creating riparian and/or scrub habitat and a 5:1 ratio. An area of 1.5 acres of Deer Park Creek shall be vegetated with native species suitable to the area.

3.2 Mitigation for areas of temporary disturbance: The Permittee shall mitigate with enhancement, restoration and or creation of kit fox and blunt-nosed leopard lizard habitat, restoration of the drainage channel on the property line, revegetation of the eastern bank of the Cuyama River for a linear distance of 1,400 feet, removal of the old cars dumped on the bank and removal of all trash, broken concrete and waste within the property. The location and type of the mitigation shall be approved by the Department prior to execution of this agreement.

### **4. Reporting Measures**

Permittee shall meet each reporting requirement described below.

4.1 Annual report: An annual report shall be submitted to the Department by Jan. 1 of each year for 5 years after planting. This report shall include the survival, % cover, and height by species of both trees and shrubs. The number by species of plants replaced, an overview of the revegetation and exotic plant control efforts, and the method used to assess these parameters shall also be included for any mitigation. Photos from designated photo stations shall be included. The report shall also contain water table depth for the year, amount of material removed, amount of material deposited by the river each year, and any plans for the following year.

### **CONTACT INFORMATION**

Any communication that Permittee or DFG submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or DFG specifies by written notice to the other.

To Permittee:

Steven M. Troesh  
Troesh Materials Inc.  
Diamond Rock Sand Gravel Mine & Aggregate Processing Facility  
P.O. Box 2805, Pismo Beach, 93448-2805,  
2280 Hutton Road, Nipomo, 93444  
805-357-2288  
stroesh@troesh.com

cc:

To DFG:

Department of Fish and Game  
South Coast Region

Attn: Lake and Streambed Alteration Program  
Natasha Lohmus  
Notification #1600-2009-0140-R5  
805-684-6281  
nlohmus@dfg.ca.gov

**LIABILITY**

Permittee shall be solely liable for any violations of the Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute DFG's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

**SUSPENSION AND REVOCATION**

DFG may suspend or revoke in its entirety the Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before DFG suspends or revokes the Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee an opportunity to correct any deficiency before DFG suspends or revokes the Agreement, and include instructions to Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused DFG to issue the notice.

## **ENFORCEMENT**

Nothing in the Agreement precludes DFG from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects DFG's enforcement authority or that of its enforcement personnel.

## **OTHER LEGAL OBLIGATIONS**

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC Sections 2050 et seq. (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

## **AMENDMENT**

DFG may amend the Agreement at any time during its term if DFG determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by DFG and Permittee. To request an amendment, Permittee shall submit to DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

## **TRANSFER AND ASSIGNMENT**

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective,

unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter DFG approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

### **EXTENSIONS**

In accordance with FGC Section 1605(b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to DFG a completed DFG "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). DFG shall process the extension request in accordance with FGC 1605(b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code, § 1605, subd. (f)).

### **EFFECTIVE DATE**

The Agreement becomes effective on the date of DFG's signature, which shall be: 1) after Permittee's signature; 2) after DFG complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC Section 711.4 filing fee listed at [http://www.dfg.ca.gov/habcon/ceqa/ceqa\\_changes.html](http://www.dfg.ca.gov/habcon/ceqa/ceqa_changes.html).

### **TERM**

This Agreement shall expire on 11/1/2014, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC Section 1605(a) (2) requires.

### **EXHIBITS**

The documents listed below are included as exhibits to the Agreement and incorporated herein by reference.



Supplemental Biological Resources Assessment dated June 2009, prepared by West Coast Environmental; the Alternatives Analysis (WCE), dated February 26, 2009, River Channel Survey and Monitoring Plan (WCE), dated February 26, 2009, Potential for Head Cutting and Erosion, Hawks & Associates, dated February 20, 2009 and the Notification Package for the Troesh Materials Inc., Diamond Rock Aggregate Mine.

**AUTHORITY**

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

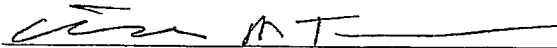
**AUTHORIZATION**

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify DFG in accordance with FGC Section 1602.

**CONCURRENCE**

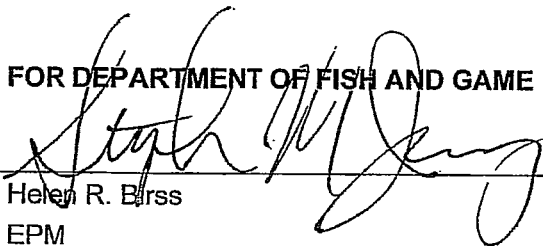
The undersigned accepts and agrees to comply with all provisions contained herein.

**FOR [INSERT NAME OF PERMITTEE]**

  
\_\_\_\_\_  
Steven M. Troesh  
Owner

4-18-2011  
\_\_\_\_\_  
Date

**FOR DEPARTMENT OF FISH AND GAME**

*For*  
  
\_\_\_\_\_  
Helen R. Barss  
EPM

19 May 2011  
\_\_\_\_\_  
Date

Prepared by: Natasha Lohmus  
Environmental Scientist

# NOTICE OF DETERMINATION

TO:  Office of Planning and Research

For U.S. Mail:  
P.O. Box 3044  
Sacramento, CA 95812-3044

Street Address:  
1400 Tenth Street  
  
Sacramento, CA 95814

FROM: Department of Fish and Game  
South Coast Region  
3883 Ruffin Road  
San Diego, Ca 92123  
Contact: Natasha Lohmus  
Phone: 805-684-6281

LEAD AGENCY (if different from above):  
County of Santa Barbara  
Planning and Development  
123 E. Amapamu Street  
Santa Barbara, CA 93101

**SUBJECT: Filing of Notice of Determination pursuant to § 21108 of the Public Resources Code**

State Clearinghouse Number: 2003121029

Project Title: Diamond Rock Sand and Gravel Mine.

**Project Location:** The project is located southwest of State Route 33, Maricopa Highway, approximately 5.9 miles southeast of the intersection with State Route 166, in the Cuyama River, within the County of Santa Barbara, State of California; Latitude 34: 51' 34.72", Longitude 119: 29' 36.36" or Section 18, Township 9N, Range 24W, U.S. Geological Survey (USGS) map: Cuyama Peak. (Thomas Brothers Guide page 346, grid 9E).

**Project Description:** The Permittee intends to alter the river to extract aggregate of various sizes to produce up to a daily production of an average of 500,000 tons per year but not to exceed 750,000 tons per year. Aggregate extraction consists of removal of flood-washed alluvial material from the Cuyama River. Extraction will be conducted with excavators, bulldozers, loaders and dump trucks. Aggregate would be scraped or excavated from the river surface and hauled to an approved rock crushing and separating facility, which is located at GPS, a neighboring mining facility, located one mile north of Troesh. The trucks shall use the existing farm road located at the eastern project boundary and travel north of the GPS processing facility. Mining will occur in the bed of the river from a 14 acre pit in the center of the 84 acre project site, and will have a maximum depth of 45 feet. If the water table is contacted, the Permittee shall reestablished a cap of 6 feet above the water table and shall stay a minimum of 6 feet above the water table at all times. The pit shall have a slope of 5:1 on the upstream side, and a 3:1 slope for the rest of the pit, to allow for any wildlife to escape. Surveys for the depth of the water table shall be done once a year, just prior to the first day of excavation of the year. Survey data may be obtained from existing wells located on the property. The haul road will be moved 450 feet north of the approved location to avoid impacts with crossing Deer Park Creek. Fencing for the blunt nosed leopard lizard will erected along the western portion of the existing haul road. Fencing may be made of aluminum or hard plastic material so that the lizards can not climb over the fence. Four culverts shall be placed in the access road to direct flows from Deer Park Creek, downstream and to allow the blunt nosed leopard lizards movement within the project boundary, but not within the construction area. Restoration includes 1.5 acres of vegetation of Deer Park Creek, a sandbag grade control structure at the mouth of the creek, and 1,000 linear feet of the east bank of the Cuyama River.

This is to advise that the Department of Fish and Game (DFG), acting as  the lead agency /  a responsible agency approved the above-described project on 19 MAY 2011 and has made the following determinations regarding the above described project:

1. The project  will /  will not have a significant effect on the environment. (This determination is limited to effects within DFG's jurisdiction when DFG acts as a responsible agency.)
2.  An environmental impact report /  A negative declaration /  A Mitigated Negative Declaration was prepared for this project pursuant to CEQA.
3. Mitigation measures  were /  were not made a condition of DFG's approval of the project.
4. A mitigation reporting or monitoring plan  was /  was not adopted by DFG for this project.

# NOTICE OF DETERMINATION

5. A Statement of Overriding Considerations  was /  was not adopted by DFG for this project.
6. Findings  were /  were not made by DFG pursuant to Public Resources Code § 21081(a). The Department did, however, adopt findings to document its compliance with CEQA.
7. Compliance with the environmental filing fee requirement at Fish and Game Code § 711.4 (check one):
  - Payment is submitted with this notice.
  - A copy of a receipt showing prior payment is on file with the Department.
  - A copy of the Lead Agency's Certificate of Fee Exemption and De Minimis Impact Finding is attached to this notice.
- Lead Agency certification: DFG, as Lead Agency, has made the final EIR with comments and responses and record of project approval, or the Negative Declaration, available to the General Public at the DFG office identified above.
- Responsible Agency statement: The final EIR, Negative Declaration or Mitigated Negative Declaration that was prepared by the Lead Agency for this project is available to the General Public at the office location listed above for the Lead Agency. DFG's record of decision is available at the DFG office identified above.

Signature: \_\_\_\_\_

Helen Birss

Environmental Program Manager

South Coast Region

CALIFORNIA DEPARTMENT OF FISH AND GAME

Date: \_\_\_\_\_

19 May 2011

Date Received for filing at OPR: \_\_\_\_\_

TRANSMISSION VERIFICATION REPORT

TIME : 05/19/2011 12:40  
NAME : DAVID  
FAX : 8584674235  
TEL :  
SER. # : BROA5J229820

DATE, TIME	05/19 12:39
FAX NO./NAME	919163233018
DURATION	00:00:49
PAGE(S)	02
RESULT	OK
MODE	STANDARD ECM

## NOTICE OF DETERMINATION

TO:  Office of Planning and Research

*For U.S. Mail:*  
P.O. Box 3044  
Sacramento, CA 95812-3044

*Street Address:*  
1400 Tenth Street

Sacramento, CA 95814

FROM: Department of Fish and Game  
South Coast Region  
3883 Ruffin Road  
San Diego, Ca 92123  
Contact: Natasha Lohmus  
Phone: 805-684-6281

**LEAD AGENCY (if different from above):**  
County of Santa Barbara  
Planning and Development  
123 E. Anapamu Street  
Santa Barbara, CA 93101

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CALIFORNIA DEPARTMENT OF FISH AND GAME  
AGREEMENT REGARDING PROPOSED STREAM OR LAKE ALTERATION  
NO. 1600-2009-0104-R5

CEQA FINDINGS

*INTRODUCTION:*

The California Environmental Quality Act ("CEQA"; Public Resources Code §21000, *et seq.*), and the State CEQA Guidelines ("Guidelines"; 14 Cal.Code Regs. 15000, *et seq.*) require that prior to reaching a decision on a project, a Responsible Agency must consider the environmental effects of the project as shown in the Environmental Impact Report ("EIR") or **Negative Declaration** prepared by the Lead Agency.

As the Responsible Agency, the Department of Fish and Game adopted the **EIR**, (SCH number **2003121049**) filed 4/24/86. The Department of Fish and Game found no significant effects on the environment, adopted mitigation measures and a **no** statement of overriding considerations. The findings included a requirement that the project developer obtain permits from all appropriate regulatory agencies, including the Department of Fish and Game, prior to Development.

The Permittee intends to alter the river to extract aggregate of various sizes to produce up to a daily production of an average of 500,000 tons per year but not to exceed 750,000 tons per year. Aggregate extraction consists of removal of flood-washed alluvial material from the Cuyama River. Extraction will be conducted with excavators, bulldozers, loaders and dump trucks. Aggregate would be scraped or excavated from the river surface and hauled to an approved rock crushing and separating facility, which is located at GPS, a neighboring mining facility, located one mile north of Troesh. The trucks shall use the existing farm road located at the eastern project boundary and travel north of the GPS processing facility. Mining will occur in the bed of the river from a 14 acre pit in the center of the 84 acre project site, and will have a maximum depth of 45 feet. If the water table is contacted, the Permittee shall reestablished a cap of 6 feet above the water table and shall stay a minimum of 6 feet above the water table at all times. The pit shall have a slope of 5:1 on the upstream side, and a 3:1 slope for the rest of the pit, to allow for any wildlife to escape. Surveys for the depth of the water table shall be done once a year, just prior to the first day of excavation of the year. Survey data may be obtained from existing wells located on the property. The haul road will be moved 450 feet north of the approved location to avoid impacts with crossing Deer Park Creek. Fencing for the blunt nosed leopard lizard will erected along the western portion of the existing haul road. Fencing may be made of aluminum or hard plastic material so that the lizards can not climb over the fence. Four culverts shall be placed in the access road to direct flows from Deer Park Creek, downstream and to allow the blunt nosed leopard lizards movement within the project boundary, but not within the construction area. Restoration includes 1.5 acres of vegetation of Deer Park Creek, a sandbag grade control structure at the mouth of the creek, and 1,000 linear feet of the east bank of the Cuyama River.

The California Department of Fish and Game ("CDFG") is a Responsible Agency under CEQA for the purpose of approving the Streambed Alteration Agreement necessitated by the Lead Agency's proposed project. As a CEQA Responsible Agency, CDFG is required by Guidelines §15096 to review the environment document certified by the Lead Agency approving the project and to make certain findings concerning the project's potential to cause significant, adverse environmental effects. However, when considering alternatives and mitigation measures approved by the Lead Agency, a Responsible Agency is more limited than the Lead Agency. CDFG has responsibility for mitigating or avoiding only the direct or indirect environmental effects of the streambed alteration agreement that it approves.

**FINDING:** CDFG has considered the **EIR** adopted by the Lead Agency. CDFG has independently concluded that the Streambed Alteration Agreement should be issued under the terms and conditions specified therein. CDFG finds that with the mitigation measures incorporated into the Streambed Alteration Agreement, there will be no significant effects from the proposed project.

**FINDING:** CDFG has considered the **EIR / Neg. Dec.** adopted by the Lead Agency. CDFG has independently concluded that the Streambed Alteration Agreement should be issued under the terms and conditions specified therein. CDFG finds that changes have been incorporated into the project that will avoid or substantially lessen the significant environmental effect as identified in the final **EIR/ Neg. Dec.** In particular, CDFG finds that the measures incorporated into the Streambed Alteration Agreement will ensure there will be no significant effects from the proposed project.

The Project is Approved.

DATE: 5-19-11



Helen Birss  
Environmental Program Manager  
South Coast Region  
CALIFORNIA DEPARTMENT OF FISH AND GAME

# 21

March 24, 2011

To: Zoraida Abresch, Supervising Planner  
Gary Kaiser, Senior Planner,  
Santa Barbara County Planning and Development Department,  
624 W. Foster Road, Suite C.,  
Santa Maria, CA 93455

RE: Appeal to Directors Decision Dated March 14, 2011:

- A. To Approve an economic hardship time extension for the proposed Diamond Rock Mine and Processing Facility (10TEX—00000-0014 to 03CUP-00000-00037), from March 23, 2010 to January 12, 2012.
- B. To accept the Findings and Conditions of Approval for 03CUP-000000-00037, including the Final Environmental Impact Report (EIR) 05EIR-00000-00001, approved by the Board of Supervisors on September 23, 2008.

Dear Zoraida Abresch and Gary Kaiser,

Initially we would like to mention that there are two separate issues addressed in the Director's decision not just a request for extension of time due to economic hardship.

We believe "significant" changes will be made to the operation of both Diamond Rock and GPS mines. We are concerned about future monitoring of mining operations and proposed modifications to the two mines, which will be operating 1500 feet apart in the Cuyama River. It appears that the two mines will be working together to extract and process sand and gravel from the Cuyama River bed. This fact was not mentioned in the Environmental Impact Reports for the Diamond Rock project or for GPS Mine. Please refer to USACE Bruce Henderson email dated March 22, 2011 attached.

Diamond Rock Mine plans to begin excavation in the Cuyama River in January 2012. GPS mine is currently excavating on the river terrace near their existing processing site because they have been issued a cease



and desist order by the EPA, which prohibits them from excavating in the Cuyama River.

The cease and desist order was issued because GPS was releasing fines from processing into an American waterway. They also excavated a large pit in early 2007 without obtaining the required permits and without completing the Environmental Review process required by CEQA. (We believe Santa Barbara County Planning and Development Department has copies of EPA correspondence and orders in their files).

Santa Barbara County did not stop the illegal and unpermitted expansion of GPS Mine in 2007 because, when asked to investigate the situation, they determined no infrastructure or man-made structures would be damaged in the un-permitted expansion. Groundwater was exposed in 2007 during the un-permitted expansion and is still exposed as of March 24, 2011. The Cuyama River and Cuyama aquifers form our natural infrastructure, which provides water to the Cuyama Valley and to Santa Maria.

It is of concern to us that the EPA felt it necessary to issue a cease and desist order but Santa Barbara County did nothing to prevent the dumping of fines or the un-permitted expansion of GPS Mine.

In addition, the U.S. Army Corps of Engineers has issued Environmental Assessments for both Diamond Rock and GPS mines. The Environmental Assessments significantly limit the scope of the proposed activities of the mines as originally permitted by Santa Barbara County. (We believe the Santa Barbara County Planning and Development Department has both Environmental Assessments in their files.) Please refer to excerpts of copies of both Diamond Rock and GPS Environmental Assessments attached.

Cuyama Valley Conservancy, formerly known as Save Cuyama Valley, has appealed the Santa Barbara County Planning Commissioners and Santa Barbara County Board of Supervisors decisions to approve the Diamond Rock Mine. We are appealing the Director's decision B. because we believe there is significant new evidence relevant to the decision, which, could not have been presented at the time the decision was made.

We are submitting correspondence between members of our group, Cuyama Valley Conservancy, and the County to show that a good faith effort has been made on our part to ask the County, as lead agency, to monitor mining activities in the Cuyama River. In addition we are submitting URS Sediment Transport Memorandums to the County because they were not included in the EIR and the May 26, 2009 Memorandum was actually written after the Board of Supervisors had approved the Diamond Rock Mine project and Save Cuyama Valley had appealed the decision. Correspondence from Dr. Curry is resubmitted with this application as expert opinion on hydrology, sediment transport issues, and the need to monitor mining activity in the Cuyama River.

We request that, as lead agency on both mining projects and as governing body for Santa Barbara County, the Planning Commissioners, Planning and Development Department, and Supervisors exercise their authority and responsibility to modify the Conditional Use Permits for both mines to reflect what is actually required by law and to adequately monitor mining activities to protect our natural resources from misappropriation and misuse by private parties.

Supporting documents are provided in chronological order.

Thank you for this opportunity to be involved in the decision making process.

Gene Zannon and Jennifer Lee  
for Cuyama Valley Conservancy

May 13, 2011

Cuyama Valley Conservancy  
Index of Supporting Documents for  
Santa Barbara County Planning Commission  
Case No.11APL-00000-00037

THIS CONFIRMS MY RECEIPT OF  
ALL OF THE ITEMS LISTED ON THIS  
INDEX SHEET, HAND-DELIVERED  
BY JENNIFER LEE ON FRIDAY  
MAY 13, 2011.

*Gayle House*

- 1) Santa Barbara Planning and Development Notice of Pending Action by Director to Approve a Time Extension dated March 2, 2011, 2 pages (pgs)
- 2) County of Santa Barbara Planning and Development letter to Mr. Steve Troesh dated March 14, 2011, 2 pgs
- 3) County of Santa Barbara Planning and Development Appeal Form dated March 24, 2011, 6 pgs
- 4) Cuyama Valley Conservancy Appeal Letter dated March 24, 2011, 3 pgs
- 5) Dr. Curry letter dated May 10, 2011, 1 page
- 6) Dr. Curry letter dated June 6, 2009, 14 pgs
- 7) San Luis Obispo Coastkeeper cover letter dated September 12, 2008, 1 page and Dr. Curry letter dated September 10, 2008, 6 pgs
- 8) Dr. Curry email dated September 12, 2008, 2 pgs
- 9) URS Memo dated May 26, 2009 and attached John Larson, URS, memo dated August 25, 2008, together 7 pgs
- 10) URS memo dated September 15, 2008, 3 pgs
- 11) URS memo dated September 26, 2005, 11 pgs
- 12) Bruce Henderson, United States Army Corps of Engineers (USACE) email dated March 22, 2011, 2 pgs
- 13) Department of the Army Corps of Engineers letter to Troesh Materials, Inc. dated April 16, 2010 and attached Troesh Materials, Inc. Permit dated March 29, 2011, 12 pgs

RECIBIDO BE.  
Gary Kaiser  
5-13-11

May 13, 2011

Cuyama Valley Conservancy  
Index of Supporting Documents for  
Santa Barbara County Planning Commission  
Case No.11APL-00000-00037

- 14) USACE Environmental Assessment for Diamond Rock Sand and Gravel Mine and Processing Facility, Troesh Materials, Inc., dated April 15, 2010, 58 pgs
- 15) Department of the Army (USACE) Permit for GPS River Rock Products, Inc. and attachments dated November 20, 2009, 10 pgs
- 16) USACE Environmental Assessment for GPS River Rock Products, Inc. dated November 16, 2009, 53 pgs
- 17) Gary Kaiser email dated April 22, 2011 and Jennifer Lee email dated April 15, 2011, 2 pgs
- 18) Gary Kaiser email dated March 24, 2011, Cuyama Valley Conservancy email and letter dated March 22, 2011, 3 pgs
- 19) County of Santa Barbara Planning and Development letter dated March 20, 2011, 2 pgs
- 20) Jennifer Lee email dated March 15, 2011, 2 pgs
- 21) Jennifer Lee email dated March 14, 2011, previous emails with Zoraida Abresch and Gary Kaiser, and Cuyama Valley Conservancy letter dated March 9, 2011, 4 pgs
- 22) Jennifer Lee email dated October 14, 2009, Gary Kaiser email dated October 13, 2009, and Jennifer Lee email dated October 12, 2009, 2 pgs
- 23) USACE email dated September 12, 2002 and RAM letter dated July 31, 2002, 2 pgs
- 24) Jennifer Lee email dated June 5, 2009 and previous emails to and from Gary Kaiser, 6 pgs

May 13, 2011

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**SANTA BARBARA COUNTY PLANNING AND DEVELOPMENT  
NOTICE OF PENDING ACTION BY DIRECTOR  
TO APPROVE A TIME EXTENSION**

**DATE OF THIS NOTICE:** March 2, 2011

**APPLICANT:** Troesh Materials, Inc.

**CASE NAME & NUMBER:** Diamond Rock Mine and Processing Facility Time Extension, 10TEX-00000-00014

**APPLICATION FILED:** February 18, 2010

**DATE OF P&D DIRECTOR ACTION:** March 14, 2011

**SUBJECT:**

On March 14, 2011, the Santa Barbara County Planning and Development Department will approve a time extension (10TEX-00000-00014) for the proposed Diamond Rock Mine and Processing Facility (Case Nos. 03CUP-00000-00037 and 03RRP-00000-00002). Said mine located on the west side of State Highway 33, 5.9 miles south of its junction with State Highway 166 (APNs 149-220-002, 011 & 065), in the Ventucopa area, Fifth Supervisorial District.

The subject sand and gravel mine was approved by the Santa Barbara County Board of Supervisors on September 23, 2008. The approved permits allow the applicant, Troesh Materials, Inc., to establish a new sand and gravel mine and processing facility on a 133-acre site located in the Cuyama River channel and on the adjoining river terrace, respectively. Prior to the expiration date of those approvals, a time extension request was filed. The required findings for a Director-level time extension based on economic hardship can and will be made by the Director of Planning and Development.

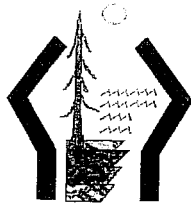
**No substantive changes are proposed to the project, which has already been approved by the County. The current request is only a time extension that would allow the applicant additional time to establish the approved use. Once established, the mine will not send or receive trucks on Highway 33 south of Lockwood Valley Road and therefore cannot increase truck traffic through the Ojai Valley.**

This action to approve this time extension is subject to a 10-day appeal period. The appeal period will start on Monday March 14, 2011 and will end at **5:00 PM on Thursday March 24, 2011.** Appeals must include the completed appeal form (<http://www.sbcountyplanning.org/PDF/C/AppealSubReqAPP.pdf>) and appeal fee of \$603.00. If you have questions about the time extension or are contemplating an appeal, please contact the planner, Gary Kaiser at (805) 934-6259 or FAX: (805) 934-6258.

**MATERIAL REVIEW:** Plans and staff analysis of the proposal may be reviewed at Planning and Development, 624 W. Foster Road, Suite C., Santa Maria, CA 93455 a week prior to the final action.

**CHALLENGES:** If you challenge the project 10TEX-00000-00014 in court, you may be limited to raising only those issues you or someone else raised in written correspondence to Planning and Development.





*Watershed Systems*

*Hydrology - Geology - Soil Science*

*Robert Curry, Ph.D., P.G.*

*600 Twin Lanes, Soquel, Calif. 95073*

*831 426-6131; curry@ucsc.edu*

*field: 760 932-7700*

Santa Barbara County Planning Commission  
Public Works Conference Room

May 10, 2011

Re: Diamond Rock Mine, Joint Venture with GPS Mine

Dear Commissioners,

I have previously submitted a professional analysis of the GPS Mine activities on the Cuyama River (June 6, 2009). Before you today is a proposal for a joint venture between Diamond Rock Mine and GPS for adjacent in-stream mining. State and federal regulators would not permit the proposed mining plan submitted by Diamond Rock because they found that it would impact groundwater by mining to a depth of 90-feet in the riverbed and would extract so much aggregate within the proposed permitting window of time that on-site and downstream erosional impacts could exceed reasonable levels. They have restricted extraction volumes and depths.

You are now being asked to approve a piecemeal mining effort under the pretext that the original mining plan might be approved in the future after a 5-year regulatory restriction has expired. In my professional opinion, based on my studies of sediment transport in the Cuyama River at the mines' location, and based on groundwater status and recharge at this somewhat critical point in the valley, there is no reason at all to expect that conditions five years from now will differ sufficiently to permit the proposed expansion and autonomous operation of two separate immediately-adjacent mines. Federal and State regulators cannot be expected to change their regulatory requirements and statutes to weaken protections. Ongoing proposed changes in the regulatory language of the Corps of Engineers are designed to reinforce, not weaken, the current language that addresses in-stream mining.

I recommend that you review my 2009 findings on the impacts of sand and gravel mining at this site. The current US Geological Survey Cuyama Project findings reinforce my earlier opinions. This geographic location represents a high-point in the Cuyama River groundwater levels and is particularly vulnerable to damage through mining exposure.

Respectfully Submitted:

Robert R. Curry  
Registered California Geologist



# County of Santa Barbara Planning and Development

Glenn S. Russell, Ph.D., Director  
Dianne Black, Director of Development Services  
Jeffrey S. Hunt, Director Long Range Planning

March 14, 2011

Mr. Steve Troesh  
Troesh Materials, Inc.  
PO Box 2805  
Pismo Beach, CA 93449

RE: Diamond Rock CUP Time Extension  
Case No. 10TEX-00000-00014 for 03CUP -00000-00037  
APN: 149-220-002, -011 and -065

Dear Steve:

On March 14, 2011, the Director of Planning and Development:

- A. Approved an economic hardship time extension for the proposed Diamond Rock Mine and Processing Facility (10TEX-00000-00014 to 03CUP-00000-00037), from March 23, 2010 to January 12, 2012.
- See Appendix B to the EIR*  
B. Accepted the Findings and Conditions of Approval for 03CUP-000000-00037, including the Final Environmental Impact Report (EIR) 05EIR-00000-00001, approved by the Board of Supervisors on September 23, 2008.

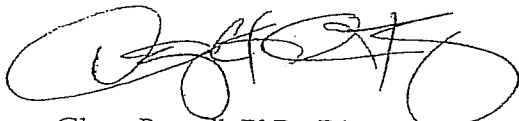
The attached findings and conditions reflect the Director's action

Action of the Director is final unless appealed in writing to the Planning Commission within 10 calendar days of the date of the action by the Director. The appeal period for this project ends at **5:00 PM on March 24, 2011.**

If the decisions appealed, a filing fee of \$603 for appeals is required and must be delivered to Planning and Development at 123 East Anapamu Street, Santa Barbara, CA or 624 W. Foster Road, Suite C, Santa Maria, CA 93455. If this action is appealed, this letter or a copy should accompany the appeal in order to determine that the appeal is filed within the allowed appeal period and to collect the required appeal fee.

Should you have any additional questions, please do not hesitate to contact Gary Kaiser, Senior Planner at 934-6259.

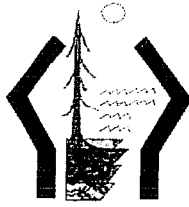
Sincerely,

A handwritten signature in black ink, appearing to read 'Douglas Anthony', written over a large, stylized circular flourish.

Glenn Russell, PhD., Director, by  
Douglas Anthony, Deputy Director  
Development Review North Division

Cc: Case File: 10TEX-00000-00014  
Records Management, P&D

Attachments: Action Letter with conditions of Approval, Dated September 23, 2008  
Deputy Director Memorandum, Dated February 15, 2010



*Watershed Systems*

Hydrology - Geology - Soil Science

Robert Curry, Ph.D., P.G.

600 Twin Lanes, Soquel, Calif. 95073

831 426-6131; FAX 426-9604; curry@ucsc.edu

field: 760 932-7700

June 6, 2009

Santa Barbara County Planning and Development  
c/o Gary Kaiser, Supervising Planner

Thank you for the opportunity to provide critical input to the GPS Mine Expansion EIR, and for your willingness to extend the time limit for receipt of this input.

Attached is an analysis of some of the problematic hydrologic issues associated with the GPS Mine Expansion EIR and associated sediment transport analyses for the GPS and Diamond Rock mine site in the upper Cuyama River bed and valley. I submitted comments on the Diamond Rock Mine proposal to you on September 10, 2008 and those comments are incorporated herein by reference.

In my professional opinion, the inconsistencies and mischaracterizations related to sediment transport, groundwater impacts, and cumulative effects as presented in the current EIR together render that document inadequate and incomplete.

Respectfully Submitted

A handwritten signature in black ink, appearing to read 'Robert R. Curry', with a long horizontal flourish underneath.

Robert R. Curry  
Registered Geologist and Hydrologist  
California RPG 3295

Assessment of analyses of hydrology and sediment transport  
budget for the  
Proposed GPS Mine Expansion, Cuyama River,  
Santa Barbara County, California  
June 6, 2009

Robert R. Curry  
RPG 3295

**Background of author:**

I am a Professor Emeritus of Geology at the University of California, Santa Cruz, and Research Director of the Watershed Institute at California State University, Monterey. I received my Ph.D. in Geomorphology and Paleoclimatology in 1967 from the University of California at Berkeley. I have over 45 years of training and experience in the fields of fluvial geomorphology and hydrology, and have authored over 100 scholarly papers in these fields. I have conducted extensive geomorphological field investigations throughout California, and have conducted over 20 studies on the effects of aggregate gravel mining on California rivers since 1962. I am a Registered Geologist in the State of California, and submit this assessment based on facts within my personal and professional knowledge. I was a professor at UC Santa Barbara for several years and have conducted many academic and consulting projects in Santa Barbara County, including a recent assessment of riparian conditions and regulatory status in south Santa Barbara County for the County Planning and Development Agency<sup>1</sup>.

I have extensive experience in the Southern California aggregate mining industry, especially with Vulcan Materials. I also participated in the drafting of the 1994 Aggregate Resources Management (ARM) Plan for Sonoma County and have worked to understand gravel mining sediment budget issues ever since my studies with Prof. Hans Einstein at Berkeley in 1962-63. I have consulted for aggregate mining companies and mining-site landowners as well as State and tribal governments and regulators throughout my professional life. Over the past 40+ years I have conducted numerous studies regarding sediment transport, hydrologic conditions, sediment budgets and riverbed and riverbank stability throughout the western United States and foreign countries. My professional specialization is in sediment transport fluvial geomorphology. I also have extensive experience and advanced degrees in soil science and biological aspects of mined land reclamation and have helped both federal and State agencies develop their mining and reclamation standards.

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<sup>1</sup> Lee, L.C., P. Fiedler, S. Stewart, R. Curry, D. Partridge, and J. Mason, 2001, Guidebook for referenced-based assessment of the functions of riverine Waters/Wetlands ecosystems in the South Coast region of Santa Barbara County, California – to Santa Barbara County P & D Agency ~900 pp

## Issues with the GPS Expansion EIR:

The following hydrologic aspects of the proposed GPS Cuyama River Mine Expansion proposal have not, in my opinion, been accurately or adequately evaluated in the environmental document for this project. As pointed out in my Diamond Rock EIR critique:

1. Cumulative effects on river bed grade and stability are incorrectly evaluated and characterized.

Although headcutting in the immediately-adjacent Deer Park Creek drainage can be controlled with well-maintained grade control structures, overall incision of the Cuyama riverbed both up- and downstream of the mine site is a certain outcome of the proposed action. I appreciate that County Planners and field personnel have looked at the GPS mine site and concluded that incision problems are minimal. But the cumulative effects of two on-going mining operations immediately adjacent along the river are likely to result in significant and unmitigatable river bed and bank changes as pointed out in earlier and subsequently retracted analyses by URS (2005 vs 08/09 letter reports).

The EPA letter submitted by the then-specialist Tim Vendlinski that is in your record accurately outlines my findings. The gravel supply that is carried about every third year to the GPS pits will be reduced by the upstream mining and flood deflection berms. When big flow events occur that cannot be deflected by moving the active GPS mining area and the berms wash out, the proposed mine pit will still capture the new sediment as well as the washed-out berms. Thus, river bed downstream of the two mine sites will be "starved" for sediment and the "hungry river" scenario ensues. This is a cumulative effect that is insufficiently evaluated.

The GPS existing development is a pre-SMARA mining effort that does not require the reclamation plan and standards of the proposed GPS expansion, but both the existing and proposed GPS Mine and the proposed Diamond Rock Mine must be assessed cumulatively under CEQA. Mining in an active riverbed does not avoid all SMARA reclamation conditions. It only makes the preexisting surface cover conditions easier to emulate.

I will show that the sediment transport model developed by the County's consultants, URS, is based on tenuous and doubtful assumptions and does not accurately lead to the conclusions drawn in the EIR.

2. The proposed in-stream mining operations do not meet the Section 404 Clean Water Act requirements if they utilize in-stream deflection berms.

The regulatory requirements of Section 404 of the Clean Water Act and the California Department of Conservation's SMARA (Surface Mining and Reclamation Act) requirements must be met and outlined in the EIR if it is considered complete. Those requirements are not discussed in the EIR.

3. The water table remains too close to the surface to accommodate in-channel mining to a depth of 90 feet below pre-mining grade.

Both water quality and water quantity issues are raised by the proposal to mine to a depth of 90-feet in the active river-bed. The EIR and County consultants argue that the seasonal drop in stream-bed water table will allow mining during some seasons of some years. To protect water quality and reduce evaporative losses it is necessary to establish a "blue line" that is above the seasonal low water table, and with a sufficiently large depth of alluvium to protect the open alluvial aquifer from contamination and exposure.

Just as in the Diamond Rock Mine EIR, the applicants continue to purport that mining can be carried out above the seasonal water table and that water only coincides with the bottom of the pit infrequently in wet years. This remains factually incorrect as I will demonstrate.

4. Impacts to near-by wells and irrigators are not fully considered.

Parcels in close proximity are supplied by shallow irrigation wells, such as that supplying the pistachio orchard immediately adjacent to the Diamond Rock parcel. That well is reported to draw upon a water table at 50 feet, which puts it in the range of the base of the proposed mine excavation. With acknowledged recharge from the river bed to an open aquifer system, and a reasonable gradient on that water table to intersect the low seasonal water table in Cuyama Creek, adjacent wells may reasonably be expected to be affected by the proposed mining. It is very unreasonable to assume special circumstances like isolated separate aquifers or compensatory mine-site recharge that may or may not prevent impacts to nearby wells.

I will show that the assumptions in the EIR regarding impacts of instream mining below the seasonal water table does have net deleterious impacts on water quality and that the combined GPS and Diamond Rock pits together exceed Santa Barbara County thresholds for consumptive groundwater uses.

#### **General EIR considerations:**

I acknowledge that Santa Barbara County Planning and Development have attempted to conduct a timely and reasonably thorough analysis of the two adjacent in-stream mining sites. I also acknowledge that the County's

consultants, URS, have tried to assess conditions in a geographic area where technical information is largely lacking. They obviously accepted the conditions imposed by the County to try to meet a time schedule and budget to permit review of the applicants' mine development proposals in a short time period without the opportunity to conduct thorough field analyses. As such, draft reports drew conclusions that differed from final conclusions after mine plans were modified and some confusion arose.

### **Sediment Transport Balance:**

**URS** had to try to model sediment transport and cumulative effects conditions at the mine sites without adequate flow information for the Cuyama River and without laboratory analyses of sediment size classes that were in the riverbed. This led to assumptions that I believe are invalid and not sufficiently conservative upon which to base their Cuyama River sediment budget calculations.

This is not an esoteric academic exercise. URS staff was careful to state their assumptions and reasons for the choices that they made. Experts will disagree, and the burden of proof is on those who criticize to show that assumptions were not correct. The County can accept their consultant's opinions if there is not reason to question them. In the case of the GPS Mine expansion, we have reason to question the results and resulting conclusions as stated in the EIR.

I have reviewed the same data that are used to support the URS opinions and the EIR statements. Several points of controversial opinion are acknowledged in the correspondence between the County and URS and in their Draft and Final reports. Among these are the expected flow volumes at the mine sites, the recurrence intervals of those flows, and the calculated instantaneous sediment transport rates associated with those flows as well as annual replenishment rates.

Sediment transport modeling is difficult and complex even where good information on sediment sizes available to be transported or eroded is present and even where good flow records are available. Here, neither was the case. Had I been hired to do this work, I would have required allowance for field investigations of stream gradients, bank sediment size analyses and bed sediment sizes on the surface and at depth. URS tried to conduct their analyses using topographic maps, digital elevation models, and information supplied by the mining operator. This insufficient baseline information created very large uncertainties leading to improbable conclusions.

A first complication is the inadequate stream-flow record for the USGS gauging station near Ventucopa. Only 12 years of record are available which is statistically inadequate for use to calculate 50- and 100-year flow volumes.



Use of the downstream gauge (Cuyama R. bl Buckhorn Cyn nr Santa Maria, Ca) in San Luis Obispo County to extend the record is problematic, as pointed out by URS, because the river between Ventucopa and the downstream gauge is a losing stream and the watershed areas and characteristics are grossly different at each gauge site. Thus, the lower gauge site often records less flow than is recorded at the upper site near the proposed mines. The existing upstream 12-year record demonstrates late winter and spring flow peaks between 47 and 7210 cfs but the wide alluvial headwater river bed absorbs much or all of the flow to recharge the overdrafted groundwater so flow diminishes downstream below the upper gauging station. Groundwater overdraft has increased following the 1946-to-1958 period of gauging record so, presumably, also has streambed infiltration.

URS has done the best that they could with inadequate data and their estimated flow volumes for various peak flows may be nearly correct. URS does not, however, evaluate the flow durations of high flow events so their conclusions are comparable to taking a photograph of the river at the mine site once a year and estimating annual flow conditions and sediment transport from that single instantaneous photo. The assumption made that the peak flows rapidly attenuate so that the 1-day peak flow volume can be used as a proxy for annual sediment transport is tenuous. We simply do not know how many days of flows sufficient to transport bed material load may occur in 20- to 100-year flow events at the mine sites. The URS calculations are conservative in that they underestimate potential transport rates during high flow years.

Another field-based method is available to estimate peak flow transport rates. This method uses the sizes of sediment clasts armoring the bed to estimate flow depth and tractive force. As the channel has incised upstream from the existing URS pit, successive coarse flood-flow lag gravel are exposed in the stream bed. Very large boulder clasts are present that have been transported in the natural riverbed. Boulders up to 1-meter in length are seen<sup>2</sup> in the river bed, and a pile of rejected boulders is seen in the processing plant area where they have been removed from the material that is destined for the crusher. To transport 1-m boulders in a wide alluvial channel at slightly more than 1% grade probably requires flow depths of 6 feet or greater and velocities of 6 feet per second or greater. We do not know how often these flow conditions occur or when they last occurred, but we may infer that natural flows sufficient to carry those boulders in the center of the channel have occurred historically.

Sediment transport rates were calculated by URS based on their peak flow return interval estimates and based on the mix of materials marketed by GPS and provided to URS. The mix of grain sizes assumed by URS as that

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<sup>2</sup> I have utilized historic and contemporary aerial photography, and approximately 50 ground-based photos taken by local residents over the past 4 years in the vicinity of the mine sites.

carried in the river based on the GPS staff statements does not match what we see in the pit walls, river bed above the mine, or in the banks of the Cuyama stream channel. It is apparent that the operators of the equipment used to excavate in the river bed try to "high-grade" the material that can be crushed for aggregate and sold for coarse sand. I estimate that the modal sizes of the materials actually transported by the river are finer than the estimates used by URS in their sediment transport modeling. URS used the company values of 38% gravel, 60% sand and 2% fines based on data from the Diamond Rock mine project applicant (P. 3, 2005 URS Draft Sediment Transport Memo). Diamond Rock may have sampled their proposed site at the surface of the stream bed or may have used data from GPS production. Either way, the volume of gravel that I estimate based on exposures in the GPS pit walls is closer to 20% gravel and boulder, 70% sand size, and 10% finer sediments.

To estimate sediment transport rates and thus to evaluate the impacts of in-channel extraction, one needs to know depths and durations of flow, sediment size fractions available to transport, gradient of the flood water surface profile, and stream flow velocity. These data need to be modeled based on estimated flood durations, recurrence frequency, channel geometry and bed armoring or excavation status

URS chose to use published formulae for sediment transport calculations and focused on two alternate bed material transport rate approximations. To develop the required hydrologic parameters that were necessary for the transport models, they chose to use the U.S. Corps of Engineers HEC-RAS computer program. HEC-RAS is a widely used and often mis-used steady-state, 1-dimensional flow model that assumes uniform lower-regime hydraulic flow conditions typical of uniform open channels and flumes. HEC-RAS cannot be used for turbulent high discharge flows in wide natural channels with sediment being transported by rolling or bouncing along the bed. Thus, it will not be useful where a channel is being diverted around a mine site or where water floods into a mid-channel pit. Alternative two-dimensional flow models that might work with a mid-channel excavation are very complex and not easy to implement.

URS then took the hydraulic output of the HEC-RAS model to use as input for the various sediment transport models. There are no "correct" transport models. All are rather crude approximations developed under differing laboratory and natural channel conditions. Obviously, if a channel is narrow and has rough banks, a greater proportion of the stream energy is dissipated in bed and bank friction and there is less energy available to do the work of transporting sediment along the bed or in suspension. If stream bed material piles up and forms dunes as it is carried along, transport rates may be very different than if each grain of sand or pebble moves independently. Warm water has a different kinematic viscosity than does cooler water, and higher

density water carrying suspended silt behaves differently than does clear water. These and many other variables affect sediment transport conditions and each investigator or each experimental site has a unique set of controlling conditions that determine actual transport rates.

URS presented a suite of different empirically developed sediment transport formulae and chose two to use for the proposed Diamond Rock mine site upstream from the GPS site. Because of very limited field data for the mine site and for the storm flows, only two of the empirical models could be used to calculate potential bed-load sediment transport. The two models yielded estimates that were an order of magnitude (10-times) different from each other. Based on reports that the mine pits filled in earlier flow years, they chose to consider the model that yielded the higher transport rate as potentially more representative. There is nothing wrong with this reasoning, but it is not conservative and argues that potential impacts of hungry water below the mine sites are minimal. If the field-based Yang relationships are closer to reality than the chosen Laursen laboratory flume estimates, the impacts of two mines immediately adjacent in the center of the same river bed become very significant.

URS makes an educated guess to conclude that impacts are mitigable. I find one serious flaw in that reasoning. Both models assume that the slope of the water surface below the mine sites is substantially less than it is above the mines. The model calculations all assume that the channel of the Cuyama is 5 times less steep below the GPS mine than it is above the Diamond Rock mine site (0.02 feet/foot above; 0.005 ft/ft below). This is an extraordinary change in river gradient in a very small length of river. This value is simply not supported by field observation<sup>3</sup> or by USGS topographic mapping.

URS admits that they used two sources of data to estimate gradients. One was the conventional USGS topographic map, and the other was a digital model of unknown resolution supplied by the USGS. Standard USGS digital elevation models (DEMs) provide estimates of elevation at gridded points, usually in a north-south or east-west equi-spaced grid. Those data sources would not be appropriate for calculating the gradient of a feature that trends northwestward diagonally across the grain of the DEM. The topographic map would be more accurate. We do not know what kind of DEM URS used.

The topographic map has a change in contour-interval just below the mine sites that may have confused some investigators. There are 20-foot

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<sup>3</sup> The historic aerial photos that are cited by the University of California Bren School study [Cuyama GP Final Report, June 2009] that are archived at the Map and Imagery Laboratory, Davidson Library, University of California, Santa Barbara, were also my sources. I particularly relied upon the April, 1950, pre-mine disturbance 1:20,000 scale photos BTM-9G-72-to-74, and BTM-2G 33/34.

intermediate contours in the river bed area below Big Pine Road and Ballinger Canyon junctions with the Cuyama River. EIR charts 3-7 and 3-8 are representations of the longitudinal profile of the thalweg of the river taken, presumably, from the topographic maps. EIR figure 3-8 shows in detail that the channel steepens just below the GPS Mine site. That figure represents the gradient below the mines as 0.023 ft/ft, very similar to the 0.02 ft/ft estimate made above the mines by URS for their calculations of transport capability. The EIR figures that show a steeper gradient below the mine sites are logical because a losing stream generally forms a progressively steeper gradient as the transport capacity diminishes in a downstream direction.

There is simply no field or topographic map evidence to support the extreme change in gradient used by URS in their calculations. Sediment transport rate and stream velocity are both strongly dependent on the gradient of the water surface. If we accept the reasonable URS assumptions of 0.035 for Manning's  $n$  channel roughness and a water surface profile parallel to the stream bed as mapped and seen at low-flow, then a reduction in gradient below the GPS mine to one-fifth of that above the Diamond Rock Mine is simply untenable and wrong. That extreme difference might be acceptable for water spilling into the upstream end of a deep pit and then rising against the downstream end of the pit, thus causing the pit to fill before resuming the more uniform longitudinal profile, but it cannot be correct for the overall sediment transport rate calculations through the general mine site river reach.

#### **Sediment Transport Balance Summary:**

The EIR's conclusions that there will be no significant sediment deficit that can affect channel geometry, bank stability, and stream bed profile below the two combined mine sites at proposed production values is unsupported. The Foothill Road Crossing and the Buckhorn Canyon Road crossing in the bed of the Cuyama River just downstream of the GPS Mine will be the site of stream incision and, following large magnitude (20-year) floods, major bank cutting and instability. Upstream migration of headcutting above the two combined mine sites may also be much greater than is projected based on the assumed Laursen bed-load function calculations rather than the more appropriate smaller Yang transport rates. Such head-cutting will be episodic and may not be evident except after 10-20 years at distances of several thousand feet upstream from the proposed Diamond Rock Mine.

The overall gradient of the Cuyama River of about 105 feet per mile is steep enough to move the observed 1-m stream-bed boulders during some major floods. The river bed above the GPS Mine today is already incising to expose a stream bed armored with large clasts. The proposed use of low-flow bypass channels protected by temporary berms will permit less interrupted access to the active mine sites at times of high flow, but we cannot expect that the low-flow channels will simply defer to the original central channel

geometry at flood flows. The active channel above the proposed Diamond Rock Mine is about one-half mile wide. The temporary mid-channel berms at the present GPS Mine site are primarily composed of less marketable fine sand and silt. As flood flows increase, the midchannel deflection berms will force higher flows against the banks until flow depths become great enough to overtop and/or remove the berms. As has been observed at the GPS mine site, the pits will fill during some unknown time frame between 2 hours and 2 weeks. If the filling is rapid and occurs at 10-year or less intervals, we may not have a net sediment deficit, but if it takes two weeks or more or occurs less frequently, we have a net sediment deficit that will have regional impacts that have not been evaluated. We simply do not have the data to resolve this question.

### **Regulatory Issues with Instream Deflection Berms:**

The Corps of Engineers letter of September 2002 clearly states that the GPS expansion project cannot be undertaken if the intent of the mining effort is to conduct instream operations that do more than simply remove stream-bed sediment from the active channel. In today's Section 404 Clean Water Act regulatory environment, the only allowable deposition of material into a stream channel that is a Water of the United States is by "incidental fallback" from the excavating machinery. In-stream deflection and upstream protection berms, as proposed, do not meet the requirements of the Clean Water Act as interpreted by recent US Supreme Court decisions and as enforced by the Corps of Engineers and US EPA.

Cuyama River is clearly a Water of the United States and the mining activities are clearly directly within the active channel of that water body. It is my understanding that following a site review by the Corps' in 2004, they realized that it was the intent of the mine operators to construct diversion berms in the channel of the river below the Ordinary High Water Mark (OHWM) that defines the boundaries of the Waters of the United States. Ongoing regulatory actions have already been undertaken by the federal government to require closure of the GPS Mine until the regulatory issues can be addressed. The entire justification for the expansion of the GPS Mine to a new part of the Cuyama channel as stated in the EIR is to develop a plan that allows active mining through low-flow years with replenishment of raw material for aggregate mining in highflow events. This plan creates a regulatory impediment to the actions proposed in the EIR. Modification of the proposed operations may be needed in light of the fact that the active pit traps normal river flow, thus interfering with normal underflow of the river and groundwater recharge from that underflow.

Thus, the release of the EIR may be premature until all the federal and state regulatory issues are resolved. In addition to the Section 404 federal issues, the several requirements outlined in Jim Pompy's letter from the California

Department of Conservation, Reclamation Division, constitute requirements under the Surface Mining and Reclamation Act (SMARA). Although the original GPS Mine predates SMARA, both the Clean Water Act and the proposed new western mine site constitute actions subject to current regulatory requirements. These are not addressed in the EIR.

### **Pit Depth and Underflow:**

The proposed 90-foot depth as proposed for both the new GPS and the possible Diamond Rock pits does not simply fill with streamflow and then drain away rapidly as stated by the applicants and stated in the EIR. We can see from aerial and ground-based photos that water remains in the GPS pit well into late spring and early summer. When flood flows inundate the pit they carry silt-sized material into the pit and plug the gravels. As that water slowly evaporates and slowly percolates through to recharge the regional water table, the silty deposits dry and form visible mudcracks.

The only logical explanation for the persistence of water in the pit during normal and drier-than-normal rainfall years is that at least some of it is underflow in the Cuyama River alluvium. Even in dry years when little or no surface flow reaches the GPS mine site, the active recharge of the river bed at and above Ventucopa discharges water as underflow. Although the underflow may not fully saturate the river bed alluvium to the depth of the static groundwater table, the underflow moving through the partly saturated river bed is groundwater. It is critical to the recharge of the deeper groundwater below the lowest seasonal static water table.

I have noted discontinuous stringers and beds of clayey-silt in the river-bed where it is being incised above the GPS mine site and in the pit walls themselves. These units comprise aquitards and may perch underflow and downward-percolating vadose groundwater for weeks or months depending on extent and geometry of the less permeable substrates. What ever causes the persistent pit water; it is water that ultimately belongs to the depleted Cuyama Valley groundwater reservoir. Two to three winter months of open pit water becoming evaporatively concentrated leads to degradation of water quality. Deliberately recharging mine site process water to make up for the evaporative losses adds insult to injury for the net groundwater quality. If water recharged to the water table is degraded to the point that it cannot be used for irrigated crops such as pistachio orchards, then that is essentially a consumptive use of water.

The 2006 version of the Santa Barbara County Water Resources' Cuyama Groundwater Basin report<sup>4</sup> and the June, 2009, Bren School UCSC Cuyama GP report (op cit, footnote 3) reveal the remarkable implications of the proposed 90-foot mine depth in relationship to the Cuyama underflow and groundwater recharge. The groundwater monitoring well noted in the EIR near the mine sites appears to have the shallowest static water levels recorded anywhere in the entire 225 square-mile Cuyama alluvial basin. The County groundwater report notes that all recharge to support 23,000 acres of agriculture in the Cuyama Valley is derived from the river itself. The Bren School study reports that exact figures for recharge of the groundwater basin are unavailable, but studies have estimated average yearly recharge to be anywhere between 8,000 acre-feet (Santa Barbara County Water Resources (op-cit) and 13000 ac-ft (Singer & Swarzenski 1970).

Virtually all of the recharge to support all the agriculture has to pass through either the riverbed as underflow at the mine site, or as stream-flow past the mine site during winter floods. The County report presents two graphic plates. The first shows the locations of some of the groundwater monitoring wells, and has a yellow dot at the location of the monitoring well near the mine site. The second figure is a May 2000 color aerial photo of the primary agricultural area supported solely by the Cuyama aquifer. The Bren School report states that underflow in the river is estimated at only about 500 ac-ft per year (based on the 1966 estimates by Singer & Swarzenski, 1970). They further estimate net agricultural pumpage of over 40,000 ac-ft per year, and total recharge from all sources to be 21,000 ac-ft with a net total basin-wide annual deficit of 30,532 ac-ft.

It is clear that the Cuyama groundwater basin, located in 4 different counties, is among the most seriously overdrafted in the State. This is one reason that the County and the U.S. Geological Survey have collaborated to develop a basin-wide study<sup>5</sup>, with the assistance of the very able federal hydrogeologist, Randy Hansen. The critically-important Ventucopa stream gauge has already been reopened and data are being posted on-line. Where water is being withdrawn from an aquifer at close to three times the rate of recharge, we can anticipate serious disruption of the Cuyama Valley agricultural infrastructure. The Bren School estimates that there may be 50 years of primarily fossil groundwater supply remaining, but long before 50 years have elapsed, all but the users with the deepest wells or the deepest pocketbooks for the well drillers will be out of business.

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<sup>4</sup> (accessed on-line at <http://www.countyofsb.org/pwd/water/downloads/Cuyama%20Groundwater%20Basin05.pdf>)

<sup>5</sup> *Geohydrology and Water Availability of the Cuyama Valley, California*, expected to be completed by the year 2012. (Gibbs & Hanson 2008, cited in Bren School report)

### **Santa Barbara County Groundwater Use regulations.**

I am indebted to the Bren School Cuyama Valley group study (*op cit*) for access to the unpublished County groundwater and well data. The monitoring well cited in the GPS Expansion EIR near the mine site appears to be more than 40 feet above the adjacent riverbed (SB County well 9N25W13B1S). That monitoring well records water levels of 90-99 feet below ground surface. This means that a 90-foot-deep pit in the river bed will be 40 feet *below* the static water table.

As can be seen in the 2006 version of the County Cuyama Valley groundwater basin report, the GPS mine site is the “eye of the needle” for Cuyama River recharge to the entire agricultural production of the Cuyama Valley. The juggling of data to meet Santa Barbara County’s arbitrary limitation of 31 ac-ft per year of consumptive use through enhanced recharge and “historic use adjustment” (Section 3.3.2.2.2. Diamond Rock EIR) is relatively unimportant if the limited underflow at the GPS mine site is being unnecessarily degraded and evaporated through mining and processing activities. The County threshold of significance for EIR evaluation is not just volume but water quality. Open recharge ponds and sumps are difficult to keep clean. Evaporative concentration of the already high boron levels in the water create a contaminate concentration that the State must then regulate.

### **Conclusions:**

The sediment transport model that is used as the basis for the EIR conclusions of no unmitigable significant effects on the Cuyama River is seriously flawed and its conclusions are not supported. Net cumulative effects of extraction of sediment from the river channel at two adjacent mine sites will occur and will be significant.

The serious groundwater overdraft condition in the Cuyama Valley is the result of unsustainable over extraction of water. That water is recharged from the Cuyama River system only. The GPS mine is located at a critical point in the hydrogeologic basin where the proposed mining will have significant impacts on water quality and substantial impacts on regional groundwater availability. The EIR authors cannot support their conclusions that there will be no net significant impacts on water quality and quantity associated with two adjacent mines that excavate to a depth of 90-feet below the river bed.



Serious effort should be given to assessment of long-term implications of the proposed mining in light of the critical nature of the mine site to regional agriculture.

**References Cited or referenced from secondary sources:**

Anderson, C., B. Dobrowsky, M. Harris, E. Moreno, and P. Roehrdanz, June, 2009, Conservation Assessment for the Cuyama Valley: Current Conditions and Planning Scenarios. UC Santa Barbara, Bren School [referred to as the Bren School Report]

Baca, B.R. and J. Ahlroth, 1992. Cuyama Groundwater Basin Update (7/31/1992). Unpublished document prepared by the County of Santa Barbara Water Resources Division. Obtained from County Senior Hydrologist, Dennis Gibbs, on January 26, 2009 and referenced in Bren School Report.

County of Santa Barbara Planning and Development. 2007. Final Environmental Impact Report: Diamond Rock Sand and Gravel Mine Processing Facility. State Clearinghouse No. 2003121049.

County of Santa Barbara Water Resources. 1992. Cuyama River Valley. <http://www.countyofsb.org/pwd/water/downloads/Cuyama%20Groundwater%20Basin05.pdf>

Gibbs, Dennis, and R. Hanson, 2008. Summary – Geohydrology and Water Availability of the Cuyama Valley, California. Unpublished document obtained from the Santa Barbara County Water Resources Division and referenced in Bren School report.

Langer, W.H. 2003. A general overview of the technology of in-stream mining of sand and gravel resources, associated potential environmental impacts, and methods to control potential impacts. US Department of the Interior. OF-02-153.

Singer, J.A. and W.V. Swarzenski, 1970. Pumpage and ground-water storage depletion in Cuyama Valley, California, 1947-66. United States Geological Survey, Water Resources Division

Upton, J.E. and J. E. Worts Jr., 1951. Ground Water in the Cuyama Valley, California. United States Geological Survey Water-Supply Paper 1110-B.

USGS Stream Gaging Stations:

- 11136800 - CUYAMA R BL BUCKHORN CYN NR SANTA MARIA CA 10/1/1959 11/12/2008
- 11136500 - CUYAMA R NR VENTUCOPA CA 4/1/1945 9/30/1958



# Appeal to the Board of Supervisors or Planning Commission (County or Montecito)

**APPEAL TO THE BOARD OF SUPERVISORS OR PLANNING COMMISSION (APL)** on the issuance, revocation, or modification of :

- All Discretionary projects heard by one of the Planning Commissions
- Board of Architectural Review decisions
- Coastal Development Permit decisions
- Land Use Permit decisions
- Planning & Development Director's decisions
- Zoning Administrator's decisions

**THIS PACKAGE CONTAINS** \_\_\_\_\_

- ✓ APPLICATION FORM
- ✓ SUBMITTAL REQUIREMENTS

**AND, IF ✓'D, ALSO CONTAINS** \_\_\_\_\_

<b>South County Office</b> 123 E. Anapamu Street Santa Barbara, CA 93101 Phone: (805) 568-2000 Fax: (805) 568-2030	<b>Energy Division</b> 123 E. Anapamu Street Santa Barbara, CA 93101 Phone: (805) 568-2040 Fax: (805) 568-2522	<b>North County Office</b> 624 W. Foster Road, Suite C Santa Maria, CA 93455 Phone: (805) 934-6250 Fax: (805) 934-6258	<b>Clerk of the Board</b> 105 E. Anapamu Street Santa Barbara, CA 93101 Phone: (805) 568-2240 Fax : (805) 568-2249
Website: <a href="http://www.sbcountyplanning.org">www.sbcountyplanning.org</a>			



# PLANNING & DEVELOPMENT APPEAL FORM

SITE ADDRESS: Cuyama River / Cuyama Valley

ASSESSOR PARCEL NUMBER: 149-220-02; 149-220-11; and 149-220-65

PARCEL SIZE (acres/sq.ft.): Gross 279.94 ac Net (CUP = 132.65 ac)

COMPREHENSIVE/COASTAL PLAN DESIGNATION: \_\_\_\_\_ ZONING: (rural) Agriculture A II

Are there previous permits/applications?  no  yes numbers: 03CUP-000000-00037  
(include permit# & lot # if tract)

Are there previous environmental (CEQA) documents?  no  yes numbers: 05EIR-00000-00001

1. **Appellant:** Cuyama Valley Conservancy 501(c)(3) Phone: 661-766-2485 FAX: \_\_\_\_\_

Mailing Address: 3380 Highway 33, Maricopa, CA 93252 E-mail: zannon@sbpistachios.com  
Street City State Zip

2. **Owner:** E. F. Zannon, Chairman Phone: 661-766-2485 FAX: \_\_\_\_\_

Mailing Address: 3380 Highway 33, Maricopa, CA 93252 E-mail: zannon@sbpistachios.com  
Street City State Zip

3. **Agent:** \_\_\_\_\_ Phone: \_\_\_\_\_ FAX: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ E-mail: \_\_\_\_\_  
Street City State Zip

4. **Attorney:** Babak Naficy Phone: 805-593-0926 FAX: \_\_\_\_\_

Mailing Address: 1504 Marsh Street, San Luis Obispo, CA 93401 E-mail: babaknaficy@sbcglobal.net  
Street City State Zip

## COUNTY USE ONLY

Case Number: _____	Companion Case Number: _____
Supervisory District: _____	Submittal Date: _____
Applicable Zoning Ordinance: _____	Receipt Number: _____
Project Planner: _____	Accepted for Processing _____
Zoning Designation: _____	Comp. Plan Designation _____

## SUBMITTAL REQUIREMENTS

- 8 Copies of the attached application.
- 8 Copies of a written explanation of the appeal including:
- If you are not the applicant, an explanation of how you are an “**aggrieved party**” (“Any person who in person, or through a representative, appeared at a public hearing in connection with the decision or action appealed, or who, by the other nature of his concerns or who for good cause was unable to do either.”);
  - A clear, complete and concise statement of the **reasons or grounds for appeal**:
    - Why the decision or determination is consistent with the provisions and purposes of the County’s Zoning Ordinances or other applicable law; or
    - There was error or abuse of discretion;
    - The decision is not supported by the evidence presented for consideration;
    - There was a lack of a fair and impartial hearing; or
    - There is significant new evidence relevant to the decision which could not have been presented at the time the decision was made.
- 1 Check payable to Planning & Development.

✓ Note: There are additional requirements for certain appeals including:

✓

- a. **Appeals regarding a previously approved discretionary permit** – If the approval of a Land use permit required by a previously approved discretionary permit is appealed, the applicant shall identify: 1) How the Land Use Permit is inconsistent with the previously approved discretionary permit; 2) How the discretionary permit’s conditions of approval that are required to be completed prior to the approval of a Land Use Permit have not been completed; 3) How the approval is inconsistent with Section 35.106 (Noticing).
- b. **Appeals regarding Residential Second Units (RSUs)** – The grounds for an appeal of the approval of a Land Use Permit for a RSU in compliance with Section 35.42.230 (Residential Second Units) shall be limited to whether the approved project is in compliance with development standards for RSUs provided in Section 35.42.230.F (Development Standards).

# COUNTY OF SANTA BARBARA APPEAL TO THE :

BOARD OF SUPERVISORS

PLANNING COMMISSION:  COUNTY  MONTECITO

RE: Project Title Diamond Rock CUP Time Extension

Case No. 10TEX-00000-00014 for 03CUP-00000-00037

Date of Action March 14, 2011

I hereby appeal the  approval  approval w/conditions  denial of the:

Board of Architectural Review – Which Board? \_\_\_\_\_

Coastal Development Permit decision

Land Use Permit decision

Planning Commission decision – Which Commission? \_\_\_\_\_

Planning & Development Director decision

Zoning Administrator decision

### Is the appellant the applicant or an aggrieved party?

Applicant

Aggrieved party – if you are not the applicant, provide an explanation of how you are and “aggrieved party” as defined on page two of this appeal form:

Cuyama Valley Conservancy, a 501(c)(3) corporation that works to conserve and protect the ecological and cultural resources of the Cuyama Valley watershed, as well as our representatives and agents, including San Luis Obispo Coastkeeper, Attorney Babak Naficy, and hydrology experts Dr. Curry and Dr. Loaiciga, have appeared at Santa Barbara Board of Supervisors, Planning Commission, and Superior Court hearings regarding these matters.

Reason of grounds for the appeal – Write the reason for the appeal below or submit 8 copies of your appeal letter that addresses the appeal requirements listed on page two of this appeal form:

- A clear, complete and concise statement of the reasons why the decision or determination is inconsistent with the provisions and purposes of the County's Zoning Ordinances or other applicable law; and
- Grounds shall be specifically stated if it is claimed that there was error or abuse of discretion, or lack of a fair and impartial hearing, or that the decision is not supported by the evidence presented for consideration, or that there is significant new evidence relevant to the decision which could not have been presented at the time the decision was made.

A. We believe the request for an "economic hardship" extension pertains  
to the economic conditions of the applicant and is unrelated to the  
economy in general, otherwise every permit today could be extended  
without recourse. (See item "B" below)

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Our specific claims are outlined on the attached pages.

**Specific conditions imposed which I wish to appeal are (if applicable):**

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

B. As described in the attached accompanying document, the project as approved by the county is in no way similar to the conditions of approval now in force. In fact, the latest change by applicant to combine the GPS mine with the Diamond Rock Mine is not addressed. Furthermore, the country has never provided any monitoring program, let alone a comprehensive monitoring program, as required.

**Please include any other information you feel is relevant to this application.**

**CERTIFICATION OF ACCURACY AND COMPLETENESS** Signatures must be completed for each line. If one or more of the parties are the same, please re-sign the applicable line.

**Applicant's signature authorizes County staff to enter the property described above for the purposes of inspection.**

*I hereby declare under penalty of perjury that the information contained in this application and all attached materials are correct, true and complete. I acknowledge and agree that the County of Santa Barbara is relying on the accuracy of this information and my representations in order to process this application and that any permits issued by the County may be rescinded if it is determined that the information and materials submitted are not true and correct. I further acknowledge that I may be liable for any costs associated with rescission of such permits.*

Cuyama Valley Conservancy

Print name and sign – Firm Date

E.F. Zannon

Print name and sign - Preparer of this form Date

E. F. Zannon for Cuyama Valley Conservancy

Print name and sign - Applicant Date

E.F. Zannon

Print name and sign - Agent 3/24/11  
Date

Print name and sign - Landowner Date

# San Luis Obispo COASTKEEPER®

September 12, 2008

Salud Carbajal, Chair  
Board of Supervisors  
105 E. Anapamu Street  
Santa Barbara, CA 93101

VIA FACSIMILE: 805-568-2249

**Subject:** APPEAL / Diamond Rock Sand and Gravel Mine, Santa Barbara County

Dear Chair Carbajal,

I am submitting the attached additional expert testimony supporting the effort of San Luis Obispo COASTKEEPER® member group "Save the Cuyama" in our appeal of the Diamond Rock Gravel Mine and Processing Facility scheduled for hearing Tuesday September 16.

By this letter I am requesting the attached comment letter by Dr. Robert Curry be included in the record for this appeal.

Thank you

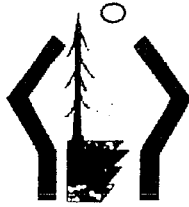
Gordon Hensley, San Luis Obispo COASTKEEPER®

CC: Gary Kaiser, 805-934-6258



San Luis Obispo COASTKEEPER® is a 501(c)(3) nonprofit organization. For more information, please contact us at 805-568-2249 or visit our website at [www.slocoastkeeper.org](http://www.slocoastkeeper.org).





Hydrology - Geology - Soil Science

Robert Curry, Ph.D., P.G.

600 Twin Lanes, Soquel, Calif. 95073  
831 426-6131; FAX 426-9604; curry@ucsc.edu  
field: 760 932-7700

September 10, 2008

Santa Barbara County Planning and Development

Attached is a brief report addressing some of hydrologic issues that are not adequately evaluated in the revised EIR for the proposed Diamond Rock Cuyama River in-stream mining development.

Respectfully Submitted

A handwritten signature in black ink, appearing to read "Robert R. Curry". The signature is stylized and includes a long horizontal flourish at the bottom.

Robert R. Curry  
Registered Geologist and Hydrologist

Assessment of adequacy of some hydrologic aspects of the  
proposed Diamond Rock, Cuyama River, aggregate mine,  
Santa Barbara County, California  
September 11, 2008

Background of author:

I am a Professor Emeritus of Geology at the University of California, Santa Cruz, and Research Director of the Watershed Institute at California State University, Monterey. I received my Ph.D. in Geomorphology and Paleoclimatology in 1967 from the University of California at Berkeley. I have over 45 years of training and experience in the fields of fluvial geomorphology and hydrology, and have authored over 100 scholarly papers in these fields. I have conducted extensive geomorphological field investigations throughout California, and have conducted over 20 studies on the effects of aggregate gravel mining on California rivers since 1962. I am a Registered Geologist in the State of California, and submit this letter based on facts within my personal and professional knowledge. I was a professor at UC Santa Barbara for several years and have conducted many academic and consulting projects in Santa Barbara County, including a recent assessment of riparian conditions in south Santa Barbara County for the County Water Agency<sup>1</sup>.

I participated in the drafting of the 1994 Aggregate Resources Management (ARM) Plan for Sonoma County and have consulted for aggregate mining companies and mining-site landowners as well as State and tribal governments throughout my professional life. Over the past 40+ years I have conducted numerous studies regarding sediment transport, hydrologic conditions, sediment budgets and riverbed and riverbank stability throughout the western United States and foreign countries. My specialization is in sediment transport fluvial geomorphology. I also have extensive experience and advanced degrees in soil science and biological aspects of mined land reclamation and have helped both federal and State agencies develop their mining and reclamation standards.

My work with the aggregate division of Vulcan Materials in Southern California led to the Hardrock Mineral Environmental Award from the Bureau of Land Management's Reclamation and Sustainable Development program. Vulcan received the award for its reclamation of a sand and gravel mining operation on the Morongo Indian Reservation in San Bernadino County. I developed the Reclamation Plan.

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<sup>1</sup> Lee, L.C., P. Fiedler, S. Stewart, R. Curry, D. Partridge, and J. Mason, 2001, Guidebook for referenced-based assessment of the functions of riverine Waters/Wetlands ecosystems in the South Coast region of Santa Barbara County, California – to Santa Barbara County Water Agency ~900 pp

Issues with the revised final EIR:

The following hydrologic aspects of the proposed Diamond Rock Cuyama River mine proposal were not, in my professional opinion, accurately or adequately evaluated or considered in the revised environmental document for this project. I do appreciate that the EIR has been revised and may meet the bulk of CEQA requirements, but I believe there are inaccuracies in the EIR itself that render it inadequate as it now stands.

1. The water table is too close to the surface to accommodate in-channel mining to a depth of 90 feet below pre-mining grade.

Both water quality and water quantity issues are raised by the proposal to mine to a depth of 90-feet in the active river-bed. The EIR consultants argue that the seasonal drop in stream-bed water table will allow mining during some seasons of some years. Their Figure 3-10 shows the ultimate depth of mining to be below the 1982-2001 recorded water-table for the mine site. To protect water quality and reduce evaporative losses it is necessary to establish a "blue line" that is above the seasonal low water table, and with a sufficiently large depth of alluvium to protect the open alluvial aquifer from contamination and exposure. Five to ten feet is standard in California.

Even during the very dry 2007 water year, we can see exposed water in two deeper areas of the nearby GPS mine on the satellite photos displayed on Google Earth. For this 2008 year, several acres of open water are seen in August in those pits, based on photos by local residents. While it is true that in some dry years, mining could progress to a depth that is 5-10 feet above the seasonal low water table in those years, based on the Figure 3-10 data, that would not allow mining to 90-feet below the current river bed.

The EIR states that "Aggregate mines typically operate above the aquifer. Section 3.3.2.2.1 describes the project's impacts on the quality of groundwater. The Diamond Rock Mine would typically operate above the groundwater level. During periods of high runoff, groundwater could rise above the bottom of the pit. However, exposure of the groundwater is expected to be infrequent and of short duration so the impact is considered adverse but not significant." This statement is without foundation and incorrect. Many years have groundwater at or very close to the ground surface throughout most of the year. Observation of sequential aerial photos and ground photos and comparison of these with local climate data suggest that exposure to groundwater is, in fact, frequent and thus significant. A thorough analysis of the aerial photo archives at the county and at UCSB can quantify the probability but water at the surface of the ordinary river-bed for two or more months per year will likely occur 5 out of 10 years. These probabilities increase as the pit gets deeper.

2. The water balance model (Chart 3-7) is incorrect and groundwater use will exceed Santa Barbara County limits for the Cuyama Valley.

The water budget calculated by EIR consultants proposes that the evaporative losses will average 45,054 gallons per day and that the total consumptive water use will only be 59,686 gpd. They propose to meet Santa Barbara County's limitation of 31 ac-ft per year for "significance" by "recycling" 258,744 gallons per average day. EIR responses state that "Section 3.3.2.2.2 describes groundwater consumption. While the usage is above these limitations, the net consumptive use is far less (6.25 and 28.12 acre-feet of water per year) due to recharge and historic use adjustment. The effect on groundwater supplies is, therefore, less than significant as stated in the EIR."

The problem with this analysis is that, for these riverbed materials that can be seen exposed on the GPS site pit walls, the various recharge basins will plug with fine grained silts quite rapidly and the water will have to either evaporate or be pumped back into the river. River bed excavations plug with fine material annually. Without a drag-line, the operators will not be able to maintain recharge for the required 299 ac-ft per year. In this windy area evaporation will doubtless exceed the consultants' estimates, but if it does, we rapidly exceed the 31-ac-ft per year Santa Barbara County groundwater use threshold and this becomes a significant and wasteful use of water. The streambank exposures demonstrate that most sediment is carried by flows of less than about a 20-year return-period event, and that coarser gravels are carried in infrequent events larger than that. Thus most pit-filling flows will carry dominantly fine grained sand-sized materials mixed with wind-blown silt, as seen in the streambanks.

Open recharge ponds and sumps are difficult to keep clean. Evaporative concentration of the already high Boron levels in the water create a contaminate concentration that the State must then regulate. During wet years with 4 or more months of local rainfall, there will be insufficient evaporative demand to meet the water balance model needs with the proposed infrastructure at the processing and mine site.

3. Cumulative effects on river bed grade and stability are not adequately evaluated.

Headcutting in the immediately-adjacent Deer Park Creek drainage can be controlled with well-maintained grade control structures but overall incision of the Cuyama riverbed both up- and downstream of the mine site is a certain outcome of the proposed action. I appreciate that County Planners and field personnel have looked at the GPS mine site and concluded that incision problems are minimal. But the cumulative effect of two on-going mining operations immediately adjacent along the river is not adequately evaluated and is very likely to exceed replenishment rates to the point that deleterious cumulative effects will occur

The EPA letter submitted by the then-specialist Tim Vendlinski that is in your record accurately outlines my findings. The gravel supply that is carried about every third year to the GPS pits will be reduced by the upstream mining and flood deflection berms. When big flow events occur and the berms wash out, the proposed mine pit will still capture the new sediment as well as the washed-out berms. Thus, the downstream site is "starved" for sediment and the "hungry river" scenario ensues. This is a cumulative effect that is not adequately evaluated. The GPS site is a pre-SMARA development that does not require the reclamation plan and standards of the proposed Diamond Rock Mine, but both must be assessed cumulatively under CEQA.

A significant safety issue also exists in that most major flood flows such as the February 1998 event and even the recent February, 2005 event generate flash flood flows. While an equipment operator can usually escape, equipment is often buried and results in groundwater contamination. The Cuyama California Irrigation Management Information System (CIMIS #88) recorded the hourly rainfall intensity in the 100-year return period 1998 event and Santa Barbara County Flood Control has calculated rainfall magnitude-intensity-return periods for the Cuyama Ranch site (station 221) and for New Cuyama Fire Station and both sites demonstrate that it will be difficult to simply shut down whenever rainfall is predicted.

As noted by the applicants' attorneys, there are actually 4 mines that should be included in a cumulative effects analysis. As noted in the California Mining and Reclamation Board review for SMARA compliance, the effects of the proposed upstream mine on the restoration of the downstream GPS mine, when its sediment supply is interrupted, needs to be considered. They further call for modeling of the cross-sectional changes that will occur during mining and during restoration. A mining and reclamation plan must include restoration and it should have been discussed and modeled just as was the progressive mine site development. The statements about either abandoning uneconomical pit-filling sediments or reworking a partly filled pit do not seem to imply that the applicants are not very certain about the quality of "run-of-the-river" tractive bed-material sediment load. We can see what that material is like in the GPS mine site pit walls. It is mostly wash-load with some scour and fill but primarily deposited by lateral braided flow. There appear to be rather great quantities of sand with fewer than 20 percent potential aggregate clasts for crushing.

4. Impacts to near-by wells and irrigators are not fully considered.

The EIR responses actually state that the adjacent property is owned by the applicant and so this issue does not need to be considered! Parcels in close proximity are supplied by shallow irrigation wells, such as that supplying the pistachio orchard immediately adjacent to the mine owners' parcel. That well

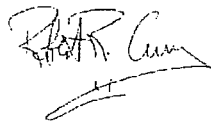
is reported to draw upon a water table at 50 feet, which puts it in the range of the base of the proposed mine excavation. With recharge from Deer Park Creek to an open aquifer system, and a reasonable gradient on that water table to intersect the low seasonal water table in Cuyama Creek, the adjacent wells may reasonably be expected to be affected by the proposed mining. Deer Park Creek is very ephemeral and gradients to the wells adjacent to Highway 33 may be expected to reverse during times of sustained drought, with well water tables lower than those in the Cuyama mine site alluvium. It is very unreasonable to assume special circumstances like isolated separate aquifers or compensatory mine-site recharge that may or may not prevent impacts to nearby wells.

The groundwater also supports the cottonwood trees adjacent to the mine site. It is meritorious that the applicants intend to remove invasive phreatophytes, and to protect the cottonwoods. But cottonwoods rely on deep soil water and summertime groundwater. They could not exist if their roots did not tap reliable groundwater. One cannot simply apply water to the surface to keep these trees alive if water tables drop. They require deep water. They also support the wildlife that has little other habitat. The EIR consultants have assessed some of the wildlife but I do not see a linkage to the litter and cottonwood sap that supports many species.

5. The categorization of in-stream shrublands as "terraces" is misleading.

Yes, these features are formed by the Cuyama River as it anastomoses across its wide alluvial riverbed. But inspection of the top 2-3 feet of the active streambanks in the vicinity of the proposed mine shows that these terraces are actually underlain by finer-grained riverwash sand and wind-blown silt. During high flow events like those in February of 1998 many of these "terrace" remnants disappear are reworked into the active alluvium. A thin discontinuous cryptogammic crust that can be seen to fold down over the top face of the active riverbanks and that characterizes and supports these vegetated communities on infrequently flooded parts of the riverbed is responsible for the differences in vegetation between the active annually flooded riverbed and the so-called "terraces". These 'terraces' are simply a less-frequently flooded part of the river.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Robert R. Curry". The signature is written in a cursive style with a long horizontal flourish at the bottom.

Robert R. Curry – RG #3295



**Fw: monitoring requirements**

Sunday, September 14, 2008 8:05 PM

From: "G.R. Hensley" <g.r.hensley@sbcglobal.net>  
To: babaknaficy@sbcglobal.net  
Diamond Mine draft.doc (57KB)

Gordon R. Hensley, San Luis Obispo COASTKEEPER<sup>SM</sup>  
Environment in the Public Interest  
EPI-Center, 1013 Monterey St., Suite 202  
San Luis Obispo, CA 93401

Ph: 805-781-9932 FAX: 805-781-9384

[www.Epicenteronline.org](http://www.Epicenteronline.org)

-- On Fri, 9/12/08, Bob Curry <curry@ucsc.edu> wrote:

.From: Bob Curry <curry@ucsc.edu>  
Subject: monitoring requirements  
To: g.r.hensley@sbcglobal.net  
Date: Friday, September 12, 2008, 3:18 AM

The following are mostly standard requirements that the State will require through SMARA or the Regional Board will require. Thus, they are only marginally "concessions" for negotiation.

- I generally require two kinds of groundwater water table monitoring:
  - One well needs to be placed immediately adjacent to the active pit - even in the river-bed. This shallow well with a full-length perforated casing can be designed to be pulled out after a flood with a hook on a backhoe or excavator. It is monitored to see how close the mining is to the "blue-line". It also can be used for water-quality grab samples if it is just downstream of the active pit. Most in-stream gravel mines have one or two of these. The well should be accessible to overseers - ie., County and or RWQCB personnel - without prior notice.
  - Two or more wells that are dedicated to water table monitoring and that establish the regional gradient to or away from the active pit. I would suggest one well be placed on the right bank of the river close to the cottonwoods, and that another be placed along a straight line from the pit through that well and alongside Highway 33, maybe on the Pistachio orchard parcel. These wells would be locked and keyed for County and State regulators

- Monitoring frequency should be monthly at first but may be more widely spaced in time as the mining company learns what the variability looks like and how much it depends on regional rainfall, river flow, and mining depth (s). These data should be systematically available to the public and should also be tabulated with pit excavation depth, observations about rainfall at a Company raingage, and observations about flow, water in the pit, and other local Cuyama river bed observations. Depths to water should be recorded to the nearest 10th of a foot with either a standard sounding instrument or a piezometer.
- Water quality monitoring needs to be better spelled out than is stated in the EIR. Pit water and water in the near-pit monitoring well should be sampled at a regular interval - not just after floods or fuel spills. Conductivity, Total Dissolved Solids and pH should be monitored in the field monthly and recorded along with the well water table depths. These three water quality criteria can be monitored in the well with easily available electronic probes, and the testing can be automated with inexpensive (\$200) data loggers. Every 6 months on or about on the solstices, samples should be collected for laboratory or NRCS government or Regional Board analyses of Boron, conductivity, TDS, and pH; as well as other ions that may be of interest to the RWQCB, such as hydrocarbons.
- I would recommend that the health of the Cottonwoods be monitored. This is done with a device called a "pressure bomb" (don't try to fly with one!). This is a device that you use by sneaking up on the trees just before sun-up and quickly clamp over a leafy branch. The you cut the thing loose from the tree and it records how hard the tree had to work all night to maintain turgor with water in its xylem and phloem. This tells us how close the tree is to wilting and dying due to dropping water tables. With time you can use the reading to establish depth to water table as sensed by the tree roots. Measurements should be monthly or weekly in a hot dry summer but only quarterly in a wet winter. Best bet would be a grad student at UCSB to do this or train a local.
- It would be great to get Ventura and SB Counties to cooperate with the mining company to reactivate the Ventucopa Cuyama river gaging station. This is real money. \$10,000 a year plus the cost of instruments and installation = \$20K - for a continuous record maintained by USGS.
- Last but most important is monitoring the river itself. You want 10 carefully monumented and surveyed cross sections of at least the proximal right-bank channel complex into which the mine is to be placed. These cross-sections are to be spaced starting upstream a half mile and continuing to a half mile below the GPS mine. Their spacing should be closer near the mine and farther apart up and downstream. At least two need to go though the mine site itself. Exact locations are a function of accessibility and permanence of monumented end points. These need to be remeasured after years with any significant flow with a 2-year return interval as determined by SB County Flood Control.





# Memorandum

Santa Maria, CA.

2625 South Miller Street, Suite 104  
Santa Maria, CA 93455

Telephone (805) 349-7000  
Facsimile (805) 739-1135

Date: May 26, 2009

To: Gary Kaiser, Supervising Planner, Santa Barbara County Planning and Development Department

From: John Larson

Subject: Sediment Transport Technical Study for the Diamond Rock and GPS-Ventucopa Mines on the Cuyama River

**Comment:** This memo all ready has a second page logo.

On May 19, 2009, you requested that we send you a copy of the 2005 memo prepared by John Gray regarding sediment transport, which was sent in 2005 in conjunction with work on the Diamond Rock Mine EIR. In response to that request, we are enclosing a copy of the original 2005 memo along with this additional information related to the topic of sediment transport. The 2005 memo was prepared based on modeling and other work done by Phillip Mineart P.E. in the URS Oakland office, and was submitted to you in a Draft form as part of your record for the Diamond Rock Mine EIR. It was not intended to be part of the Draft EIR, and represents only one component of the analytical work undertaken to prepare the Drainage, Erosion and Water Quality sections of the Diamond Rock and GPS-Ventucopa Mine EIRs. The memo contains some minor typographic and editorial errors, but more importantly it was prepared a year before the Diamond Rock Draft EIR was published and does not reflect subsequent changes in the project design or work on the impact analysis. Some of the statements in the memo are no longer applicable. For these reasons, this 2005 technical memo should not be considered outside of the context of the subsequent work that is reflected in the Diamond Rock and GPS-Ventucopa Mine EIRs. The following points (organized by major topics in the 2005 memo) provide clarification and describe some of the subsequent analysis that led to our conclusions in the EIRs.

## 1.0 INTRODUCTION

Since the time of the 2005 memo, the designs of both projects were modified. The GPS-Ventucopa Mine was changed to shift the pit towards the west away from the center of the river channel. Both projects incorporated low flow berms to prevent most normal river flows from entering their mine areas.

## 3.0 RESULTS

The modeling work for the original memo was done in late 2004. The observation on page 5 noting the significant flooding that completely filled the GPS pit at the end of the 2004-2005 winter was added by John Gray after Phil Mineart had completed his computational work.

## 4.0 POTENTIAL IMPACTS

The concept of a "sediment deficit" is a useful tool for describing the dynamics of sediment transport within a system. Within the broad limits of the Cuyama River floodplain, the projects would create a "sediment deficit." Neither project is designed, however, to harvest bed load or suspended sediment from the flowing Cuyama River. In the past, the GPS mine has taken advantage of newly deposited sediment but this is not a reliable source of properly sized aggregate and the project design does not envision current river transport as its supply of sand.

The Diamond Rock project is also not designed to use current bed load or suspended sediment. Both projects are designed to mine older deposits of sand and gravel from the river floodplain. Both projects incorporate low flow diversion berms to prevent the normal river flow from entering their pits. The effects of the Diamond Rock low flow diversion berms were considered in some detail in that EIR, and we recommended minor changes in their location and timing to maintain as wide a channel as possible to minimize the potential for localized erosion. This aspect of the project design and analysis was developed after the 2005 memo. The analysis of the low flow berms in the Diamond Rock project and their effect on flow velocity is entirely within that EIR.

It is only in the case of high flows during which the river would overtop the berms and enter the pits that potential impacts related to the "sediment deficit" would occur. These impacts include the potential for downstream scouring where water exiting the pits is capable of picking up new sediment from the river bed. In addition, headcutting—the erosion of the upstream wall of the mine pit—could also occur. These are important issues and are addressed in both project EIRs, but the anticipated changes were not considered substantial. Due to the uncertainty in this matter, however, we did recommend monitoring of the river channel and implementation of corrective measures if any significant changes are observed. This mitigation measure is included as Conditions 2 and 3 in the Diamond Rock Condition Use Permit approval.

Finally, the cumulative impact of "sediment deficit" must be understood in a regional context. As noted in the memo, and in the draft EIRs, it could take a number of years for the completed pits to fill by natural means. Depending on the nature of an individual flood event, however, it may also take as little as a few hours. The time for the larger river system to re-establish its sediment transport equilibrium is short relative to the lifetime of either project. Any temporary changes in the sediment regime would be local in the sense that they would only occur within a few thousand feet of the project sites.

There were no comments regarding our analysis during the public review of the Diamond Rock EIR, but two late letters were submitted questioning our conclusions and implying that regional impacts would be significant. Our memo to you dated August 25, 2008 provided a response to those comments, documenting several of the points made above and supporting the information we presented to the Planning Commission on this issue. A copy of that 2008 memo is also attached.

**MEMO**

To: Gary Kaiser, County of Santa Barbara, Planning and Development Department  
From: John Larson, URS  
Phillip Mineart, URS  
Date: August 25, 2008  
Subject: Sediment Transport and Related Issues, Diamond Rock Sand and Gravel Mine and Processing Facility.

We have reviewed the points raised in Dr. Loaciaga's letter dated August 20, 2008, and provide the following information for your use in the staff report and presentation.

**Comment 1: Cumulative Impacts**

This paragraph presents information from the Final EIR, and concludes:

The magnitude and duration of the proposed mining would embody a large-scale project whose cumulative impacts on channel morphology, ground water, sediment budget, aquatic habitat, and water quality are certain to be deleterious and irreversible in the Cuyama River.

**Response:**

The information quoted from the FEIR is accurate, but the characterization of the mining projects as "...certain to be deleterious and irreversible..." is not supported by any evidence. The entire river system and habitat is very dynamic. The complete infilling of the GPS pit during the 2004-5 storm season illustrates how the river is capable of replacing sediments removed by mining. In this context, it is reasonable to anticipate successful reclamation and restoration of the river bed and its habitat to pre-mining conditions.

**Comment 2: Geomorphological impacts**

The thrust of these comments is that the proposed mining projects will not be "sustainable" because they will remove more sediment on an annual basis than is transported across the reach of river occupied by the projects. This section of the letter outlines a series of effects, and procedures for providing detailed quantification of those effects.

**Response:**

The conclusion that the project would "...lead to severe degradation and channel incision at the Diamond Rock site" is based solely on the difference between the projected rate of mining by both projects (1,000,000 tons per year for Diamond Rock plus GPS) and the stated rate of sediment transport across the property (229,000 tons/year). The first half of the comment outlines detailed studies necessary to quantify the total annual sediment supply at the site, and improve upon our earlier estimates. The second half of the comment then repeats a series of "...certain adverse geomorphologic impacts..." despite the fact that no additional quantification has been provided. We have responded to these issues before, and that response is repeated in the following paragraphs:

The hydrology and sediment transport analysis presented in the Draft and Final EIR was intended to identify and describe the potential for impacts associated with sand mining in river beds, and to provide a context for the mitigation measures suggesting minor design changes (W-1, W-3 and W-4) and monitoring (W-2) for data to be referenced in annual inspections as part of the County's monitoring and enforcement authority in the Conditional Use Permit. The sediment study was not intended to be used for engineering design purposes and should not be interpreted as establishing a specific engineering warrant or constraint related to the proposed Diamond Rock mine. The EIR contains a weighted annual average estimate of sediment flow, which is derived from estimates for sediment flow associated with specific storm events. The range in this estimate, however, is very large—from less than 100,000 tons for a single 2-year storm event, to over 1,000,000 tons for a 20-year storm event, and nearly 4,000,000 tons for a 100-year storm. These values are summarized in Table 2 (below), from our original analysis of this issue.

The proposed mine is not intended to intercept and remove sediment as it is transported along the river. Rather, it is intended to excavate and remove a volume and quality of material that is known to exist beneath the current river bed. The relationship between the project and the sediment transport function of the Cuyama River is determined by how river flows are diverted around the excavation area or, in the case of higher flows, how the excavation pit collects water, fills up, and influences flow velocities. The potential for downstream scouring or upstream headcutting is discussed in the EIR (Section 3.1.2.2.3 on pages 3.1-16 through 3.1-9). On the basis of observations of the GPS operation, observations of the river bed upstream and downstream, and in conjunction with the analysis in the EIR, we concluded that the probability for substantial erosion of either type is low and that the resulting effect is not likely to be significant. The EIR recognizes the uncertainties involved in this issue, however; and it identifies mitigation measures, which are intended to ensure that such erosion remains less than significant.

**Table 2**  
**Estimated Sediment Inflow to project Area**  
**for Different Storm Event Sizes**

Storm Return Period	Laursen		Yang	
	Tons	Yards	Tons	Yards
2-year	73,005	48,670	7,497	4,998
5-year	352,829	235,219	37,529	25,019
10-year	776,146	517,431	84,017	56,011
20-year	1,399,116	932,744	153,453	102,302
50-year	2,592,931	1,728,621	288,322	192,215
100-year	3,945,336	2,630,224	442,823	295,216
200-year	5,881,760	3,921,173	666,063	444,042
500-year	9,713,325	6,475,550	1,112,314	741,543
Annual Average	314,000	210,000	34,000	23,000

**Comment 3: Hydrologic Impacts**

This comment states that the EIR estimates of flood events for various return periods are incorrect, since they were not based on the USGS Water Resources Investigations Report 77-21. The comment then outlines procedures for estimating river flows based on this report.

Unrelated to surface flows, the comment also argues that adverse effects would occur if the mining excavation intercepts groundwater in the pit. Specifically, the comment argues that this event would "...drain aquifer storage and adversely affect neighboring wells that depends on ground water for domestic or agricultural supply."

Finally, the comment notes that USGS is undertaking a water resources investigation for the Cuyama River, and argues that no action be taken on the project until this pending investigation is completed.

**Response:**

As John Larson testified before the Planning Commission, we did not use the USGS 77-21 procedures since gage data were available for a location relatively close to the project site (Ventucopa, approximately 2.5 miles upstream).

The issue related to intercepting the upper groundwater surface by excavation is discussed in the EIR in Section 3.3.2.2.1, where it is concluded that the effect would not represent a significant impact. If the upper surface is encountered by the excavation, there will be no drainage of the aquifer. Nearby production wells draw from a deeper aquifer, not from subsurface flow in the river channel. Based on input from the California Department of Fish and Game and the Department of Conservation, Office of Mine Reclamation, the project conditions have been modified to prohibit exposure of the upper water table.

Several water resource studies have been done in the Cuyama Valley, all substantiating the existing overdraft situation. This information forms the basis for the County's threshold procedure to assess water use impacts in the region, which was used in the EIR evaluation of this issue (Section 3.3.2.2.2).

**Comment 4: Monitoring Impacts**

This comment states that the May 2007 EIR did not include an adequate monitoring plan, and suggests tasks to be accomplished as part of a monitoring program to identify the geomorphologic and hydrologic responses of the river to the mining project.

**Response:**

The Final EIR (Mitigation Measure W-2), and several project conditions (2, 3, and 57), require monitoring and reporting of the river flows, channel, and mining pit configuration. These measures are required to help ensure that the project design does not result in any substantial changes in the river banks or configuration of the river offsite.

## Qualifications

In response to your request for a summary of our qualifications, we provide the following information.

John Larson (Project Manager for the Diamond Rock EIR)  
B.S. Chemistry  
M.B.A, Business Administration  
31 years experience

Mr. Larson's training and experience are in the physical sciences and management of projects and interdisciplinary teams performing environmental impact assessment. He has managed hundreds of such projects, including dozens of EIR and permitting projects for aggregate mines, landfills, sewage treatment plants, and similar projects.

Phillip Mineart, P.E. (Task Leader for Sediment Transport Analysis)  
B.S. environmental Resources Engineering  
M.S. Civil Engineering

Mr. Mineart is a Registered Professional Engineer (Civil) specializing in hydrology. He has over 25 years of experience in the fields of hydrologic and hydraulic analysis, water quality analysis, including rainfall-runoff analysis, erosion and sediment transport, flow routing and advection and dispersion modeling. He has experience in the use of HEC-1 and HEC-HMS, HEC-2 and HEC-RAS, and other models for evaluating streamflows, sediment transport and water quality.

## MEMO

To: Gary Kaiser, County Planning and Development Department  
Steve Rodriguez, Project Manager

From: John Larson, URS Corporation

Date: September 15, 2008

Subject: Diamond Rock Mine EIR, Letter from Robert Curry

We have reviewed the letter from Robert R. Curry, dated September 10, 2008, and conclude that it does not raise any new significant issues that we have not already addressed in the Final EIR and other responses during the hearing process for this project. The conclusions in the Final EIR with respect to impacts and mitigation measures, and the conditions of approval for the Conditional Use Permit as proposed, remain valid and do not require any modification. The following paragraphs provide specific responses to the items in the letter.

### 1. Depth to Water Table

The information in this comment is consistent with the description of the depth to the water table provided in the Final EIR (Section 3.3.1, and more specifically 3.3.1.2). The EIR recognizes the potential for the excavation to intersect the upper surface of groundwater (Section 3.3.2.2.1). We do not consider this to represent a significant impact, since it would be an intermittent and short-term event and would not result in any substantial changes with respect to water quantity or quality. The County did, however, place a specific condition to prohibit excavation below the water table and to prohibit artificial de-watering ("Geologic Hazards" Condition 8).

### 2. Water Consumption

The Chart 3-7 referenced in the comment does not relate to water balance (it presents a longitudinal section of the river channel). We have reviewed this issue before with the Planning Commission. The procedure used to estimate net water consumption is specific for the Cayama Groundwater Basin and was developed by Brian Baca at the County Planning and Development Department, and published in the County's Thresholds and Guidelines Manual. The Final EIR presents this information in Section 3.3.2.2.2, and the overall review occurs in two parts. First, the total consumption of the project is estimated as presented in Table 3-3-1. Then adjustments identified in the Thresholds and Guidelines procedure are applied. The adjustments include an estimate of recharge, amounting to about 3.19 acre-feet per year, and an allowance for the displacement of agricultural activities which would consume about 45.80 acre feet per year. The comment argues that the estimate of recharge may be too high, since stormwater collection basins on the project may "plug" with fine sediment and since windy conditions may increase evaporation beyond rates estimated.

For the estimated peak production year (750,000 tons per year) the net water use was 28.12 acre-feet per year, which is below the threshold for this area of 31 acre-feet per



year. The difference is 2.65 acre-feet per year. Thus, the recharge area would only have to function at about 10% of the capacity estimated in order to maintain water use below the threshold.

Since publication of the Final EIR, the project has been modified to reduce the overall production rates such that no traffic is directed to and from the south. This reduction amounts to an effective decrease in production of about 20%, which will further decrease water use and provide even greater certainty in the conclusions regarding net water consumption.

#### 3. Effects on River Bed Grade and Stability

Headcutting will not be a cumulative phenomenon. That is, headcutting from the GPS mine may influence the Diamond Rock property, but will not lead to a change in potential headcutting upstream from Diamond Rock—which would be influenced by the location and pattern of excavation on Diamond Rock itself.

The potential effect with respect to downstream scouring could be cumulative in nature, and would originate in the event that river flows filled the mine pits and dropped their sediment load on the mine properties. Then the cleaner flows, referenced as the “hungry river” in the comment, could suspend and remove additional sediment from downstream areas. This potential impact was considered, and is discussed in the Final EIR in Section 3.1.2.2.3 (see the first paragraph on page 3.1-17). For several reasons, not the least of which is that such downstream scouring has not been observed in association with the GPS pit, this potential effect is considered to be minor and is not expected to cause any damage. Because of the uncertainty in this conclusion, however, we did categorize this effect as a potentially significant, but mitigable (Class II) impact. The mitigation measure (W-2) requires regular monitoring of the channel morphology and adaptive management in the event any unexpected changes occur.

In other notes, the comment is incorrect in stating that the GPS mine does not require a Reclamation Plan. The “4 mines” referenced were not included in the cumulative impact analysis. That is because one (Ozena Ranch) is located in Lockwood Valley, nearly 15 miles upstream, and another (Richards Holdings) had not been submitted at the time the analysis was done. The other two (Diamond Rock and GPS) were both included and analyzed together with respect to their effects on the river bed and sediment movement. Finally, it must again be clarified that both Diamond Rock and the proposed new pit at GPS are intended to mine existing river bed material. Both intend to excavate during dry conditions and to divert most river flows and transported sediment around their pits. These two projects will not intentionally intercept and remove transported sediment from river flows.

#### 4. Impacts to Nearby Wells

The project effect on groundwater use was analyzed in Section 3.3.2 as discussed above. The original discussion in the Final EIR was based on the County’s published procedure

and did not include a detailed review of wells in the immediate area. This issue of specific effects on wells in the immediate vicinity was not raised by any commenter during public review. I did, however, review additional groundwater information and logs for several wells in the vicinity while researching a different issue from the Planning Commission hearings. It is true, as noted in the comment, that wells in the immediate vicinity can have standing water at depths as low as 50 feet below ground surface. It is incorrect, however, to characterize these as "shallow" irrigation wells. Test data show that these wells routinely pump water from depths in excess of 100 feet below ground surface, and boring logs indicate that these wells are screened to draw water from even greater depths, up to 300 feet below ground surface. The fact is that the depth to groundwater is highly variable in this environment. We have not assumed the presence of isolated or confined aquifers or other special circumstances in our discussion.

The project itself will not consume inordinate amounts of groundwater, and it will not have any substantial influence on the highly variable water table associated with this area. Consequently, we do not expect any noticeable effects on the small line of Cottonwood trees that separates the Diamond Rock site from the adjacent irrigated agricultural use.

#### 5 Characterization of In-stream Terraces

The graphics (Figure 4-14) and text (Section 3.4.2.1.2, dealing with vegetative communities and 3.4.2.2.1 dealing with the U.S. Army Corps of Engineers jurisdiction) describe these in-channel areas as mixed alluvial scrub – river channel, and "in-stream terraces in the middle of the river channel ...". The latter phrase was used to emphasize that these features extend above the ordinary high water mark, as evidenced by their structure and vegetation. There is no confusion between these in-channel features and the relatively more stable river terraces associated with the banks of the river.

Date: September 26, 2005

To: Gary Kaiser - Santa Barbara County P&D

From: Phillip Mineart and John Gray - URS Corporation

Subject: Sediment Transport Conditions in the Cuyama River and Potential Impacts of the Diamond Rock and GPS Mine Projects

## **1.0 INTRODUCTION**

Santa Barbara County Planning & Development is currently conducting an environmental review of two mining projects on the upper Cuyama River, which are shown on Figures 1 and 2, and summarized below:

- Diamond Rock Mine - a proposed new aggregate mine located in the river bed with a maximum area of 80 acres and depth of 90 feet. The proposed average annual production would be 500,000 tons (or 333,000 cubic yards).
- GPS Mine - 30-acre expansion of an existing 15-acre mine (maximum mine depth of 90 feet) located 1,000 feet downstream of the Diamond Rock mine site. The proposed average annual production would be 500,000 tons (or 333,000 cubic yards). This mine has operated since 1969 with annual mining production rates that varied from 17,000 to 500,000 tons (data from the applicant).

The objectives of this analysis is to estimate the sediment transport capacity of the Cuyama River in the vicinity of the two mine projects, and to use this information to determine if the proposed combined mine production rates could adversely affect the hydraulic conditions of the river at mine sites, and in upstream and downstream reaches.

## **2.0 METHODS**

A hydraulic model of the Cuyama River at the project sites was developed using the Army Corps of Engineers Hydrologic Engineering Center's River Analysis System (HEC-RAS) version 3.1.3. HEC-RAS is one of the most frequently used models for estimating water levels in open channels. The HEC-RAS model was selected for this study because it is capable of calculating flow parameters useful for evaluating sediment transport (e.g., water surface elevation, velocity, shear stress, stream power) and has several sediment transport relationships included that can directly access the necessary flow parameters. HEC-RAS is a one-dimensional hydraulic model for natural and constructed channels. The input developed for this model consists of two primary elements: (1) the geometry and physical conditions of the channel, and (2) the hydrologic conditions, as described below.

### Channel Geometry and Physical Parameters

Input data for the hydraulic model was generated from a digital elevations model (DEM) obtained from the USGS for the project sites. Channel and floodplain cross-section geometry was determined at approximately 450-foot intervals a 10,300 foot long study reach (see Figure 3). The study reach extends from above the Diamond Rock mine site to below the GPS mine.

Detailed topography was available for much of the river channel at the Diamond Rock; no reliable topographic mapping was available from the GPS mine. The Diamond Rock mine site topography was used to supplement the USGS topography data.

Hydraulic computations for streams require an estimate of roughness in a channel. Manning's 'n' is a coefficient used to describe resistance or roughness in the stream. The Cuyama River channel along the study reach was assigned an 'n' value of 0.035, which is characteristic of a natural stream that is "clean, straight, full stage, no rifts or pools" with few stones and weeds.

### Hydrologic Flow Conditions and Sediment Characteristics

HEC-RAS requires as input a description of the flow rate and water surface elevation at the model boundaries. For mixed flow conditions (i.e., critical and sub-critical flow), a water surface elevation is specified at both the upstream and downstream ends of the study reach. For this analysis, normal depth was assumed at both model boundaries with a slope of 0.005 ft/ft at the downstream end and 0.02 ft/ft at the upstream end taken from the USGS topographic map. Flood frequency flows described in Diamond Rock Mine Draft EIR were used for flow data.

Original development of sediment transport equations were based on experimental data using different particle size distributions. Therefore, each sediment transport equation is usually recommended only for the range of particle sizes that was used in its development. A variety of sediment transport equations were considered for the sediment transport model, as listed below in Table 1.

**TABLE 1**  
**SEDIMENT TRANSPORT EQUATIONS AND KEY INPUT VALUES**  
**CONSIDERED FOR THE MODEL**

Range of Input Values for Sediment Transport Functions used in HEC-RAS				
Equation	Particle Diameters (mm)	Median Diameter (mm)	Depth (ft)	Channel Width (ft)
Ackers-White (flume)	0.04 – 7.0	NA	0.01 – 4	0.23 – 4.0
Englund-Hansen (flume)	NA	0.19-0.93	0.19 – 1.33	NA
Laursen (field)	NA	0.08 – 0.7	0.67 – 54	63 – 3640
Laursen (flume)	NA	0.011 – 29	0.03 – 3.6	0.25 – 6.6
Meyer-Peter Muller (flume)	0.4 – 29	NA	0.03 – 3.9	0.5 – 6.6
Tofaletti (field)	0.062 – 4.0	0.095 – 0.76	0.07 – 56.7(R)	63 – 3640
Tofaletti (flume)	0.062 – 4.0	0.45 – 0.91	0.07 – 1.1 (R)	0.8 – 8
Yang (field-sand)	0.15 – 1.7	NA	0.04 – 50	0.44 – 1750
Yang (field- gravel)	2.5 – 7.0	NA	0.08 – 0.72	0.44 – 1750

(R) = Hydraulic Radius, ft. NA = Data not available

The river deposits to be mined consist of 38% gravel, 60% sand and 2% fines based on data from the Diamond Rock mine project applicant. The range in particle size for different sediment types are presented in Table 2.

**TABLE 2  
TYPICAL RANGES OF PARTICLE SIZE FOR DIFFERENT SEDIMENT TYPES**

Sediment Type	Typical Particle Size Range (mm)
Gravel	> 2
Coarse Sand	0.5 to 2
Medium Sand	0.25 to 0.5
Fine sand	0.0625 to 0.25
Fines	< 0.0625

The equations listed in Table 1 that did not match the particle size ranges observed near the mine sites were eliminated from further consideration in the model. Only the Yang and the Laursen equations were used for the analysis, both of which include gravels.

### Hydrographs

Calculation of the sediment load requires an assumption about the shape of a typical storm hydrograph. Sediment load by storm event can be calculated if the shape of the hydrograph, the peak flow rate, and the relationship between flow and sediment transport are known. The values for peak flow rate for storm events from 2-year to 500-year were derived from the Diamond Rock Mine Project Draft EIR. An SCS unit hydrograph was used for the shape of the hydrograph at the project site; this shape is shown on Figure 4.

Figure 5 shows the estimated hydrographs for the 2-year through 500-year flow events. A lag time of 7 hours (lag time is the time between the middle of the rainfall event and the peak of the runoff) was used to develop the figures. The lag time does not affect the volume under the hydrograph or the shape. Changing the lag time moves the center of the hydrograph along the time axis.

### **3.0 RESULTS**

Figures 6 and 6 show the sediment transport in the Cuyama River at the project sites as a function of flow rate. Values are shown for:

- The upstream 2,000 feet of the study reach = inflow area
- The lower 2000 feet of the study reach = outflow
- The middle section of the project reach = project site, encompassing both the Diamond Rock and GPS mine sites

The sediment transport relationships are sensitive to the channel cross-sections used for the analysis. The actual cross-sections of the river at the project site now, and during a storm event, are unknown. The cross section of the river will vary from storm to storm, and from year to year

due to the mobile nature of the bed material. Hence, the values shown on Figures 4 and 5 are based on the average sediment transport calculated for all the sections along the study reach.

Both the Laursen and the Yang equations predict that inflow is higher than outflow at the project site, indicating that the project site is a depositional area. The lower outflow rate of sediment is due to the decreased slope of the river channel downstream of the project area. The sediment transport rates based on the Yang method predicts are only 10% of the transport rates based on the Laursen method.

A sediment hydrograph can be prepared by combining the information from the hydrograph with the sediment rates on Figures 6 and 7. Integrating this hydrograph results in predictions of sediment load for different storm events. This procedure was used to obtain the sediment load for each storm event from the 2-year to the 500-year event in the study reach. The predicted sediment load for each storm event is presented in Table 3 for the two equations. The annual average transport rate (inflow) was calculated as the probability weighted transport weight of each storm event.

**TABLE 3**  
**ESTIMATED SEDIMENT INFLOW TO THE PROJECT SITE**  
**FOR DIFFERENT STORM EVENT SIZES**

Storm Return Period	Laursen		Yang	
	Tons	Yards	Tons	Yards
2-year	73,005	48,670	7,497	4,998
5-year	352,829	235,219	37,529	25,019
10-year	776,146	517,431	84,017	56,011
20-year	1,399,116	932,744	153,453	102,302
50-year	2,592,931	1,728,621	288,322	192,215
100-year	3,945,336	2,630,224	442,823	295,216
200-year	5,881,760	3,921,173	666,063	444,042
500-year	9,713,325	6,475,550	1,112,314	741,543
Annual Average=	314,000	210,000	34,000	23,000

Table 4 shows the predicted outflow of sediment from the study reach. The outflow is less than the inflow, indicating that the study reach is an aggrading segment of the river.

**TABLE 4**  
**ESTIMATED SEDIMENT OUTFLOW TO THE PROJECT SITE**  
**FOR DIFFERENT STORM EVENT SIZES**

Storm Return Period	Laursen		Yang	
	Tons	Yards	Tons	Yards
2-year	0	0	-	-
5-year	46,099	30,733	3,943	2,629
10-year	235,194	156,796	24,232	16,155
20-year	525,043	350,029	55,966	37,310
50-year	1,068,936	712,624	115,324	76,882
100-year	1,663,822	1,109,214	180,914	120,609
200-year	2,475,815	1,650,543	270,340	180,227
500-year	3,994,948	2,663,299	437,643	291,762
Annual Average =	85,606	57,071	9,008	6,006

The order of magnitude difference in the predicted sediment rates between the Laursen and Yang equations cannot be reconciled without more detailed sediment transport modeling using surveyed cross sections, and/or empirical data to provide benchmarks for validation.

Reliable empirical data on sediment transport at the GPS mine is lacking. There is anecdotal observations of flow events that filled the existing mine pit, but there is no supporting documentation for these observations, which include the following:

- The GPS mine applicant believes that 2 million cubic yards (3,000,000 tons) of sediment filled the existing 15-acre mine pit in January – March 1995. There are no topographic data on the mine pit volume prior to the storm events to substantiate this observation.
- The GPS mine applicant believes that the mine pit present in late 2004 was filled during storms during January and February 2005. No reliable estimate of the mine pit volume has been provided, but anecdotal evidence suggests that the pit has a capacity of at least 500,000 tons (750,000 cubic yards).

It should be noted that URS staff observed that the GPS mine pit was filled to the river channel elevation at the end of the 2004-2005 winter. The GPS mine project applicant has indicated that the mine pit has been filled periodically since its inception in 1969. There are no reliable estimates of the average annual mine production, or the total mine production of the GPS mine since 1969. Available data indicates that total mine production during the years 1988-1996 and 2002-2004 has been about 1.9 million tons, or about 160,000 tons per year.

The above empirical data suggests that the Laursen equation provides a more accurate estimate of the average annual sediment inflow and outflow at the project site.

The river along the study reach does not exhibit any obvious signs of channel degradation or headcutting. The GPS mine has been removing about 160,000 tons per year, on average, since 1988. The model predicts that the average annual inflow to the project site is 314,000 tons and an

average annual outflow of 85,000 tons, resulting in an annual accumulation of 229,000 tons, which is the same order of magnitude as the historic GPS mine production.

#### 4.0 POTENTIAL IMPACTS

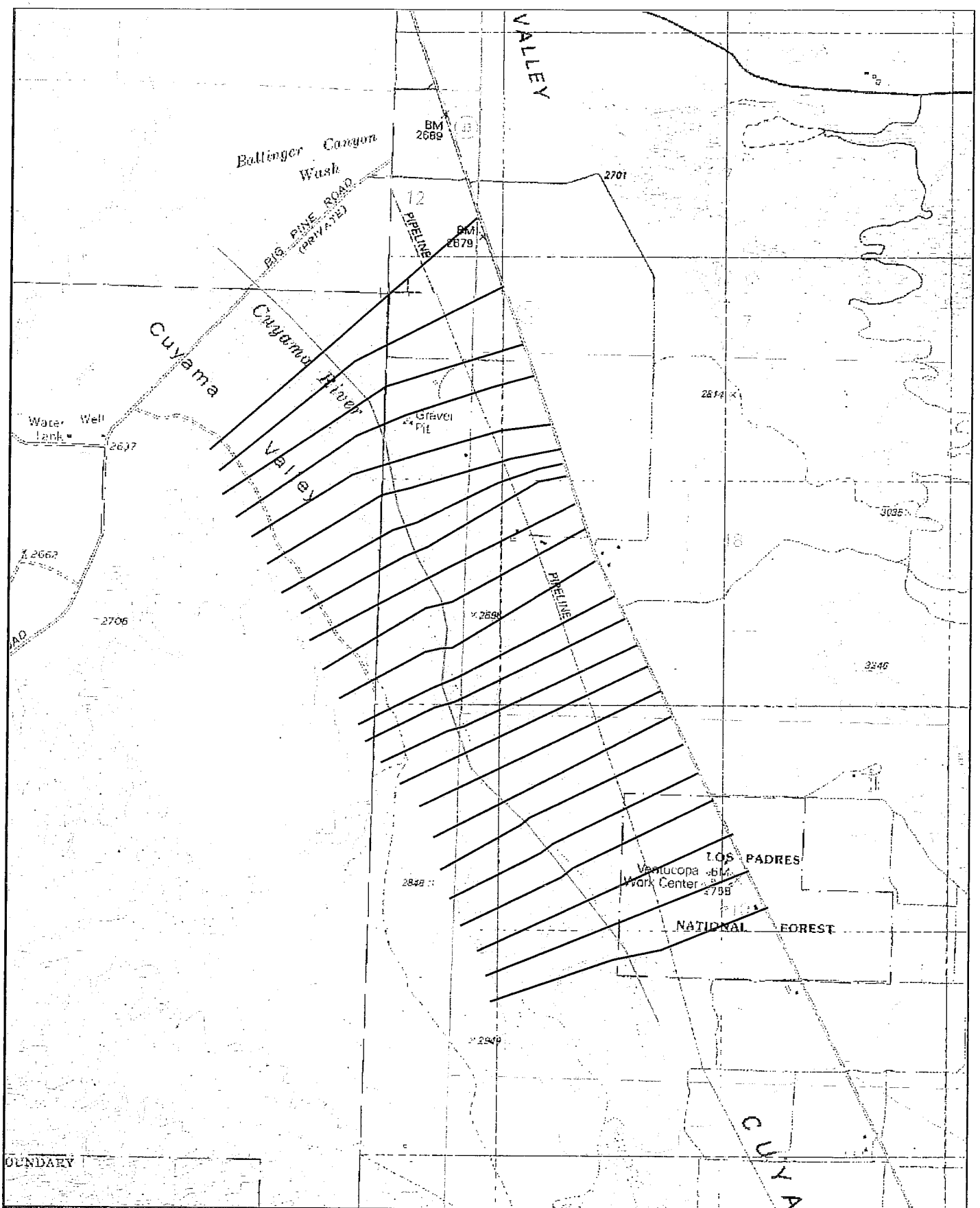
The sediment transport model indicates that the average annual accumulation of sediment at the project site is about 229,000 tons. The combine average annual mine production for the new Diamond Rock Mine and the expanded GPS mine would result in up to 1,000,000 tons per year. Hence, the mining projects, individually and cumulatively, would immediately create a sediment deficit in the study reach. This deficit would result in downstream channel degradation extending from the GPS mine for an unknown distance downstream. The amount of channel degradation cannot be predicted with available data, and because of the complexity of hydraulic conditions in the wide river channel at the project site. However, channel degradation of 5 to 15 feet would not be unexpected. The length of the channel degradation also cannot be accurately predicted with the available data. The length of the downstream impact would likely be at least 1,000 to 2,000 feet or more.

The sediment deficit at the mine sites could also result in head cutting of the river bed and upstream migration of the pits. The existing GPS mine has been in the river for about 30 years and has not migrated upstream, except during the 2004 storms. The lack of significant headcutting at the GPS mine is likely due to the fact that the mine pit is periodically filled because a sediment deficit has not created by the historic GPS mining rates. In addition, the river bed material may contain enough large material (e.g., large gravels and cobbles) to armor the upstream lip of the pit. An increase in the mine production rate at GPS and the new mining at Diamond Rock may cause headcutting due to the substantially higher mining rate in the study reach compared to the predicted natural replenishment rate.

The new Diamond Rock mine pit would extend across most of the river channel, and as such, may intercept a significant proportion of the sediment in the river. This effect cannot be accurately predicted, as it is dependent on the river flow line and the width of the Diamond Rock mine pit. However, it is likely that over time the upstream mine will reduce the replenishment opportunities and rates for the GPS mine.

Finally, the proposed projects, individually and cumulatively, will create a sediment deficit over time resulting in mine pits that will increase in size and depth until the mine pits are almost fully excavated. Significant flood events would replenish the mine pits during the early years of excavation when the pit volumes are similar to the sediment inflows from large storms. However, as the mining progresses, the amount of sediment inflow required to fill both pits will become greater, and therefore, the time required to replenish the mine pits would become longer compared to the current conditions at the GPS mine. Eventually, both mine pits would fill with sediment once mining has ceased. The amount of time to replenish both pits at the end of mining is dependent on many factors, but could be 10 years or more.





0 2000 4000 Feet



Figure 1. Location of Cross-Sections Cut from USGS Digital Elevation Model for use in HEC-RAS Analysis

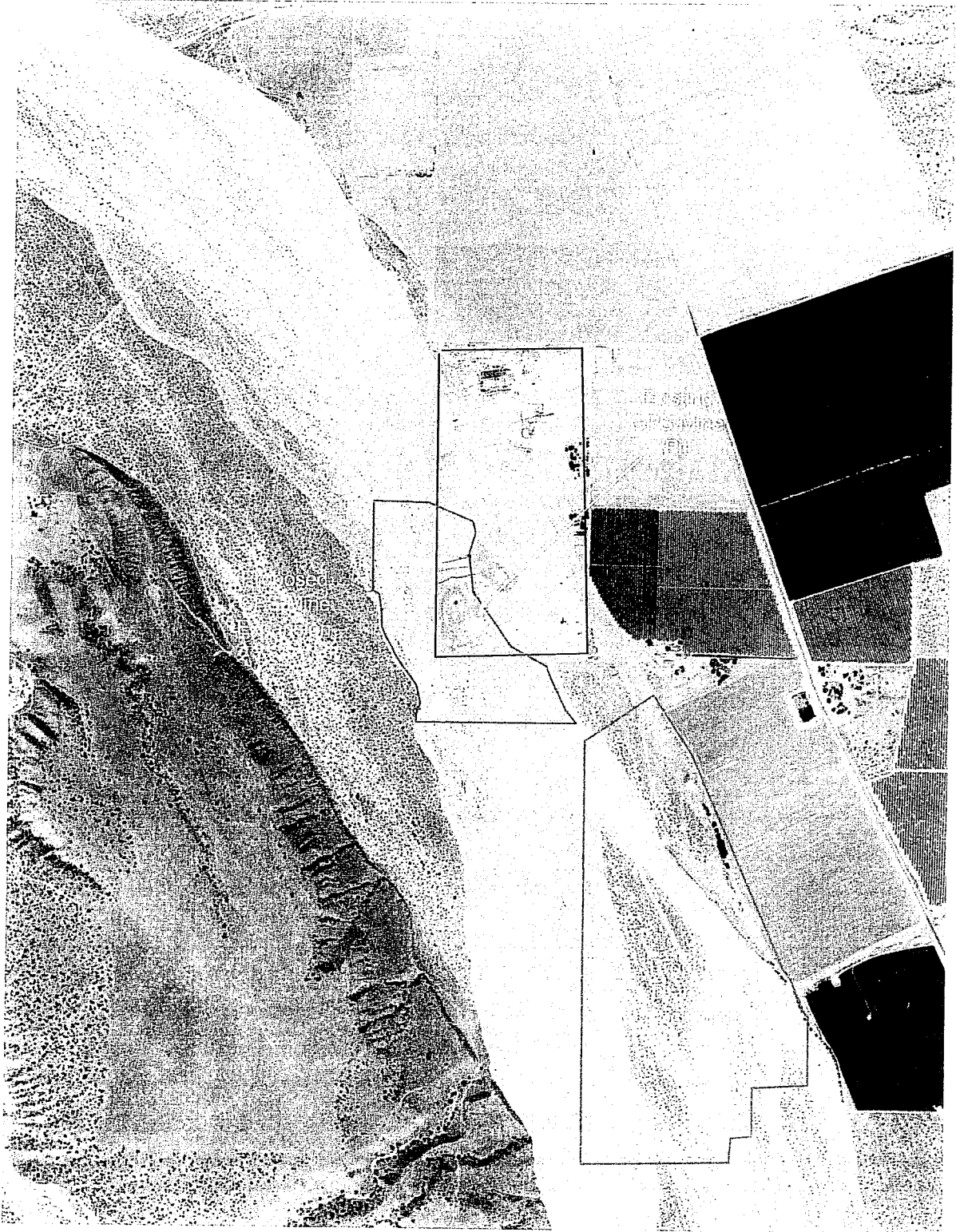


Figure 2. Mining Projects on Aerial Photograph

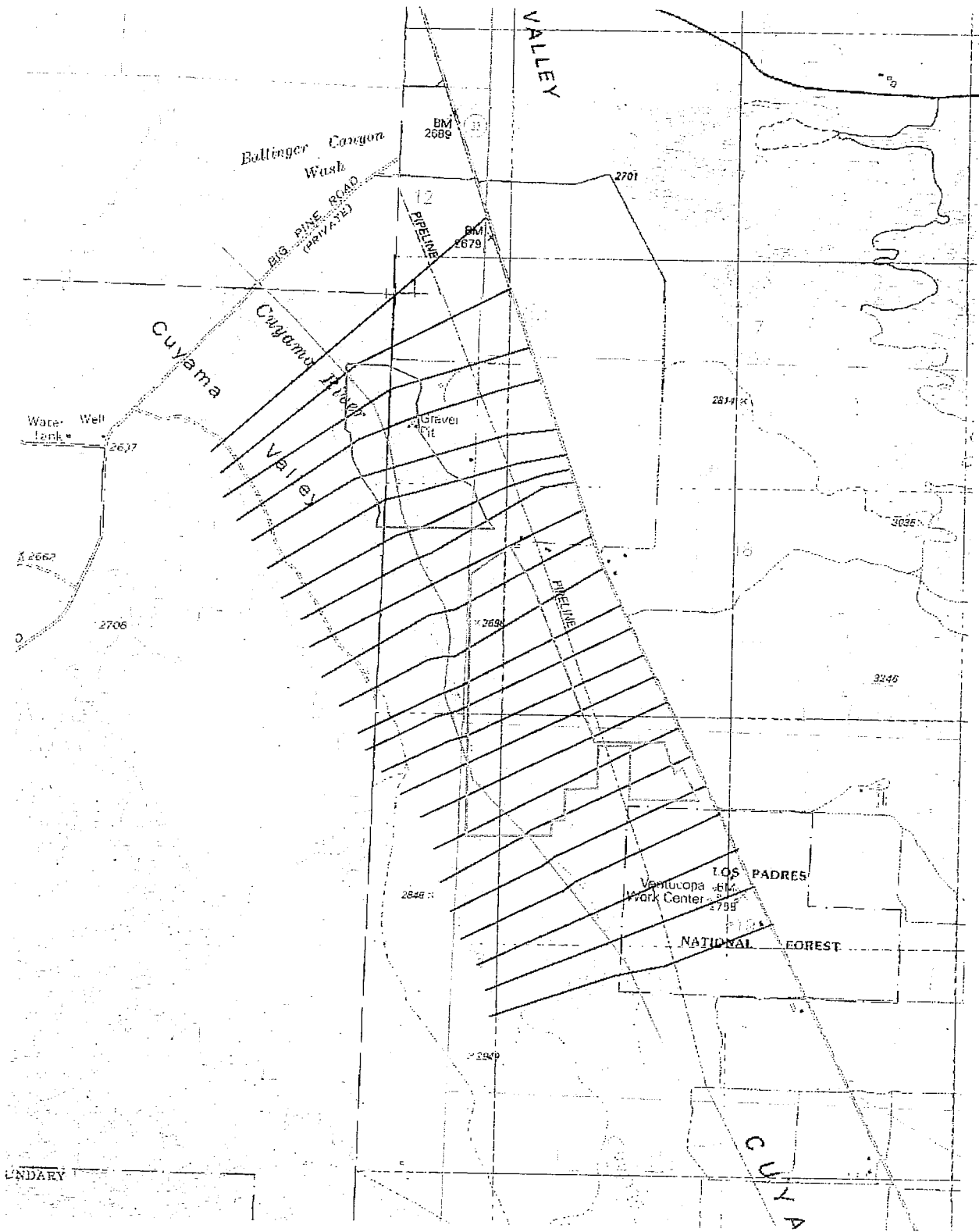


Figure 3. Study Reach and Model Cross Sections

Figure 4. SCS Dimensionless Unit Hydrograph

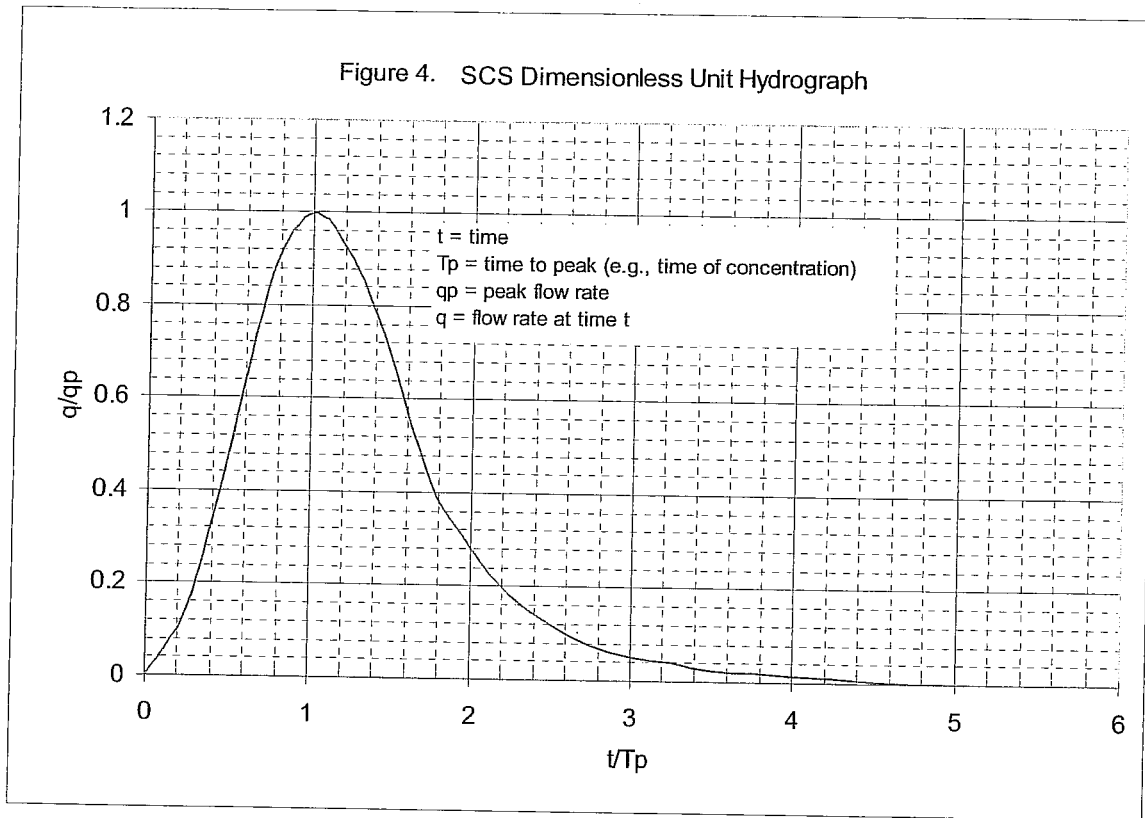


Figure 5. Hydrographs for Different Return Period Flow Events (SCS Unit Hydrograph) in the Cuyama River

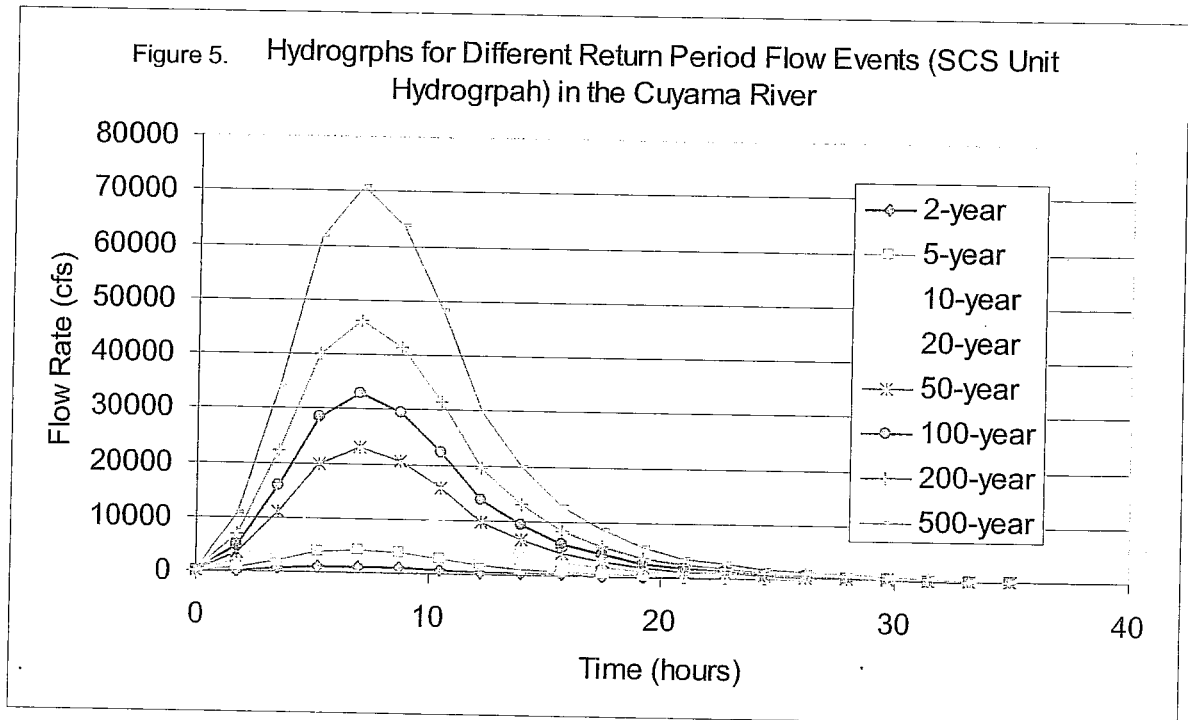


Figure 6. Sediment Transport in the Cuyama River (Laursen Relationship)

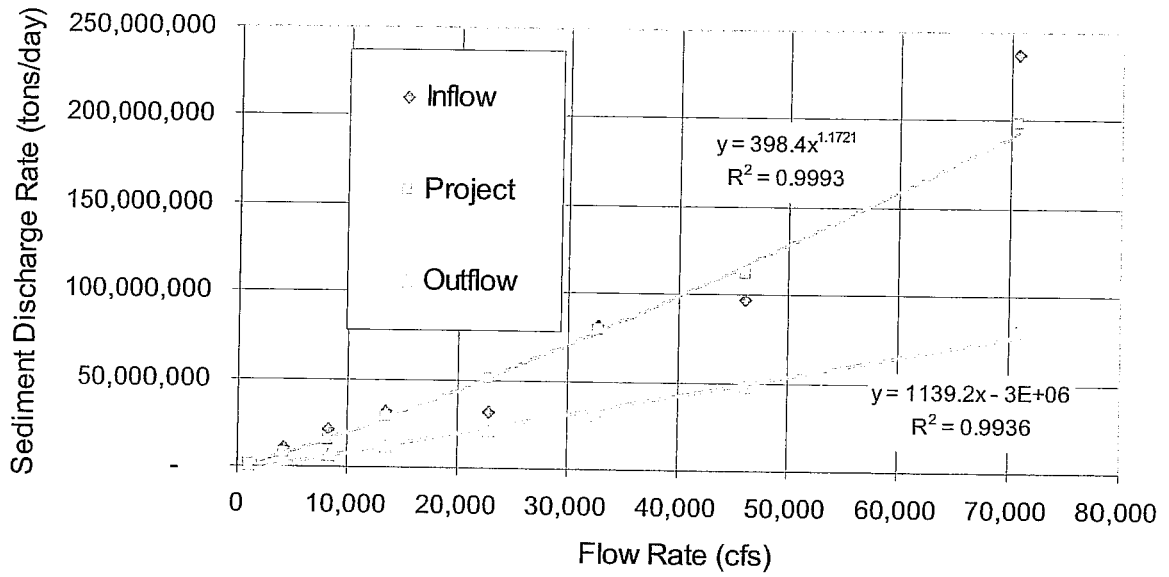
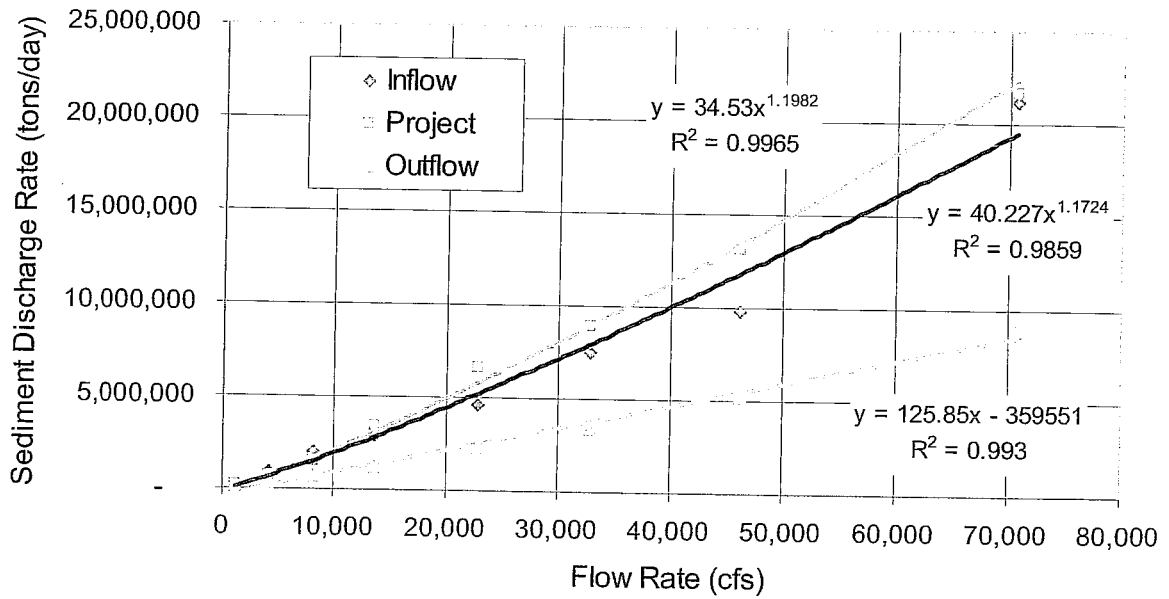


Figure 7. Sediment Transport in the Cuyama River (Yang Relationship)



Subject: **RE: FOIA request information needed by 3/24/11 please.. (UNCLASSIFIED)**

From: Henderson, Bruce A SPL <Bruce.A.Henderson@usace.army.mil>

Sent: Tue Mar 22 14:15:40 2011

To: xitlalli@hughes.net

Cc: zannon@sbpistachios.com, babaknaficy@sbcglobal.net, curry@ucsc.edu, g.r.hensley@sbcglobal.net

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Classification: UNCLASSIFIED

Caveats: NONE

Good afternoon, Jennifer

Unfortunately, I do not have anything additional since our last correspondence. Diamond Rock's consultant informed me that her client did not yet sign the permit because he had not concluded the process with the regional water quality control board (Section 401 certification; required prior to working under a Section 404 permit from the Corps of Engineers). She believed it would be taken care of by early last week. We met on Monday or Tuesday (March 14 or 15) when she told me that it was not yet accomplished because the analyst at the water board was only recently given the project for review and did not yet get into the finer details. We called him to get a status update, and informed him that the fencing of an initial 7+ acres identified to likely be absent blunt-nosed leopard lizard would allow them to isolate it from the lizard and avoid protocol surveys. This lizard discussion directly relates to the discussion we had with the USFWS. Still nothing finalized as of today.

Without a permit that is in force, there is nothing to amend. So, as of today, I still do not have anything official other than our discussions regarding the project modification.

To recap, the proposed work would occur within the CUP project area approved by the County. Matthew Vandersande, former Corps project manager, limited the initial excavation phase to 14 acres within the CUP area, with 5:1 slopes on the upstream side and 3:1 slopes on the east and west. The original project would have had a processing area east of the CUP area, but with economics being what they are, Diamond Rock entered into an agreement with GPS to haul river material to GPS for processing. The haul route would be the existing farm road adjacent to the river on the upland terrace between the river and the farmed area. Our discussion with USFWS was about the new haul route and potential impacts to the lizard (with kit fox being of lesser concern).

I do not know if this is of any value to the appeal discussion. It may only

serve to put things into perspective.

Regards,

Bruce

-----Original Message-----

From: JENNIFER LEE [<mailto:xitlali@hughes.net>]

Sent: Tuesday, March 22, 2011 11:12 AM

To: Henderson, Bruce A SPL

Cc: [zannon@sbpistiachios.com](mailto:zannon@sbpistiachios.com); [xitlali@hughes.net](mailto:xitlali@hughes.net); [babaknaficv@sbcglobal.net](mailto:babaknaficv@sbcglobal.net); [curry@ucsc.edu](mailto:curry@ucsc.edu); [g.r.hensley@sbcglobal.net](mailto:g.r.hensley@sbcglobal.net)

Subject: FOIA request information needed by 3/24/11 please..

Good Morning Bruce,

I was wondering if you have any information, in writing, you could send us before Thursday March 24, 2011 which is Santa Barbara County's appeal deadline.

Thank you for your help.

Jennifer Lee  
for Cuyama Valley Conservancy

Classification: UNCLASSIFIED  
Caveats: NONE



**DEPARTMENT OF THE ARMY**  
LOS ANGELES DISTRICT, CORPS OF ENGINEERS  
VENTURA FIELD OFFICE  
2151 ALESSANDRO DRIVE, SUITE 110  
VENTURA, CALIFORNIA 93001

April 16, 2010

REPLY TO  
ATTENTION OF  
Regulatory Division

Steve Troesh  
Troesh Material Inc.  
c/o John Hecht  
Sespe Consulting, Inc.  
343 E. Main St., Suite 201  
Ventura, California 93001

Dear Mr. Troesh:

This letter is in reference to your application for a Department of the Army (DA) Permit to discharge fill material into waters of the United States, in association with the Diamond Rock Sand and Gravel Mine and Processing Facilities located in the Cuyama River (at Lat/Long: 34.8548/-119.4947), near the Town of Ventucopa, Santa Barbara County, California. The property and mineral rights owner is Triangle E Farms of Maricopa, California.

Enclosed is a "Provisional Permit." This Provisional Permit is NOT VALID and does not constitute authorization for you to do work. The Provisional Permit describes the work that will be authorized, including general and special conditions which will be placed on your final DA permit, if you receive a Section 401 water quality certification from the California Regional Water Quality Control Board (RWQCB). No work is to be performed until you have received a validated copy of the DA permit.

By Federal law, no DA permit can be issued until a Section 401 water quality certification has been issued or waived by RWQCB. This requirement can be satisfied by obtaining 401 certification/waiver or providing evidence that 60 days have passed since you submitted a valid application to the RWQCB for certification. Be aware that any conditions on your 401 certification will become conditions on your DA permit, unless the Corps of Engineers deems these conditions to be either unreasonable or unenforceable.

**WHEN YOU RECEIVE SECTION 401 CERTIFICATION/WAIVER, THE FOLLOWING STEPS NEED TO BE COMPLETED:**

1. The owner or authorized responsible official must sign and date both copies of the provisional permit indicating that he/she agrees to comply with all conditions stated in the permit.



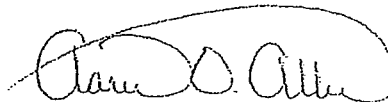
2. The signer's name and title (if any) must be typed or printed below the signature.
3. Both signed provisional permits must be returned to the Corps of Engineers at the above address (Attention: CESPL-RG).
4. The Section 401 certification must be sent to the Corps of Engineers with the signed provisional permits.
5. When returning the signed provisional permits include a check for the processing fee of \$100 payable to the Finance and Accounting Officer USAED LA.

Should the Section 401 certification contain conditions which might result in a modification to the provisional permit, by signing and dating both copies of the provisional permit and returning them to the Corps of Engineers (along with the appropriate permit fee and Section 401 certification), we will assume you agree to comply with all Section 401 certification conditions which are added to the provisional permit.

Should the RWQCB deny the required certification, then the DA permit is considered denied without prejudice. If you subsequently obtain Section 401 certification, you should contact this office to determine how to proceed with your permit application.

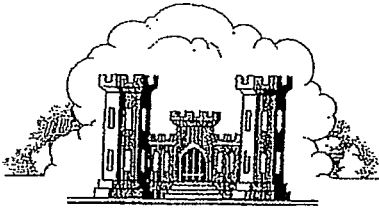
If you have any questions, please contact Bruce Henderson of my staff at 805-585-2145 or via e-mail at [bruce.a.henderson@usace.army.mil](mailto:bruce.a.henderson@usace.army.mil). Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,



Aaron O. Allen, Ph.D.  
Chief, North Coast Branch  
Regulatory Division

Enclosures



LOS ANGELES DISTRICT  
U.S. ARMY CORPS OF ENGINEERS

DEPARTMENT OF THE ARMY PERMIT

Permittee: Troesh Materials, Inc.; Mr. Steve Troesh  
Permit Number: SPL-2003-803-BAH  
Issuing Office: Los Angeles District

Note: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**Project Description:** To temporarily discharge fill material into 14 acres of waters of the United States, in association with the Troesh Material, Inc., Diamond Rock Sand and Gravel Mine and Processing Facilities.

Specifically, you are authorized to:

1. Mechanically clear 14 acres of the riverbed, including the temporary stockpiling of fill material during mining;
2. Grade an approximately four-foot-tall ten-foot-wide low-flow diversion berm around the mine pit with native riverbed sediments;
3. Construct an approximately two-foot-tall eight-foot-wide 350-foot-long sandbag diversion berm at the confluence of Deer Park Creek and Cuyama River;
4. Grade an approximately two-foot-tall four-foot-wide 1000-foot-long diversion berm with native riverbed sediments along the eastern bank to divert flows from Deer Park Creek away from the mine pit;
5. Construct an access road (i.e., heavy equipment haul road) into the mine pit using native riverbed material and culverts; and
6. Grade material deposited in the mine pit after a flood event, should it breach the berms.

**Project Location:** The Diamond Rock Sand and Gravel Mine and Processing Facilities are located in the Cuyama River (at Lat/Long: 34.8548/-119.4947), near the Town of Ventucopa, Santa Barbara County, California. The property and mineral rights owner is Triangle E Farms of Maricopa, California.

## **Permit Conditions:**

### **General Conditions:**

1. The time limit for completing the authorized activity ends on April 16, 2015. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification from this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

### **Special Conditions:**

1. The permittee shall not directly impact an area greater than 14 acres for aggregate mining in the Cuyama River on APNs 149-220-002, -011, and -065. Mining activities include mechanized land clearing, construction of a low-flow diversion berm around the perimeter of the mine pit, construction of a grade control structure and diversion berm at the confluence of Deer Park Creek and the Cuyama River, and temporary stockpiles of mined material in waters of the United States. In order to facilitate the natural flow of water past the project site during small runoff events, the permittee shall excavate the 14-acre mine pit in the center of 84-acre project site in the Cuyama River.

2. The permittee shall not directly impact an area greater than 0.50 acre for the construction of an access road (approximately 30 feet wide and 700 feet long), with three five-foot-diameter corrugated steel pipe culverts half-buried in the riverbed near the eastern river bank in order to facilitate blunt-nosed leopard lizard passage and to provide all-weather access between the processing facility and the mine pit.
3. The permittee shall not directly impact an area greater than 0.07 acre for the construction of a sandbag grade control structure approximately 8 feet wide and 350 feet long located at the confluence of Deer Park Creek and the Cuyama River (Memorandum dated 5 February 2008; prepared by Hawks and Associates).
4. To the maximum extent practicable, the permittee shall ensure that the low-flow diversion berms are constructed using material graded from the top one-foot of the vegetated riverbed so that the native seed bank has an opportunity to germinate.
5. The permittee shall not impact waters of the United States to a depth greater than 45 feet below the natural grade of the riverbed. The elevation in the center of the proposed project is approximately 2780 feet above sea level (per the Hawks and Associates plan and typical section for the Deer Park Creek Grade Control Structure submitted to the Corps 5 February 2008). Therefore, the base of the center of the mine pit on APN 149-250-011 shall not be deeper than approximately 2735 feet above sea level, and all depths up- and downstream from that point shall be relative along the same 1.5% slope plane for the 14-acre mine footprint. These elevations will be verified prior to mining as described at special condition 13 (below).
6. The permittee shall maintain a 5:1 (horizontal:vertical) pit wall slope on the upstream side (i.e., southern side) of the mine pit. The permittee shall maintain a 3:1 pit wall slope for all other sides (i.e., eastern, western, and northern sides) of the mine pit.
7. This Corps permit does not authorize you to take any threatened or endangered species, in particular the blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin kit fox (*Vulpes macrotis mutica*), and Kern primrose sphinx moth (*Euproserpinus euterpe*). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed U.S. Fish and Wildlife Service BO (PAS 1628.1929.2482; dated 5 December 2006) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit.
8. To minimize impacts to and avoid take of the federally listed blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin kit fox (*Vulpes macrotis mutica*), and Kern primrose sphinx moth (*Euproserpinus euterpe*), the permittee shall implement the following minimization measures, which were included in the project design submitted as part of your permit application for the project:
  - a. A worker education program, taught by a Service-approved biologist, would be conducted for all employees and would provide instruction on the identification, life history, habitat requirements, and regulatory protection of

the blunt-nosed leopard lizard and San Joaquin kit fox. Workers would be trained on what to do if blunt-nosed leopard lizards or San Joaquin kit fox are observed within work zones.

- b. All on-site trash would be cleared from the area on a daily basis and disposed of in secure containers to prevent potential predators from being attracted to the site.
- c. A 15 mile-per-hour speed limit sign would be posted on the access road.
- d. Permanent exclusionary fencing would be installed around the perimeter of the processing facility and along the access road into the mining pit.
- e. Exclusionary fencing would be installed around the perimeter of the mining pit between March 1 and November 1 of each year. During this time, the fencing would only be removed if flooding of the mining pit was anticipated, during which time mining would not occur, and would be replaced before mining could begin again. The fencing would be removed between November 1 and March 1, during the time that blunt-nosed leopard lizards are in winter dormancy. The two-foot high fencing would consist of small-meshed hardwire cloth with a base of aluminum flashing. The metal flashing would be at least 12 inches above the surface to prevent the lizards from climbing over the fence. The bottom of the fencing and metal flashing would be buried 18 inches beneath the soil surface to prevent the lizards from digging under the fence. Fencing would be checked daily and maintained as necessary.
- f. A Service-approved biologist would monitor restoration and construction activities, and trap and relocate blunt-nosed leopard lizards that may be disturbed by the project activities. A Service-approved biologist would also monitor construction of the exclusionary fencing and ensure that no blunt-nosed leopard lizards are trapped within exclusion zones.
- g. Three 5-foot diameters corrugated steel pipe culverts, half-buried underground, would be placed 12 inches apart underneath the access road to allow blunt-nosed leopard lizards to pass underneath the road.
- h. In order to determine if and to what extent blunt-nosed leopard lizards utilize the riverbed of the Cuyama River, and to assess the effectiveness of the culverts and fencing, a Service-approved biologist would survey the riverbed, access road, and culverts for blunt-nosed leopard lizards during their active period (April 15 through July 15) each year. Protocol developed by California Department of Fish and Game for blunt-nosed leopard lizard surveys would be followed.
- i. Haul truck drivers and heavy equipment operators would be instructed to avoid impacting the exclusionary fencing to maintain the integrity of the fencing.
- j. Chemical dust suppressants would not be used in areas where blunt-nosed leopard lizards could be exposed to the material. As an alternative dust suppressant, water would be used on the access road and near the Agricultural Restoration Area, or the crossing would be shielded at the sides to prevent overspray.
- k. In the Agricultural Restoration Area, non-native plants would be removed by hand to avoid spraying herbicides where blunt-nosed leopard lizards may occur. Saltcedar would be removed using the least toxic herbicide, Garlon.

FISH & WILDLIFE  
SERVICE

This herbicide would only be used to treat saltcedar stumps after hand removal of the plants, and would not be sprayed on a broad scale.

- l. Within 14 days prior to any new ground disturbances in natural habitats on the project site, a Service-approved biologist would conduct surveys for presence of San Joaquin kit fox dens.
  - m. If suitable San Joaquin kit fox dens are found within the construction zone, they would be surveyed for three days to determine if the dens are occupied by San Joaquin kit fox. Activity at the den would be monitored by placing tracking medium at the entrance every morning. Tracking material would be checked twice a day; every morning for tracks and prior to sundown to ensure that the tracking materials have not been damaged or blown away.
  - n. If San Joaquin kit fox activity is not observed during monitoring, the den would be physically closed to prevent occupation of the den.
  - o. If San Joaquin kit fox activity is observed at the den during monitoring, a Service-approved biologist would implement one of the two following approaches:
    - i. The den would be monitored until three consecutive days without San Joaquin kit fox activity occurs. At that point, the den would be physically closed; or
    - ii. The den would be monitored for at least five consecutive days. Use of the den would be discouraged during this period by partially plugging the entrance(s) with soil in such a manner that any resident animal could escape easily. If the den is still occupied after five days, the den would be carefully excavated using hand tools (e.g. shovel) while the den is temporarily vacant, such as during the animal's normal foraging activities. If San Joaquin kit fox are discovered in the den at any time during excavation, the excavation would cease immediately and monitoring of the den would be resumed. Destruction of the den may be resumed, when in the judgment of the biologist, the animal has escaped from the partially destroyed den.
  - p. If a natal den is discovered on-site, the Service would be contacted. Exclusionary flagging would be placed around the den, and the den would be monitored by a Service-approved biologist until the pups have vacated the den. After the den is vacated by the pups and mother, the biologist would clear and close the den.
9. Prior to initiation of project construction (i.e., land clearing, berm construction, and mining), the permittee shall notify the U.S. Fish and Wildlife Service in writing of the intended project initiation date and anticipated duration of the mining.
  10. The permittee shall mitigate for the long-term temporary impacts to approximately 14 acres of waters of the United States with the restoration of the approximately 1,400-foot-long section of the eastern Cuyama River bank and the enhancement of approximately 1.5 acres of the Deer Park Creek located between State Route 33 and the confluence with the Cuyama River as described in the final compensatory mitigation plans, "River Bank Restoration and Mine Reclamation" (dated 11 May 2007, included as part of the final EIR) (Bank Plan) and "Deer Park Creek Additional Mitigation" (Creek Plan) (dated 29 October 2009, and prepared by Sespe Consulting, Inc). The permittee shall fully implement the Bank Plan and Creek Plan within one year of first conducting mining operations at the project site. The Bank Plan shall also include a 75% survival

- rate and evidence of at least good vigor and active growth for planted cottonwood trees at the end of the five-year monitoring period, including two consecutive years without the use of supplemental irrigation.
11. The permittee shall only use herbicides in the Cuyama River and Deer Park Creek that have been approved by the EPA for use in aquatic environments. Therefore, the permittee shall not use Round-up™ (as described in the application), or its generic form, in the restoration and enhancement areas to control weeds.
  12. The permittee shall ensure all mining equipment and associated vehicles remain on the single access road when travelling between the processing facility and mine pit.
  13. The permittee shall conduct annual surveys of the surface elevation of the mine pit and river (both up- and downstream of the mine pit).
    - a. The permittee shall conduct the first survey not more than 30 days prior to the initiation of mining.
    - b. The permittee shall clearly identify a survey reference point (i.e., a permanent stable monument) located outside of the river for all surveys.
    - c. Annual surveys after the initiation of mining shall be conducted during the month of October.
    - d. Survey results shall be submitted to this office within 30 days of completion.
    - e. The surveys shall be conducted by an independent licensed land surveyor.
    - f. The surveys shall include a longitudinal profile of the centerline of the Cuyama River for at least 5,000 feet up- and downstream of the mine pit.
    - g. The surveys shall include cross-sections of the Cuyama River at 250-, 500-, 1500-, and 5000-foot intervals both up- and downstream of the mine pit.
    - h. The surveys shall include cross-sections of Santa Barbara Canyon and Ballinger Canyon 500 feet upstream of their confluence with the Cuyama River.
    - i. Cross-sections and the longitudinal profile shall be taken at the same location each year for comparison.
    - j. The surveys shall include the perimeter of the mine (i.e., the safety berms) and the perimeter of the mine pit at its base (i.e., at the bottom of the mine slopes).
    - k. The surveys shall include the location of the upstream diversion berm and access road.
  14. The permittee shall conduct semi-annual photographic surveys of the mining operation in the river during October and April. Reference photo points shall be established at the approximate midpoint of each side of the mine pit and in the center of the base of the pit. From each point the permittee shall take one photo each in the north, south, east, and west direction. The midpoint photos should show the berms, the wildlife fencing, and the entire pit wall. The permittee shall submit the photos to this office within 30 days of being taken. The first photographic survey shall be conducted no more than 30 day prior to initiating mining activities.
  15. The permittee shall not conduct any work in standing or flowing water.
  16. The permittee shall notify this office in writing if the diversion berms are breached by a runoff event in the river and water enters the pit. The notification shall be submitted with 30 days of the event. The notification shall include a description of where the berm was breached, the approximate volume of water and sediment that entered the pit, and any bed or bank erosion that occurred (i.e., location and approximate length and width of the erosion).

17. The permittee shall submit to this office an annual report detailing the volume of the mine pit and weight of material extracted from the mine pit.
18. The permittee shall ensure dust generated by the mining operation is minimized by wetting the disturbed areas of the riverbed, stockpiles of sediments, and berms. The use of any dust suppressant other than pure water shall be approved by this office in writing after coordination with the U.S. Fish and Wildlife Service and Regional Water Quality Control Board.
19. If the permittee chooses to renew this authorization or modify this authorization, we recommend that the permittee notify this office at least six months prior to its expiration. This notification shall identify the depth to groundwater in the riverbed (i.e., within the mine pit footprint) during the wet season and dry season. This notification shall also include annual rainfall and runoff data with corresponding sediment transport data for this reach of the Cuyama River.
20. The permittee shall ensure that all workers at the project site have read and understand the terms and conditions of this authorization.

**Further Information:**

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:

Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403).

Section 404 of the Clean Water Act (33 U.S.C. 1344).

Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

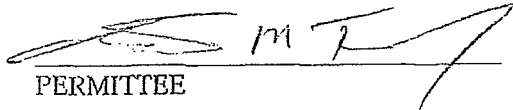


- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.
  - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
- a. You fail to comply with the terms and conditions of this permit.
  - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
  - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

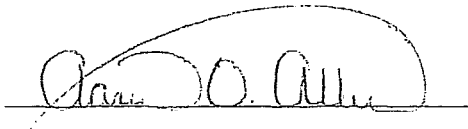
6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give you favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit

  
PERMITTEE

3/29/11  
DATE

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

  
\_\_\_\_\_

March 29, 2011  
DATE

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
TRANSFEREE

\_\_\_\_\_  
DATE

LOS ANGELES DISTRICT  
U.S. ARMY CORPS OF ENGINEERS

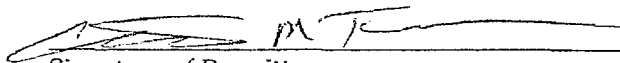
NOTIFICATION OF COMMENCEMENT OF WORK  
FOR  
DEPARTMENT OF THE ARMY PERMIT

Permit Number: SPL-2003-803-BAH  
Name of Permittee: Troesh Materials, Inc.; Steve Troesh  
Date of Issuance: April 16, 2010

Date work in waters of the U.S. will commence: \_\_\_\_\_  
Estimated construction period (in weeks): \_\_\_\_\_  
Name & phone of contractor (if any): \_\_\_\_\_

Please note that your permitted activity is subject to a compliance inspection by an Army Corps of Engineers representative. If you fail to comply with this permit you may be subject to permit suspension, modification, or revocation.

I hereby certify that I, and the contractor (if applicable), have read and agree to comply with the terms and conditions of the above referenced permit.

  
Signature of Permittee

3/29/11  
Date

At least ten (10) days prior to the commencement of the activity authorized by this permit, sign this certification and return it using any ONE of the following three (3) methods:

- (1) E-MAIL a statement including all the above information to:

bruce.a.henderson@usace.army.mil

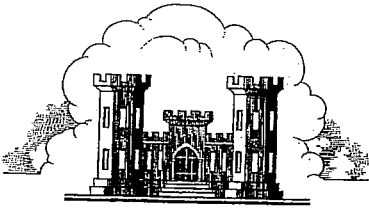
OR

- (2) FAX this certification, after signing, to: 805-585-2154

OR

- (3) MAIL to the following address:

U.S. Army Corps of Engineers  
Regulatory Division  
ATTN: CESPL-RG-SPL-2003-803-BAH  
2151 Alessandro Drive, Suite 110  
Ventura, California 93001



ENVIRONMENTAL ASSESSMENT  
404(b)(1) EVALUATION  
PUBLIC INTEREST REVIEW

PERMIT APPLICATION NUMBER:

SPL-2003-803-BAH

APPLICANT:

Diamond Rock Sand and Gravel Mine and Processing Facilities,  
Troesh Materials, Inc.

Prepared by:

Matthew Vandersande, D.Env.  
Project Manager, North Coast Branch  
Regulatory Division

4/15/10  
Date

Reviewed by:

Bruce A. Henderson  
Senior Project Manager, North Coast Branch  
Regulatory Division

April 15, 2010  
Date

Approved by:

Aaron O. Allen, Ph.D.  
Chief, North Coast Branch  
Regulatory Division

April 15, 2010  
Date

This document constitutes my Environmental Assessment, Statement of Findings, and review and compliance determination according to the 404(b)(1) guidelines for the proposed work (applicant's preferred alternative) described in the attached public notice:

- I. **Proposed Project:** The proposed aggregate mining project would impact approximately 84 acres of waters of the United States within the Cuyama River over the next 30 years. The applicant has proposed to extract approximately 500,000 tons of sand and gravel annually from the bed of the Cuyama River using heavy mobile equipment such as front-end loaders, bulldozers, and excavators. The maximum annual production from the mine would be 750,000 tons. Berms would be graded around the approximately 90-foot-deep mine pit as a safety measure and to divert low flows during small runoff events. It is anticipated that moderate to large runoff events in the river will breach the diversion berm and deposit sediment in the mine pit. Depending upon the composition of the deposited sediment (i.e., grain size of the in-fill material), the applicant may mine this material or abandon that section of the pit if the cost to mine it would be greater than the revenue generated from the aggregate. The material would be processed on site at a proposed facility located on the adjacent currently farmed uplands. The applicant initially proposed to return the unmarketable fine-grained material that is generated during processing back into the pit. However, they have found they can sell these less valuable fines as a soil amendment instead. The processing facility would be electrically powered. Within the facility the aggregate would be crushed, sorted, washed, and stockpiled. On-road 29.5-ton haul trucks would collect the aggregate from the processing facility for distribution to Santa Barbara, Ventura, Kern, and San Luis Obispo counties.
  - A. **Changes to the proposed project since circulation of the public notice:** The proposed project has undergone several minor revisions since circulation of the public notice. However, because these revisions were minor in nature relative to the size and scope of the project described in the public notice, it was determined that a new public notice was not necessary.
  - B. **Specific activity that requires a Department of the Army permit:** The applicant requires authorization to temporarily impact 84 acres of waters of the United States for the placement of fill associated with: (1) mechanized land clearing of the river bed, including the temporary stockpiling of fill material during mining; (2) grading of an approximately four-foot-tall ten-foot-wide low-flow diversion berm around the mine pit with native riverbed sediments; (3) constructing an approximately two-foot-tall eight-foot-wide 350-foot-long sandbag diversion berm at the confluence of Deer Park Creek and Cuyama River; (4) grading of an approximately two-foot-tall four-foot-wide 1000-foot-long diversion berm with native riverbed sediments along the eastern bank to divert flows from Deer Park Creek away from the mine pit; (5) construction of an access road (i.e., heavy equipment haul road) into the mine pit using native riverbed material and culverts; and (6) grading of material deposited in the mine pit after a flood event should it breach the berms.

In keeping with standard protocols, the Corps is processing the application for a Department of the Army permit for a five-year term rather than the requested 30-year term. Within this five-year term the applicant has proposed to mine a

25-acre footprint within the 84-acre riverbed project site to a maximum depth of 90 feet.

- C. **Scope of analysis under NEPA:** Because the proposed project involves the grading and construction of temporary berms around the mine (including mechanized land-clearing of the riverbed and in-stream raised islands), temporary stockpiling of materials in the riverbed during mining, grading the mine pit walls (i.e., slopes and benches), and construction of an access road into the mine pit, the scope of analysis includes all areas in the river associated with the mining operation (approximately 84 acres). In addition, the proposed approximately 14-acre processing facility located on the adjacent upland parcel is directly related to the in-stream mining activities and would likely not be constructed without the in-stream mine. Therefore, the proposed construction activities in waters of the United States and at the processing facility in adjacent uplands are considered within the scope of analysis because sufficient Federal control and responsibility exists. The Corps' scope of analysis does not extend beyond the mine pit or processing facility because there is a complete lack of Federal control and responsibility regarding the direction or use of the processed aggregate.
- D. **Relevant public interest factors considered:** In this analysis, the relevant public interest factors include conservation, economics, aesthetics, general environmental concerns, fish and wildlife values, flood hazards, floodplain values, considerations of property ownership, water supply and conservation, safety, mineral needs, and needs and welfare of the people.

II. **Environmental and Public Interest Factors Considered:**

- A. **Purpose and Need:** The purpose of the proposed project is to mine and process sand and gravel aggregate material. The project would meet a public need for high-grade aggregate materials. Specifically, the proposed mine would extract Portland cement concrete (PCC)-grade aggregate material and sand. PCC-grade aggregate material is valued for its strength and durability as a building material, and is used in projects such as bridges and building foundations.

The mined aggregate would be delivered to Santa Barbara, Ventura, San Luis Obispo, and Kern Counties. In 2006, the California Department of Conservation, California Geological Survey (CGS) published an updated "Map Sheet 52: Aggregate Availability in California." The report compared the anticipated 50-year demand for aggregate with the currently permitted aggregate resources for various regions in California. Within the San Luis Obispo-Santa Barbara region, the 50-year demand is projected to be 243 million tons and the currently permitted resources are 77 million tons (approximately 32 percent of the demand). In the Bakersfield and Ventura County regions, the percent permitted is 46 percent and 34 percent of demand, respectively. In Santa Barbara County, Map Sheet 52 identified eight aggregate mines currently producing less than 500,000 tons per year, and two mines producing between 0.5 and 2 million tons per year. In San Luis Obispo County, Map Sheet 52 identified 16 aggregate mines with each producing less than 500,000

tons per year.

- B. **Basic project purpose and water dependency:** The basic project purpose is aggregate mining, which is not a water dependent activity.
- C. **Overall project purpose for 404(b)(1) analysis:** The overall project purpose is to extract and process PCC-grade aggregate and sand to supply the demand for such material in Santa Barbara, Ventura, San Luis Obispo, and Kern counties.
- D. **Alternatives** (33 CFR 320.4(b)(4), 40 CFR 230.10):
  - 1. **No action:** With no federal action, the applicant could potentially operate a small, shallow pit, clean excavation, in-stream mine and an upland processing facility. The Mining Safety and Health Administration requires that safety berms are constructed around the perimeter of any pit that is deeper than the mid-axle point of the smallest vehicle used in the mine. Therefore, the pit for the no federal action alternative could not be more than a few feet deep. At this depth, the feasibility of the mine would be economically questionable. This type of operation would result in similar short-term adverse impacts, but reduced long-term adverse impacts to waters of the United States. Less aggregate would be mined annually because a clean excavation mining operation is less efficient than the proposed mining operation. Clean excavation involves using wheeled back-hoes or front-end loaders to remove riverbed materials and place it directly into dump trucks. The dump trucks would then transport the material to the adjacent upland processing plant. These methods would be less efficient for three reasons: (1) by not stockpiling materials in the riverbed, the excavation and transportation components must work in sync to avoid one part of the system waiting for the other; (2) by not constructing berms to divert low flows in the river, the mine would be in operation fewer days of the year; and (3) the access roads into and around the mine would not be engineered or constructed using culverts.

Overall, implementation of the no federal action alternative would result in a similar, but much shallower, less efficient, and substantially smaller volume mining operation. Because the mine pit would be much shallower, the applicant would likely need to mine a greater area of the riverbed to extract a similar amount of material. Mining a greater area of the riverbed would generate additional impacts to flow characteristics of the river, vegetation, aesthetics, wildlife, and sediment transport dynamics. These activities and impacts would still need other local, state, and federal permits. For instance, the potential take of several federally listed species would need to be addressed under Section 10 of the Endangered Species Act. It is unlikely that an adequate area of several hundred acres could be bought or leased to make the operation feasible. Under the no federal action alternative, the applicant could still operate the upland processing facility and load trucks for distribution to customers. Consequently, the impacts to traffic and air pollution from the distribution trucks would be similar. Given that a clean excavation mine would

not likely be feasible and could result in potentially greater impacts to the environment, the Corps has determined that the no federal action alternative would not represent the least environmentally damaging alternative.

2. **Sequenced search for less environmentally damaging alternatives:**

- a. **Other Sites:** As stated in Regulatory Guidance Letter 93-2, although all requirements in EPA regulations at 40 CFR Part 230.10 (“404(b)(1) Guidelines”) must be met, the compliance evaluation procedure will vary to reflect the seriousness of the potential for adverse impacts on the aquatic ecosystem posed by the specific dredged or fill material discharge activities. In addition, the above guidance also states that when applying the 404(b)(1) Guidelines, one must recognize the different levels of effort that should be associated with varying degrees of impact and require or prepare commensurate documentation; the level of documentation should reflect the significance and complexity of the discharge activity.

The Cuyama River is a unique aquatic ecosystem that is located in an arid inland valley, geographically separated from the Pacific Ocean by the San Rafael Mountains. Flow conditions range from long periods of no flow to discharges of over 20,000 cubic feet per second (cfs). At these peak discharges, the flowing river can exceed 1000 feet in width and be several feet deep. During large runoff events the riverbed is mobilized and the channel form can change dramatically. The magnitude and duration of the long-term temporary impacts of mining would depend upon the volume of water and sediment that is transported in this reach of the river.

Analyzing off-site alternatives within the service area is critical because aggregate is considered a low value-to-weight commodity. As a low value-to-weight commodity, transportation costs are high and therefore the practicability of the alternatives decreases with distance to the demand. For instance, transporting aggregate a distance of 30 miles will increase the price, relative to the price at the mine, by approximately \$4.50 per ton (California Department of Conservation 2006). To put this in perspective, in Southern and Central California the price of aggregate ranges from approximately \$10 per ton in Palmdale to \$16 per ton in the Central Valley, to \$22 per ton in San Diego (California Department of Conservation 2006). The rising cost of energy underscores this aspect of the analysis.

The California Geological Survey revised *Map Sheet 52* in 2006 to map and report aggregate availability in California. The report compares the projected 50-year demand for aggregate and the currently permitted aggregate resources in 31 aggregate study areas throughout the state. In the San Luis Obispo-Santa Barbara Region, the 50-year demand is 243 million tons and the permitted aggregate resources are 77 million tons, approximately 32 percent of the projected 50-year aggregate demand. The average percentage of aggregate permitted compared to the 50-year



demand in the state is also 32 percent, but varies from 8 percent in the North San Francisco Bay Region to 100 percent in the Yuba City-Marysville Region. Given these data, the current production of aggregate relative to the projected consumption for the San Luis Obispo-Santa Barbara Region is comparable to other regions in the state, but is still short of meeting the projected future demand. Therefore, limiting the analysis of off-site alternatives to southern San Luis Obispo and northern Santa Barbara Counties is appropriate because aggregate is needed in the region and the costs associated with transporting aggregate into the region from elsewhere are high (including additional adverse impacts to the environment from increased traffic and air pollution).

Active large-scale aggregate mines in the San Luis Obispo-Santa Barbara Region include GPS River Rock Products in the Cuyama River on a neighboring parcel, Troesh Ready Mix in Nipomo, Hanson Aggregates in Sisquoc, CalPortland in Garey, and Granite Construction in Buellton. Three of these mines are located within the Santa Maria River watershed: the Hanson and Union Asphalt mines are shallow extraction operations located in the Sisquoc and Santa Maria rivers, and the Troesh mine is an off-channel pit mine in the Santa Maria River floodplain. The Granite pit mine is located in the Santa Ynez River floodplain, immediately upstream of Highway 101. There are also blasting operations in the region including Hanson Aggregates in Santa Margarita and a Union Asphalt operation in Rocky Canyon. Blasting operations generally produce an inferior concrete product relative to alluvial gravel because the rounded nature of alluvial aggregate is easier to work with as wet mix and does not cause wear and damage to equipment like sharp-edged blasted and crushed rock does.

In general, the Cuyama River has two general types of aggregate material: hard rock quarry stone of Franciscan geologic era in the lower river valley with ultra basic, altered, and original sedimentary rock; and alluvial deposits in the upper river valley. Alluvial in-stream deposits are prized because the material has been naturally rounded and sorted, leaving only the strongest materials as aggregates. The lower river valley is relatively narrow and confined by steep mountain slopes, while the upper river valley is much broader with large farmed terraces. The neighboring GPS River Rock Products mine has been in operation since 1969 and has produced high quality PCC-grade aggregate. However, the proportion of PCC-grade aggregate has decreased with subsequent filling of the pit with finer-grained alluvium. During the 2004-05 rainy season, the alluvium that filled the pit was mostly sand. Sand is less valuable than PCC-grade aggregate, but is still sold to market. Meanwhile, the quarry stone deposits of the lower Cuyama River also have inclusions of serpentine rock, which is an undesirable aggregate material because asbestos is released when the rock is crushed, potentially contributing to lung disease or cancer if inhaled.

Given that the proposed project site is believed to contain a suitable quality

and quantity of PCC-grade aggregate, the applicant investigated the suitability of off-channel alternatives within the valley. Mining outside of the floodplain would avoid the direct impacts to waters of the United States, but create new impacts to the upland environment and leave unchanged those indirect impacts (e.g., noise, air quality, traffic, etc.) to the environment. At present the majority of the Cuyama River floodplain located outside of waters of the United States is in agricultural production. Samples extracted from the adjacent terrace were found to not contain an equivalent amount of marketable aggregate. Furthermore, if a pit was excavated in the adjacent terrace, then borrow material would need to be imported from elsewhere to reclaim the pit at the end of the project. The importation of borrow material would require a substantial amount of additional truck trips, likely resulting in additional adverse impacts to air quality.

Considering the limited availability of PCC-grade aggregate in sufficient quantities at reasonable off-site locations and the potential additional impacts to the environment, the Corps has determined that other project site alternatives would not represent the least environmentally damaging practicable alternative.

- b. **Other project designs on site:** As described by Mount (1995) in his book "California Rivers and Streams", in-stream mining can dramatically disrupt the river's natural processes of eroding, transporting, and depositing sediment. He notes in the chapter "Mining and the Rivers of California" that the adverse impacts to rivers from aggregate mining are "rooted in the tendency of miners to remove material at a rate that exceeds replenishment rates." He describes the sequence of events that occur after water begins flowing into an in-stream mine pit:

During moderate flows, the upstream end of the pit will behave in a manner similar to a knickpoint. The steeper gradient generates an increase in stream power and competence, leading to headward erosion as the river attempts to smooth its overall longitudinal profile. Immediately downstream of this knickpoint, the sharp decrease in slope and the increase in channel cross-sectional area of the pit reduce stream power, leading to rapid deposition of bedload (the filling of the pit envisioned by gravel operators). Downstream of the extraction pit, the flow has excessive stream power, leading to scouring of the channel downstream. Thus through headward erosion and downstream scour the river attempts to smooth the disruption that a pit forms in its profile (pages 219-220).

As described above, increased competence means that the river is capable of entraining and transporting larger diameter grains of sediment. Thus,

formation of a headcut at the knickpoint will migrate upstream until the slope of the riverbed is stable. The length of the headcut and new smoothed slope will depend primarily upon the depth of the pit, the volume of the pit, and the subsequent sequence of rainfall and runoff events. A headcut may continue migrating upstream for years and poses a threat to undermine streamside structures such as bridges (Kondolf 1997). Downstream of the mining pit, the sediment-starved water, also known as hungry water, is prone to erode the channel bed and banks as it begins to entrain and transport new sediment (Kondolf 1997).

Mining in the Cuyama River could be accomplished through several options:

*Reduced mine footprint:* The proposed mine would have an approximately 25-acre footprint in the riverbed. A reduced mine footprint alternative would limit the length, width, or both of the dimensions in order to minimize direct and indirect impacts to the environment. The proposed project site is located in one of the few undisturbed sections of the Cuyama River floodplain. The undisturbed sections of riverbed are characterized by relatively stable island terraces within the braided channel as well as densely vegetated adjacent floodplain terraces. The channel braids function to convey small to large flow events, while the terraces function as habitat for various plants and animals. These habitat functions include, but are not limited to vegetative cover, forage for wildlife, and topographic complexity.

The minimum footprint necessary to reach the proposed depth of 90 feet – with approximately 3:1 (H:V) side slopes – is 7 acres (equivalent to a pit approximately 555 feet long and 540 feet wide). Without natural in-fill, a pit of this size could be achieved in approximately one year at an extraction rate of 500,000 tons per year, or in five years at an extraction rate of 100,000 tons per year. With episodic natural in-fill (i.e., a runoff event large enough to mobilize the riverbed and transport bedload), it could take much longer to fill the pit depending upon the frequency and duration of large rainfall and runoff events. The differences in direct adverse impacts to riverbed functions (e.g., flood control, wildlife habitat) are relatively large between a 7-acre and 25-acre mine pit. A 25-acre footprint would present an adverse impact to wildlife by reducing the width of the riverbed available for use as a migratory corridor by species such as San Joaquin kit fox and blunt-nosed leopard lizard. A 25-acre footprint would also remove a larger area of the undisturbed in-stream terraces and channel braids in the riverbed.

Given the proposed location of the pit in the center of river channel, the potential indirect effects of lateral channel erosion on adjacent uplands is minimized because of the natural buffer around the proposed pit. A 7-acre pit would, by definition, impact a smaller area of the riverbed and hence have a larger buffer area around it than would a 25-acre pit. At the neighboring GPS River Rock Products project site, lateral channel erosion

during moderate to high runoff events has been small relative to up- and downstream channel erosion. Lateral channel erosion is smaller because the river alignment is relatively straight at the project site and the braided channel morphology tends to spread water across the entire active channel.

As such, the erosive energy of water flowing into a pit is generally focused in the direction of flow (i.e., in the upstream direction as a headcut or in the downstream direction as channel incision as sediments are deposited in the pit). This is unlike a meandering river which tends to have its greatest erosive energy directed at the outside edge of each meander bend.

Anecdotal accounts by neighbors suggest historic mining practices at the GPS site have “trained” the low-flow channel towards the center of the riverbed where most of the mining has occurred. Still, the effectiveness of low-flow diversion berms would be reduced by minimizing the width of flow in the riverbed.

While the direct adverse impacts to riverbed functions and lateral channel erosion would be moderately decreased at the site with a reduced footprint, the adverse impacts to waters of the United States from upstream headcutting and downstream channel incision would be greatly minimized with a reduced mine pit footprint. For a given mine pit depth, the magnitude of a potential headcut from a 7-acre pit would be less than a 25-acre pit, because the volume of the pit would be substantially smaller. The volume of a roughly square, 90-foot-deep pit with a 25-acre footprint is approximately 2,000,000 cubic yards (3,000,000 tons) compared with the volume of a 7-acre-footprint mine of 600,000 cubic yards (900,000 tons). In other words, once the river breaches the diversion berms and water starts flowing into the pit, it would take approximately 3.3 times longer to fill the 25-acre mine pit. During this additional time, a headcut would potentially migrate further upstream. If the pit does not fill, the headcut would continue its migration upstream with subsequent storm flows. Potential downstream channel incision, or downcutting, would also be larger with a 25-acre pit than a 7-acre pit because more sediment would settle in the 25-acre pit resulting in more sediment-starved water flowing downstream (i.e., hungry water with a higher capacity to cause channel incision).

These projections are only rough calculations because the volume of the pit (which can be thought of as an upside down truncated pyramid, or frustum, with a rectangular base) will change with the configuration of the footprint (i.e., a square versus a rectangular footprint). Furthermore, the volume of the pit in any particular year would be less than the 2,000,000 cubic yards of the proposed 25-acre 90-foot-deep pit because it takes time to reach that size. Even after five years, the footprint may be less than 25 acres because of episodic natural in-fill.

The applicant’s agent has proposed an alternative rectangular footprint of approximately 17 acres 800 feet wide by 950 feet long and 90 feet deep with 2:1 (H:V) slopes. This alternative attempts to minimize the direct adverse

impacts to the riverbed by reducing the footprint of the mine and moving the mine into the center of the 84-acre project site while maintaining a 500,000 ton per year extraction rate. This alternative would avoid approximately 8 acres of impact to the riverbed, corresponding to a reduction of the adverse impacts to aquatic function (e.g., flood capacity, wildlife habitat). The applicant's agents believe this alternative would ensure that any future headcutting or downstream channel incision would not extend beyond the 84-acre project site. They base their estimate on a visual assessment of the existing headcutting at the GPS site. At the GPS site, an approximately 1500-foot-long headcut developed upstream of an approximately 10-acre 50-foot-deep pit during the winter of 2007-08. Even though the proposed mine pit is much larger at the Diamond Rock site than the GPS site, the applicant's agent argues that the potential for headcutting and downstream channel incision is reduced because the mine pit would be located in the center of the channel, outside of the main flow path, which is located on the western bank. Still, at the GPS site the mine pit that caused the headcutting was located along the western bank, while the main flow path was in the center of the riverbed. This suggests that just one weak point around the mine can initiate a headcut. Currently, GPS is authorized (Corps File No. 200602068) to mine within a 14-acre footprint in the center of the river. This 14-acre footprint is slightly smaller than their historic mining operations.

The reduced mine footprint alternative would result in fewer adverse impacts to waters of the U.S., but would not reduce the other environmental impacts because the mine depth would remain at 90 feet. As a result, the Corps has determined that this project design would not represent the least environmentally damaging practicable alternative.

*Reduced mine depth:* The applicant has proposed to mine to a maximum depth of 90 feet. However, if groundwater is reached before that depth, they propose to backfill the pit with at least six feet of native material. Groundwater levels in the region are unpredictable because they fluctuate seasonally, vary with the underlying geology, and are highly dependent on the extraction rates of users (i.e., well pumping) in the valley. For example, if groundwater levels rose above the base of a 45-foot-deep pit with a surface footprint of 25 acres (approximately 13.4 acres at the base of the pit), the operator would be required to import at least 388,000 cubic yards of fill material to sufficiently cover the groundwater.

Water table depths from wells in the vicinity have shown that groundwater levels fluctuate between approximately 40 feet below ground surface (bgs) to over 100 feet bgs. These data were collected between 1982 and 2001 from wells located on the adjacent terrace, which are approximately 12 feet higher in elevation and approximately 200 feet away. The agent for GPS River Rock Products contends that historic mining at the GPS site went below 80 feet and no groundwater was reached. Meanwhile, adjacent land

owners who oppose the mines contend that a fault line occurs between the GPS site and Diamond Rock site and that the fault pools water behind it, creating a shallow water table at the Diamond Rock site. It is difficult to verify or refute this claim given the lack of groundwater depth data in the river at the proposed project site. Therefore, based strictly on well data from the adjacent terrace, it is possible that the mine could expose the water table or the unsaturated zone immediately above the water table (i.e., the capillary fringe) multiple times per year in the riverbed. Exposing subsurface water to the arid environment of the Cuyama River Valley would increase evapotranspiration and further contribute to the regional overdraft of groundwater.

One alternative would skim aggregate from the river channel using heavy equipment on bars, terraces, or other surface deposits of alluvium. Bar skimming operations are generally small-scale because of the low extraction rates (i.e., the process is usually limited by the deposition of fresh alluvium). Bar skimming avoids many of the hydrologic impacts associated with pit mining (e.g., upstream headcutting, downstream channel incision) because the depth of extraction is generally limited to the lowest existing point at that time in the riverbed (also known as the redline). By limiting the depth of extraction the river can balance the influx of sediment and water to the changing topographic conditions under typical flow conditions. Bar skimming is more common in regions with wetter climates and meandering rivers that have a consistent, annual deposition of alluvium such as cobbles on large point bars (e.g., the Russian River in coastal northern California). Conversely, the Cuyama River flows infrequently and does not have depositional point bars in the vicinity of the proposed project.

Bar skimming operations generally affect larger areas of the riverbed because they are by definition shallow. Consequently bar skimming operations have larger impacts to riparian areas and the functions and services they provide to the environment. Although the Cuyama River at the project location lacks the willow riparian corridor typical of most streams in Santa Barbara County, the riverbed has a unique topographic complexity that supports mature scalebroom scrub habitat, which is dominated by the phreatophyte *Lepidospartum squamatum*. The scalebroom scrub occurs primarily on the network of raised in-stream islands and terraces located between the active braids or along the banks. Scalebroom scrub has also adapted to the scour and deposition cycles of the river, but is found in lower densities in these locations.

In general, a bar skimming operation is not practicable because the surface alluvium in the riverbed at the proposed project site is primarily sand and lacks the PCC-grade aggregate described in the overall project purpose. Furthermore, large-scale bar skimming could result in greater direct impacts at the project site because the exposed bars (and in particular the few remaining terraces) are scarce in the region and are habitat for the

federally endangered blunt-nosed leopard lizard, San Joaquin kit fox, and Kern primrose sphinx moth.

A second alternative would be to mine a pit as proposed but to reduce the depth. Historic mining records suggest that a pit at the GPS site once reached 85 feet in depth. The depth has been allegedly limited by groundwater which can fluctuate considerably depending upon rainfall, runoff, and regional groundwater extraction. Between approximately 2006 and 2008, the GPS mine reached a depth of approximately 50 feet (with a footprint of approximately 10 acres) near the centerline of the river. During the winter of 2007-08, the diversion berms around the mine were breached and water rushed into the pit. Rainfall during the winter of 2007-08 was near average with runoff events no greater than moderate. These moderate flows did not mobilize the bed materials and little sediment entered the mine pit. Consequently, a headcut developed at the eastern upstream corner of the mine pit. The headcut was approximately 40 feet deep and approximately 400 feet wide adjacent to the mine pit, and extended more than 1500 feet upstream of the mine until it matched the natural grade of the riverbed. During the winter of 2008-09, there was below average rainfall and minimal runoff in the river. As a result, the channel erosion that occurred the previous year remained in-place and unchanged. These data represent an adverse indirect impact from in-stream mining at the project site and to the neighboring properties. The long-term effects of the channel erosion remain to be seen. Given the lack of historical river surveys and monitoring data, it is difficult to predict future river responses given the current situation. A moderate runoff event in the Cuyama River this year may result in additional headcutting and downstream channel incision, or a large runoff event may carry enough sediment to fill the eroded areas. It may be reasonably anticipated that if the GPS mine pit had been excavated to 90 feet – as is currently proposed at the Diamond Rock site – instead of the 50 feet that was excavated, the headcutting could have extended further upstream given the simple geometry of depth and slope. In other words, by mining to a reduced depth, adverse hydrologic impacts (i.e., headcutting, bank erosion, downstream channel incision) could be avoided or minimized.

The second substantial indirect effect of mining to a depth of 90 feet is exposing groundwater. The applicant does not propose to mine in such conditions. However, if the pit is excavated to 90 feet, groundwater levels could rise and inundate the pit or subsurface flows could be intercepted by the pit. Standing water in the arid climate of the Cuyama River Valley would evaporate quickly and would continue to evaporate so long as water is near the pit. In addition, even if groundwater is not directly exposed to the atmosphere, capillary action would draw water from deeper depths and evaporate. The Cuyama River Valley is currently in a state of groundwater overdraft as a consequence of the intensive agricultural production in the valley. Exposing groundwater also increases the potential to directly

contaminate the resource, and serves as an attractive nuisance to wildlife.

While a reduced mine depth reduces the potential magnitude of adverse impacts to hydrology (i.e., headcutting, downstream channel incision, and bank erosion) and groundwater, it does not avoid or minimize the direct adverse impacts to waters of the United States or the other indirect adverse impacts to the environment. As a result, the Corps has determined that this project design does not represent the least environmentally damaging practicable alternative.

*Modified layout design:* This alternative would modify the design of the pit in order to minimize adverse impacts to hydrology and stream morphology. The proposed pit design would have an overall pit wall slope of 3:1 (horizontal to vertical), comprised of internal slopes of 2:1 with an approximately 30-foot-wide bench for each 30 feet excavated into the pit. A shallower pit wall slope would minimize the drop, or fall, that water would take into the pit after it breaches the low-flow diversion berm. The steeper the drop of the water, the greater the erosive forces, thus resulting in greater potential for lateral bank erosion and upstream headcutting. The natural grade of the river in this reach is approximately 50:1.

By reducing only the upstream slope of the pit wall from 3:1 to 5:1 or 10:1, the potential for headcutting is still reduced. Water flowing down this shallower slope would be less likely to cut into the slope and travel upstream. Other factors influencing upstream and lateral pit erosion include the volume of runoff, the duration of the runoff event, the amount of bedload of the runoff, the type of bedload, and the volume of the pit. The factors are all highly variable and difficult to predict.

Reducing the upstream slope of the mine pit would also minimize the overall volume of the mine for a given footprint. A reduced volume would minimize the adverse hydrologic impacts to waters of the United States but also reduce the amount of material the permittee could extract for a given footprint and depth. With side slopes of 3:1, a 45-foot-deep, roughly square pit with a 25-acre footprint would have a volume of 1,357,000 cubic yards. With side slopes of 5:1, the same pit would have a volume of 598,500 cubic yards, approximately 23 percent smaller. With side slopes of 10:1, a pit with a footprint of 15 acres could not reach a depth of 45 feet because the wall would intercept before that depth. As such, a mine pit with 10:1 side slopes is not practicable.

Given that headcutting has in the past (and will most likely in the future) develop around the upstream side of the pit, the pit wall slope design alternative could be modified to apply only to that slope. By having a 5:1 slope on the upstream side of the pit with 3:1 slopes on the other sides the problem with headcutting during moderate runoff events could be minimized while still maximizing the volume to footprint ratio



(approximately a 6 percent reduction in volume if only the upstream wall was modified).

Another layout design modification alternative would be to configure the berms (and the associated mine pit) with a narrow and linear orientation relative to the direction of flow. A long and narrow diversion berm would intercept low and moderate flows less often. Moderate runoff events would be more likely to flow around the mine pit and berms given the shallower angle of approach (i.e., the flows could be directed around the pit in much the same way raised terraces in the riverbed near the project site are long and narrow). As a result, the berms would be breached infrequently and the potential for headcutting and lateral bank erosion during moderate runoff events would be minimized. Still, large runoff events would breach the berms and flow into the pit. Large runoff events are anticipated to carry a substantial amount of bedload and therefore would cause less erosion because sediment would be deposited in the pit. It is anticipated that large runoff events would be usually correlated with each El Nino event, which generally occur every four to seven years.

While a reduced slope of the upstream pit wall and long narrow configuration would minimize some of the adverse hydrologic impacts of the proposed project, it does not avoid or minimize the direct impacts to waters of the United States or adverse indirect impacts to the environment for excessive bed and bank erosion. As a result, the Corps has determined that this project design does not represent the least environmentally damaging practicable alternative.

*Reduced mine footprint, reduced mine depth, and modified layout design:* This alternative combines features of the smaller mine footprint, reduced mine depth, and modified pit design to further avoid and minimize adverse impacts to waters of the United States.

As mentioned above, the neighboring GPS mine is authorized to mine within a 14-acre footprint in the center of the river. This 14-acre footprint is roughly the size of their historic mining operations. This footprint minimizes the direct adverse impacts to waters of the United States, while still being practicable mining operation. By reducing the mine footprint of the proposed Diamond Rock Mine the potential for intercepting low and moderate flows in the river is reduced. Placing the mine pit in the center of the 84-acre riverbed parcel would minimize the potential for permanent adverse impacts to the fluvial geomorphological characteristics of the river (i.e., irreversible excessive bed and bank erosion). Similarly, by reducing the mine footprint the direct adverse impacts (e.g., habitat destruction, harassment) to federally listed threatened and endangered species is reduced.

As stated above, the reduced mine depth minimizes direct adverse impacts

to groundwater resources. By limiting the depth of the mine pit, potential direct and indirect adverse hydrologic impacts such as upstream headcutting and downstream channel incision would be minimized. The overall volume of the mine pit will be a substantial factor influencing the magnitude of potential adverse hydrologic impacts. Limiting the mine depth would also minimize potential adverse impacts to groundwater (i.e., increased evaporative losses, contamination from pollutants, creation of an attractive nuisance to wildlife). As stated above, a modified pit design would minimize adverse indirect hydrologic impacts to waters of the United States. By reducing the slope of the upstream pit wall to 5:1 (H:V), the erosive potential of water that breaches the diversion berms and flows into the pit would be minimized. By configuring the diversion berms to maximize the cross-sectional width of the channel (i.e., the wetted perimeter), the pits would be breached less often during low to moderate runoff events thus minimizing the indirect adverse hydrologic impacts to waters of the United States.

Specifically, by reducing the mine pit depth to 45 feet from 90 feet, the potential for upstream headcutting and downstream channel incision is reduced substantially. A mine pit depth of 45 feet would likely not intercept groundwater based on historic well data in the vicinity and observed comparisons between the current 50-foot-deep pit near the site and the approximately 40-foot-deep headcut (i.e., the pit has retained water for an approximately two years but the headcut area is dry). By reducing the pit footprint from 25 acres to 14 acres (the neighboring GPS mine was permitted under a separate authorization, SPL-2006-2068-MWV, at a maximum footprint of 14 acres and depth of 45 feet) direct adverse impacts to the riverbed would be avoided. By configuring the pit to be narrower it would intercept fewer small to moderate runoff events. Therefore adverse impacts to hydrology from moderate runoff events can be minimized. A pit with a 14-acre footprint would have dimensions of approximately 1200 feet long by 510 feet wide by 45 feet deep (including a 5:1 (H:V) upstream slope) and would be approximately 650,000 cubic yards (approximately 1,000,000 tons, or 200,000 tons per year over the life of the permit).

While this alternative results in a smaller annual extraction volume than proposed, it is considered to be practicable because it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose. Historic annual extraction volumes at the GPS site have averaged approximately 160,000 tons per year since 1988. Over the last five years, there has been a gradual increase in extraction averaging approximately 385,500 tons per year. Therefore, the LEDPA is within the range of previous mining operations. Furthermore, the annual equivalent extraction rate is closer to the roughly estimated annual sediment deposition rate for this reach of the Cuyama River. Episodic in-filling of the pit would potentially allow for increased annual extraction rate. Historically, mine pit in-fill material has

been higher in sand content and therefore less valuable than gravel but still marketable. If the in-fill material was predominately clay and silt, it may be uneconomical to mine the in-fill material. It is anticipated that the applicant will apply for an extension to mine in or adjacent to the proposed footprint when the permit expires in 5 years. At that time the least environmentally damaging practicable alternative may be different based on detailed channel geometry data collected during the next 5 years. For instance, annual topographic monitoring data and seasonal groundwater depth data in the riverbed may demonstrate that the Cuyama River can, or cannot, support a larger/deeper mine pit without additional adverse impacts to waters of the United States.

Based on available information, this modified pit configuration with a depth of 45 feet represents the least environmentally damaging practicable alternative because it avoids and minimizes direct and indirect adverse impacts to waters of the United States to the maximum extent practicable.

**E. Anticipated changes to the physical/chemical characteristics of the aquatic environment:**

- (X) **substrate:** The proposed mining project would cause long-term temporary adverse impacts to the river's substrate. As proposed, the mining operation would remove substrate from the river as well as redeposit substrate to form berms, roads, and stockpiles. The permit being considered under this analysis would be for a five-year period. The substrate removed during mining would be replenished by deliveries of sediment from upstream over time. These sediments would be similar in composition to the ones that would be removed during mining, but likely a smaller grain size. It is also anticipated that the mine pit would be episodically filled during large storm events. Based on the available information, the proposed mining project would result in direct adverse impacts to channel substrate. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to channel substrate.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of adverse impacts to substrate during mining, but would not eliminate direct adverse impacts to channel substrate.

- (X) **currents, circulation, or drainage patterns:** The proposed mine would have long-term temporary adverse impacts to drainage patterns in the river and could have permanent adverse impacts to drainage patterns. The Cuyama River has an ephemeral flow regime and braided channel morphology. Currently, the river channel is approximately 2,500 feet wide at the project site. Drainage patterns within the channel are highly variable and depend upon the supply of sediment and water. The proposed diversion berms around the mine would direct low flows to the western and eastern banks of the channel around

the pit. The berms may cause a slight backwater effect as the cross-sectional diameter of the river is reduced. The backwater effect would be small given that the four-foot-tall berms are only capable of diverting small runoff events before being washed away. In addition, the predominant flow path is along the western bank. Once water begins flowing into the pit, there is the potential for a headcut to develop and travel upstream. Depending upon the amount of aggregate removed (i.e., the volume of the pit) and the subsequent runoff events, the headcut could convert the braided channel into a single-thread channel with deep cut banks. This effect could last for decades depending upon the magnitude of the headcutting. The potential for headcutting for a single mine pit any given year is relatively low based on past observations and the large quantity of bedload transported by the river. Recently, the GPS mine pit (approximately 300 acre-feet in size) filled completely after the first few large storm events of the 2004-2005 water year. The filling of the pit was not accompanied by any observable headcutting, but a topographic survey was conducted. Yet, during the 2007-2008 water year, a 1500-foot-long headcut developed upstream of a pit that was approximately 50 feet deep and covered approximately 10 acres. The pit was located on the western bank and the river flows intercepted the pit at its southwest corner. This headcut substantially altered the drainage patterns of the river, forcing water into a single channel through the middle of the river. The pit also filled with water, preventing some channel flow from proceeding downstream.

Based on the available information, the proposed mining project would result in direct adverse impacts to drainage patterns. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to drainage patterns.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of adverse impacts to drainage patterns during mining, but would not eliminate direct adverse impacts to waters of the United States.

- (X) **suspended particulates; turbidity:** The mining operation would not be conducted in standing or flowing water, and should not directly contribute to in-stream turbidity. Following rainfall events, heavy equipment may drive across puddles or similar small concentration of surface water in the work area, but these adverse impacts would be localized and temporary. However, during high flows in the river the earthen berms around the mine pit would be washed away and water would also flow into the pit. Erosion of the berms would contribute suspended particulates to the flowing river, but the Cuyama River is already considered a high sediment-load river (i.e., high suspended-load during low flows, and high bed-load during high flows), so the contribution from the berms would be minimal.
- (X) **water quality (temperature, salinity patterns and other parameters):** The

mining operation would have a small adverse impact on water quality. The mining operation includes using heavy equipment in the river channel, and although this equipment is not intended to discharge oil or lubricants, operation of the equipment does result in oil and lubricants periodically dripping into the channel. The quantity of oil and lubricants entering the channel would likely be small because the operators would be required have the equipment in good operating condition, and conduct all refueling and maintenance in uplands. The temperature of the river water may be adversely affected after it has flowed into and then ponded in an excavated mine pit. Depending upon the quantity of water and duration of ponding, the water may be heated above background temperature as it ponds in the sun. Ponding is a function of the infiltration rate in the pit. The infiltration rate will depend upon the characteristics of the sediment deposited into the pit. If the sediments were fined grain-sized then they will slowly settle at the bottom of the pit and effectively clog the pore space of the river bed, further slowing the infiltration of water into the ground. Large grain-sized materials will have a smaller clogging effect. In addition, water ponded in the pit would serve as an attractive nuisance to wildlife. Animals entering the pit to drink could potentially contaminate the water by depositing animal waste.

Based on the available information, the proposed mining project would result in direct adverse impacts to water quality. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to water quality.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of adverse impacts to water quality during mining, but would not eliminate direct adverse impacts to waters of the United States.

- (X) **flood control functions:** The proposed project would affect the flood control functions of the Cuyama River at the project site in three ways. First, the mine pit would increase the capacity of the river to accommodate flood flows. This increase would be relatively short-lived because the mine pit would be filled during large runoff events. Second, the construction of flood control berms around the mine pit would alter the natural flooding regime. The berms would direct water to the eastern and western banks during low flows when erosive forces are minimal. During moderate and large runoff events, the berms would be washed away. Third, the proposed project could adversely impact flood control functions by altering the natural form and function of the river. For example, recent observations have shown that when a moderate runoff event washes away the diversion berm and enters an approximately 50-foot-deep 10-acre pit, it can form a deep headcut extending approximately 1,500 feet upstream. This deeper and narrower channel form is substantially different than the natural braided channel morphology and could ultimately disconnect the floodplain from the active channel. A disconnected floodplain would inhibit overbank flooding and potentially lower the groundwater table. In this

arid environment this may result in a long-term die-back of riparian and transitional vegetation. The severity of the adverse impacts to flood control functions would depend upon the delivery of water and sediment to this reach of the channel.

Based on the available information, the proposed mining project would result in direct adverse impacts to flood control functions. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to flood control functions.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of adverse impacts to flood control functions during mining, but would not eliminate direct adverse impacts to waters of the United States.

( ) **storm, wave and erosion buffers:** Not applicable.

(X) **erosion and accretion patterns:** The proposed project would excavate approximately 500,000 tons per year of native substrate from the riverbed, substantially altering the river's natural balance of water and sediments in the immediate project vicinity. Consequently, during small runoff events, water is diverted around the pit and the size of the pit grows and the sediment deficit for this reach of the river increases. During moderate to large runoff events the diversion berms would be washed away and water and sediment would enter the pit. As water flows into the pit the upstream pit wall will erode due to an increase in stream energy, sediment will be deposited in the pit as the water pools, and sediment-starved hungry water will flow downstream. Large runoff events will generally transport enough sediment to fill in the eroded areas, but moderate events that do not mobilize the riverbed will cause both upstream headcutting and downstream channel incision. Given the relatively large scale of the proposed mine pit, any erosion patterns established in the riverbed will influence future erosion and accretion events. The limited number of historic observations suggests that small erosion patterns can be eliminated by large runoff events, but there is no evidence that large runoff events will eliminate a large erosion pattern in the Cuyama River.

Based on the available information, the proposed mining project would result in direct adverse impacts to erosion and accretion patterns. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to erosion and accretion patterns.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in substantially reduced adverse impacts to erosion and accretion patterns during mining, but would not eliminate direct or indirect adverse impacts to

waters of the United States.

- (X) **aquifer recharge:** The Cuyama River groundwater basin is currently in a state of overdraft. Over the last 50 years irrigated agriculture in the valley has steadily increased, and groundwater levels have dropped. The drop in groundwater levels highlights the importance of aquifer recharge dynamics at the project site. In general, when river flows breach the earthen berms around the mine pit, water that would otherwise flow downstream collects in the pit and infiltrates into the ground. The longer it takes for the water to infiltrate into the ground, the greater the amount of water that will evaporate. This effect is enhanced when the river breaches the mining berms and additional suspended sediments are deposited at the bottom of the mine pit.

Aquifer recharge may also be reduced as the mine pit gets larger in area and deeper. A 90-foot-deep pit would be at, near, or below the groundwater level depending upon the time and location of the pit. Historic data from irrigation wells in the vicinity has shown that groundwater levels fluctuate between approximately 40 feet below ground surface (bgs) to 100 feet bgs. The groundwater level depends upon the underlying geology, the season, and the quantity of precipitation the preceding years. At one point in 2004, the GPS mine pit was approximately 85 feet deep and had not reached groundwater. Even if a pit does not expose groundwater, it may expose the unsaturated capillary fringe located immediately above the saturated groundwater. Exposing the capillary fringe to the arid climate of the region would increase the rate of evaporation from the soil and further diminish aquifer recharge. Similarly, a deep mine pit may intercept a perched lens of groundwater or a zone of shallow subsurface flow. Exposing either would further diminish aquifer recharge by increasing evaporation of subsurface water.

Based on the available information, the proposed mining project would result in both direct beneficial and adverse impacts to aquifer recharge. Mitigation measures such as implementation of best management practices would reduce, but not eliminate the temporary adverse impacts to aquifer recharge.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of adverse impacts to aquifer recharge during mining, but would not eliminate direct adverse impacts to waters of the United States.

- (X) **baseflow:** The proposed mine pit would be located in the center of the river and susceptible to intercepting baseflow. The Cuyama River is an ephemeral waterway and baseflow is very small during the wet season and absent in the dry season. The mine pit has the potential to alter the baseflow dynamics by increasing evaporative losses of groundwater that would sustain baseflow, but due to minimal amount of recessional flow typical of the project area, the proposed project would only result in long-term minor adverse impacts to

baseflow.

- ( ) **mixing zone, in light of the depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification; discharge vessel speed and direction; rate of discharge; dredged material characteristics; number of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing:**  
Not applicable.

F. **Anticipated changes to the biological characteristics of the aquatic environment:**

- (X) **special aquatic sites (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45):**  
No special aquatic sites are located at the project site.
- (X) **habitat for fish and other aquatic organisms:** The Cuyama River has an ephemeral flow regime and high suspended sediment load, making it poor habitat for fish and other aquatic organisms. In addition, the project site is located upstream of Twitchell Reservoir, thus preventing anadromous steelhead (*Oncorhynchus mykiss*) from reaching the site. As a result, the proposed project would have long-term minor adverse impacts to fish and other aquatic organisms in the project area.
- (X) **wildlife habitat (breeding, cover, food, travel, general):** This reach of the Cuyama River is used by a variety of wildlife as both habitat for resident species and as a migratory corridor. The dominate plant community in the riverbed and adjacent terraces is scalebroom scrub characterized by *Lepidospartum squamatum*. Islands (i.e., raised terraces containing mature scalebroom scrub) located in the river between the various braided flow paths serve as more valuable habitat for wildlife than the generally barren flow paths. These islands are some of the last remaining native habitat in the valley because the floodplain terraces have, for the most part, been converted to agriculture. Small mammals, reptiles, insects, and birds use these islands for breeding, foraging, and as a shady refuge during the intense heat of the summer. The proposed project site has not been mined previously and contains a diverse habitat for wildlife.

Based on the available information, the proposed mining project would result in direct and indirect adverse impacts to wildlife habitat. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to wildlife habitat. The applicant has proposed to enhance a 1400-foot-long section of the existing eastern riverbank by removing the junked automobiles and exotic Tamarix trees, and by planting native local riparian plant species. After mining ceases, the pit would slowly fill and the wildlife habitat would naturally re-establish on the site. The rate of re-establishment will depend upon the rate of sedimentation



and influx of native seeds.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of direct and indirect adverse impacts to wildlife habitat during mining, but would not eliminate direct adverse impacts to species that utilize waters of the United States.

**(X) endangered or threatened species:**

- 1) Listed endangered and/or threatened species or designated critical habitat present on site: two blunt-nosed leopard lizards (*Gambelia sila*) were found adjacent to the site during June 2003 surveys; San Joaquin kit fox (*Vulpes macrotis mutica*) are known to occur in the vicinity of the project and may use the project area as a movement corridor, for foraging, or to den; Kern primrose sphinx moth (*Euproserpinus euterpe*) are known to occur in the Carrizo Plain and in tributaries to the Cuyama River near the project site, but field surveys in early 2006 were negative and the site was determined to lack an adequate concentration of the host plant, *Camissonia campestris*, but the site may act as a migratory corridor for the moth in certain years when the host plant colonizes the site; California jewel-flower (*Caulanthus californicus*), Hoover's eriastrum (*Eriastrum hooveri*), giant kangaroo rat (*Dipodomys ingens*) and San Joaquin woolly threads (*Monolopia congonii*) are known to occur in the vicinity of the project but were not observed on site nor are they expected to occur due to the lack of suitable habitat.
- 2) Proposed listed endangered and/or threatened species or proposed critical habitat present on site: None.
- 3) Compliance with ESA - Formal/Informal consultation or conference: On 8 December 2006, the U.S. Fish and Wildlife Service issued a biological opinion (BO) for blunt-nosed leopard lizard and San Joaquin kit fox concluding the proposed project would not jeopardize the lizard or fox. The BO included a concurrence with the Corps' determination that the project may affect but is not likely to adversely affect the Kern primrose sphinx moth.

- (X) biological availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities or other sources:** All of the fill placed in waters of the United States as part of the project design (e.g., berms, roads, stockpiles, etc.) would be native riverbed material. The applicant has not proposed to return any of the low-value fines

(i.e., scalped fines) back into the pit. Therefore, the potential of introducing new biological contaminants is very low. If any contaminants were present in the native riverbed material, then they would be returned to virtually the same place they were found. However, the presence of a deep pit in a remote location raises the possibility for unauthorized dumping by trespassers. Historically, the Cuyama River has been subject to the dumping of wide range of trash including farm equipment, cars, and household appliances (trash cleanup in the valley was part of earlier settlement between EPA and the GPS mine, and has been proposed by the applicant on this site). While unauthorized dumping is unlikely because the mining operators would working everyday in the pit, these types of discharges would have the potential to pollute groundwater. The contamination potential increases with the depth of the mine pit and the duration of the mining operation.

The Cuyama River drainage basin is relatively undeveloped except for farms (primarily row crops and tree nuts) located in the floodplain adjacent to the river. Runoff from these farms would likely contain conventional pesticides and fertilizers. Most of the rest of the drainage basin is protected as part of the Los Padres National Forest. A limited amount of cattle grazing and mining is permitted in the forest.

**G. Anticipated changes to the human use characteristics of the aquatic environment:**

- (X) **existing and potential water supplies; water conservation:** Excavation and processing of the mined aggregate would require water from the existing on-site well system. The mine and processing plant would use approximately 350,000 gallons of water per day at an aggregate extraction rate of 500,000 tons per year. Approximately 75 percent of this water would be recycled and reused. The other 25 percent (approximately 90,000 gallons per day) would evaporate into the air or percolate into the ground. Currently, the Cuyama River groundwater basin is in an overdraft condition of approximately 25,000 acre-feet per year. This overdraft is a consequence of the arid environment and intensive agricultural production (e.g., carrots, pistachios, alfalfa, etc.).

Groundwater levels in the vicinity of the project site vary with the season and the year, and depend also upon the underlying geology. In general, groundwater levels are the shallowest in the spring after the winter rains infiltrate into the ground. Groundwater levels have also been found to rise dramatically following a wet winter. Groundwater levels drop during the summer when well water is pumped to irrigate crops in the valley. Historic well data from the adjacent terrace show that on 23 May 1983, the Triangle E Farms' Well #3, located north of Deer Park Creek at the confluence with the Cuyama River, had standing water at 40 feet below ground surface (bgs). The terrace is approximately 10 feet higher in elevation than the bed of the Cuyama River. If this ground water level extended west across the river bed along the same plane, standing water would be approximately 30 feet bgs where mining is proposed. Similarly, GPS' Well #1, located near the existing processing

facility, had standing water at 53 feet bgs on 11 May 2001. While Well #2, located approximately 100 feet south, had standing water at 66 feet bgs on the same day. Conversely, the former GPS mine pit reached a depth of approximately 85 feet bgs in 2004 without exposing standing water.

In general, the mine pit would capture runoff and sediment that would otherwise proceed downstream and thus augment the volume of water that will infiltrate in the project area. The rate of infiltration would depend upon the amount of fine grain sediments that settle at the bottom of the pit after the pit fills. The greater the amount of fine grain sediments, the slower the infiltration rate and the greater the amount of evaporation. Observations of the former pits at the GPS site suggest that water could pond in the pit for hours (i.e., when the whole pit fills concurrently with sediment) to months (i.e., when the pit fills with water and only fine grain sediments). Mining below the level of groundwater would increase evaporative losses to the atmosphere, especially during the dry season. The rate of evaporation in the arid and hot Cuyama River Valley is very high. The applicant has proposed to mitigate this effect by not mining below the existing level of groundwater. However, given the spatial, seasonal, and annual fluctuations in the level of groundwater it is a difficult variable to predict. Furthermore, the applicant does not have to expose standing water to adversely affect groundwater. By intercepting the unsaturated capillary fringe located immediately above the groundwater, the applicant could accelerate evaporative losses of groundwater, resulting in long-term adverse impacts to groundwater.

- ( ) **recreational or commercial fisheries:** Not applicable.
- ( ) **other water related recreation:** Not applicable.
- (X) **aesthetics of the aquatic ecosystem:** The Cuyama River Valley is valued as a rural area rich in natural beauty. Located near the project site are the Los Padres National Forest (including three areas designated as wilderness) and the Carrizo Plain National Monument. The proposed mine would create an unnatural feature in the river floodplain, but the mine pit would be located generally below ground and mostly hidden from the public, except for the property owners located on the adjacent bluff. The processing facility and aggregate stockpiles would be visible to the public from the State Route 33. The applicant has proposed to minimize the visual impacts by planting native vegetation between State Route 33 and the processing facility. Given the existing agricultural production in this rural valley, the presence of mining equipment, such as big rig-type trucks, would not be completely out of context. After mining has ceased, it would likely take years for the pit to fill with native sediments. It would probably take many more years for the riparian vegetation to colonize the riverbed and scalebroom habitat to develop on terraces.

Based on the available information, the proposed mining project would result in direct and indirect adverse impacts to the aesthetics of aquatic ecosystem.

Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to aesthetics.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in reduced adverse impacts to the rivers form and process and thus the aesthetics during mining, but would not eliminate direct adverse impacts to waters of the United States.

- (X) **parks, national and historic monuments, national seashores, wild and scenic rivers, wilderness areas, research sites, etc.:** The Los Padres National Forest (LPNF) is located several miles to the south, east, and west of the project site. Within the LPNF are the Matilija, Chumash, and Dick Smith wilderness areas. The California State Route 33, which is adjacent to the project, is a California State Scenic Highway and a National Forest Scenic Byway (in the LPNF stretch). The proposed project would have no direct adverse impacts on the LPNF because the river flows north, away from the LPNF boundaries. The Carrizo Plain National Monument is located in an adjacent valley north of the Cuyama River and would not be directly affected by the proposed project.
- ( ) **national natural landmarks program:** Not applicable.
- (X) **traffic/transportation patterns:** The proposed project is located on State Route 33, approximately 6 miles south of State Route 166. Both roads are two-lane undivided highways. The applicant has proposed to construct a left-hand turn lane for northbound traffic on State Route 33. The proposed mine processing facility would be available for truck loading and hauling 24 hours per day. Trucks transporting aggregate material from the proposed project would travel north and south on State Route 33. At the proposed extraction rate of 500,000 tons per year the mine would add approximately 118 daily trips to the local roads. The applicant estimates that 50 percent of the traffic would travel to the City of Santa Maria, 20 percent to Kern County, 20 percent to Ventura County, 5 percent to projects located within 5 miles of the project site (e.g., road repairs), and 5 percent to the nearby communities of Cuyama and Taft. The largest increase in truck trips would occur near the community of Ventucopa, which would have an increase of approximately 4 percent in average daily traffic relative to a 2004 study. The relative percentage increase in average daily traffic for Ventucopa, Cuyama, north of Ojai, and south of Ojai would be 4, 1, 1, and less than 1 respectively.

Based on the available information, the proposed mining project would result in direct minor adverse impacts to the traffic patterns. Mitigation measures, such as prohibiting travel during peak travel periods, would reduce but not eliminate these temporary adverse impacts to traffic patterns.

With the proposed changes to the configuration of the proposed mine pit, corresponding to a reduced extraction rate, the modified project design would

result in reduced adverse impacts to traffic patterns by reducing the number of truck trips.

- (X) **energy consumption or generation:** The proposed processing facility would be powered by electricity that is already provided on site. The increase in demand for electricity would not require development of additional energy supplies. The mining and hauling of the aggregate would be conducted by diesel-powered trucks. The proposed project should have a small net reduction in energy consumption for the region because the mine would provide aggregate to local communities instead of having the aggregate imported from further away. Based on the above information and the no federal action alternative, the proposed permit action would result in a long-term temporary minor benefit to energy consumption and generation.
- ( ) **navigation:** Not applicable.
- (X) **safety:** Excavating a mine pit in an active river channel is inherently dangerous. The mine would be built according to federal, state, and local regulations for mine safety. The Mining Safety and Health Administration requires that safety berms are constructed around the perimeter of any pit that is deeper than the mid-axle point of the smallest vehicle used in the mine. In addition, the riverbed materials are unconsolidated sand and gravel and need to be sloped appropriately to prevent failure. An analysis of mine slope stability for the applicant found that mining should not occur below the level of groundwater to prevent slope failure (Hilltop Geotechnical, Inc., 31 August 2005).

As with any mining operation that uses heavy equipment, there is also the potential for an accident that could result in construction-related injuries. The aggregate extracted would be transported using haul trucks that would operate on public roads according to state regulations. The increase in truck trips would result in an increase in the potential for a vehicle accident. Even under the no federal action alternative, aggregate mined from the river would also be transported from the site using haul trucks.

Severe erosion of the eastern bank would threaten an existing 24-inch-diameter natural gas pipeline identified on the Cuyama Peak USGS topographic map. If the pipeline was exposed or undermined, it would pose a substantial risk to the neighboring community of Ventucopa and people travelling along State Route 33. Given that the pipeline is buried behind the existing bank, it is unlikely the pipeline would become exposed but it highlights the need for monitoring lateral bank erosion.

Based on the above information and the no federal action alternative, the proposed permit action would result in long-term temporary adverse impacts to safety. With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would

result in reduced adverse impacts to traffic patterns.

- (X) **air quality:** The mining operation would emit combustion pollutants and particulate matter into the local air basin. The discharge of fill material into waters of the United States would require the use of heavy earth-moving equipment. All equipment would be operated in accordance with applicable Federal, state, and local laws and regulations. Approximately 15 diesel-powered vehicles – including front-end loaders, scrapers, dozers, excavators, haul truck, and water trucks – would be necessary to construct and operate the mine. Diesel-powered heavy equipment emits compounds that can negatively affect air quality, most notably PM<sub>10</sub>, NO<sub>x</sub>, CO<sub>2</sub> and CO. The County's EIR identified that daily operation of the heavy earth-moving equipment for the proposed project would produce 122.1 pounds of these contaminants per day. This exceeds the County's Air Pollution Control District threshold of 55 pounds per day. However, this value (equivalent to approximately 23 tons per year) is less than the Federal de minimis level of 100 tons per year in maintenance areas and 50 tons per year in non-attainment areas (i.e., it is below the level that would require a Conformity Determination and therefore below the level of significance). Furthermore, with the proposed changes to the configuration of the proposed mine, the volume of material extracted would be approximately half of what is proposed and hence the emission from heavy equipment would also be cut in half.

Emissions from the discharge of fill material into waters of the United States would also produce fugitive dust emissions. Dust would be created during excavation, stockpiling of sediments in the river, and driving into the mine on the dirt access road. These activities would adversely affect air quality. However, the impacts would be small because of the limited number of vehicles and distance to sensitive receptors in the remote rural location. In addition, the impacts would be temporary in nature, occurring during business hours, and comprise only a very small fraction of county-wide emissions. To mitigate dust impacts, the applicant would wet the road surfaces in the mine and on stockpiles in the processing area to minimize the generation of dust. Covered haul trucks would be used to transport the mined aggregates from the mine to various locations in the region. Transportation of the mined materials would not involve a discharge of fill material into water of United States and is beyond the Corps scope of analysis.

Based on the above information and the no federal action alternative, the proposed permit action would result in long-term adverse impacts to air quality. With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in reduced adverse impacts to air quality.

- (X) **noise:** Mining activities would generate loud noises through the operation of heavy equipment during hauling, excavation, and processing of the aggregate. Given the rural setting and large land parcels, project noises would be heard by

a limited number of people who live and work adjacent to the river. The applicant's agent estimated that closest residence is approximately 1500 feet south of the processing facility. It is estimated that the ambient noise at the residence would be less than 65 dBA. The noise impacts from mining are partially mitigated by the fact the mine is below ground and would represent a long-term minor impact when compared to baseline conditions. The applicant would also construct a sound barrier at the processing area to further reduce the level of noise for residences located near State Route 33.

- (X) **historic properties:** A record search of the California Historic Resources Information Service found no known properties within the project area. Two field surveys found no cultural resources on site. Historic properties are not anticipated to occur on site because the project is located within an active alluvial floodplain and farm field.
- ( ) **land use classification:** Not applicable.
- (X) **economics:** The proposed project would generate income for the applicant. The mine would create several jobs for the region, resulting in minor economic benefits to the local economy.
- (X) **prime and unique farmland (7 CFR Part 658):** The proposed project site is located within the riverbed and the soil is classified as riverwash (Rs). The processing facility is located on land that is currently farmed and is classified as Metz Loamy Sand (MnC2). Neither soil is classified as prime or unique farmland. The processing facility would be returned to farming after the mining is complete.
- (X) **food and fiber production:** The proposed processing facility would be located on a 14-acre parcel that is currently farmed. Prior to constructing the processing facility, the applicant would stockpile the topsoil and use it to plant visual screening berms around the facility. After mining ceases, the top soil would be returned to the field and the land would be used again to grow crops.
- (X) **general water quality:** The mining operation would have adverse impacts on water quality. The mining operation includes using heavy equipment in the river channel, and although this equipment is not intended to discharge oil or lubricants, operation of the equipment does result in oil and lubricants periodically dripping into the channel. The quantity of oil and lubricants entering the channel would likely be very small because the operators would be required have the equipment in good operating condition, and conduct all refueling and maintenance in uplands. The temperature of the river water may be adversely affected after it has flowed into and then ponded in an excavated mine pit. Depending upon the quantity of water and duration of ponding, the water may be heated above background temperature by the sun. Ponding is a function of the infiltration rate. The infiltration rate will depend upon the characteristics of the sediment deposited into the pit. Fine-grained sediments

would slowly settle at the bottom of the pit and effectively clog the pore space of the river bed, hence slowing the infiltration of water into the ground. Large-grained materials will have a smaller clogging effect. In addition, water ponded in the pit would serve as an attractive nuisance to wildlife. Animals entering the pit to drink water could potentially contaminate the water by depositing animal waste.

Based on the available information, the proposed mining project would result in direct and indirect adverse impacts to water quality. Mitigation measures such as implementation of best management practices for mining vehicles would reduce, but not eliminate these temporary adverse impacts to water quality.

With the proposed changes to the configuration of the proposed mine pit, the direct and indirect adverse impacts to water quality would be reduced because the number of vehicle trips per year would be reduced and the pit would be above the level of groundwater.

(X) **mineral needs:** The proposed project would provide PCC-grade aggregate to markets in Santa Barbara, San Luis Obispo, Ventura, and Kern Counties. PCC-grade aggregate is valued for its strength and durability as a building material, and is used in projects such as bridges and building foundations. As a result, the proposed project would provide important benefits by contributing to the mineral needs in the project vicinity.

(X) **consideration of private property:** The proposed project would be located on private property. The project has the potential to adversely impact private property located adjacent to the mine site. The downstream land owner also operates an in-stream aggregate mine. The proposed project could potentially adversely affect the downstream land owner's property value if the project causes severe channel incision or captures more aggregate than is delivered downstream. The magnitude of any downstream channel incision is difficult to predict, but would depend upon the depth and volume of the mine pit, the magnitude of subsequent runoff events, and the volume of sediment being transported by the river. It is also difficult to predict the relative volume of sediment that would be captured by the upstream pit any one year. Historically, infrequent but large runoff events in the river have transported large volumes of sediment. Over the last several years, upstream headcuts and downstream channel incisions have developed at the GPS pit and eroded away alluvium located on the adjacent property. A third mine has been proposed downstream of the proposed project, though no application has been received by the Corps. The proposed project could potentially reduce the volume of sediment that is deposited on both of the downstream properties. This could potentially cause channel incision and the loss of aggregate of the property.

The proposed project also has the potential to impact private property located along the river. These impacts include lateral bank erosion resulting from



either the water diversion berms or channel downcutting and subsequent bank sloughing. Based on anecdotal evidence from the downstream GPS mine, these impacts appear to be unlikely because of the high sediment load of the Cuyama River.

Several property owners in the vicinity of the project have voiced opposition to the proposed project during and since the Corps' Public Notice. They are concerned that the proposed mine and other future mines would adversely affect the value of their property due to excessive erosion within the floodplain, reduced groundwater levels, additional traffic, and excessive dust.

Based on the available information, the proposed mining project would result in direct and indirect adverse impacts to private property. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to aesthetics.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth of 45 feet, the modified project design would result in further reduced direct and indirect adverse impacts to private property during mining, but would not eliminate adverse impacts to waters of the United States.

( ) **other:** Not applicable.

- H. **Other anticipated changes to non-jurisdictional areas that have been determined to be within the Corps' NEPA scope of analysis:** The proposed upland processing facility is within the Corps' NEPA scope of analysis. The processing facility would separate the unmarketable fine grain material from the marketable PCC-grade aggregate using a clean water washing process and an organic polymer flocculent such as Nalclear. The wash water would be held in siltation ponds until the fine grain sediments fall from suspension, and the water would then be recycled. The marketable material would be stockpiled at the processing facility and sold. The less valuable fine grain material, estimated at approximately 30% of the mined material, would be sold as a soil amendment. The less valuable material is generally fine sand and silt. Clay is separated from the wash water in settling ponds and is sold as a soil amendment or with the aggregate. The stockpiling of mined material in uplands, especially fine grained material, would generate fugitive dust due to the Cuyama River Valley's hot dry winds. Water would be sprayed on the stockpiles to suppress dust. The processing facility would also generate noise during its operation and require artificial lighting during low-light conditions. The applicant has proposed to plant native trees and shrubs around the processing facility to serve as a visual barrier to traffic travelling on State Route 33. Lighting would be shielded to directly illuminate the work areas.
- I. **Summary of indirect and cumulative effects from the proposed permit action:** The proposed project design has the potential to cause substantial adverse indirect and cumulative effects in the river's form and function. These indirect and

cumulative adverse impacts may transition from long-term temporary impacts to permanent features of the river. Based on the currently available information, mining to a depth of 90 feet in the river would impact not only the mine footprint, but would affect the river morphology both up- and downstream, potentially for several thousand feet. More specifically, by removing large volumes of riverbed material, the natural balance of water and sediment in this reach of the river could be substantially disrupted. Models provided by the applicant show a high level of uncertainty regarding future in-fill scenarios. Recent sediment budget analyses for the Cuyama River suggest the average annual sediment yield at the site varies between 314,000 tons (the Diamond Rock EIR estimate based on an empirical sediment transport equation with the HEC-RAS hydraulic model) and 338,350 tons (the GPS estimate based on a percentage of the total yield as calculated at Twitchell Reservoir). While these two estimates used different approaches and arrived at similar annual yields, they are based on limited site-specific data and lack detailed insight into the long-term dynamics of the river. For instance, the sediment budget analyses do not describe the effects of different sized rainfall events on the capacity or competence of the river to transport sediment. However, they are the only estimates available because the applicant did not prepare a long-term study of the water and sediment transport dynamics for this reach of the Cuyama River. As such, this assessment and review is based on the best available information and shows that the proposed project would create a sediment deficit of approximately 175,000 tons per year. Over time this sediment deficit would likely result in considerable adverse impacts to the riverbed both up- and downstream. In particular, the cumulative effects of the proposed projects could negatively affect federal lands managed by the Bureau of Land Management located immediately upstream of the Diamond Rock site and immediately downstream of the GPS site. These effects include erosion of federal mineral rights without authorization and large-scale loss of habitat used by federally threatened and endangered species.

Based on available information, the proposed project design has the potential to cause substantial adverse indirect and cumulative impacts to groundwater resources in the valley. Mining in the riverbed to a depth of approximately 90 feet has the potential of exposing either the groundwater table or shallow subsurface flow. Fluctuations in groundwater levels and highly variable subsurface flow patterns make it difficult to predict the precise location of groundwater. Exposing subsurface water supplies in this arid environment would increase evaporation rates and contribute to the regional overdraft condition. This would adversely affect adjacent property owners who rely on groundwater.

Based on the available information, the proposed project has the potential to cause substantial adverse indirect and cumulative effects to plants and wildlife in the valley. The applicant's proposed mine is located in relatively undisturbed native riverbed. Headcutting or downstream channel incision outside of the mine footprint would physically remove the increasingly scarce scalebroom scrub habitat in the valley. Scalebroom scrub and similar habitats are used by several federally listed species including the blunt-nosed leopard lizard (BNLL), San Joaquin kit fox (SJKF), and Kern primrose sphinx moth (KPSM). Any drop in grade of the riverbed

would also have the potential to cause bank failure and the loss of in-stream islands and adjacent terraces. Indirect effects to habitat located outside of the mine footprint were not considered in the BO and therefore are not considered in the incidental take statement. As such, the indirect destruction of occupied habitat could be determined an unauthorized take of a listed species.

The LEDPA (modified project design) would reduce the adverse indirect and cumulative impacts of the mining operation to below the level of significance by avoiding and minimizing direct and indirect impacts to waters of the United States. In particular, by limiting the footprint of the mine pit and the location and extent of the diversion berms to 14 acres, the location and extent of roads and stockpiles, the depth of mining to 45 feet below the natural riverbed surface, and the configuration of the mine pit on the landscape (i.e., locating the mine in the center of the 84-acre riverbed parcel and grading of the pit walls to a shallower slope), the potential for excessive unnatural bed and bank erosion would be reduced. In particular, the potential adverse indirect and cumulative impacts from the proposed project and up to two other mines nearby would be reduced by keeping the mines in relative balance with the net deposition of sediment in this reach of the river. As discussed above, the LEDPA would have the estimated extraction rate of approximately 200,000 tons per year. This is less than the proposed design of 500,000 tons per year, but close to the historical extraction average of approximately 160,000 tons per year. Based on the available information, this is below the average quantity of sediment deposited annually for this reach of the river.

**J. Other cumulative effects not related to the proposed permit action:**

1. **Occurred on site historically:** The riverbed downstream of the project site has been mined for aggregate since 1969 (GPS). Extraction rates from the GPS mine have varied over that time, averaging approximately 160,000 tons per year, but ranging from less than 30,000 tons per year to, more recently, nearly 500,000 tons per year. Large runoff events with high bedload transport usually occur every 4 to 7 years with El Nino events, and have previously filled in these pits. Small runoff events have generally flowed around the diversion berms placed in the river. However, moderate-sized runoff events have caused substantial headcutting. Currently, a headcut from an approximately 50-foot-deep, 10-acre pit excavated between 2006 and 2008 extends nearly 1,500 feet upstream. The headcut is located within the existing 15-acre footprint being considered for mining in this permit action. Consequently, the volume of aggregate available for mining has been cut approximately in half. Furthermore, any flows in the river would be funneled through this headcut and likely washout any diversion berms placed in the headcut. Still, within the next five years a large runoff event may deposit enough aggregate material to render the project feasible.

During the headcutting event of 2007-2008, the mine pit partially filled with water. This ponded water persisted through the following dry season, suggesting a connection with subsurface water (e.g., exposing the groundwater table, intercepting shallow subsurface flows). Similarly, a headcut in 2003

formed at the GPS site and extended more than 300 feet upstream. It was during this headcut event that the approximately 18-acre pit filled from approximately 80 feet deep to 54 feet deep (i.e., approximately 26 feet of sediment was deposited in the pit). During the large rainfall and runoff winter of 2004-2005, the pit and associated headcut were naturally filled with sediment. Other large rainfall and runoff events occurred in the winter of 1994-1995 when approximately 2 million cubic yards of sediment filled the existing pit, and the winter of 1997-1998 when approximately 100,000 cubic yards of sediment filled the existing pit.

In-stream mining at the GPS site has eliminated much of the existing native scalebroom scrub habitat in the riverbed. The Cuyama River is a topographically complex system with a braided channel morphology and numerous floodplain terraces. These terraces, of differing levels, are habitat for scalebroom scrub and the federally listed blunt-nosed leopard lizard, San Joaquin kit fox, California jewelflower, and Kern primrose sphinx moth. As the Cuyama River Valley has developed, primarily for agriculture, the quantity of mature scalebroom scrub has decreased. In particular, aerial images show that the floodplain terrace located on the west bank on the GPS property was completely removed during historic mining. Meanwhile, the adjacent property, located to the south (upstream), still has the scalebroom scrub-dominated terrace. This terrace is the location of several BNLL sightings.

A search of the database for other in-stream mining projects in the Santa Maria River drainage basin (the Cuyama River and Sisquoc River are the major tributaries that combine to form the Santa Maria River) and all permitted projects around the project site within a 15-mile radius was conducted. Mining projects located in the Sisquoc and Santa Maria Rivers are essentially isolated from the Cuyama River because of Twitchell Dam, which is located on the Cuyama River upstream of its confluence with the Sisquoc River and which retains almost all of the sediment that flows into it. The Sisquoc River mines are included in this discussion as a general comparison of mining activities in the greater drainage basin, but are not considered as part of the cumulative impact assessment.

Other active permitted in-stream mines in the region include CalPortland (formerly Union Asphalt) and Hanson Aggregates West (Hanson). Both operations are shallow excavation operations (i.e., bar skimming) that cannot go deeper than the redline. The CalPortland operation is located along a twelve-mile-long reach of the lower Sisquoc River and upper Santa Maria River. CalPortland received Corps authorization to mine up to 1,130 acres of jurisdictional waters over a 25-year duration, including 8.9 acres of Corps-defined wetlands and 632 acres of sparse mulefat scrub, in order to extract up to 2 million cubic yards of material per year. From 1997 to 2007, CalPortland mined approximately 673 acres of jurisdictional waters over 7.4 miles. In order to compensate for these impacts, CalPortland is required to provide a minimum of 1,351 acres of habitat restoration concurrent with or immediately following

jurisdictional impacts, including 43 acres of Corps-defined wetlands, 98 acres of willow woodland, and 1,210 acres of mulefat scrub. In any given year, CalPortland estimates their mining activities would occur on not more than 10 percent of the linear distance within their operating areas, and approximately 2-3 percent of the area.

The Hanson operation is located along a 2-mile reach of the upper Santa Maria River between the east and west components of the authorized CalPortland project. Hanson received Corps authorization to mine up to 97 acres of jurisdictional waters over a 25-year duration, including 2.0 acres of Corps-defined wetlands and 18 acres of mulefat scrub, in order to extract up to 714,000 cubic yards of material per year. From 2006 to 2007, Hanson mined approximately 22 acres of jurisdictional waters over approximately 1.3 miles. In order to compensate for these impacts, Hanson is required to provide a minimum of 475 acres of habitat restoration concurrent with or immediately following jurisdictional impacts, including 64 acres of Corps-defined wetlands, 110.5 acres of willow woodland, and 300.5 acres of mulefat scrub.

Over the last 15 years, Santa Barbara County Flood Control received Corps authorization for the removal of sediment from select reaches of the lower Santa Maria River in the immediate vicinity of the City of Santa Maria, which is several miles downstream of Twitchell Reservoir. This practice of channel clearing is intended to encourage the river to flow in the center of the channel away from development. Flood Control periodically removes sediment and vegetation from three distinct reaches and proposes to remove sediment from two additional reaches in 2010 to 2011. These 4-foot-deep channels total approximately 6 miles in length and are approximately 400 feet wide.

Historically, aggregate was also mined from the channel of Alamo Creek near its confluence with the Cuyama, approximately 60 miles downstream from the proposed project and immediately upstream of Twitchell Reservoir. Mining in Alamo Creek has ceased, but the Corps is currently processing an application to stabilize a section of the creek in response to the headcut that has migrated up the creek for many years and destabilized the banks.

Two off-channel mines also occur near the proposed project: Ozena Valley Ranch Mine located approximately 18 miles upstream of the proposed project on the Cuyama River, and the Lima Gypsum Mine located on Quatal Canyon. The Ozena Mine extracts aggregate from an approximately 7-acre pit on a terrace adjacent to the river. The Lima Mine extracts gypsum from a quarry located in the mountains, outside of the floodplain.

A search of the ORM2 database found 13 Section 404 permit actions within a 15-mile radius of the proposed project. These included maintenance of the off-channel Ozena aggregate mine levee on the Cuyama River, two other levee repair projects, six road maintenance projects, and four utility line maintenance projects. These projects resulted in approximately 3 acres of temporary impact

and 1.5 acres of permanent impact to waters of the U.S. Of these 13 permit actions, 8 were considered emergency actions in response to flooding in the Cuyama River.

2. **Likely to occur within the foreseeable future:** GPS River Rock Products has proposed to Santa Barbara County, but not to the Corps, to expand the existing operation into a partially disturbed area (i.e., it was mined without authorization sometime between 2005 and 2008) of the Cuyama River adjacent to the existing mine footprint. This new mine would be mined after the remaining marketable material is extracted from the existing mine footprint. GPS has proposed to extract approximately 500,000 tons of aggregate per year. The replacement acreage would impact approximately 20 acres of waters of the United States and adjacent uplands on the western bank.

A third in-stream mine, known as the Richard's Mine, has been presented to Santa Barbara County, but not to the Corps. This mine would be located several hundred feet downstream of the GPS mine. No specifics have been proposed at this point, but it would likely be similar to what has already been proposed at the GPS and Diamond Rock mines.

3. **Contextual relationship between the proposed action and (1) and (2) above:** In the absence of mitigation, the proposed project design, in combination with three reasonably foreseeable mines, could have a significant adverse effect to the aquatic environment in this reach of the Cuyama River. Of greatest concern is excessive erosion of the riverbed (i.e., headcutting, downstream channel incision) and riverbanks in the project vicinity from a deficit of sediment within the system. Recent observations of the river have shown that headcutting from an approximately 50-foot-deep 10-acre-area pit can extend 1,500 feet upstream. Given that the three proposed pits would be approximately that same distance apart, but much larger in area, there is the potential for the GPS, Diamond Rock, and Richard's mines to form one very large pit.

The formation of a very large in-stream pit from the three mining operations would create a substantial knickpoint in the longitudinal profile of the river. This knickpoint could theoretically develop into an extensive headcut and also cause substantial channel incision downstream. This very large pit and subsequent erosion could impact the adjacent property owners and would threaten the integrity of State Route 166 that crosses the river approximately 6 miles downstream and State Route 33 that parallels the river. Over the last few years several Corps permit actions have dealt directly with emergency maintenance of State Routes 33 and 166 in response to bank erosion in waters of the United States.

To facilitate major channel destabilization in this reach of the Cuyama River, a chain of not uncommon events would need to occur. First, there would need to be a couple years of below average rainfall when the mining operations could excavate large deep pits with little interruption and no natural in-fill. Then,

diversion berms could be breached during a season of average rainfall events and moderate runoff events. With only moderate runoff, flow velocity would be insufficient to mobilize the channel substrate and little to no bedload would be transported. Consequently, runoff would cut along the upstream edge of the pit with only water and suspended sediment entering the pit (i.e., no bedload material to fill the pit). Therefore, the headcut could migrate upstream until the grade of the slope reached the bottom of the pit. With two or three very deep in-stream pits within close proximity of each other, the downstream side of the upper pit would fail as the downstream pit headcuts, the pits would combine, and the erosion could continue. If this event was followed by another moderate runoff event the headcutting and downstream channel incision could expand further. This scenario would result in a sediment deficit in this reach that far exceeds the natural sediment transport dynamics of the river. As a result the grade of the river would drop substantially, potentially tens of feet for miles downstream. Successive runoff events would likely deposit additional sediment in this reach, but erode bank material further downstream due to sediment starvation.

As mentioned above, the estimated natural annual sediment yield at the site is approximately 325,000 tons. GPS was authorized to mine approximately 200,000 tons per year (i.e., a 14-acre pit in the center of the riverbed that would be 45 feet deep) and the current proposal is to mine 500,000 tons per year with up to 750,000 tons in any one year. Based on documents submitted to Santa Barbara County, the Richard's Mine would similarly extract 500,000 tons per year. Together the three mines would extract a total of approximately 1,200,000 tons of aggregate per year from an approximately 1-mile-long reach of the river. According to the annual sediment yield estimate prepared by the applicant, this would create an annual average deficit of approximately 875,000 tons per year. However, averages may not serve as the best measures of sediment transport given the stochastic rainfall and flashy runoff characteristics of the Cuyama River Valley. For any given rainfall year the Cuyama River could transport zero tons of sediment or greater than a million tons.

The headcutting assessment provided by the Diamond Rock Mine consultant stated that, relative to the Diamond Rock Mine reach, the "localized reach through the GPS Mine area is even flatter [than the up- and downstream reaches] at 0.5 percent. It is assumed that this is caused by the mining operations and nature is trying to establish equilibrium in this stretch of the river." However, the consultant did not assess the potential change in elevation or gradient of the river under various scenarios with two, or three pit mines in close proximity in the river.

Based on available information, cumulative impacts to groundwater as a result of having three large in-stream pits exposed to the arid climate of the region is another major concern. The Cuyama River Valley is already in a state of overdraft as a result of intensive agriculture in the region. If the pits exposed groundwater, or shallow subsurface flow, the potential loss of water to

evaporation would be another adverse impact. Further losses of moisture from the river, whether they be evaporation or disconnection of the floodplain may adversely affect the native scalebroom scrub habitat and the species that depend upon it in the agriculturally dominated valley.

Lastly, the proposed project design, in combination with two other mine projects, would have a cumulative adverse impact to federally threatened and endangered species known to inhabit this reach of the Cuyama River. The combined effects of changes to the channel morphology, additional noise and dust, the loss of riverbed vegetation, and the alteration of hydrology is potentially significant without the appropriate mitigation. In particular, two or more large in-stream mines have the potential to disrupt the migratory pathway the riverbed provides to the federally listed SJKF and BNLL in the Cuyama River Valley, the Carrizo Plain National Monument, the Los Padres National Forest, and the Central Valley. A report prepared by University of California at Santa Barbara (UCSB), titled "Conservation Assessment for the Cuyama Valley: Current Conditions and Planning Scenarios" and dated June 2009, highlights the importance of the riverbed as a migratory corridor. At present, intensive agricultural operations have covered most of the valley and encroached into the floodplain, while State Routes 33 and 166 have further constrained wildlife movement between the Los Padres National Forest to the south, the Carrizo Plain National Monument to the north, the Central Valley to the east, and the Pacific Coast to the west. Two or more large in-stream mines would reduce riverside vegetation cover and constrict the width of the river used by wildlife. Excessive bed and bank erosion would further reduce the suitability for wildlife movement.

**K. Mitigation proposed by applicant:**

- 1. Avoidance, minimization, compensation:** The proposed project would minimize adverse impacts to waters of the United States by not installing any permanent structures in the riverbed. The applicant has proposed two on-site mitigation projects to compensate for impacts to waters of the United States. The compensatory mitigation plans include restoration of the eastern bank of the Cuyama River on the subject property and the enhancement of Deer Park Creek also located on the subject property. The modified project design would result in additional avoidance and minimization of direct and indirect impacts to the aquatic environment and, based on available information, would comply with the requirements of the 404(b)(1) Guidelines.
- 2. Summary of why applicant's proposal does or does not reduce impacts to below significance:** Based on available information, the applicant's proposed project, in combination with past, present, and reasonably foreseeable projects, does not reduce impacts below the level of significance because the proposal fails to demonstrate that volume of material excavated would not cause potentially significant indirect and cumulative adverse impacts to waters of the United States. For instance, the proposed annual extraction would substantially



exceed the estimated natural sediment balance for this reach of the Cuyama River. In addition, the proposed project would remove in-stream islands and terraces that support some of the last undisturbed native vegetation in the valley. When viewed in conjunction with the other proposed in-stream mining projects in this reach, the potential exists for long-term adverse impacts to the physical, chemical, and biological integrity of the Cuyama River.

3. **Summary of why the modified project design does or does not reduce impacts to below significance:** The applicant's proposed project is not the least environmentally damaging practicable alternative (LEDPA). The modified project design would reduce indirect and cumulative impacts below the level of significance. The modified project design is practicable after taking into consideration cost, existing technology, and logistics in the context of the past and current mining operations at the adjacent GPS mine site. The reduced mine footprint, reduced depth, and modified pit design alternative avoids and minimizes the potentially significant individual and cumulative adverse impacts. By reducing the volume of the mine pit, the potential adverse hydrologic impacts (e.g., upstream headcutting, downstream channel incision) would be minimized because the net annual sediment deficit of this reach of the river would be smaller. By reducing the footprint of the mine pit, the direct and indirect adverse impacts to the channel geometry, flow patterns of the river and habitat for federally listed animals would be minimized. By reducing the depth of the mine pit, the direct and indirect adverse impacts to groundwater are minimized. By modifying the pit layout, direct and indirect adverse impacts to the sediment transport functions of the river are minimized. Therefore, this environmental assessment for the modified project design meets the requirements of the 404(b)(1) Guidelines and National Environmental Policy Act.

### III Findings:

#### A. Status of other authorizations and legal requirements:

1. **Water quality certification:** The permittee is required to obtain a Section 401 certification, or waiver thereof, from the California Regional Water Quality Control Board before a Section 404 permit is issued. The permittee has applied for a 401 certification from the Central Coast Regional Water Quality Control Board.
2. **Coastal zone management consistency determination:** Not applicable.
3. **Compliance with Section 106 of the National Historic Preservation Act:** No historic properties would be affected by the proposed project.
4. **Compliance with the Endangered Species Act:** On 8 December 2006, the U.S.

Fish and Wildlife Service issued a biological opinion (BO) for blunt-nosed leopard lizard and San Joaquin kit fox. The BO included a concurrence with the Corps' determination that the project may affect, but is not likely to adversely affect the Kern primrose sphinx moth.

5. **Compliance with Section 176(c)(General Conformity Rule review) of the Clean Air Act:** The proposed permit has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit.
  6. **State and/or local authorizations:** The applicant would need to obtain a streambed alteration agreement from the California Department of Fish and Game and a Conditional Use Permit from Santa Barbara County.
- B. **Corps public notice and comment process:** A complete application was received on 12 March 2004. A public notice describing the project was issued on 11 April 2004 and sent to all interested parties (mailing lists), including appropriate state and Federal agencies. All comments received on this action have been reviewed and are summarized below.

1. **Summary of comments received.**

- a. **Federal agencies:**

- 1) U.S. Environmental Protection Agency (EPA): In a letter dated 26 March 2004, the EPA stated that they object to the issuance of the permit on the basis that the authorization may result in substantial and unacceptable impacts to aquatic resources of national importance. In a letter dated 21 April 2004, the EPA stated they have concluded the proposed project **will** have substantial and unacceptable impacts to an aquatic resource of national importance. The content of both letters is identical.

The EPA stated that the applicant has not demonstrated that the proposed project is the least environmentally damaging practicable alternative as required by the 404(b)(1) guidelines. The EPA points out that successful aggregate mining opportunities may be available in nearby uplands, hence avoiding impacts to waters, or the mining operation could be reduced in size to lessen its impacts.

The EPA also stated that the applicant has not demonstrated that the proposed project will not violate state water quality standards. In

particular, EPA is concerned about downstream sedimentation processes, dissolved oxygen concentrations, temperature, turbidity and potential impacts on wildlife.

The EPA also stated that the applicant has not demonstrated that the proposed project will not jeopardize the continued existence of threatened or endangered species in the area such as the blunt nosed leopard lizard, California condor, California jewelflower, California red-legged frog, San Joaquin kit fox, San Joaquin woolythreads, and yellow-blotched salamander.

The EPA also stated that the applicant has not demonstrated that the proposed project would not contribute to the significant degradation of waters of the U.S. Specifically, the EPA is concerned that given the size and scope of the project, impacts on river geomorphology and biological communities would be adverse. The EPA suggested computer modeling of the sediment dynamics in river to address these issues.

The EPA also stated the applicant has not taken the appropriate steps to minimize potential adverse impacts to the aquatic system and has proposed unacceptable mitigation. The EPA stated that the project could be reduced in size and still be practicable. In addition, the EPA stated that the applicant must formulate a mitigation package to compensate for the large-scale indirect and cumulative impacts as well as the direct loss of 100 acres of waters.

The EPA concluded the letter by stating that an environmental impact statement is necessary to thoroughly analyze all of the impacts under NEPA and the Corps scope of analysis should include the entire project.

**Response:** In accordance with the 404(q) Memorandum of Agreement, dated August 1992, the Corps will coordinate this decision document and any draft permit with the EPA.

The Corps agrees with the EPA that the application for the proposed project at the time of the Public Notice did not demonstrate that the project is the LEDPA. The applicant's agent has responded that alternatives were developed and considered for the proposed project in the Final Environmental Impact Report (EIR), dated May 2007 and prepared by the County of Santa Barbara. They state that "the proposed project would not result in any significant, unavoidable impacts, and that all ten potentially significant impacts listed above can be feasibly mitigated to less than significant levels through the mitigation measures identified in the EIR." Because the EIR was developed under the California Environmental Quality Act, it did not

include a LEDPA analysis. Since the Public Notice, the applicant has provided additional information (which is contained in this document) that discusses the alternatives to the proposed project.

An upland alternative was considered above but determined not to be the LEDPA. Mining outside of the floodplain would avoid the direct impacts to waters of the United States, but create new impacts to the upland environment and leave unchanged those indirect impacts (e.g., noise, air quality, traffic, etc.) to the environment. At present the majority of the Cuyama River floodplain located outside of waters of the United States is in agricultural production. Samples extracted from the adjacent terrace were found to not contain an equivalent amount of marketable aggregate. Furthermore, if a pit was excavated in the adjacent terrace, borrow material would need to be imported from elsewhere to reclaim the pit at the end of the project. The importation of borrow material would require a substantial amount of additional truck trips, likely resulting in additional adverse impacts to air quality, as well as other safety considerations inherent to transport by truck.

The Corps agrees with the EPA that in-stream mining has the potential to create channel instability and result in adverse effects to the aquatic environment. The magnitude of the adverse effects on the physical characteristics, water quality, and ecology of the river are difficult to predict given the unique climatic conditions and geomorphology of the site. For example, the Buckhorn Canyon stream gage located on the Cuyama River approximately 30 miles downstream of the site indicates an annual mean flow of 27.8 cfs. However, during the heavy rainfall winter of 1997-98, the gage recorded a peak flow of 26,200 cfs. While a detailed computer model would provide additional information that may be useful to this analysis, one was not developed for the application. Sediment transport models generally do not accurately reflect real site conditions because of the numerous assumptions and range of variables built into these models. Furthermore, in fluvial systems with dynamic boundaries (i.e., in a braided channel such as this, the riverbed becomes mobile during high runoff events and therefore most computer models are inadequate).

Historic observations of the GPS mine site suggest that large bedload-dominated runoff events in the Cuyama River erase most evidence of a mine pit or mining in the river. Meanwhile, small suspended load-dominated runoff events in the Cuyama River have virtually no effect on a mine pit because the berms divert the water around the pit. However, moderately sized runoff events that flow into the mine pit have a dramatic effect on the morphology of the river. During the same 2007-2008 winter runoff event discussed earlier, severe headcutting was observed upstream of the GPS mine pit. Because the runoff event was moderately large, very little bedload was transported into the pit,

causing the upstream side of the pit (the knickpoint) to erode approximately 1,500 feet upstream of the pit. Lateral bank erosion during this event was minor relative to the headcutting.

Regarding the proposed and historic extraction rates, the historical average extraction rate at the GPS mine was approximately 160,000 tons per year. However, between 2000 and 2004 the average annual extraction rate increased to approximately 400,000 tons per year with a peak extraction rate approaching 500,000 tons in one year. Taking into consideration the proposed extraction rate of 500,000 tons per year at the Diamond Rock Mine, and the authorized extraction rate of approximately 200,000 tons per year at the GPS mine, the gross extraction rate would be approximately 700,000 tons per year within an approximately 1-mile-long reach of the Cuyama River. The agent for GPS previously responded to EPA's comments by explaining that the river has historically been able to "restore itself" during extreme rainfall and runoff events. In particular, during the winter of 2004-2005 a very large in-stream pit (approximately 800,000 c.y. in volume and equivalent to approximately 1,200,000 tons of alluvium) was completely filled after a series of large rainfall events in short succession. These intense rainfall events generally occur with El Nino events every 4 to 7 years. However, surface water flow is generally ephemeral in the project reach between these intense rainfall events. Mining records from GPS have shown that surface flows have generally prohibited mining in the river for 10 days per year.

Surface flows in the Cuyama River generally percolate into the ground quickly because the riverbed material is predominately sand. However, this is not always the case as was seen during the summer of 2008. During the winter of 2007-2008, a moderately sized runoff event broke through the existing berm and partially filled the existing 50-foot-deep pit. Because this moderately sized runoff event carried mostly suspended sediment and not bedload, the bottom of the pit was likely covered with finer grained silts and clays. These finer grained sediments consequently reduced the surface porosity, reduced the infiltration rate, and the pit held the water through the summer. Given that the pit held water for approximately two years, an alternative explanation is that it intercepted shallow subsurface flows. The depth to groundwater in this region of the valley is highly variable depending upon regional groundwater pumping, the underlying geology, and the season. It is possible that shallow subsurface flows in the riverbed discharged through the uncoated sides of the pit and filled the pit with water for some time.

As EPA notes, in-stream mining will increase the amount of turbidity because the mining will expose loose sediments (e.g., the berms, the redeposited fines if unmarketable). The issue of turbidity is relatively

minor given the site conditions. When the Cuyama River flows, it transports enormous amounts of sediment, especially silt during low-flow conditions. Any additional sediment contribution from the mining operation would be small. In addition, monitoring data from the Santa Barbara Water Project has shown that the Cuyama River contains a high level of total dissolved solids relative to other major rivers in the region. Furthermore, the applicant is not proposing to mine in standing or flowing water, and therefore, would not be creating additional turbidity at those times. Finally, the applicant is required to obtain a 401 Water Quality Certification from the Central Coast Regional Water Quality Control Board prior to the issuance of a Section 404 permit. The 401 certification would address state water quality standards, and any conditions of the certification would become conditions of any Corps permit.

As stated by EPA, in-stream mining would reduce the quality of habitat for wildlife in the riverbed, including blunt-nosed leopard lizard, San Joaquin kit fox, and other sensitive species adapted to the arid region riparian areas (e.g., coast horned lizard). Adverse impacts to the riverbed are especially important because most of the Cuyama River Valley has been converted into agricultural production and is thus poor wildlife habitat. The 84 acres of riverbed within the project site would not all be disturbed simultaneously. The mining operation would directly impact a relatively small area of riverbed at any one time. Over the next five years approximately 14 acres in the riverbed would be disturbed. This 14-acre site and the related infrastructure (i.e., access roads and berms) would substantially narrow the width of the migration corridor used by species such as kit fox. Potential indirect impacts from headcutting or downstream channel incision could destroy additional scalebroom scrub habitat in the river. The applicant has proposed compensatory mitigation to address the long-term temporary impacts to the riverbed. This would include restoring the Cuyama River bank on the property that is littered with old car bodies and enhancing the Deer Park Creek channel on the property. These projects would improve the aquatic resource function of the river reach and facilitate the movement of animals past the mine.

Regarding the listed species, on 8 December 2006 the Service issued a BO for blunt-nosed leopard lizard and San Joaquin kit fox. The BO included a concurrence with the Corps' determination that the project may affect, but is not likely to adversely affect the Kern primrose sphinx moth. Given their absence from the project site and vicinity, the Corps determined the project would not affect California condor, California jewelflower, California red-legged frog, San Joaquin woollythreads, and yellow-blotched salamander.

Based on available information, the Corps agrees that the originally

proposed project with an extraction rate of 500,000 tons per year is not the least environmentally damaging practicable alternative. As discussed in the alternatives analysis, the Corps investigated several practicable alternatives, including a reduced footprint, a reduced mine depth, a modified pit design, and a combination of these alternatives. As a result, the Corps determined that the LEDPA is a reduced footprint, reduced depth, and the modified layout as described above.

- 2) U.S. Fish and Wildlife Service (FWS): No comment.
- 3) National Marine Fisheries Service (NMFS): No comment.
- 4) U.S. Coast Guard (USCG): No comment.
- 5) Bureau of Land Management: No comment.
- 6) Bureau of Reclamation: No comment.
- 7) Federal Emergency Management Agency: No comment.
- 8) Federal Energy Regulatory Commission: No comment.
- 9) Federal Highway Administration: No comment.
- 10) National Park Service: No comment.
- 11) Natural Resources Conservation Service: No comment.
- 12) Advisory Council - Historic Preservation: No comment.

**b. State and local agencies:**

- 1) State Coastal Zone Management Agency: No comment.
- 2) State Fish and Game agency: No comment.
- 3) State Lands agency: No comment.
- 4) State Historic Preservation Officer: No comment.
- 5) State Water Quality agency: No comment.
- 7) Soil and Water Conservation District: No comment.

**c. Other organizations and individuals:**

- (1) Marty and Lily Eifrid: In an email dated 29 March 2004 (addressed to

the applicant's agent John Hecht and copied to the Corps), Marty and Lily Eifrid stated that they live near the existing GPS River Rock Products Company mine and are concerned about the impacts another mine would have on their property adjacent (downstream) to the proposed project. They listed four major concerns and one minor concern. The major concerns included: (1) noise pollution, in particular the beeping sound of heavy equipment moving in reverse; (2) air pollution in the form of dust; (3) flood control, in particular the potential redirection of flood flows off the berms around the mine onto their property; and, (4) decrease in their property values. The minor concern involved light pollution as a result of lighting the processing facility 24 hours per day.

**Response:** The issue of noise pollution described by Mr. and Mrs. Eifrid is related to the safety sounds that heavy equipment is required to emit while in operation and moving in reverse. The County's EIR found that noise impacts to nearby residences would be less than significant (i.e., less than 65 dBA). The EIR also included several mitigation measures to reduce noise impacts, such as the construction of sound barriers at the processing facility and the use of mufflers on diesel equipment in the processing facility. The regulation of the safety equipment on the mining equipment is beyond the Corps' authority. The applicant has proposed to control dust on the project site by spraying the site with water. The County's EIR found that dust impacts to nearby residences would be less than significant. As described above, the use of low-flow diversion berms made from unconsolidated riverbed material berms would have a minor effect on the river's flow patterns during low-flow conditions. During moderate and large runoff events in the river, the berms would quickly wash downstream and therefore the berms would be incapable of causing flooding on his property. The County's EIR found that hydraulic impacts from the berms to nearby residences would be less than significant. The issue of neighboring property values is speculative and beyond the Corps' scope. The applicant proposes to operate his processing facility 24 hours per day, which will necessitate the use of lighting. The Corps has no authority to restrict hours of operation, which is more appropriately the function of local government. The County's EIR found that lighting impacts to nearby residences would be less than significant, but required mitigation for the lighting to be low-glare and shielded to direct the light only towards the processing facility.

(2) Bradley Deick: In a letter dated 8 April 2004, Mr. Deick stated that he strongly objects to the proposed project. Mr. Deick owns an adjacent 40-acre parcel of land on the Cuyama River and is concerned the project would result in devaluation of his property. Mr. Deick expressed concern that an environmental impact study has not been completed for the project. He is also concerned about potential flooding on his property from any diversions around the mine, as well as noise, light, and air pollution coming from the mine. Mr. Deick questioned whether or not another



mining operation is needed in the area. Mr. Deick concluded the letter by requesting a public meeting if his objections would not be fairly considered.

**Response:** The issue of property values is speculative and beyond the scope of this decision document. At this time, there has not been a preliminary indication that the project would result in a significant impact to the environment. If significant impacts are identified, an Environmental Impact Statement would be prepared to assess the impacts. As described above, the use of low-flow diversion berms made from unconsolidated riverbed material berms would have a minor effect on the river's flow patterns during low-flow conditions. During moderate and large runoff events in the river, the berms would quickly wash downstream and therefore be incapable of causing flooding on his property. Furthermore, the berms would be located in the center of the riverbed over 900 feet from the western bank. The County's EIR found that hydraulic impacts from the berms to nearby residences would be less than significant. The issues of noise and light were also found to be less than significant by the County's EIR. The level of air pollution from the mining and processing activities was determined to be adverse, but less than the General Conformity level and therefore not a significant impact to the environment. Regarding the issue of whether another mine is necessary, the Corps references the State of California's production and consumption report. The report indicated that this region is projected to consume more aggregate than it is anticipated to produce in the foreseeable future. The Corps replied to Mr. Deick's request for a public hearing on 28 April 2004, stating "[b]ecause only two other comment letters were received in response to the Public Notice, the Corps does not believe a public hearing is warranted at this time. However, if you would like to personally discuss the project in greater detail with personnel in this office, please contact Matthew Vandersande of my staff." A response was not received from Mr. Deick, and neither a public hearing nor a meeting was conducted.

(3) Concerned Citizens of the Cuyama Valley: In a letter dated 15 July 2005 addressed to Governor Schwarzenegger and copied to the Corps of Engineers, the local citizens group expressed objections to the proposed project. The letter describes several potential detrimental effects of the project on the local environment, including traffic; archeological resources; emergency services; agriculture; noise; night-time lighting; hydrology; earthquakes; groundwater; air pollution; wetlands; endangered species; mitigation; and, environmental justice. Specifically, CCCV is concerned that operation of the mine will contribute an unacceptable level of heavy truck traffic to the two-laned State Routes 33 and 166 in the Cuyama Valley. CCCV contends that the additional truck traffic will create safety problems because of the lack of turn lanes on the road, the winding nature of State Route 33, and an insufficient number of law enforcement personnel patrolling the region. CCCV is concerned the mining operation will

disturb archeological sites of the Chumash Indians. CCCV states that the number of emergency services in the Valley are limited and that the mining operation could place additional stress these services. CCCV is concerned that mining will have lasting repercussions on agricultural resources. CCCV believes the mining will generate disruptive noises in the rural setting. CCCV is concerned that night-time lighting will reduce the quality of sky viewing and adversely affect wildlife. CCCV believes the mining operation will cause erosion along the river, threaten wildlife and potentially creating negative cumulative effects to private property located adjacent to the river. CCCV questions whether the mining operation could affect the San Andreas fault. CCCV question if the mining operation will degrade groundwater quality because the valley is located on the Morales Formation. CCCV is concerned that the mining operation will release particulates into the air that may cause health problems for Valley residents. CCCV contends dust from other mining operations have degraded visibility in the Cuyama Valley, and that the proposed project would create additional problems, so before permitting another mine air quality should be monitored. CCCV also requested a comprehensive groundwater monitoring of the Cuyama Valley because the mining operation may contribute to lowering of the water table, increases in pH levels, and a loss of wetlands. Citing Executive Order 12898, CCCV requested an environmental justice analysis for the proposed mine because they believe there may be a disproportionate impact on low-income or minority populations. CCCV closes the letter questioning decisions by local government regarding land-use and that they are prepared to litigate the proposed project.

**Response:** The CCCV comments to the Governor were received after the comment period on the Public Notice closed, but they have been included in this decision document because they represent a large group of concerned citizens that live and work in the Cuyama River valley. In general, the CCCV comments were similar to those received during the comment period. Similarly, several of their comments were beyond the regulatory authority of the Corps (e.g., regulating truck traffic, developing a comprehensive groundwater monitoring plan for the valley, nocturnal lighting). The group, also known as Save the Cuyama Valley, has also engaged the Corps several times since the Public Notice was issued, including a Freedom of Information Act (FOIA) request. During several meetings with the CCCV representatives Gene Zannon, Tristan Zannon, and Jennifer Lee, the Corps listened to their concerns about the mine and described the Section 404 of the Clean Water Act permitting process. Their major concerns regarding aquatic resources have been specifically addressed in the Public Interest Review part of this document.

Finally, regarding issues of environmental justice, the CCCV has not provided any indication that the proposed project will have, or was designed to have, disproportionately high and adverse human health or

environmental effects on low-income or minority populations. The proposed project is located on private property that is currently farmed in the uplands. The location of the proposed project is in a sparsely populated rural area and according to the applicant was chosen because it contains the valuable PCC-grade aggregate, as identified by the California Geological Survey, used in major construction and building projects. The location is also near several markets which is important for a commodity that has a low value-to-weight ratio. The potential environmental effects of the proposed mine have been assessed throughout this decision document.

Over the long term, the river will deposit enough sediment to erase most, if not all, evidence that mining occurred on site in the river. This is to say, when managed properly the resource is renewable. The GPS mine is a relatively small operation located near the proposed mine and has been mining and processing aggregate since 1969. Regarding the human health aspect of environmental justice, mining and processing aggregate is done with earth moving equipment and water. Aggregate mining doesn't use environmentally hazardous methods that are necessary for other types of mining (e.g., mercury in gold mining). Aggregate mining would generate dust, noise and light pollution, but the applicant has proposed mitigation measures to minimize these adverse impacts. The Corps has worked openly with the CCCV and provided access to information through the FOIA process.

- d. **Requests for public hearings:** Mr. Deick requested a public meeting in his letter dated 8 April 2004. The Corps replied to his request on 28 April 2004, stating "[b]ecause only two other comment letters were received in response to the Public Notice, the Corps does not believe a public hearing is warranted at this time. However, if you would like to personally discuss the project in greater detail with personnel in this office, please contact Matthew Vandersande of my staff." A response was not received from Mr. Deick, and neither a public hearing nor a meeting was conducted.

## 2. **Evaluation:**

I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application as well as the stated views of other interested agencies and the concerned public. In doing so, I have considered the possible consequences of this proposed work in accordance with regulations published in 33 CFR Part 320 to 330 and 40 CFR Part 230. The following paragraphs include our evaluation of comments received and of how the project complies with the above cited regulations.

- a. **Consideration of comments:** The comments provided to the Corps have highlighted serious issues with the proposed project and its anticipated effect on waters of the United States. In particular, the potential indirect and cumulative impacts of the proposed project and the two other reasonably foreseeable mining projects in this reach of the Cuyama River

could be contrary to the public interest without incorporating appropriate avoidance and minimization measures. These comments were taken into consideration while developing the least environmentally damaging practicable alternative (modified project design). The least environmentally damaging practicable alternative complies with the Corps regulations and provides the applicant with a viable project and would not be contrary to the public interest.

**b. Evaluation of Compliance with 404(b)(1) guidelines (restrictions on discharge, 40 CFR 230.10). (A check in a block denoted by an asterisk indicates that the project does not comply with the guidelines.)**

**1) Alternatives test:**

Yes     No

a) Based on the discussion in II B, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the United States" or at other locations within these waters?

Yes     No

b) Based on II B, if the project is in a special aquatic site and is not water-dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

**2) Special restrictions. Will the discharge:**

Yes     No

a) violate state water quality standards?

Yes     No

b) violate toxic effluent standards (under Section 307 of the Act)?

Yes     No

c) jeopardize endangered or threatened species or their critical habitat?

Yes     No

d) violate standards set by the Department of Commerce to protect marine sanctuaries?

Yes     No

e) Evaluation of the information in II C and D above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s).

(X) based on the above information, the material is not a carrier of contaminants

( ) the levels of contamination are substantially similar at the extraction and disposal sites and the discharge is not likely to

result in degradation of the disposal site and pollutants will not be transported to less contaminated areas

- ( ) acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site

3) **Other restrictions.** Will the discharge contribute to significant degradation of "waters of the U.S." through adverse impacts to:

Yes     No

a) human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites?

Yes     No

b) life states of aquatic life and other wildlife?

Yes     No

c) diversity, productivity and stability of the aquatic ecosystem, such as the loss of fish or wildlife habitat, or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy?

Yes     No

d) recreational, aesthetic and economic values?

Yes     No

4) Actions to minimize potential adverse impacts (mitigation). Will all appropriate and practicable steps (40 CFR 23.70-77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?

The following special conditions would be added to the Corps' authorization to define the LEDPA:

1. The permittee shall not directly impact an area greater than 14 acres for aggregate mining in the Cuyama River on APNs 149-220-002, -011, and -065. Mining activities include mechanized land clearing, construction of a low-flow diversion berm around the perimeter of the mine pit, construction of a grade control structure and diversion berm at the confluence of Deer Park Creek and the Cuyama River, and temporary stockpiles of mined material in waters of the United States. In order to facilitate the natural flow of water past the project site during small runoff events, the permittee shall excavate the 14-acre mine pit in the center of 84-acre project site in the Cuyama River.
2. The permittee shall not directly impact an area greater than 0.50 acre for the construction of an access road (approximately 30 feet wide and 700 feet long), with three five-foot-diameter corrugated steel pipe culverts half-buried in the riverbed near the eastern river bank in order to facilitate blunt-nosed leopard lizard passage and to provide all-weather access between the processing facility and the mine pit.

3. The permittee shall not directly impact an area greater than 0.07 acre for the construction of a sandbag grade control structure approximately 8 feet wide and 350 feet long located at the confluence of Deer Park Creek and the Cuyama River (Memorandum dated 5 February 2008; prepared by Hawks and Associates).
4. To the maximum extent practicable, the permittee shall ensure that the low-flow diversion berms are constructed using material graded from the top one-foot of the vegetated riverbed so that the native seed bank has an opportunity to germinate.
5. The permittee shall not impact waters of the United States to a depth greater than 45 feet below the natural grade of the riverbed. The elevation in the center of the proposed project is approximately 2780 feet above sea level (per the Hawks and Associates plan and typical section for the Deer Park Creek Grade Control Structure submitted to the Corps 5 February 2008). Therefore, the base of the center of the mine pit on APN 149-250-011 shall not be deeper than approximately 2735 feet above sea level, and all depths up- and downstream from that point shall be relative along the same 1.5% slope plane for the 14-acre mine footprint. These elevations will be verified prior to mining as described at special condition 13 (below).
6. The permittee shall maintain a 5:1 (horizontal:vertical) pit wall slope on the upstream side (i.e., southern side) of the mine pit. The permittee shall maintain a 3:1 pit wall slope for all other sides (i.e, eastern, western, and northern sides) of the mine pit.
7. This Corps permit does not authorize you to take any threatened or endangered species, in particular the blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin kit fox (*Vulpes macrotis mutica*), and Kern primrose sphinx moth (*Euproserpinus euterpe*). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed U.S. Fish and Wildlife Service BO (PAS 1628.1929.2482; dated 5 December 2006) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit.
8. To minimize impacts to and avoid take of the federally listed blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin kit fox (*Vulpes macrotis mutica*), and Kern primrose sphinx moth (*Euproserpinus euterpe*), the permittee shall implement the following minimization measures, which were included in the project design submitted as part of your permit application for the project:
  - a. A worker education program, taught by a Service-approved biologist, would be conducted for all employees and would provide instruction on the identification, life history, habitat requirements, and regulatory protection of the blunt-nosed leopard lizard and San Joaquin kit fox. Workers would be trained on what to do if blunt-nosed leopard lizards or San Joaquin kit fox are observed within work zones.

- b. All on-site trash would be cleared from the area on a daily basis and disposed of in secure containers to prevent potential predators from being attracted to the site.
- c. A 15 mile-per-hour speed limit sign would be posted on the access road.
- d. Permanent exclusionary fencing would be installed around the perimeter of the processing facility and along the access road into the mining pit.
- e. Exclusionary fencing would be installed around the perimeter of the mining pit between March 1 and November 1 of each year. During this time, the fencing would only be removed if flooding of the mining pit was anticipated, during which time mining would not occur, and would be replaced before mining could begin again. The fencing would be removed between November 1 and March 1, during the time that blunt-nosed leopard lizards are in winter dormancy. The two-foot high fencing would consist of small-meshed hardwire cloth with a base of aluminum flashing. The metal flashing would be at least 12 inches above the surface to prevent the lizards from climbing over the fence. The bottom of the fencing and metal flashing would be buried 18 inches beneath the soil surface to prevent the lizards from digging under the fence. Fencing would be checked daily and maintained as necessary.
- f. A Service-approved biologist would monitor restoration and construction activities, and trap and relocate blunt-nosed leopard lizards that may be disturbed by the project activities. A Service-approved biologist would also monitor construction of the exclusionary fencing and ensure that no blunt-nosed leopard lizards are trapped within exclusion zones.
- g. Three 5-foot diameters corrugated steel pipe culverts, half-buried underground, would be placed 12 inches apart underneath the access road to allow blunt-nosed leopard lizards to pass underneath the road.
- h. In order to determine if and to what extent blunt-nosed leopard lizards utilize the riverbed of the Cuyama River, and to assess the effectiveness of the culverts and fencing, a Service-approved biologist would survey the riverbed, access road, and culverts for blunt-nosed leopard lizards during their active period (April 15 through July 15) each year. Protocol developed by California Department of Fish and Game for blunt-nosed leopard lizard surveys would be followed.
- i. Haul truck drivers and heavy equipment operators would be instructed to avoid impacting the exclusionary fencing to maintain the integrity of the fencing.
- j. Chemical dust suppressants would not be used in areas where blunt-nosed leopard lizards could be exposed to the material. As an alternative dust suppressant, water would be used on the access road and near the Agricultural Restoration Area, or the crossing would be shielded at the sides to prevent overspray.
- k. In the Agricultural Restoration Area, non-native plants would be removed by hand to avoid spraying herbicides where blunt-nosed leopard lizards may occur. Saltcedar would be removed using the least toxic herbicide, Garlon. This herbicide would only be used to treat saltcedar stumps after hand removal of the plants, and would not be sprayed on a broad scale.

- l. Within 14 days prior to any new ground disturbances in natural habitats on the project site, a Service-approved biologist would conduct surveys for presence of San Joaquin kit fox dens.
  - m. If suitable San Joaquin kit fox dens are found with the construction zone, they would be surveyed for three days to determine if the dens are occupied by San Joaquin kit fox. Activity at the den would be monitored by placing tracking medium at the entrance every morning. Tracking material would be checked twice a day; every morning for tracks and prior to sundown to ensure that the tracking materials have not been damaged or blown away.
  - n. If San Joaquin kit fox activity is not observed during monitoring, the den would be physically closed to prevent occupation of the den.
  - o. If San Joaquin kit fox activity is observed at the den during monitoring, a Service-approved biologist would implement one of the two following approaches:
    - i. The den would be monitored until three consecutive days without San Joaquin kit fox activity occurs. At that point, the den would be physically closed; or
    - ii. The den would be monitored for at least five consecutive days. Use of the den would be discouraged during this period by partially plugging the entrance(s) with soil in such a manner that any resident animal could escape easily. If the den is still occupied after five days, the den would be carefully excavated using hand tools (e.g. shovel) while the den is temporarily vacant, such as during the animal's normal foraging activities. If San Joaquin kit fox are discovered in the den at any time during excavation, the excavation would cease immediately and monitoring of the den would be resumed. Destruction of the den may be resumed, when in the judgment of the biologist, the animal has escaped from the partially destroyed den.
  - p. If a natal den is discovered on-site, the Service would be contacted. Exclusionary flagging would be placed around the den, and the den would be monitored by a Service-approved biologist until the pups have vacated the den. After the den is vacated by the pups and mother, the biologist would clear and close the den.
9. Prior to initiation of project construction (i.e., land clearing, berm construction, and mining), the permittee shall notify the U.S. Fish and Wildlife Service in writing of the intended project initiation date and anticipated duration of the mining.
  10. The permittee shall mitigate for the long-term temporary impacts to approximately 14 acres of waters of the United States with the restoration of the approximately 1,400-foot-long section of the eastern Cuyama River bank and the enhancement of approximately 1.5 acres of the Deer Park Creek located between State Route 33 and the confluence with the Cuyama River as described in the final compensatory mitigation plans, "River Bank Restoration and Mine Reclamation" (dated 11 May 2007, included as part of the final EIR) (Bank Plan) and "Deer Park Creek Additional Mitigation" (Creek Plan) (dated 29 October 2009, and prepared by Sespe Consulting, Inc). The permittee shall fully implement the Bank Plan and Creek Plan within one year of first conducting mining operations at the project site. The Bank Plan shall also include a 75% survival rate and evidence of at least good vigor and active growth for planted cottonwood



- trees at the end of the five-year monitoring period, including two consecutive years without the use of supplemental irrigation.
11. The permittee shall only use herbicides in the Cuyama River and Deer Park Creek that have been approved by the EPA for use in aquatic environments. Therefore, the permittee shall not use Round-up™ (as described in the application), or its generic form, in the restoration and enhancement areas to control weeds.
  12. The permittee shall ensure all mining equipment and associated vehicles remain on the single access road when travelling between the processing facility and mine pit.
  13. The permittee shall conduct annual surveys of the surface elevation of the mine pit and river (both up- and downstream of the mine pit).
    - a. The permittee shall conduct the first survey not more than 30 days prior to the initiation of mining.
    - b. The permittee shall clearly identify a survey reference point (i.e., a permanent stable monument) located outside of the river for all surveys.
    - c. Annual surveys after the initiation of mining shall be conducted during the month of October.
    - d. Survey results shall be submitted to this office within 30 days of completion.
    - e. The surveys shall be conducted by an independent licensed land surveyor.
    - f. The surveys shall include a longitudinal profile of the centerline of the Cuyama River for at least 5,000 feet up- and downstream of the mine pit.
    - g. The surveys shall include cross-sections of the Cuyama River at 250-, 500-, 1500-, and 5000-foot intervals both up-and downstream of the mine pit.
    - h. The surveys shall include cross-sections of Santa Barbara Canyon and Ballinger Canyon 500 feet upstream of their confluence with the Cuyama River.
    - i. Cross-sections and the longitudinal profile shall be taken at the same location each year for comparison.
    - j. The surveys shall include the perimeter of the mine (i.e., the safety berms) and the perimeter of the mine pit at its base (i.e., at the bottom of the mine slopes).
    - k. The surveys shall include the location of the upstream diversion berm and access road.
  14. The permittee shall conduct semi-annual photographic surveys of the mining operation in the river during October and April. Reference photo points shall be established at the approximate midpoint of each side of the mine pit and in the center of the base of the pit. From each point the permittee shall take one photo each in the north, south, east, and west direction. The midpoint photos should show the berms, the wildlife fencing, and the entire pit wall. The permittee shall submit the photos to this office within 30 days of being taken. The first photographic survey shall be conducted no more than 30 day prior to initiating mining activities.
  15. The permittee shall not conduct any work in standing or flowing water.
  16. The permittee shall notify this office in writing if the diversion berms are breached by a runoff event in the river and water enters the pit. The notification shall be submitted with 30 days of the event. The notification shall include a description of where the berm was breached, the approximate volume of water and sediment that entered the pit, and any bed or bank erosion that occurred (i.e., location and approximate length and width of the erosion).

17. The permittee shall submit to this office an annual report detailing the volume of the mine pit and weight of material extracted from the mine pit.
18. The permittee shall ensure dust generated by the mining operation is minimized by wetting the disturbed areas of the riverbed, stockpiles of sediments, and berms. The use of any dust suppressant other than pure water shall be approved by this office in writing after coordination with the U.S. Fish and Wildlife Service and Regional Water Quality Control Board.
19. If the permittee chooses to renew this authorization or modify this authorization, they shall notify the Corps at least six months prior to its expiration. This notification shall identify the depth to groundwater in the riverbed (i.e., within the mine pit footprint) during the wet season and dry season. This notification shall also include annual rainfall and runoff data with corresponding sediment transport data for this reach of the Cuyama River.

c. **General Evaluation (33 CFR 320.4(a)):**

- 1) **The relative extent of the public and private need for the proposed work:** The proposed project would meet a private need to generate income through a mining operation. The project would meet an important public need to supply PCC-grade aggregate to the surrounding counties. The mining operation would also meet a public need for job creation.
- 2) **The practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work:** The 404(b)(1) alternatives analysis did not identify a superior location beyond the proposed location. The proposed method of aggregate mining (i.e., the construction of diversion and safety berms, temporary stockpiling in the river, and the construction of access roads) is the most practicable method of accomplishing the project objective. Based on the above alternatives analysis, the modified 14-acre pit design that limits the pit depth to 45 feet would avoid and minimize direct and indirect impacts to the aquatic environment to the maximum extent practicable and, therefore, represents the least environmentally damaging practicable alternative.
- 2) **The extent and permanence of the beneficial and/or detrimental effects that the proposed structures or work may have on the public and private uses to which the area is suited:** The proposed project would have long-term temporary adverse impacts to the Cuyama River with the potential for permanent adverse impacts to waters of the United States. Channel erosion (i.e., upstream headcutting or downstream channel incision) from the mine could potentially affect public lands administered by the BLM located up- and downstream from the project site. The proposed project would serve a private benefit of generating economic revenue through high quality aggregate extraction.

The extent and permanence of the detrimental impacts will depend upon future rainfall and runoff events in the Cuyama River. For example, a series of years with only small to moderate runoff events may cause severe bed and bank erosion. Under such a scenario, future mining operations may need to be curtailed or halted until the site recovers as sediment is transported to and deposited in the mine pit. It is unlikely that the applicant could implement measures to ameliorate the indirect adverse effects of severe erosion – should they occur – because of the large size of the site. Future Corps permitting evaluations and actions will rely on the morphology and extraction data collected over the next five years. Without the avoidance and minimization measures that were identified in the least environmentally damaging practicable alternative and without the special conditions identified above, the proposed project would have had the potential to cause significant adverse cumulative impacts to waters of the United States.

The LEDPA (modified project design) would provide the applicant an aggregate mining operation similar in size and extraction volumes to historic mining operations at the GPS mine site. The LEDPA (modified project design) would avoid and minimize adverse direct and indirect impacts to waters of the United States by reducing the footprint of the proposed mine to 14 acres, reducing the depth of the proposed mine to 45 feet, and modifying the pit layout. The LEDPA (modified project design) would address the major concerns expressed by commenters to the public notice for the proposed project by limiting the depth of the mine to avoid impacting groundwater resources, by limiting the volume of the mine to minimize potential adverse channel erosion events, and by modifying the upstream mine pit wall to have a shallower slope to minimize the potential for headcutting. The LEDPA (modified project design) would be conditioned to monitor the conditions of the mine pit and adjacent channel sections in order to record effects the mine may have on the river's form and processes. It is anticipated that the applicant would apply to continue mining at the end of the five-year permit term. The current LEDPA (modified project design) may require changes in future permitting actions in response to the results of the monitoring program. This adaptive management approach would avoid potentially significant cumulative adverse impacts to the aquatic environment.

**3. Determinations:**

- a. **Finding of No Significant Impact (FONSI) (33 CFR Part 325).** Having reviewed the information provided by the applicant, all interested parties and our assessment of environmental impacts contained in part II B of this document, I find that authorization of the modified project design,

determined to be the least environmentally damaging practicable alternative, will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

b. **404(b)(1) Compliance/Noncompliance Review (40 CFR 230.12):**

- ( ) The discharge complies with the guidelines. The proposed project is the least environmentally damaging practicable alternative (LEDPA).
- (X) All of the appropriate and practicable conditions listed in III.B.2.b.4 to minimize pollution or adverse effects to the affected ecosystem have been included as part of the proposed action or were required by special conditions of the permit. This modified and conditioned project is the LEDPA.
- ( ) The discharge fails to comply with the requirements of these guidelines because:
  - ( ) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem and that alternative does not have other significant adverse environmental consequences.
  - ( ) The proposed discharge will result in significant degradation of the aquatic ecosystem under 40 CFR 230.10(b) or (c).
  - ( ) The discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem, namely.
  - ( ) There is not sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with the guidelines.

c. **Public interest determination:**

In this analysis, the relevant public interest factors included conservation, economics, aesthetics, general environmental concerns, fish and wildlife values, flood hazards, floodplain values, considerations of property ownership, water supply and conservation, safety, mineral needs, and needs and welfare of the people. The owners of the project site and the applicant have an economic interest to mine aggregate material in the river. The mine would contribute to the mineral needs of the region and would benefit the local economy; however some residents of the Cuyama River Valley are concerned about the degradation of the environment associated with the proposed project.

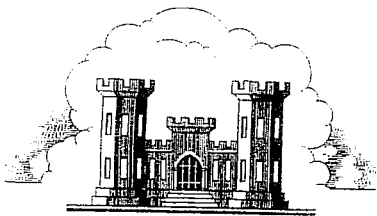
In response to this mine application, and the two other proposed mines, a group of local property owners united to form the organization, Save the Cuyama Valley (SCV). While the majority of their comments in opposition to the proposed project were received after the Public Notice comment period expired, their concerns were addressed in this document. In particular, SCV is concerned the mines would adversely impact their water supply, cause irreversible bed and bank erosion, and disrupt their quality of life. Water supply and water quality issues are their primary concern because the community relies on well water. The operation of mining equipment and increased truck traffic are the primary quality of life issues. Mining equipment generates loud noises while operating in the mine and trucks on the two-lane undivided Highway 33 are a safety concern. Traffic outside of the mine and processing facility is outside of the Corps' scope of analysis. Irreversible bed and bank erosion is a major concern of some property owners on the river.

The special conditions added to the permit would avoid and minimize many of the adverse individual and cumulative impacts of the proposed project. These special conditions would ensure the proposed project is the least environmentally damaging practicable alternative. The Corps' LEDPA is different than the project approved by the County in their Environmental Impact Report (EIR). On 3 February 2010, the applicant requested that the Corps process the modified project design LEDPA rather than the proposed project. Given the applicant's limited studies of sediment transport and population dynamics of the federally listed blunt-nosed leopard lizard and San Joaquin kit fox, the Corps' LEDPA has reduced the footprint of the fill to 14 acres, relocated the mining pit in the center of the project site while data on the river's morphology are collected, and limited the depth of fill activities to 45 feet to avoid and minimize potentially significant indirect and cumulative impacts to waters of the United States. With the modified project design combined with the required mitigation measures, this permit action would not be contrary to the public interest.

I find that issuance of a Department of the Army permit (with special conditions), as prescribed by regulations published in 33 CFR Parts 320 to 330, and 40 CFR Part 230, is not contrary to the public interest.

## References

- Kondolf, G.M. 1997. Hungry Water: Effects of dams and gravel mining on river channels. *Environmental Management* 21: 533-551.
- Mount, J.F. 1995. *California Rivers and Streams: The conflict between fluvial process and land use*. Los Angeles: University of California Press. 359 pages.



LOS ANGELES DISTRICT  
U.S. ARMY CORPS OF ENGINEERS

## DEPARTMENT OF THE ARMY PERMIT

**Permittee:** GPS River Rock Products Inc., Mr. Rusty Risi

**Permit Number:** SPL-2006-2068-MWV

**Issuing Office:** Los Angeles District

Note: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**Project Description:** The GPS River Rock Products aggregate mine would temporarily impact 14 acres of waters of the United States as identified on the attached Mining and Reclamation Plan, prepared by your agent, Sarah Bartling of RAM Environmental Services Inc., dated September 2009, and as conditioned below. Discharges of native riverbed fill material into waters of the United States include: grading of the mine pit footprint, stockpiling excavated riverbed material in the mine pit, constructing a 4-foot-tall 4-foot-wide safety berm, constructing a 4-foot-tall 10-foot-wide low-flow water diversion berm along the eastern side of the mine, and grading a 20-foot-wide access road (i.e., haul road) between the processing facility and the mine pit. The mine pit would be no deeper than 45 feet below the natural grade of the riverbed. Mining within the 14-acre footprint would take place over a 5-year period. The volume of the mine pit is approximately 1,000,000 tons (equivalent to an extraction rate of approximately 200,000 tons per year).

**Project Location:** The mine is located on APN 149-210-011 and APN 149-170-036 in the Cuyama River, approximately 3 miles north of the Town of Ventucopa, Santa Barbara County, California.

## **Permit Conditions:**

### **General Conditions:**

1. The time limit for completing the authorized activity ends on 17 November 2014. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification from this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

### **Special Conditions:**

1. The permittee shall not directly impact an area greater than 14 acres for aggregate mining in the Cuyama River. These impacts include mechanized land clearing, construction of a perimeter safety berm, and temporary stockpiles of mined material. In order to facilitate the natural flow of water past the project site, the permittee shall avoid mining the 1 acre located at the southeast corner of the 15-acre parcel.
2. The permittee shall not directly impact an area greater than 0.35 acre (approximately 4 feet tall, 10 feet wide, and 1500 feet long) for the construction of a diversion berm along the southern and eastern sides of the 14-acre mine footprint. The diversion berm shall not interfere with the approximately 700-foot-wide flow path along the eastern bank of the Cuyama River. The

permittee shall not directly impact an area greater than 0.50 acre (approximately 20 feet wide 1100 feet long) for the construction of an at-grade access road from the processing area to the mine pit.

3. The permittee shall not impact waters of the United States to a depth greater than 45 feet below the grade of the riverbed prior to the channel incision event that occurred during the winter of 2007/2008. The elevation at the southwest corner of the 15 acre parcel was approximately 2674 feet above sea level and the elevation at the northwest corner of APN 149-210-011 was approximately 2658 feet above sea level prior to the winter of 2007/2008 (a slope of approximately 1.0%, based on Google Earth image dated 22 January 2007 and the SEI topographic survey of the site dated April 2003). Therefore, the base of the mine pit shall not be deeper than 2629 feet above sea level at the southwest corner and 2613 feet above sea level at the northwest corner of APN 149-210-011 (near the deepest point of the narrow northern part of the mine pit), and all depths in between shall be along the same 1.0% slope plane for the 14-acre mine footprint.
4. The permittee shall maintain a 5:1 (horizontal: vertical) pit wall slope on the upstream side (i.e., southern side) of the mine pit. The permittee shall maintain a 3:1 pit wall slope for the other sides (i.e., eastern, western, and northern sides) of the mine pit.
5. This Corps permit does not authorize you to take any threatened or endangered species, in particular the blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin kit fox (*Vulpes macrotis mutica*), and Kern primrose sphinx moth (*Euproserpinus euterpe*) or adversely modify their designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed U.S. Fish and Wildlife Service BO (1-8-08-F-8) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit.
6. To minimize impacts to and avoid take of the federally listed blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin kit fox (*Vulpes macrotis mutica*), and Kern primrose sphinx moth (*Euproserpinus euterpe*), the permittee shall implement the following minimization measures, which were included in the project design submitted as part of the permit application for the project:
  - a. Monitoring by a qualified biologist prior to initial earth moving in the mining area.
  - b. An employee education program.
  - c. Traffic and dust control.
  - d. Clear boundary markings to confine ground-disturbing activities to the project site.
  - e. A trash removal program.
  - f. Daily monitoring of work areas for trapped and secretive sensitive species.



- g. Topsoil banking and re-vegetation of select acreage.
- h. A reclamation program for areas in which mining has been completed.

7. Prior to initiation of project construction (i.e., land clearing, berm construction, and mining), the permittee shall notify the U.S. Fish and Wildlife Service in writing of the intended project initiation date and anticipated duration of the mining.

8. The permittee shall ensure all mining equipment and associated vehicles remain on the single access road when travelling between the processing facility and mine pit.

9. The permittee shall conduct annual surveys of the surface elevation of the mine pit and river (both up- and downstream of the mine pit).

- a. The permittee shall conduct the first survey not more than 30 days prior to the initiation of mining.
- b. The permittee shall clearly identify a benchmark (i.e., a permanent stable monument) located outside of the river for all surveys.
- c. Annual surveys (after the initiation of mining) shall be conducted during the month of October.
- d. Survey results shall be submitted to this office within 30 days of completion.
- e. The surveys shall be conducted by an independent licensed land surveyor.
- f. The surveys shall include a longitudinal profile of the centerline of the Cuyama River for at least 5,000 feet up- and downstream of the mine pit.
- g. The surveys shall include a cross-sections of the Cuyama River at approximately 250-, 500-, 1500-, and 5000-foot intervals both up-and downstream of the mine pit.
- h. The surveys shall include cross-sections of Santa Barbara Canyon and Ballinger Canyon 500 feet upstream of their confluence with the Cuyama River.
- i. Cross-sections and the longitudinal profile shall be taken at the same location each year for comparison.
- j. The surveys shall include the perimeter of the mine (i.e., the safety berms) and the perimeter of the mine pit at its base (i.e., at the bottom of the mine slopes).
- k. The surveys shall include the location of the upstream diversion berm and access road.

10. The permittee shall conduct semi-annual photographic surveys of the mining operation in the river. The photographic surveys shall be conducted once in the month of October and once in the month of April. Photo points shall be established at the approximate midpoint of each side of the mine pit and in the center of the base of the pit. From each point the permittee shall take one photo each in the north, south, east, and west direction. The midpoint photos should show the berms, the wildlife fencing, and the entire pit wall. The permittee shall submit the photos to this office within 30 days of being taken.

11. The permittee shall not conduct any work in standing or flowing water.

12. The permittee shall ensure that no trash, waste, or debris contaminates the water located in the wash water desilting basins in the processing facility.

13. The permittee shall notify this office in writing if the diversion berms are breached by a runoff event in the river and water enters the pit. The notification shall be submitted with 30 days of the event. The notification shall include a description of where the berm was breached, the approximate volume of water and sediment that entered the pit, and any bed or bank erosion that occurred (i.e., location and approximate length and width of the erosion).

14. The permittee shall submit to this office an annual report detailing the volume of the mine pit and weight of material extracted from the mine pit as well as the weight of material re-deposited back in the mine pit following processing.

15. The permittee shall ensure dust generated by the mining operation is minimized by wetting the disturbed areas of the riverbed, stockpiles of sediments, and berms. The use of any other dust suppressant than pure water shall be approved by this office in writing after coordination with the U.S. Fish and Wildlife Service and Regional Water Quality Control Board.

16. If the permittee chooses to renew this authorization or modify this authorization, they shall notify the Corps at least six month prior to its expiration. This notification shall accurately and precisely identify the seasonal fluctuation in the depth to groundwater in the riverbed (i.e., within the mine pit footprint). This notification shall also include annual rainfall and runoff data with corresponding sediment transport data for this reach of the Cuyama River.

**Further Information:**

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

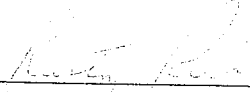
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
  - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.
  - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
  5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
    - a. You fail to comply with the terms and conditions of this permit.
    - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
    - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give you favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

  
PERMITTEE Vice President

11/20/09  
DATE

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.



11/20/09  
DATE

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
TRANSFEEE

\_\_\_\_\_  
DATE

LOS ANGELES DISTRICT  
U.S. ARMY CORPS OF ENGINEERS

NOTIFICATION OF COMMENCEMENT OF WORK  
FOR  
DEPARTMENT OF THE ARMY PERMIT

Permit Number: SPL-2006-2068-MWV  
Name of Permittee: GPS River Rock Products Inc.; Rusty Risi  
Date of Issuance: 17 November 2009

Date work in waters of the U.S. will commence: \_\_\_\_\_  
Estimated construction period (in weeks): \_\_\_\_\_  
Name & phone of contractor (if any): \_\_\_\_\_

Please note that your permitted activity is subject to a compliance inspection by an Army Corps of Engineers representative. If you fail to comply with this permit you may be subject to permit suspension, modification, or revocation.

I hereby certify that I, and the contractor (if applicable), have read and agree to comply with the terms and conditions of the above referenced permit.

\_\_\_\_\_  
Signature of Permittee

\_\_\_\_\_  
Date

At least ten (10) days prior to the commencement of the activity authorized by this permit, sign this certification and return it using any ONE of the following three (3) methods:

(1) E-MAIL a statement including all the above information to:  
Matthew.W.Vandersande@usace.army.mil

OR

(2) FAX this certification, after signing, to: 805-585-2154

OR

(3) MAIL to the following address:  
U.S. Army Corps of Engineers  
Regulatory Division  
ATTN: CESPL-RG-SPL-2006-02068-MWV  
2151 Alessandro Drive, Suite 110  
Ventura, CA 93001

LOS ANGELES DISTRICT  
U.S. ARMY CORPS OF ENGINEERS

NOTIFICATION OF COMPLETION OF WORK AND  
CERTIFICATION OF COMPLIANCE WITH  
DEPARTMENT OF THE ARMY PERMIT

Permit Number: SPL-2006-2068-MWV  
Name of Permittee: GPS River Rock Products; Rusty Risi  
Date of Issuance: 17 November 2009

Date work in waters of the U.S. completed: \_\_\_\_\_  
Construction period (in weeks): \_\_\_\_\_  
Name & phone of contractor (if any): \_\_\_\_\_

Please note that your permitted activity is subject to a compliance inspection by an Army Corps of Engineers representative. If you fail to comply with this permit you may be subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of said permit.

\_\_\_\_\_  
Signature of Permittee

\_\_\_\_\_  
Date

Upon completion of the activity authorized by this permit, sign this certification and return it using any ONE of the following three (3) methods:

- (2) E-MAIL a statement including all the above information to:  
Matthew.W.Vandersande@usace.army.mil
- OR
- (2) FAX this certification, after signing, to: 805-585-2154
- OR
- (3) MAIL to the following address:  
U.S. Army Corps of Engineers  
Regulatory Division  
ATTN: CESPL-RG-SPL-2006-02068-MWV  
2151 Alessandro Drive, Suite 110  
Ventura, CA 93001

Approximate OHWM  
April 2005

Existing  
Processing  
Area  
Appx.  
30 Acres



Section 12.

Section 13

Property Leased  
to GPS for  
Mineral  
Extraction --  
Riverbed acreage  
in all of  
Section 13

Estimated  
Diverted  
Stream  
Channel

NW

NE

SW

SE

Main  
Channel  
2005

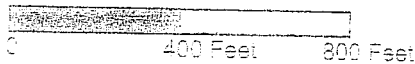
Phase III/II  
Reclaimed  
Area 2005  
Appx  
15 Acres

Estimated  
Area impacted  
by headcutting

Extends along west side of Diamond Rock

Low Flow  
Diversion Berm

Note: Low flow diversion  
berm shown is estimated.  
Actual berm(s) will be placed  
depending on the location of  
active pits and flow channels.

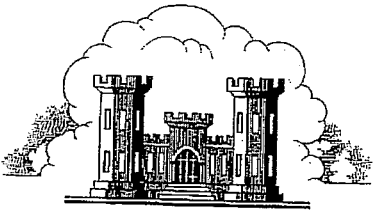


RAM Environmental Engineering Services, Inc.

Mining & Reclamation Plan  
Revised September 2009  
April 2005 Aerial Photograph  
RAM Project No. 2000469

Staged Mine Areas and Berms  
GPS Filter Rock Products  
Yreka, CA, California

RAM ENVIRONMENTAL  
ENGINEERING SERVICES, INC.  
BAYPESIDE, CA



ENVIRONMENTAL ASSESSMENT  
404(b)(1) EVALUATION  
PUBLIC INTEREST REVIEW

PERMIT APPLICATION NUMBER:

SPL-2006-2068-MWV

APPLICANT:

GPS River Rock Products, Inc., Mr. Rusty Risi

Prepared by:

Matthew Vandersande, D.Env.  
Project Manager, North Coast Branch  
Regulatory Division

11/16/09

Date

Reviewed by:

Bruce A. Henderson  
Senior Project Manager, North Coast Branch  
Regulatory Division

Nov. 16, 2009

Date

Approved by:

Aaron O. Allen, Ph.D.  
Chief, North Coast Branch  
Regulatory Division

Nov. 16, 2009

Date



This document constitutes my Environmental Assessment, Statement of Findings, and review and compliance determination according to the 404(b)(1) guidelines for the proposed work (applicant's preferred alternative) described in the attached public notice:

- I. **Proposed Project:** The proposed aggregate mining project would impact approximately 15 acres of waters of the United States within the Cuyama River. The applicant has proposed to extract approximately 500,000 tons of sand and gravel annually from the bed of the Cuyama River using heavy mobile equipment such as front-end loaders, bulldozers, and excavators. Berms would be graded around the approximately 90-foot-deep mine pit as a safety measure and to divert low flows during small runoff events. It is anticipated that intermediate (i.e., moderate) to large runoff events in the river will breach the diversion berm and deposit sediment in the mine pit. Depending upon the composition of the deposited sediment (i.e., grain size of the in-fill), the applicant may mine this material or abandon that section of the pit because the cost to mine it would be greater than the revenue generated from the aggregate. The material would be processed on site at an existing facility located on the adjacent uplands. The site has supported surface mining and rock processing operations since 1969. The processing facility would be electrically powered. Within the facility the aggregate would be crushed, sorted, washed, and stockpiled. On-road haul trucks would collect the aggregate from the processing facility for use in Santa Barbara, San Luis Obispo, and Kern counties.

The proposed project would be implemented in accordance with a 1997 mining and reclamation plan approved by the Office of Mine Reclamation and permitted by the County of Santa Barbara, but which has not been authorized by the Corps of Engineers. On 28 September 2006 the applicant and the Environmental Protection Agency (EPA) signed an Administrative Order on Consent (AOC) (Docket No. CWA-404-309(a)-06-011). The AOC included measures to compensate for the adverse environmental impacts resulting from unauthorized discharges at the 22-acre site prior to 24 November 2004. An amended AOC was signed by the applicant and EPA on 31 March 2009 for adverse environmental impacts that occurred at the site and adjacent sites between 24 November 2004 and 5 March 2008. The current proposal includes the future mining activities within the County-approved footprint.

- A. **Changes to the proposed project since circulation of the public notice:** The proposed project has undergone several minor revisions since circulation of the public notice. However, because these revisions were minor in nature relative to the size and scope of the project described in the public notice, it was determined that a new public notice was not necessary.
- B. **Specific activity that requires a Department of the Army permit:** The applicant requires authorization to temporarily impact 15 acres of waters of the United States for a period of five years for the placement of fill associated with: (1) mechanized land clearing of the river bed, including the temporary stockpiling of fill during mining; (2) grading of a four-foot-tall four-foot-wide earthen safety berm around the mine pit with native riverbed sediments; (3) grading of a four-foot-tall ten-foot-wide low-flow diversion berm along the eastern side of the mine pit with native riverbed sediments; (4) construction of an access road (i.e., heavy equipment haul

road) into the mine pit using native riverbed material; (5) placement of unmarketable excess fine sands and silts back into the mined areas (i.e., approximately 30% of the excavated material would be returned to the river after washing and sorting); and (6) grading of material deposited in the mine pit after a flood event should it breach the berms.

C. **Scope of analysis under NEPA:** Because the proposed project involves the grading and construction of temporary berms around the mine (including mechanized land-clearing of the riverbed and in-stream raised terraces), temporary stockpiling of materials in the riverbed during mining, grading the mine pit walls (i.e., slopes and benches) and construction of an access road into the mine pit, the scope of analysis includes all areas in the river associated with the mining operation (approximately 15 acres). In addition, the existing 30-acre processing facility located on the adjacent upland parcel is directly related to the in-stream mining activities and would likely not be operating if the mining ceased. If the applicant chose instead to pursue a clean excavation-type mine that would not involve a Section 404 permit, then the processing facility would still operate but infrequently and at a largely reduced capacity given the limited extraction rates of a clean excavation only mine. Therefore, the proposed construction activities in waters of the United States and at the existing processing facility in adjacent uplands are considered within the scope of analysis because sufficient Federal control and responsibility exists. The Corps' scope of analysis does not extend beyond the mine pit or processing facility because there is a lack of Federal control and responsibility regarding the direction or use of the mined aggregate.

D. **Relevant public interest factors considered:** In this analysis, the relevant public interest factors include conservation, economics, aesthetics, general environmental concerns, fish and wildlife values, flood hazards, floodplain values, considerations of property ownership, water supply and conservation, safety, mineral needs, and needs and welfare of the people.

## II. Environmental and Public Interest Factors Considered:

A. **Purpose and Need:** The purpose of the proposed project is to mine and process aggregate (i.e., sand and gravel) material. The site has been mined for aggregate since 1969. The project would meet a public need for high-grade aggregate materials. Specifically, the proposed mine would extract Portland cement concrete (PCC)-grade aggregate material and sand. PCC-grade aggregate material is valued for its strength and durability as a building material, and is used in projects such as bridges and building foundations. The quantity of PCC-grade aggregate material in the mine footprint has decreased since it was initially mined because the sediments that fill the pit during each flood event contain more sand than PCC-grade aggregate materials.

The mined aggregate would be used in the communities of northern Santa Barbara County, southern San Luis Obispo County, and southern Kern County. In 2006, the State of California, Department of Conservation, published an updated "Map Sheet

52: Aggregate Availability in California.” The report compared the anticipated fifty-year demand for aggregate with the currently permitted aggregate resources for various regions in California. Within the San Luis Obispo-Santa Barbara region, the fifty-year demand is projected to be 243 million tons and the currently permitted resources are 77 million tons (approximately 32 percent of the demand). In the Bakersfield and Ventura County regions, the percent permitted is 46 and 34, respectively. In Santa Barbara County, Map Sheet 52 identified 8 aggregate mines currently producing less than 500,000 tons per year, and 2 mines producing between 0.5 and 2 million tons per year. In San Luis Obispo County, Map Sheet 52 identified 16 aggregate mines producing less than 500,000 tons per year.

- B. **Basic project purpose and water dependency:** The basic project purpose is aggregate mining, which is not a water dependent activity.
- C. **Overall project purpose for 404(b)(1) analysis:** The overall project purpose is to extract and process PCC-grade aggregate and sand to supply the communities of northern Santa Barbara, southern San Luis Obispo, and southern Kern counties.
- D. **Alternatives (33 CFR 320.4(b)(4), 40 CFR 230.10):**
  - 1. **No action:** With no federal action, the applicant could potentially operate a small, shallow pit, clean excavation, in-stream mine and an upland processing facility. The Mining Safety and Health Administration requires that safety berms be constructed around the perimeter of any pit that are deeper than the mid-axle point of the smallest vehicle used in the mine. Therefore, the pit for the no federal action alternative could not be more than a few feet deep. At this depth, the feasibility of the mine would be economically questionable and the existing processing facility would be used infrequently. This type of operation would result in similar short-term adverse impacts, but reduced long-term adverse impacts to waters of the U.S. Less aggregate would be mined annually because a clean excavation mining operation is less efficient than the proposed mining operation. Clean excavation involves using wheeled back-hoes or front-end loaders to scoop up riverbed materials – minus any incidental fallback – and place them in dump trucks. The dump trucks would then transport the material to the adjacent uplands for processing. These methods would be less efficient for three reasons: (1) by not stockpiling materials in the riverbed, the excavation and transportation components must work in sync to avoid one part of the system waiting for the other; (2) by not constructing berms to divert low flows in the river, the mine would be in operation fewer days of the year; and (3) the access roads into and around the mine would not be engineered or constructed using imported and compacted base materials.

Overall, implementation of the no federal action alternative would result in a similar, but much shallower, less efficient, and substantially smaller volume mining operation. Because the mine pit would be much shallower, the applicant would likely need to mine a greater area of the riverbed to extract a similar amount of material. Mining a greater area of the riverbed would

generate additional impacts to flow characteristics of the river, vegetation, aesthetics, wildlife, and sediment transport dynamics. These activities and impacts would still need other local, state, and federal permits. For instance, the potential take of several federally listed species would need to be addressed under Section 10 of the Endangered Species Act. It is unlikely that a comparable area (i.e., hundreds of acres) could be bought or leased to make the operation feasible. Under the no federal action alternative, the applicant could still operate the upland processing facility and load trucks for distribution to customers. Consequently, the impacts to traffic and air pollution from the distribution trucks would be similar. Given that a clean excavation mine would not likely be feasible and could result in potentially greater impacts to the environment, the Corps has determined that the no federal action alternative would not represent the least environmentally damaging alternative.

2. **Sequenced search for less environmentally damaging alternatives:**

- a. **Other Sites:** As stated in Regulatory Guidance Letter 93-2, although all requirements in EPA regulations at 40 CFR Part 230.10 ("404(b)(1) Guidelines") must be met, the compliance evaluation procedure will vary to reflect the seriousness of the potential for adverse impacts on the aquatic ecosystem posed by the specific dredged or fill material discharge activities. In addition, the above guidance also states that when applying the 404(b)(1) Guidelines, one must recognize the different levels of effort that should be associated with varying degrees of impact and require or prepare commensurate documentation; the level of documentation should reflect the significance and complexity of the discharge activity.

The Cuyama River is a unique aquatic ecosystem that is located in an arid inland valley, geographically separated from the Pacific Ocean by the San Rafael Mountains. Flow conditions range from long periods of no flow to discharges of over 20,000 cubic feet per second (cfs). At these discharges, the flowing river can exceed 1000 feet in width and be several feet deep. During large runoff events the riverbed is mobilized and the channel form can change dramatically. The time it takes to eliminate evidence of in-stream mining would depend upon the scale of up- and downstream adverse impacts such as headcutting or channel incision. The magnitude and duration of the long-term temporary impacts would depend upon the configuration of the mine pit and the quantity of water and sediment of the flow events.

Analyzing off-site alternatives within the service area is critical because aggregate is considered a low value-to-weight commodity. As a low value-to-weight commodity, transportation costs are high and therefore the practicability of the alternatives decreases the further away one gets from the demand. For instance, transporting aggregate a distance of 30 miles will increase the price, relative to the price at the mine, by approximately \$4.50 per ton (California Department of Conservation 2006). To put this in

perspective, in Southern and Central California the price of aggregate ranges from approximately \$10 per ton in Palmdale to \$16 per ton in the Central Valley, to \$22 per ton in San Diego (California Department of Conservation 2006). The rising cost of energy underscores this aspect of the analysis.

The California Department of Conservation, California Geological Survey (CGS) recently revised *Map Sheet 52* (2006) which provides a map and report for aggregate availability in California. The report compares the projected 50-year demand for aggregate and the currently permitted aggregate resources in 31 aggregate study areas throughout the state. In the San Luis Obispo-Santa Barbara Region, the 50-year demand is 243 million tons and the permitted aggregate resources are 77 million tons, approximately 32 percent of the projected 50-year aggregate demand. The average percent permitted of aggregate compared to the 50-year demand in the state is also 32 percent, but varies from 8 percent in the North San Francisco Bay Region to 100 percent in the Yuba City-Marysville Region. Given these data, the current production of aggregate relative to the projected consumption for the San Luis Obispo-Santa Barbara Region is comparable to other regions in the state, but is still short of meeting the projected future demand. Therefore, limiting the analysis of off-site alternatives to southern San Luis Obispo and northern Santa Barbara Counties is appropriate because aggregate is needed in the region and the costs associated with transporting aggregate into the region from elsewhere are high (including additional adverse impacts to the environment from increased traffic and air pollution).

Active large-scale aggregate mines in the San Luis Obispo-Santa Barbara Region include: Troesh Ready Mix in Nipomo, Hanson Aggregates in Sisquoc, Union Asphalt in Garey, and Granite Construction in Buellton. Three of these mines are located within the Santa Maria River watershed: the Hanson and Union Asphalt mines are shallow extraction operations located in the Sisquoc and Santa Maria rivers, and the Troesh mine is an off-channel pit mine in the Santa Maria River floodplain. The Granite pit mine is located in the Santa Ynez River floodplain, immediately upstream of Highway 101. There are also blasting operations in the region including Hanson Aggregates in Santa Margarita and a Union Asphalt operation in Rocky Canyon. Blasting operations generally produce an inferior concrete product relative to alluvial gravel because the rounded nature of alluvial aggregate is easier to work with as wet mix and does not cause wear and damage to equipment like sharp-edged blasted and crushed rock does.

In general, the Cuyama River has two types of aggregate material: hard rock quarry stone of Franciscan geologic era in the lower river valley with ultra basic, altered, and original sedimentary; and alluvial deposits in the upper river valley. Alluvial in-stream deposits are prized because the material has been naturally rounded and sorted, leaving only the strongest

materials as aggregates. The lower river valley is relatively narrow and confined by steep mountain slopes, while the upper river valley is much broader with large farmed terraces. The existing mine has been in operation since 1969 and has produced high quality PCC-grade aggregate. However, the proportion of PCC-grade aggregate has decreased with subsequent filling of the pit with finer-grained alluvium. During the 2004-05 rainy season, the alluvium that filled the pit was mostly sand. Sand is less valuable than PCC-grade aggregate, but is still sold to market. Meanwhile, the quarry stone deposits of the lower Cuyama River also have inclusions of serpentine rock, which is an undesirable aggregate material because asbestos is released when the rock is crushed, potentially contributing to lung disease or cancer if inhaled.

Given that the proposed project site contains a suitable quality and quantity of PCC-grade aggregate, the applicant investigated the suitability of off-channel alternatives within the valley. Mining outside of the floodplain would avoid the direct impacts to waters of the U.S., but create new impacts to the upland environment and leave unchanged those indirect impacts (e.g., noise, air quality, traffic, etc.) to the environment. At present the majority of the Cuyama River floodplain located outside of waters of the U.S. is in agricultural production. The applicant sampled and tested the materials underlying the adjacent terrace and found it was not marketable aggregate. Furthermore, if a pit was excavated in the adjacent terrace, then borrow material would need to be imported from elsewhere to reclaim the pit at the end of the project. The importation of borrow material would require a substantial amount of additional truck trips, likely resulting in additional adverse impacts to air quality.

The applicant has investigated the potential for mining in the river, adjacent to the existing mine (including the lower floodplain terraces), west of the current mine. Mining this parcel would likely produce PCC-grade aggregate at a rate similar to what was historically mined at the existing site. However, except for the areas located outside of the existing mine footprint that were mined without authorization and addressed in the two AOCs between EPA and the applicant, this parcel contains undisturbed native scalebroom scrub vegetation, which is habitat for several federally listed species. In addition, mining the adjacent parcel would encourage the flow path of the river towards the western bank and could lead to erosion of the stable terraces both up- and downstream of the site over time.

Considering the limited availability of PCC-grade aggregate in sufficient quantities at reasonable off-site locations and the potential additional impacts to the environment, the Corps has determined that the other project site alternative would not represent the least environmentally damaging practicable alternative.

- b. Other project designs on site: As described by Mount (1995) in his book

"California Rivers and Streams", in-stream mining can dramatically disrupt the river's natural processes of eroding, transporting, and depositing sediment. He notes in the chapter "Mining and the Rivers of California" that the adverse impacts to rivers from aggregate mining are "rooted in the tendency of miners to remove material at a rate that exceeds replenishment rates." He describes the sequence of events that occur after water begins flowing in into an in-stream mine pit:

During intermediate flows, the upstream end of the pit will behave in a manner similar to a knickpoint. The steeper gradient generates an increase in stream power and competence, leading to headward erosion as the river attempts to smooth its overall longitudinal profile. Immediately downstream of this knickpoint, the sharp decrease in slope and the increase in channel cross-sectional area of the pit reduce stream power, leading to rapid deposition of bedload (the filling of the pit envisioned by gravel operators). Downstream of the extraction pit, the flow has excessive stream power, leading to scouring of the channel downstream. Thus through headward erosion and downstream scour the river attempts to smooth the disruption that a pit forms in its profile (pages 219-220).

As described above, increased competence means that the river is capable of entraining and transporting larger diameter grains of sediment. Thus, formation of a headcut at the knickpoint will migrate upstream until the slope of the riverbed is stable. The length of the headcut and new smoothed slope will depend primarily upon the depth of the pit, the volume of the pit, and the subsequent sequence of rainfall and runoff events. A headcut may continue migrating upstream for years and poses a threat to undermine streamside structures such as bridges (Kondolf 1997). Downstream of the mining pit, the sediment-starved water, also known as hungry water, is prone to erode the channel bed and banks as it begins to entrain and transport new sediment (Kondolf 1997).

Mining in the Cuyama River could be accomplished through several options:

*Reduced mine footprint:* The proposed mine would have an approximately 15-acre footprint in the riverbed. A reduced mine footprint alternative would limit the length, width, or both of the dimensions in order to minimize impacts to the environment. According to the applicant's agent, the minimum footprint necessary to reach the proposed depth of 90 feet – with approximately 3:1 side slopes – is 7 acres (equivalent to a pit approximately 555 feet long and 540 feet wide). Without natural in-fill, this sized pit could be achieved in approximately one year at an extraction rate of 500,000 tons per year, or in five years at an extraction rate of 100,000 tons

per year. With episodic natural in-fill (i.e., a runoff event large enough to mobilize the riverbed and transport bedload), it could take much longer to fill the pit depending upon the frequency and duration of large rainfall and runoff events.

Given that the 15-acre footprint has been previously mined, then filled during the winter of 2004-05, and then incised following the winter of 2007-08 the riverbed within the proposed footprint lacks many of the habitat functions present in neighboring undisturbed sections of the riverbed. These undisturbed sections of riverbed are characterized by relatively stable island terraces within the braided channel as well as densely vegetated adjacent floodplain terraces. These habitat functions include, but are not limited to: vegetative cover, forage for wildlife, and topographic complexity. As such, the differences in direct adverse impacts to riverbed functions (e.g., wildlife habitat) are relatively small between a 7-acre and 15-acre pit. Still, a 15-acre footprint would present an adverse impact to wildlife by reducing the width of the riverbed that would be available for use as a migratory corridor by species such as San Joaquin kit fox and blunt-nosed leopard lizard.

Given the proposed location of the pit in the center of river channel, the potential indirect effects of lateral channel erosion on adjacent uplands is minimized because of the natural buffer around the proposed pit. A 7-acre pit would, by definition, impact a smaller area of the riverbed and hence have a larger buffer area around it than would a 15-acre pit. In the past at the project site, lateral channel erosion during moderate (or intermediate) to high runoff events has been small relative to up- and downstream channel erosion. Lateral channel erosion is smaller because the river alignment is relatively straight at the project site and the braided channel morphology tends to spread water across the entire active channel. As such, the erosive energy of water flowing into a pit is generally focused in the direction of flow (i.e., in the upstream direction as a headcut or in the downstream direction as channel incision as sediments are deposited in the pit). This is unlike a meandering river which tends to have its greatest erosive energy directed at the outside edge of each meander bend. Anecdotal accounts by neighbors suggest historic mining practices have "trained" the low-flow channel towards the center of the riverbed where most of the mining has occurred. Still, the effectiveness of low-flow diversion berms would be reduced by minimizing the width of flow in the riverbed.

While the direct adverse impacts to riverbed functions and lateral channel erosion would be slightly to moderately decreased at the site with a reduced footprint, the adverse impacts to waters of the United States from upstream headcutting and downstream channel incision would be minimized with a reduced mine pit footprint. For a given mine pit depth, the magnitude of a potential headcut from a 7-acre pit would be less than a 15-acre pit, because the volume of the pit would be substantially smaller. The volume of a



roughly square, 90-foot-deep, pit with a 15-acre footprint is approximately 1,500,000 cubic yards (2,250,000 tons) compared with a 7-acre footprint mine the volume is 600,000 cubic yards (900,000 tons). In other words, once the river breaches the diversion berms and water starts flowing into the pit, it would take approximately 2.5 times longer to fill the 15-acre pit. During this additional time, a headcut would migrate further upstream. If the pit does not fill, then the headcut would continue its migration upstream with subsequent storm flows. Potential downstream channel incision, or downcutting, would also be larger with a 15-acre pit than a 7-acre pit because more sediment would settle in the 15-acre pit resulting in more sediment-starved water flowing downstream (i.e., hungry water with a higher capacity to cause channel incision).

These projections are only rough calculations because the volume of the pit (which can be thought of as an upside down truncated pyramid, or frustum, with a rectangular base) will change with the configuration of the footprint (i.e., a square versus a rectangular footprint). Furthermore, the volume of the pit in any particular year would be less than the 1,500,000 cubic yards of the proposed 15-acre 90-foot-deep pit because it takes time to reach that size. Even after five years, the footprint may be less than 15 acres because of the episodic natural in-fill.

The reduced mine footprint alternative would result in fewer adverse impacts to waters of the U.S., but would not reduce the other environmental impacts because the mine depth would remain at 90 feet. As a result, the Corps has determined that this project design would not represent the least environmentally damaging practicable alternative.

*Reduced mine depth:* The applicant has proposed to mine to a maximum depth of 90 feet. However, if groundwater is reached before that depth, they propose to backfill the pit with at least six feet of native material. Groundwater levels in the region are unpredictable because they fluctuate seasonally, vary with the underlying geology, and are highly dependent on the extraction rates of users (i.e., well pumping) in the valley. Therefore, if groundwater levels rose above the base of a 45-foot-deep pit with a surface footprint of 15 acres (approximately 6.7 acres at the base of the pit), then they would be required to import at least 65,000 cubic yards of fill material to cover the groundwater. Water table depths from wells in the vicinity have shown that groundwater levels fluctuate between approximately 40 feet below ground surface (bgs) to over 100 feet bgs. These data were collected between 1982 and 2001 from wells located outside of the riverbed on the adjacent terrace, which is approximately 12 feet higher in elevation and a couple hundred feet away. Consequently, the permittee could expose the water table or the unsaturated zone immediately above the water table (i.e., the capillary fringe) multiple times per year in the riverbed. Exposing subsurface water to the arid environment of the Cuyama River Valley would increase evapotranspiration and further contribute to the regional

overdraft of groundwater.

One alternative is to skim aggregate from the river channel using heavy equipment to scrape bars, terraces, or other surface deposits of alluvium. Bar skimming operations are generally small-scale because of the low extraction rates (i.e., the process is usually limited by the deposition of fresh alluvium). Bar skimming avoids many of the hydrologic impacts associated with pit mining (e.g., upstream headcutting, downstream channel incision) because the depth of extraction is generally limited to the lowest existing point at that time in the riverbed (also known as the redline). By limiting the depth of extraction the river can adjust (i.e., balance the influx of sediment and water) to the changing topographic conditions quicker under typical flow conditions. Bar skimming is more common in regions with wetter climates and meandering rivers that have a consistent, annual deposition of alluvium such as cobbles on large point bars (e.g., the Russian River in coastal northern California). Conversely, the Cuyama River flows infrequently and does not have depositional point bars in the vicinity of the proposed project.

Bar skimming operations generally affect larger areas of the riverbed because they are by definition shallow. Consequently bar skimming operations have larger impacts to riparian areas and the functions and services they provide to the environment. Although the Cuyama River at the project location lacks the willow riparian corridor typical of most streams in Santa Barbara County, the riverbed has a unique topographic complexity that supports mature scalebroom scrub habitat, which is dominated by the phreatophyte *Lepidospartum squamatum*. The scalebroom scrub occurs primarily on the network of raised in-stream terraces located between the active braids or along the banks. Scalebroom scrub has also adapted to the scour and deposition cycles of the river, but is found in lower densities in these locations.

In general, a bar skimming operation is not practicable because the surface alluvium in the riverbed at the proposed project site is primarily sand and lacks the PCC-grade aggregate described in the overall project purpose. Furthermore, large-scale bar skimming could result in greater direct impacts at the project site because the exposed bars (and in particular the few remaining terraces) are scarce in the region and are habitat for the federally endangered blunt-nosed leopard lizard, San Joaquin kit fox, and Kern primrose sphinx moth.

A second alternative would be to mine a pit as proposed but to reduce the depth. Historic mining records suggest that a pit at the GPS site once reached 85 feet in depth. The depth has been supposedly limited by groundwater which can fluctuate considerably depending upon rainfall, runoff, and regional groundwater extraction. Between approximately 2006 and 2008, the applicant mined to a depth of approximately 50 feet (with a

footprint of approximately 10 acres) near the centerline of the river. During the winter of 2007-08, the diversion berms around the mine were breached and water rushed into the pit. Rainfall during the winter of 2007-08 was near average with runoff events no greater than moderate. These moderate flows did not mobilize the bed materials and little sediment entered the mine pit. Consequently, a headcut developed at the eastern upstream corner of the mine pit. The headcut was approximately 40 feet deep and approximately 400 feet wide adjacent to the mine pit. The headcut extended more than 1500 feet upstream of the mine until it matched the natural grade of the riverbed. These data represent an adverse indirect impact from in-stream mining at the project site and to the neighboring properties. During the winter of 2008-09, there was below average rainfall and minimal runoff in the river. As a result, the channel erosion that occurred the previous year remained in-place and unchanged. The long-term effects of the channel erosion remain to be seen. Given the lack of historical river survey's and monitoring data, it is difficult to predict future river responses given the current situation. A moderate runoff event in the Cuyama River this year may result in additional headcutting and downstream channel incision, or a large runoff event may carry enough sediment to fill the eroded areas. If the mine pit had been excavated to 90 feet – as is currently proposed – instead of the 50 feet that was excavated, then the headcutting would have likely extended further upstream given the simple geometry of depth and slope. In other words, by mining to a reduced depth, many of the adverse hydrologic impacts (i.e., headcutting, bank erosion, downstream channel incision) would be avoided or minimized.

The second substantial indirect effect of mining to a depth of 90 feet is exposing groundwater. Mining in standing water or mud is problematic and the applicant does not propose to mine in such conditions. However, if the pit is excavated to 90 feet, it is possible that groundwater levels could rise and inundate the pit or subsurface flows could be intercepted by the pit. Standing water in the arid climate of the Cuyama River Valley would evaporate quickly and would continue to evaporate so long as water is near the pit. For instance, even if groundwater is not exposed to the atmosphere, capillary action would slowly draw water up from deeper depths and evaporate. This is important because the Cuyama River Valley is currently in a state of groundwater overdraft as a consequence of the intensive agricultural production in the valley. Furthermore, exposing groundwater increases the potential to directly contaminate the resource with pollutants, and serves as an attractive nuisance to wildlife. Animals attracted to water in the base of the pit would attract other animals, resulting in species becoming trapped and increased impacts to wildlife.

While a reduced mine depth reduces the potential magnitude of adverse impacts to hydrology (i.e., headcutting, downstream channel incision, and bank erosion) and groundwater, it does not avoid or minimize the direct impacts to waters of the United States or the other indirect impacts to the

environment. As a result, the Corps has determined that this project design does not represent the least environmentally damaging practicable alternative.

*Modified pit design:* This alternative would modify the design of the pit in order to minimize adverse impacts to hydrology and stream morphology. The proposed pit design would have an overall pit wall slope of 3:1 (horizontal to vertical) (comprised of internal slopes of 2:1 with an approximately 30-foot-wide bench for each 30 feet excavated into the pit). A shallower pit wall slope would minimize the drop, or fall, that water would take into the pit after it breaches the low-flow diversion berm. The steeper the drop of the water, the greater the erosive forces, thus resulting in a greater potential for lateral bank erosion and upstream headcutting. The natural grade of the river in this reach is approximately 50:1.

By reducing only the upstream slope of the pit wall from 3:1 to 5:1 or 10:1, the potential for headcutting is reduced. Water flowing down this shallower slope would be less likely to cut into the slope and travel upstream. Other factors influencing upstream and lateral pit erosion include the volume of runoff, the duration of the runoff event, the amount of bedload of the runoff, the type of bedload, and the volume of the pit. The factors are all highly variable and difficult to predict.

Reducing the upstream slope of the mine pit would also have the effect of minimizing the overall volume of the mine for a given footprint. A reduced volume would minimize the adverse hydrologic impacts to waters of the United States but also reduce the amount of material the permittee could extract for a given footprint and depth. With side slopes of 3:1, a 45-foot-deep, roughly square pit with a 15 acre footprint would have a volume of 769,500 cubic yards. With side slopes of 5:1, the same pit would have a volume of 598,500 cubic yards, approximately 23 percent smaller. With side slopes of 10:1, a pit with a footprint of 15 acres could not reach a depth of 45 feet because the wall would intercept before that depth. As such, a mine pit with 10:1 side slopes is not practicable.

Given that headcutting has in the past (and will most likely in the future) develop around the upstream side of the pit, the pit wall slope design alternative could be modified to apply only to that slope. By having a 5:1 slope on the upstream side of the pit with 3:1 slopes on the other sides the problem with headcutting during moderate runoff events could be minimized while still maximizing the volume to footprint ratio (approximately a 6-percent reduction in volume if only the upstream wall was modified).

Another design modification alternative would be to configure the berms (and the associated mine pit) with a narrow and linear orientation relative to the direction of flow. A long and narrow diversion berm would intercept

low and moderate flows less often. For example, by excluding the southeast corner of the 15 acre project footprint (an approximately one acre triangular-shaped section), the diversion berm would confine a smaller cross-section of the channel and there be less likely to be eroded. Moderate runoff events would be more likely to flow around the mine pit and berms given the shallower angle of approach (i.e., the flows could be directed around the pit in much the same way raised terraces in the riverbed near the project site are long and narrow). As a result, the berms would be breached infrequently and the potential for headcutting and lateral bank erosion during moderate runoff events would be minimized. Still, large runoff events would breach the berms and flow into the pit. Large runoff events are anticipated to carry a substantial amount of bedload and therefore would cause less erosion because sediment would be deposited in the pit. It is anticipated that large runoff events would be usually correlated with each El Nino event, which generally occur every four to seven years.

While a reduced slope of the upstream pit wall and long narrow configuration would minimize some of the adverse hydrologic impacts of the proposed project, it does not avoid or minimize the direct impacts to waters of the United States or adverse indirect impacts to the environment for excessive bed and bank erosion. As a result, the Corps has determined that this project design does not represent the least environmentally damaging practicable alternative.

*Reduced mine footprint, reduced mine depth, and modified pit design:* This alternative combines features of the smaller mine footprint, reduced mine depth, and modified pit design to further avoid and minimize adverse impacts to waters of the United States.

As stated above, the reduced mine footprint minimizes the direct adverse impacts to waters of the United States. By reducing the mine footprint the potential for intercepting low and moderate flows in the river is reduced and thus minimizes the potential for indirect adverse hydrologic impacts (e.g., upstream headcutting, downstream channel incision, and bank erosion). Similarly, by reducing the mine footprint the direct adverse impacts (e.g., habitat destruction, harassment) to federally listed threatened and endangered species is reduced.

As stated above, the reduced mine depth minimizes direct adverse impacts to groundwater resources. By limiting the depth of the mine pit, potential direct and indirect adverse hydrologic impacts such as upstream headcutting and downstream channel incision would be minimized. The overall volume of the mine pit will be a substantial factor influencing the magnitude of potential adverse hydrologic impacts. Limiting the mine depth would also minimize potential adverse impacts to groundwater (i.e., increased evaporative losses, contamination from pollutants, creation of an attractive nuisance to wildlife).

As stated above, a modified pit design would minimize adverse indirect hydrologic impacts to waters of the United States. By reducing the slope of the upstream pit wall to 5:1 (H:V), the erosive potential of water that breaches the diversion berms and flows into the pit would be minimized. By configuring the diversion berms to maximize the cross-sectional width of the channel (i.e., the wetted perimeter), the pits would be breached less often during low to moderate runoff events thus minimizing the indirect adverse hydrologic impacts to waters of the United States.

Specifically, by limiting the mine pit depth to 45 feet, the potential for upstream headcutting and downstream channel incision is reduced substantially. A mine pit depth of 45 feet would likely not intercept groundwater based on historic well data in the vicinity and observed comparisons between the current 50-foot-deep pit near the site and the approximately 40-foot-deep headcut (i.e., the pit has retained water for an approximately two years but the headcut area is dry). By reducing the pit footprint from 15 acres to 14 acres and configuring the pit to be narrower (i.e., eliminating the southeast corner of the triangle-shaped parcel), it would intercept fewer small to moderate runoff events. Therefore adverse impacts to hydrology from moderate runoff events can be minimized. A pit with a 14 acre footprint would have dimensions of approximately 1200 feet long by 510 feet wide by 45 feet deep (including a 5:1 (H:V) upstream slope) would be approximately 650,000 cubic yards (approximately 1,000,000 tons). Over a period of 5 years that would be the equivalent to 200,000 tons per year.

While this alternative results in a smaller annual extraction volume than proposed, it is considered to be practicable because it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose. Historic annual extraction volumes at the GPS site have averaged approximately 160,000 tons per year since 1988. Over the last five years, there has been a gradual increase in extraction averaging approximately 385,500 tons per year. Therefore, the LEDPA is within the range of previous mining operations. Furthermore, the annual equivalent extraction rate is closer to the roughly estimated annual sediment deposition rate for this reach of the Cuyama River. Episodic in-filling of the pit would potentially increase the annual extraction rate. Historically, mine pit in-fill material has been higher in sand content and therefore less valuable but still marketable. If the in-fill material was predominately clay and silt, then it may be uneconomical to mine the in-fill. It is anticipated that the applicant will apply for an extension to mine in or adjacent to the proposed footprint when the permit expires in 5 years. At that time the least environmentally damaging practicable alternative may be different based on detailed channel geometry data collected during the next 5 years. For instance, annual topographic monitoring data and seasonal groundwater depth data in the riverbed may demonstrate that the Cuyama River can, or cannot, support a larger/deeper

mine pit without additional adverse impacts to waters of the United States.

Based on available information, the modified pit design that is limited to a depth of 45 feet represents the least environmentally damaging practicable alternative because it avoids and minimizes direct and indirect adverse impacts to waters of the United States to the maximum extent practicable.

**E. Anticipated changes to the physical/chemical characteristics of the aquatic environment:**

- (X) **substrate:** The proposed mining project would cause long-term temporary adverse impacts to the river's substrate. As proposed, the mining operation would remove substrate from the river as well as redeposit substrate to form berms, roads, and stockpiles. The permit being considered under this analysis would be for a five year period. The substrate removed during mining would be replenished by deliveries of sediment from upstream over time. These sediments would be similar in composition to the ones that would be removed during mining, but vary depending upon the hydrologic sorting of the river. It is also anticipated that the mine pit would be episodically filled during large storm events. Based on the available information, the proposed mining project would result in direct adverse impacts to channel substrate. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to channel substrate.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of adverse impacts to substrate during mining, but would not eliminate direct adverse impacts to channel substrate.

- (X) **currents, circulation, or drainage patterns:** The proposed mine would have long-term temporary adverse impacts to drainage patterns in the river and could have permanent adverse impacts to drainage patterns. The Cuyama River has an ephemeral flow regime and braided channel morphology. Currently, the river channel is approximately 2,500 feet wide at the project site. Drainage patterns within the channel are highly variable and depend upon the supply of sediment and water. The proposed diversion berms around the mine would direct low flows to the eastern bank of the channel around the pit. The berms may cause a slight backwater effect as the cross-sectional diameter of the river is reduced. The backwater effect would be small given that the four-foot-tall berms are only capable of diverting small runoff events before being washed away. Once water begins flowing into the pit, there is the potential for a headcut to develop and travel upstream. Depending upon the amount of aggregate removed (i.e., the size of the pit) and the subsequent runoff events, the headcut could converted the braided channel into a single-thread channel with deep cut banks. This effect could last for decades depending upon the magnitude of the headcutting. Anecdotal accounts by land owners near the site suggest the predominate flow path has shifted towards the pit since mining

began at the GPS site. The potential for headcutting for a single mine pit any given year is relatively low based on past observations and the large quantity of bedload transported by the river. Most recently, the GPS mine pit (approximately 300 acre-feet in size) filled completely after the first few large storm events of the 2004-2005 water year. The filling of the pit was not accompanied by any observable headcutting, but a topographic survey was conducted. Yet, during the 2007-2008 water year, a 1500-foot-long headcut developed upstream of a pit that was approximately 50 feet deep and covered approximately 10 acres. The pit was located on the western bank and the river flows intercepted the pit at its southwest corner. This headcut substantially altered the drainage patterns of the river, forcing water into a single channel through the middle of the river. The pit also filled with water, preventing some channel flow from proceeding downstream.

Based on the available information, the proposed mining project would result in direct adverse impacts to drainage patterns. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to drainage patterns.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of adverse impacts to drainage patterns during mining, but would not eliminate direct adverse impacts to waters of the United States.

- (X) **suspended particulates; turbidity:** The mining operation would not be conducted in standing or flowing water, thus it should not directly contribute to in-stream turbidity. However, during high flows the earthen berms around the mine pit would be washed away and water would also flow into the pit. Erosion of the berms would contribute suspended particulates to the flowing river, but the Cuyama River is already considered a high sediment-load river (i.e., high suspended-load during low flows, and high bed-load during high flows), so the contribution from the berms would be minimal.
- (X) **water quality (temperature, salinity patterns and other parameters):** The mining operation would have a small adverse impact on water quality. The mining operation includes using heavy equipment in the river channel, and although this equipment is not intended to discharge oil or lubricants, operation of the equipment does result in oil and lubricants periodically dripping into the channel. The quantity of oil and lubricants entering the channel would likely be small because the operators would be required to have the equipment in good operating condition, and conduct all refueling and maintenance in uplands. The temperature of the river water may be adversely affected after it has flowed into and then ponded in an excavated mine pit. Depending upon the quantity of water and duration of ponding, the water may be heated above background temperature as it ponds in the sun. Ponding is a function of the infiltration rate in the pit. The infiltration rate will depend upon



the characteristics of the sediment deposited into the pit. If the sediments were fine grain-sized then they will slowly settle at the bottom of the pit and effectively clog the pore space of the river bed, hence slowing the infiltration of water into the ground. Large grain-sized materials will have a smaller clogging effect. In addition, water ponded in the pit would serve as an attractive nuisance to wildlife. Animals entering the pit to drink could potentially contaminate the water by depositing animal waste.

Based on the available information, the proposed mining project would result in direct adverse impacts to water quality. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to water quality.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of adverse impacts to water quality during mining, but would not eliminate direct adverse impacts to waters of the United States.

- (X) **flood control functions:** The proposed project would affect the flood control functions of the Cuyama River at the project site in three ways. First, the mine pit would increase the capacity of the river to accommodate flood flows. This increase would be relatively short-lived because the mine pit would be filled during large runoff events. Second, the construction of flood control berms around the mine pit would alter the natural flooding regime. The berms would direct water to the eastern bank during low flows when erosive forces are minimal. During moderate and large runoff events, the berms would be washed away. Third, the proposed project could adversely impact flood control functions by altering the natural form and function of the river. For example, recent observations have shown that when a moderate runoff event washes away the diversion berm and enters an approximately 50-foot-deep 10-acre pit, it can form a deep headcut extending approximately 1,500 feet upstream. This deeper and narrower channel form is substantially different than the natural braided channel morphology and could ultimately disconnect the floodplain from the active channel. A disconnected floodplain would inhibit overbank flooding and potentially lower the groundwater table. In this arid environment this may result in a long-term die-back of riparian and transitional vegetation. The severity of the adverse impacts to flood control functions would depend upon the delivery of water and sediment to this reach of the channel.

Based on the available information, the proposed mining project would result in direct adverse impacts to flood control functions. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to flood control functions.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result

in an additional reduction of adverse impacts to flood control functions during mining, but would not eliminate direct adverse impacts to waters of the United States.

( ) **storm, wave and erosion buffers:** Not applicable.

(X) **erosion and accretion patterns:** The proposed project would excavate approximately 500,000 tons per year of native substrate from the riverbed, substantially altering the river's natural balance of water and sediments in the immediate project vicinity. Consequently, during small runoff events water is diverted around the pit and the size of the pit grows and the sediment deficit for this reach of the river increases. During moderate to large runoff events the diversion berms would be washed away and water and sediment would enter the pit. As water flows into the pit the upstream pit wall will erode due to an increase in stream power, sediment will be deposited in the pit as the water pools, and sediment-starved hungry water will flow downstream. Large runoff events will generally transport enough sediment to fill in the eroded areas, but moderate events that do not mobilize the riverbed will cause both upstream headcutting and downstream channel incision. Given the relatively large scale of the proposed mine pit, any erosion patterns established in the riverbed will influence future erosion and accretion events. The limited number of historic observations suggest that small erosion patterns can be eliminated by large runoff events, but there is no evidence that large runoff events will eliminate a large erosion pattern in the Cuyama River.

Based on the available information, the proposed mining project would result in direct adverse impacts to erosion and accretion patterns. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to erosion and accretion patterns.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in substantially reduced adverse impacts to erosion and accretion patterns during mining, but would not eliminate direct or indirect adverse impacts to waters of the United States.

(X) **aquifer recharge:** The Cuyama River groundwater basin is currently in a state of overdraft. Over the last 50 years irrigated agriculture in the valley has steadily increased, and groundwater levels have dropped. The drop in groundwater levels highlights the importance of aquifer recharge dynamics at the project site. In general, when river flows breach the earthen berms around the mine pit, water that would otherwise flow downstream collects in the pit and infiltrates into the ground. The proposed project includes returning unmarketable, fine-grained material (i.e., fine sand and silt) back to the pit after processing. These small diameter particles have the potential to settle between the larger sediments in the bottom of the pit and slow the infiltration rate by

reducing the porosity of the soil's surface. The longer it takes for the water to infiltrate into the ground, the greater the amount of water that will evaporate into the air. This effect is enhanced when the river breaches the mining berms and additional suspended sediments are deposited at the bottom of the mine pit.

Aquifer recharge may also be reduced as the mine pit gets larger in area and deeper. A 90-foot-deep pit would be at, near, or below the groundwater level depending upon the time and location of the pit. Historic data from irrigation wells in the vicinity has shown that groundwater levels fluctuate between approximately 40 feet below ground surface (bgs) to 100 feet bgs. The groundwater level depends upon the underlying geology, the season, and the quantity of rainfall the preceding years. At one point in 2004, the GPS mine pit was approximately 85 feet deep and had not reach groundwater. Even if a pit does not break below the groundwater level, it may expose the unsaturated capillary fringe located immediately above the saturated groundwater. Exposing the capillary fringe to the arid climate of the region would increase the rate of evaporation from the soil and further diminish aquifer recharge. Similarly, a deep mine pit may intercept a perched lens of groundwater or a zone of shallow subsurface flow. Exposing either would further diminish aquifer recharge by increasing evaporation of subsurface water.

Based on the available information, the proposed mining project would result in both direct beneficial and adverse impacts to aquifer recharge. Mitigation measures such as implementation of best management practices would reduce, but not eliminate the temporary adverse impacts to aquifer recharge.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of adverse impacts to aquifer recharge during mining, but would not eliminate direct adverse impacts to waters of the United States.

- (X) **baseflow:** The proposed mine pit would be located in the center of the river and susceptible to intercepting baseflow. The Cuyama River is an ephemeral waterway and baseflow is very small during the wet season and absent in the dry season. The mine pit has the potential to alter the baseflow dynamics by increasing evaporative losses of groundwater that would sustain baseflow, but due to minimal amount of recessional flow typical of the project area, the proposed project would only result in long-term minor adverse impacts to baseflow.
- ( ) **mixing zone, in light of the depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification; discharge vessel speed and direction; rate of discharge; dredged material characteristics; number of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing:**

Not applicable.

**F. Anticipated changes to the biological characteristics of the aquatic environment:**

(X) **special aquatic sites (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45):** No special aquatic sites are located at the project site.

(X) **habitat for fish and other aquatic organisms:** The Cuyama River has an ephemeral flow regime and high suspended sediment load, making it poor habitat for fish and other aquatic organisms. In addition, the project site is located upstream of Twitchell Reservoir, thus preventing anadromous steelhead (*Oncorhynchus mykiss*) from reaching the site. As a result, the proposed project would have long-term minor adverse impacts to fish and other aquatic organisms in the project area.

(X) **wildlife habitat (breeding, cover, food, travel, general):** The Cuyama River is used by a variety of wildlife as both habitat for resident species and as a migratory corridor. The dominant plant community in the riverbed and adjacent terraces is scalebroom scrub characterized by *Lepidospartum squamatum*. Islands (i.e., raised terraces containing mature scalebroom scrub) located in the river between the various braided flow paths serves as more valuable habitat for wildlife than the generally barren flow paths. These islands are some of the last remaining native habitat in the valley because the floodplain terraces have, for the most part, been converted into agriculture fields. Small mammals, reptiles, insects, and birds use these islands for breeding, foraging, and as a shady refuge during the intense heat of the summer. The proposed project site has been mined previously and contains little habitat for wildlife (i.e., the terraces and islands have been removed).

Based on the available information, the proposed mining project would result in direct and indirect adverse impacts to wildlife habitat. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to wildlife habitat.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in an additional reduction of direct and indirect adverse impacts to wildlife habitat during mining, but would not eliminate direct adverse impacts to species that utilize waters of the United States.

(X) **endangered or threatened species:**

1) Listed endangered and/or threatened species or designated critical habitat present on site: two Blunt-nosed leopard lizards (*Gambelia sila*) were found

adjacent to the site during June 2003 surveys; San Joaquin kit fox (*Vulpes macrotis mutica*) are known to occur in the vicinity of the project and may use the project area as a movement corridor, for foraging, or to den; Kern primrose sphinx moth (*Euproserpinus euterpe*) are known to occur in the Carrizo Plain and in tributaries to the Cuyama River near the project site, but field surveys in early 2006 were negative and the site was determined to lack an adequate concentration of the host plant *Camissonia campestris*, but the site may act as a migratory corridor for the moth in certain years when the host plant colonizes the site; California jewel-flower (*Caulanthus californicus*), Hoover's eriastrum (*Eriastrum hooveri*), giant kangaroo rat (*Dipodomys ingens*) and San Joaquin wooly threads (*Monolopia congonii*) are known to occur in the vicinity of the project but were not found on-site nor are they expected to occur due to the lack of suitable habitat.

- 2) Proposed listed endangered and/or threatened species or proposed critical habitat present on site: None.
  - 3) Compliance with ESA - Formal/Informal consultation or conference: A Section 7 request for concurrence with a may affect, not likely to adversely affect determination for blunt-nosed leopard lizard, San Joaquin kit fox, and Kern primrose sphinx moth was requested with the U.S. Fish and Wildlife Service (Service) on 26 July 2007. On 4 October 2007 the Service concurred with the Kern primrose sphinx moth determination, but did not concur with the blunt-nosed leopard lizard and San Joaquin kit fox determination. On 26 October 2007, the Corps requested to initiate formal consultation for blunt-nosed leopard lizard and San Joaquin kit fox. The Service issued a biological opinion (BO) for blunt-nosed leopard lizard and San Joaquin kit fox on 20 May 2008. On 16 January 2009 the Service issued an amendment to the BO.
- (X) **biological availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities or other sources:** All of the fill placed in waters of the U.S. as part of the project would be native riverbed material. Therefore, the potential of introducing new biological availability contaminants is very low. If any contaminants were present in the riverbed, then they would be returned to virtually the same place they were found. However, the presence of a deep pit in a remote location raises the possibility for unauthorized dumping by trespassers. Historically, the Cuyama River has been subject to the dumping of wide range of trash including farm equipment, cars, and household appliances (trash cleanup in the valley was part of earlier settlement between EPA and GPS). While unauthorized dumping is an unlikely, these types of discharges would have the

potential to pollute groundwater. The potential increases with the depth of the mine pit and the duration of the mining operation.

The Cuyama River drainage basin is relatively undeveloped, except for farms (primarily row crops and tree nuts) located in the floodplain adjacent to the river. Runoff from these farms would likely contain conventional pesticides and fertilizers. Most of the rest of the drainage basin is protected as part of the Los Padres National Forest. A limited amount of cattle grazing and mining is permitted in the forest.

**G. Anticipated changes to the human use characteristics of the aquatic environment:**

- (X) **existing and potential water supplies; water conservation:** Processing of the mined aggregate would require water from the existing onsite well system. The processing plant uses approximately 70 acre-feet of water per year. This includes well water, capture of wash water, percolation out of the holding ponds, and evapotranspiration. This amounts to approximately 0.25% of the total overdraft in the Cuyama River groundwater basin. Currently, the Cuyama River groundwater basin is in an overdraft condition of approximately 25,000 acre-feet per year. This overdraft is a consequence of the arid environment and intensive agricultural production (e.g., carrots, pistachios, alfalfa, etc.).

Groundwater levels in the vicinity of the project site vary with the season and the year, and depend also upon the underlying geology. In general, groundwater levels are the shallowest in the spring after the winter rains infiltrate into the ground. Groundwater levels have also been found to rise dramatically following a wet winter. Groundwater levels drop during the summer when well water is pumped to irrigate crops in the valley. Historic well data from the adjacent terrace shows that on 23 May 1983 the Triangle E Farms, Well #3 (located north of Deer Park Creek at the confluence with the Cuyama River) had standing water at 40 feet below ground surface (bgs). The terrace is approximately 10 feet higher in elevation than the bed of the Cuyama River. If this ground water level extended west, across the river bed along the same plain, then standing water would be approximately 30 feet bgs where mining is proposed. Similarly, GPS, Well #1 (located near the existing processing facility) had standing water at 53 feet bgs on 11 May 2001. While Well #2, located approximately 100 feet south, had standing water at 66 feet bgs on the same day. Conversely, the former GPS mine-pit reached a depth of approximately 85 feet bgs in 2004 without exposing standing water.

In general, the mine pit would capture stream flow that would otherwise proceed downstream and augment infiltration in the project area. The rate of infiltration would vary depending upon the amount of fine grain sediments that settle at the bottom of the pit. The greater the amount of fine grain sediments, the slower the infiltration rate and the greater the amount of evaporation. Observations of the former pits at GPS suggest that water could

pond in the pit for hours (i.e., when the whole pit fills concurrently with sediment) to months at a time (i.e., when the pit fills with water but only fine grain sediments). Mining below the level of groundwater would increase evaporative losses to the atmosphere, especially during the dry season. The rate of evaporation in the arid and hot Cuyama River Valley is very high. The applicant has proposed to mitigate this effect by not mining below the existing level of groundwater. However, given the spatial, seasonal, and annual fluctuations in the level of groundwater it is a difficult variable to predict. Furthermore, the applicant does not have to expose standing water to adversely affect groundwater. By intercepting the unsaturated capillary fringe located immediately above the groundwater, the applicant could accelerate evaporative losses of groundwater, resulting in long-term adverse impacts to groundwater.

- ( ) **recreational or commercial fisheries:** Not applicable.
- ( ) **other water related recreation:** Not applicable.
- (X) **aesthetics of the aquatic ecosystem:** The Cuyama River Valley is valued as a rural area rich in natural beauty. Located near the project site are the Los Padres National Forest and the Carrizo Plain National Monument. The proposed mine would create an unnatural feature in the river floodplain, but the mine pit would be located generally below ground and mostly hidden from the public, except for the property owners located on the adjacent bluff. The processing facility and aggregate stockpiles would be visible to the public from the State Route 33. Given the existing agricultural production in this rural valley, the presence of mining equipment would not be completely out of context. After mining has ceased, it would likely take years for the pit to fill with native sediments. It would probably take many more for years for the riparian vegetation to colonize the riverbed and scalebroom habitat to develop on terraces.

Based on the available information, the proposed mining project would result in direct and indirect adverse impacts to the aesthetics of aquatic ecosystem. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to aesthetics.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in reduced adverse impacts to the rivers form and process and thus the aesthetics during mining, but would not eliminate direct adverse impacts to waters of the United States.

- (X) **parks, national and historic monuments, national seashores, wild and scenic rivers, wilderness areas, research sites, etc.:** The Los Padres National Forest (LPNF) is located several miles to the south, east, and west of the project site. California State Highway 33, which is adjacent to the project, is a California State Scenic Highway and a National Forest Scenic Byway (in the LPNF

stretch). The proposed project would have no direct adverse impacts on the LPNF because the river flows north, away from the LPNF boundaries. The Carrizo Plain National Monument is located in an adjacent valley north of the Cuyama River and would not be directly affected by the proposed project.

( ) **national natural landmarks program:** Not applicable.

(X) **traffic/transportation patterns:** The proposed project is located on State Route 33, approximately 6 miles south of State Route 166. Both roads are two-lane undivided highways. All trucks transporting aggregate material from the proposed project would travel north on Highway 33 to Highway 166. No trucks would travel south through the Los Padres National Forest. The proposed mining operation would increase the extraction rate over historic levels and thus would add vehicle trips to local traffic patterns.

Based on the available information, the proposed mining project would result in direct minor adverse impacts to the traffic patterns. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to traffic patterns.

With the proposed changes to the configuration of the proposed mine pit, corresponding to a reduced extraction rate, the modified project design would result in reduced adverse impacts to traffic patterns.

(X) **energy consumption or generation:** The proposed processing facility would be powered by electricity that is already provided on-site. The increase in demand for electricity would not require the development of additional energy supplies. The mining and hauling of the aggregate would be powered by diesel-powered trucks. The proposed project should have a net reduction in energy consumption for the region because the mine would provide aggregate to local communities instead of having the aggregate imported from further away. Based on the above information and the no federal action alternative, the proposed permit action would result in a long-term temporary minor benefit to energy consumption and generation.

( ) **navigation:** Not applicable.

(X) **safety:** The mine would be built according to federal, state, and local regulations for mine safety. Excavating a mine pit in an active river channel of this size is inherently dangerous. The Mining Safety and Health Administration requires that safety berms are constructed around the perimeter of any pit that is deeper than the mid-axle point of the smallest vehicle used in the mine. In addition, the riverbed materials are unconsolidated sand and gravel and need to be sloped appropriately to prevent failure. An analysis of mine slope stability for the Diamond Rock proposal found that mining should not occur below the level of groundwater to prevent slope failure (Hilltop Geotechnical, Inc., 31 August 2005).



As with any mining operation that uses heavy equipment, there is also the potential for an accident that could result in construction-related injuries. The aggregate extracted would be transported using haul trucks that would operate on public roads according to state regulations. The increase in truck trips would result in an increase in the potential for a vehicle accident. Even under the no federal action alternative, aggregate mined from the river would also be transported from the site using haul trucks.

Severe erosion of the eastern bank would threaten a 24-inch diameter natural gas pipeline identified on the Cuyama Peak USGS topographic map. If the pipeline was exposed or undermined, it would pose a substantial risk to the neighboring community of Ventucopa and people travelling along Highway 33. Given that the pipeline is buried behind the existing bank, it is unlikely the pipeline would become exposed but it is possible and highlights the need for monitoring lateral bank erosion.

Based on the above information and the no federal action alternative, the proposed permit action would result in long-term temporary adverse impacts to safety. With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in reduced adverse impacts to traffic patterns.

- (X) **air quality:** The mining operation would emit combustion pollutants and particulate matter into the local air basin. The discharge of fill material into waters of the U.S. would require the use of heavy earth-moving equipment (i.e., off-highway equipment). All equipment would be operated in accordance with applicable federal, state, and local laws and regulations. Approximately 15 diesel-powered vehicles – including front-end loaders, scrapers, dozers, excavators, haul truck, and water trucks – would be necessary to construct and operate the mine. Diesel-powered heavy equipment emits compounds that can negatively affect air quality, most notably PM<sub>10</sub>, NO<sub>x</sub>, and CO. Emissions from the discharge of fill material into waters of the U.S. would also produce fugitive dust emissions. Dust would be created during excavation, stockpiling of sediments in the river, and driving into the mine on the dirt access road. These activities would adversely affect air quality. However, the impacts would be small because of the limited number of vehicles and remote location. In addition, the impacts would be temporary in nature, occurring during business hours, and comprise only a fraction of county-wide emissions. Water would be sprayed on the road surfaces in the mine to minimize the generation of dust. Haul trucks would be used to transported the mined aggregates from the mine to various locations in, and around, Santa Barbara and Kern Counties. Transportation of the mined materials would not involve a discharge of fill material into water of U.S.
  
- (X) **noise:** Mining activities would generate loud noises through the operation of heavy equipment during hauling, excavation, and processing of the aggregate.

Given the rural setting and large land parcels, the noise impacts would be felt by the limited number of people who live and work adjacent to the river. Land owners on the western bank have complained about the beeping sound of heavy equipment when it is driving in reverse. The noise impacts are partially mitigated by the fact the mine is below ground and would represent long-term minor impact when compared to baseline conditions:

- (X) **historic properties:** A record search of the California Historic Resources Information Service found no known properties within the project area. Two field surveys found no cultural resources on-site. Historic properties are not anticipated to occur on-site because the project is located within an active alluvial floodplain.
- ( ) **land use classification:** Not applicable.
- (X) **economics:** The proposed project would generate income for the applicant. The mine would maintain several jobs for the region, resulting in minor economic benefits to the local economy.
- (X) **prime and unique farmland (7 CFR Part 658):** The proposed project site is located within the riverbed and the soil is classified as either riverwash (Rs) or sandy alluvial land (Sh), neither of which is prime or unique farmland. The processing facility is located on land classified as Mine Pits and Dumps (MpG).
- ( ) **food and fiber production:** Not applicable.
- (X) **general water quality:** The mining operation would have adverse impacts on water quality. The mining operation includes using heavy equipment in the river channel, and although this equipment is not intended to discharge oil or lubricants, operation of the equipment does result in oil and lubricants periodically dripping into the channel. The quantity of oil and lubricants entering the channel would likely be small because the operators would be required to have the equipment in good operating condition, and conduct all refueling and maintenance in uplands. The temperature of the river water may be adversely affected after it has flowed into and then ponded in an excavated mine pit. Depending upon the quantity of water and duration of ponding, the water may be heated above background temperature as it sits in the sun. Ponding is a function of the infiltration rate. The infiltration rate will depend upon the characteristics of the sediment deposited into the pit. If the sediments were fine-grained then they will slowly settle at the bottom of the pit and effectively clog the pore space of the river bed, hence slowing the infiltration of water into the ground. Large grain-sized materials will have a smaller clogging effect. In addition, water ponded in the pit would serve as an attractive nuisance to wildlife. Animals entering the pit to drink could potentially contaminate the water by depositing animal waste.

Based on the available information, the proposed mining project would result

in direct and indirect adverse impacts to water quality. Mitigation measures such as implementation of best management practices for mining vehicles would reduce, but not eliminate these temporary adverse impacts to water quality.

With the proposed changes to the configuration of the proposed mine pit, the direct and indirect adverse impacts to water quality would be reduced because the number of vehicle trips into the mine per year would be reduced and the pit would be above the level of groundwater.

- (X) **mineral needs:** The proposed project would provide PCC-grade aggregate to markets in Santa Barbara, San Luis Obispo, and Kern Counties. PCC-grade aggregate is valued for its strength and durability as a building material, and is used in projects such as bridges and building foundations. As a result, the proposed project would provide important benefits by meeting some of the mineral needs in the project vicinity.
  
- (X) **consideration of private property:** The proposed project would be located on private property. The project has the potential to adversely impact private property located adjacent to the mine site. The upstream land owner has also proposed an in-stream aggregate mine. The proposed project could adversely affect the upstream land owner's property value if a severe headcut were to develop. A headcut would erode away the aggregates currently located in the riverbed on their property. The magnitude of any headcut is difficult to predict, but would depend upon the depth of the mine pit, the volume of the mine pit, the magnitude of the flow event, and the volume of sediment being transported. Over the last several years several headcuts have developed and eroded away alluvium located on the adjacent property. A third mine has been proposed, though no application has been received by the Corps, downstream of the proposed project. The proposed project could potentially prevent sediment from being deposited on the downstream property. This could potential cause channel incision and the loss of aggregate of the property. The proposed project also has the potential to impact private property located on the western bank and immediately upstream of the project site. These impacts would include bank erosion resulting from water diversion berms, and potentially in-stream down cutting that could result if a headcut were to develop once the berms are washed away and water flows into an empty pit. Based on anecdotal evidence from the downstream GPS mine, these impacts appear to be unlikely because of the high sediment load of the Cuyama River.

Several property owners in the vicinity of the project have voiced opposition to the proposed project during and since the Corps' Public Notice. They are concerned that the proposed mine and other future mines would adversely affect the value their property. Their concerns include excessive erosion within the floodplain, reducing groundwater levels, additional traffic, and excessive dust.

Based on the available information, the proposed mining project would result in direct and indirect adverse impacts to private property. Mitigation measures such as implementation of best management practices would reduce, but not eliminate these temporary adverse impacts to aesthetics.

With the proposed changes to the configuration of the proposed mine pit, including a reduced depth to 45 feet, the modified project design would result in further reduced direct and indirect adverse impacts to private property during mining, but would not eliminate adverse impacts to waters of the United States.

( ) other: Not applicable.

H. **Other anticipated changes to non-jurisdictional areas that have been determined to be within the Corps' NEPA scope of analysis:** Operation of the existing processing facility, which is located completely in uplands, is considered within the Corps' NEPA scope of analysis. The processing facility would separate the unmarketable fine grain material from the marketable PCC-grade aggregate using a clean water washing process. The wash water would be held in siltation ponds until the fine grain sediments fall from suspension, then the water would be recycled. The marketable material would be stockpiled on site and sold. The unmarketable fine grain material, estimated at approximately 30% of the mined material, would be returned to a section of the mined pit. The unmarketable material is generally fine sand and silt. Clay is separated from the wash water in settling ponds and is sold as a soil amendment. The stockpiling of mined material in uplands, especially fine grained material, would generate fugitive dust due to the Cuyama River Valley's hot dry winds. Water would be sprayed on the stockpiles to suppress dust. The processing facility would also generate noise during its operation and require artificial lighting during low-light conditions.

I. **Summary of indirect and cumulative effects from the proposed permit action:** The proposed project design has the potential to cause substantial adverse indirect and cumulative effects in the river's form and function. These indirect and cumulative adverse impacts may transition from long-term temporary impacts to permanent features of the river. Based on currently available information, mining to a depth of 90 feet in the river would impact not only the mine footprint, but would effect the river both up- and downstream, potentially for several thousand feet. More specifically, by removing large volumes of riverbed material, the natural balance of water and sediment in this reach of the river could be substantially disrupted. Models provided by the applicant show a high level of uncertainty regarding future in-fill scenarios. Recent sediment budget analyses for the Cuyama River suggests the average annual sediment yield at the site varies between 314,000 tons (the Diamond Rock EIR estimate based on an empirical sediment transport equation with the HEC-RAS hydraulic model) and 338,350 tons (the GPS estimate based on a percentage of the total yield at calculated at Twitchell Reservoir). While these two estimates used different approaches and arrived at similar annual yields,

they are based on limited site-specific data and lack detailed insight into the long-term dynamics of the river. For instance, the sediment budget analyses do not describe the effects of different sized rainfall events on the capacity or competence of the river to transport sediment. However, they are the only estimates available because the applicant did not prepare a long-term study of the water and sediment transport dynamics for this reach of the Cuyama River. As such, this assessment and review is based on best available information and shows that the proposed project would create a sediment deficit of approximately 175,000 tons per year. This sediment deficit would likely result in considerable adverse impacts to the riverbed both up- and downstream. In particular, the cumulative effects of the proposed projects could negatively affect federal lands managed by the Bureau of Land Management located immediately upstream of the Diamond Rock site and immediately downstream of the GPS site. These effects include erosion of federal mineral rights without authorization and large-scale loss of habitat used by federally threatened and endangered species.

Based on available information, the proposed project design has the potential to cause substantial adverse indirect and cumulative impacts to groundwater resources in the valley. Mining in the riverbed (to a depth of approximately 90 feet) has the potential of exposing either the groundwater table or shallow subsurface flow. Fluctuations in groundwater levels and highly variable subsurface flow patterns make it difficult to predict the precise location of groundwater. Exposing subsurface water supplies in this arid environment would increase evaporation rates and contribute to the regional overdraft condition. This would adversely affect adjacent property owners who rely on groundwater.

Based on available information, the proposed project has the potential to cause substantial adverse indirect and cumulative effects to plants and wildlife in the valley. Headcutting or downstream channel incision outside of the mine footprint would physically remove the increasingly rare scalebroom scrub habitat in the valley. Scalebroom scrub and similar habitats are used by several federally listed species including the BNLL, SJKF, and KPSM. Any drop in grade of the riverbed would also have the potential to cause bank failure and the loss of in-stream and adjacent terraces. Indirect effects to habitat located outside of the mine footprint were not considered in the BO and therefore are not considered in the incidental take statement. As such, the indirect destruction of occupied habitat could be considered unauthorized take.

The LEDPA (modified project design) would reduce the adverse indirect and cumulative impacts of the mining operation to below what is the level of significance by avoiding and minimize both direct and indirect impacts to waters of the United States. In particular, by limiting the footprint of the mine pit (i.e., the location and extent of the diversion berms), the depth of mining (i.e., the location and extent of roads and stockpiles), and the layout of the mine pit (i.e., the grading of the pit walls) the potential for excessive unnatural bed and bank erosion can be reduced. In particular, the potential adverse indirect and cumulative impacts from the proposed project and up to two other mines would be reduced by keeping the

mines in relative balance with the net deposition of sediment in this reach of the river. As discussed above, the LEDPA (modified project design) would have equivalent extraction rate of approximately 200,000 tons per year. This is less than the proposed design of 500,000 tons per year, but close to the historical extraction average of approximately 160,000 tons per year. Based on the available information, this is below the quantity of sediment deposited annually for this reach of the river.

**J. Other cumulative effects not related to the proposed permit action:**

1. **Occurred on site historically:** The riverbed in the vicinity of the project site has been mined for aggregate since 1969. Extraction rates from the GPS mine have varied over that time, averaging approximately 160,000 tons per year, but ranging from less than 30,000 tons per year to, more recently, nearly 500,000 tons per year. Large runoff events with high bedload transport usually occur every 4 to 7 years, and have previously filled in these pits. Small runoff events have generally flowed around the diversion berms placed in the river. However, moderate-sized runoff events have caused substantial headcutting. Currently, a headcut from an approximately 50-foot-deep, 10-acre pit excavated between 2006 and 2008 extends nearly 1,500 feet upstream. The headcut is located within the existing 15-acre footprint being considered for mining in this permit action. Consequently, the volume of available for mining has approximately been cut in half. Furthermore, any flows in the river would be funneled through this headcut and likely washout any diversion berms placed in the headcut. Still, within the next five years a large runoff event may deposit enough aggregate material to render the project feasible.

During the headcutting event of 2007-2008, the mine pit partially filled with water. This ponded water persisted through the following dry season, suggesting a connection with subsurface water (e.g., exposing the groundwater table, intercepting shallow subsurface flows). Similarly, in 2003 a headcut formed at the GPS site and extended more than 300 feet upstream. It was during this headcut event that the approximately 18 acre pit filled from approximately 80 feet deep to 54 feet deep. During the large rainfall and runoff winter of 2004-05, the pit and associated headcut were naturally filled with sediment. Other large rainfall and runoff events occurred in the winter of 1994-95 when approximately 2 million cubic yards of sediment filled the existing pit, and the winter of 1997-98 when approximately 100,000 cubic yards of sediment filled the existing pit.

In-stream mining at the GPS site has eliminated much of the existing native scalebroom scrub habitat in the riverbed. The Cuyama River is a topographically complex system with a braided channel morphology and numerous floodplain terraces. These terraces, of differing levels, are habitat for scalebroom scrub and the federally listed blunt-nosed leopard lizard (BNLL), San Joaquin kit fox (SJKF), California jewelflower (CAJF), and Kern primrose sphinx moth (KPSM). As the Cuyama River Valley has developed, primarily for agriculture, the quantity of mature scalebroom scrub has decreased. In

particular, aerial images show that the floodplain terrace located on the west bank on the GPS property was completely removed during historic mining. Meanwhile, the adjacent property, located to the south (i.e., upstream), still has the scalebroom scrub-dominated terrace. This terrace is the location of several BNLL sightings.

A search of the database for other in-stream mining projects in the Santa Maria River drainage basin (the Cuyama River and Sisquoc River are the major tributaries that combine to form the Santa Maria River) and all permitted projects around the project site within a 15-mile radius was conducted. Mining projects located in the Sisquoc and Santa Maria Rivers are essentially isolated from the Cuyama River because of Twitchell Dam (which is located on the Cuyama River upstream of its confluence with the Sisquoc River and which retains almost all of the sediment that flows into it). The Sisquoc River mines are included in this discussion as a general comparison of mining activities in the greater drainage basin, but are not considered as part of the cumulative impact assessment.

Other active permitted in-stream mines in the region include CalPortland (formerly Union Asphalt) and Hanson Aggregates West (Hanson). Both operations are shallow excavation operations (i.e., bar skimming) that cannot go deeper than the redline. The CalPortland operation is located along a twelve-mile-long reach of the lower Sisquoc River. CalPortland received Corps authorization to mine up to 1,130 acres of jurisdictional waters over a 25-year duration, including 8.9 acres of Corps-defined wetlands and 632 acres of mulefat scrub, in order to extract up to 2 million cubic yards of material per year. From 1997 to 2007, CalPortland mined approximately 673 acres of jurisdictional waters over 7.4 miles. In order to compensate for these impacts, CalPortland is required to provide a minimum of 1,351 acres of habitat restoration concurrent with or immediately following jurisdictional impacts, including 43 acres of Corps-defined wetlands, 98 acres of willow woodland, and 1,210 acres of mulefat scrub.

The Hanson operation is located along a 2-mile reach of the lower Sisquoc River between the east and west components of the authorized CalPortland project. Hanson received Corps authorization to mine up to 97 acres of jurisdictional waters over a 25-year duration, including 2.0 acres of Corps-defined wetlands and 18 acres of mulefat scrub, in order to extract up to 714,000 cubic yards of material per year. From 2006 to 2007, Hanson mined approximately 22 acres of jurisdictional waters over approximately 1.3 miles. In order to compensate for these impacts, Hanson is required to provide a minimum of 475 acres of habitat restoration concurrent with or immediately following jurisdictional impacts, including 64 acres of Corps-defined wetlands, 110.5 acres of willow woodland, and 300.5 acres of mulefat scrub.

Over the last 15 years, Santa Barbara County Flood Control received Corps authorization for the removal of sediment from select reaches of the lower

Santa Maria River in the immediate vicinity of the City of Santa Maria (which is separated from the project site by Twitchell Reservoir). This practice of channel clearing is intended to encourage the river to flow in the center of the channel away from development. Flood Control periodically removes sediment and vegetation from three distinct reaches and proposes to remove sediment from two additional reaches in the near future. These 4-foot-deep channels total approximately 6 miles in length and are approximately 400 feet wide.

Historically, aggregate was also mined from the channel of Alamo Creek near its confluence with the Cuyama, approximately 60 miles downstream from the proposed project and immediately upstream of Twitchell Reservoir. Mining in Alamo Creek has ceased, but the Corps is currently processing an application to stabilize a section of the creek in response to the headcut that has migrated up the creek for many years and destabilized the banks.

Two off-channel mines also occur near the proposed project: Ozena Valley Ranch Mine located approximately 18 miles upstream on the Cuyama River, and the Lima Gypsum Mine located on Quatal Canyon. The Ozena Mine extracts aggregate from an approximately 7-acre pit on a terrace adjacent to the river. The Lima Mine extracts gypsum from a quarry located in the mountains, outside of the floodplain.

A search of the ORM2 database found 13 Section 404 permit actions within a 15-mile radius of the proposed project. These included: maintenance of the off-channel Ozena aggregate mine levee on the Cuyama River, two other levee repair projects, six road maintenance projects, and four utility line maintenance projects. These projects resulted in approximately 3 acres of temporary impact and 1.5 acres of permanent impact to waters of the U.S. Of these 13 permit actions, 8 were considered emergency actions in response to flooding in the Cuyama River.

2. **Likely to occur within the foreseeable future:** GPS has proposed to Santa Barbara County, but not to the Corps, to expand the existing operation into a previously undisturbed area of the Cuyama River adjacent to the existing mine footprint. This new mine would be mined after the remaining marketable material is extracted from the existing mine footprint. GPS has proposed to extract approximately 500,000 tons of aggregate per year. The replacement acreage would impact approximately 20 acres of waters of the U.S. and adjacent uplands on the western bank.

The Corps is also currently processing a mining application for Troesh Materials, Inc. for an 84-acre parcel called the Diamond Rock Mine (Corps File No. 200300803). The Diamond Rock Mine is proposed for mining for a 30-year period. Troesh Materials proposes to mine an average of 500,000 tons of aggregate per year, with a peak extraction of 750,000 tons per year. The Diamond Rock Mine is proposed for a previously undisturbed area of the river located approximately 1,500 feet upstream of the GPS Mine.



A third in-stream mine, known as the Richards Mine, has been presented to Santa Barbara County, but not to the Corps. This mine would be located several hundred feet downstream of the GPS mine. No specifics have been proposed at this point, but it would likely be similar to what has already been proposed at the GPS and Diamond Rock mines.

3. **Contextual relationship between the proposed action and (1) and (2) above:** In the absence of mitigation, the proposed project design, in combination with three reasonably foreseeable mines, could have a significant adverse effect to the aquatic environment in this reach of the Cuyama River. Of greatest concern is excessive increase in the erosion of the riverbed (i.e., headcutting, downstream channel incision) and riverbanks in the project vicinity from a deficit of sediment within the system. Recent observations of the river have shown that headcutting from an approximately 50-foot-deep 10-acre-area pit can extend 1,500 feet upstream. Given that the three proposed pits would be approximately that same distance apart, but much larger in area, there is the potential for the GPS, Diamond Rock, and Richards mines to form one very large pit.

The formation of a very large in-stream pit from the three mining operations would create a substantial knickpoint in the longitudinal profile of the river. This knickpoint could theoretically develop into an extensive headcut and also cause substantial channel incision downstream. This very large pit and subsequent erosion could impact the adjacent property owners and would threaten the integrity of Highways 166 that crosses the river approximately 6 miles downstream and Highway 33 that parallels the river. Over the last few years several Corps permit actions have dealt directly with emergency maintenance of Highways 33 and 166 in response to bank erosion in waters of the United States.

To facilitate major channel destabilization in this reach of the Cuyama River, a chain of not uncommon events would need to occur. First, there would need to be a couple years of below average rainfall when the mining operations could excavate large deep pits with little interruption and no natural in-fill. Then, during a season of average rainfall events and moderate runoff events the diversion berms would be breached. With only moderate runoff, flow velocity would be insufficient to mobilize the channel substrate and therefore little to no bedload would be transported. Consequently, the runoff would cut along the upstream edge of the pit with only water and suspended sediment entering the pit (i.e., no bedload material to fill the pit). Therefore, the headcut could migrate quickly upstream until the grade of the slope reached the bottom of the pit. With two or three very deep in-stream pits within close proximity of each other, the downstream side of the upper pit would fail as the downstream pit headcuts, the pits would combine, and the erosion could continue. If this event was followed by another moderate runoff event the headcutting and downstream channel incision could expand further. This scenario would result

in a sediment deficit in this reach that far exceeds the natural sediment transport dynamics of the river. As a result the grade of the river would drop substantially, potentially tens of feet for miles downstream. Successive runoff events would likely deposit additional sediment in this reach, but erode bank material further downstream because it would be sediment starved.

As mentioned above, the estimated natural annual sediment yield at the site is approximately 325,000 tons. The Diamond Rock Mine and GPS Mine have each proposed to mine 500,000 tons per year with Diamond Rock proposing to mine up to 750,000 tons in any one year. It is presumed the Richards Mine would similarly extract 500,000 tons per year. Together the three mines would extract a total of approximately 1,500,000 tons of aggregate per year from an approximately 1-mile-long reach of the river. According to the basic annual sediment yield estimate prepared by the applicant, this would create an annual deficit of approximately 1,175,000 tons per year. For any given year the Cuyama River could transport zero tons of sediment or over 1 million tons. The scenario presented above could occur two years from now or 20 years from now. Hence, even during an "average" rainfall and runoff year this reach of the Cuyama River would experience a substantial sediment deficit with the two proposed and third reasonably foreseeable mine.

The headcutting assessment provided by the Diamond Rock Mine consultant stated that, relative to the Diamond Rock Mine reach, the "localized reach through the GPS Mine area is even flatter [than the up- and downstream reaches] at 0.5 percent. It is assumed that this is caused by the mining operations and nature is trying to establish equilibrium in this stretch of the river." However, the consultant did not assess the potential change in elevation or gradient of the river under various scenarios with two, or three, very deep mine pits in close proximity in the river.

Based on available information, cumulative impacts to groundwater as a result of having three large in-stream pits exposed to the arid climate of the region is another major concern. The Cuyama River Valley is already in a state of overdraft as a result of intensive agriculture in the region. If the pits exposed groundwater, or shallow subsurface flow, then the potential loss of water to evaporation would be another adverse impact. Further losses of moisture from the river, whether they be evaporation or disconnection of the floodplain may adversely affect the native scalebroom scrub habitat and the species that depend upon it in the agriculturally dominated valley.

Lastly, the proposed project design, in combination with two other mine projects, would have a cumulative adverse impact to federally threatened and endangered species known to inhabit this reach of the Cuyama River. The combined effects of changes to the channel morphology, additional noise and dust, the loss of riverbed vegetation, and the alteration of hydrology is potentially significant without the appropriate mitigation. In particular, two or more large in-stream mines have the potential to disrupt the migratory

pathway the riverbed provides to the federally listed SJKF and BNLL in the Cuyama River Valley, the Carrizo Plain National Monument, the Los Padres National Forest, and the Central Valley. A report prepared by UCSB, titled "Conservation Assessment for the Cuyama Valley: Current Conditions and Planning Scenarios" and dated June 2009, highlights the importance of the riverbed as a migratory corridor. At present, intensive agricultural operations have covered most of the valley and encroached into the floodplain, while Highways 33 and 166 have further constrained wildlife movement between the Los Padres National Forest to the south, the Carrizo Plain National Monument to the north, the Central Valley to the east, and the Pacific Coast to the west. Two or more large in-stream mines would reduce riverside vegetation cover and constrict the width of the river that could be used by wildlife. Excessive bed and bank erosion would further reduce the suitability for wildlife movement.

The LEDPA (modified project design) would avoid and minimize many of these direct, indirect, and cumulative adverse impacts to waters of the United States. Diligent monitoring of the authorized discharges of fill and the corresponding changes to the form and processes of the Cuyama River is critical to any future re-authorizations or modifications. Monitoring data required as part of this authorization shall include changes to the longitudinal profile of this reach of the Cuyama River, up- and downstream cross-sections of the river, and depths of groundwater in response to a range of rainfall and runoff events. Future authorizations may necessitate changes to the modified project design after careful review and analysis of the monitoring data.

**K. Mitigation proposed by applicant:**

1. **Avoidance, minimization, compensation sequence:** The proposed project would avoid impacting previously undisturbed waters of the U.S. by only mining in the existing mine footprint. The proposed project would minimize adverse impacts to waters of the U.S. by not installing any permanent structures in the riverbed. The applicant has proposed that the off-site mitigation projects completed as part of the two agreements with EPA are sufficient compensation for impacts to waters of the United States. The compensatory mitigation plans included native habitat preservation for the endangered California jewelflower and the removal of trash and debris from within the Cuyama River floodplain. The modified project design would result in additional avoidance and minimization of direct and indirect impacts to the aquatic environment and, based on available information, would comply with the requirements of the 404(b)(1) Guidelines.
2. **Summary of why applicant's proposal does or does not reduce impacts to below significance:** Based on available information, the applicant's proposed project in combination with past, present, and reasonably foreseeable projects does not reduce impacts below the level of significance because the proposal fails to demonstrate that volume of material excavated would not cause

potentially significant indirect and cumulative adverse impacts to waters of the United States. For instance, the proposed annual extraction would substantially exceed the roughly estimated natural sediment balance for this reach of the Cuyama River. When viewed in conjunction with the other proposed in-stream mining projects the potential exists for long-term adverse impacts to the physical, chemical, and biological integrity of the Cuyama River.

3. **Summary of why the modified project design does or does not reduce impacts to below significance:** The modified project design would reduce indirect and cumulative impacts below the level of significance. The reduced mine footprint, reduced depth, and modified pit design alternative avoids and minimizes the potentially significant individual and cumulative adverse impacts. By reducing the volume of the mine pit, the potential adverse hydrologic impacts (e.g., upstream headcutting, downstream channel incision) would be minimized because the net annual sediment deficit of this reach of the river would be smaller. By reducing the footprint of the mine pit, the direct and indirect adverse impacts to the channel geometry, flow patterns of the river and habitat for federally listed animals would be minimized. By reducing the depth of the mine pit, the direct and indirect adverse impacts to groundwater are minimized. By modifying the pit layout, direct and indirect adverse impacts to the sediment transport functions of the river are minimized and therefore this environmental assessment for the modified project design meets all the requirements of the National Environmental Policy Act.

### III Findings:

#### A. Status of other authorizations and legal requirements:

1. **Water quality certification:** The permittee is required to obtain a Section 401 certification, or waiver thereof, from the California Regional Water Quality Control Board before a Section 404 permit is issued. On 25 July 1996 the Water Board determine that the GPS application was complete and would not recommend a denial of certification or adoption of waste discharge requirements. This letter is equivalent to a waiver of water quality certification.
2. **Coastal zone management consistency determination:** Not applicable.
3. **Compliance with Section 106 of the National Historic Preservation Act:** No historic properties would be affected by the proposed project.
4. **Compliance with the Endangered Species Act:** A Section 7 request for concurrence with a may affect, not likely to adversely affect determination for blunt-nosed leopard lizard, San Joaquin kit fox, and Kern primrose sphinx moth was requested with the U.S. Fish and Wildlife Service (Service) on 26 July 2007. On 4 October 2007 the Service concurred with the Kern primrose sphinx moth determination, but did not concur with the blunt-nosed leopard lizard and San

Joaquin kit fox determination. On 26 October 2007, the Corps requested to initiate formal consultation for blunt-nosed leopard lizard and San Joaquin kit fox. The Service issued a biological opinion (BO) for blunt-nosed leopard lizard and San Joaquin kit fox on 20 May 2008. On 16 January 2009 the Service issued an amendment to the BO.

5. **Compliance with Section 176(c)(General Conformity Rule review) of the Clean Air Act:** The proposed permit has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit.
  6. **State and/or local authorizations:** A general permit (5F15S017475) to discharge stormwater associated with an industrial activity from the State Water Resources Control Board (11 September 2002). A streambed alteration agreement (R5-2002-0442) from the California Department of Fish and Game (14 May 2003). A Land Use Permit (03LUP-00000-00511) from Santa Barbara County (18 July 2003).
- B. **Corps public notice and comment process:** A public notice describing the project was issued on 5 March 2007 and sent to all interested parties (mailing list), including appropriate state and Federal agencies. All comments received on this action have been reviewed and are summarized below.
1. **Summary of comments received.**

a. **Federal agencies:**

- 1) **U.S. Environmental Protection Agency (EPA):** In a letter dated 21 March 2007, the EPA expressed serious concerns with the proposed aggregate extraction rate and the cumulative adverse impacts of the mine, in conjunction with the proposed adjacent Diamond Rock Mine, on the Cuyama River. Specifically, the EPA stated that the increase in extraction from approximately 160,000 tons per year to 500,000 tons per year may result in substantial and unacceptable impacts to the Cuyama River.

The EPA described the three categories of possible impacts to the environment including physical, water quality, and ecological. The physical impacts associated with in-stream gravel mining included channel incision, headcutting, and bank erosion. Water quality impacts include increases in turbidity (i.e., suspended sediment) and

contamination from heavy equipment. Ecological impacts included the reduction of habitat quality for wildlife as a result of adverse impacts to the stability of the river's form and processes.

The EPA stated that the applicant has not demonstrated that the proposed project is the least environmentally damaging practicable alternative as required by the 404(b)(1) guidelines. The EPA points out that the applicant must take appropriate and practicable steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

The EPA noted that 40 CFR 230.10(c) states no discharge of dredged or fill materials shall be permitted which will cause or contribute to significant degradation of waters. Effects contributing to significant degradation considered individually or collectively, include: (1) adverse effects on human health; (2) life stages of aquatic life and other wildlife dependent upon aquatic ecosystems; (3) aquatic ecosystem diversity, productivity, and stability; (4) and recreational, aesthetic, and economic values. EPA adds that Twitchell Reservoir already contributes to significant environmental degradation in the watershed through the aggradation of sediment behind the 241-foot-tall dam and by controlling the release of water downstream.

The EPA cited the 2005 URS sediment transport analysis of the proposed Diamond Rock Mine in order to demonstrate the potential for adverse effects to hydraulic conditions as a result of the mining. They described how the analysis found that annual accumulation of sediment at the site totaled 229,000 tons, but that the combined extraction of 1,000,000 tons per year would leave a deficit of approximately 771,000 tons per year.

Although the EPA cited the hydraulic analysis, they acknowledged the inherent uncertainty and complexity with all sediment transport analyses. Given this uncertainty, the EPA recommended that the Corps approach the permitting of the mines using a safe yield approach and a monitoring program. The safe yield approach would limit the annual extraction to the value of the annual supply or a fraction thereof. A monitoring program was suggested because of the lack of baseline information regarding sediment transport dynamics at the site.

The EPA concluded that although GPS is not proposing an expansion of the existing mining footprint, the increased extraction rate could negatively impact air quality, traffic, and aquatic resources.

**Response:** While the historical average extraction rate was approximately 160,000 tons per year, between 2000 and 2004 the average annual extraction rate was approximately 400,000 tons per year

with a peak of close to 500,000 tons in one year. Taking into consideration the proposed extraction rate of 500,000 tons per year at the adjacent Diamond Rock Mine, the gross extraction rate would be approximately 1,000,000 tons per year within an approximately 1-mile-long reach of the Cuyama River. The applicant's agent responded to EPA's comments by explaining that the river has historically been able to "restore itself" during extreme rainfall and runoff events. In particular, during the winter of 2004-05 a very large in-stream pit (approximately 800,000 c.y. in volume and equivalent to approximately 1,200,000 tons of alluvium) was completely filled after a series of large rainfall events in short succession. These intense rainfall events generally occur with El Nino events approximately every 4 to 7 years. However, surface water flow is ephemeral in nature between these intense rainfall events. Mining records from GPS have shown that surface flows have generally prohibited mining in the river for 10 days per year.

Surface flows in the Cuyama River generally percolate into the ground quickly because the riverbed material is predominately sand. However, this is not always the case as was seen during the summer of 2008. During the winter of 2007-08, a moderately sized runoff event broke through the existing berm and partially filled the existing 50-foot-deep pit. Because this moderately sized runoff event carried mostly suspended sediment and not bedload, the bottom of the pit was likely covered with finer grained silts and clays. These finer grained sediments consequently reduced the surface porosity, reduced the infiltration rate, and the pit held the water through the summer. Given that the pit held water for approximately two years, an alternative explanation is that it has intercepted shallow subsurface flows. The depth to groundwater in this region of the valley is highly variable depending upon regional groundwater pumping, the underlying geology, and the season. It is possible that shallow subsurface flows in the riverbed discharged through the uncoated sides of the pit and filled the pit with water for some time.

The Corps agrees with the EPA that in-stream mining has the potential to create channel instability and result in adverse effects to the aquatic environment. The magnitude of the adverse effects on the physical characteristics, water quality, and ecology of the river are difficult to predict given the unique climatic conditions and geomorphology of the site. For example, the Buckhorn Canyon stream gage located on the Cuyama River approximately 30 miles downstream of the site indicates an annual mean flow of 27.8 cfs. However, during the heavy rainfall winter of 1997-98, the gage recorded a peak flow of 26,200 cfs. During these extreme rainfall and runoff events, the bed of the river becomes mobile and transports a tremendous amount of alluvium. Historic observations of the site suggest that large bedload-dominated runoff

events in the Cuyama River erase most evidence of a mine pit or mining in the river. Meanwhile, small suspended load-dominated runoff events in the Cuyama River have virtually no effect on a mine pit because the berms divert the water around the pit. However, moderately sized runoff events that flow into the mine pit have a dramatic effect on the morphology of the river. During the same 2007-08 winter runoff event discussed earlier, severe headcutting was observed upstream of the pit. Because the runoff event was moderately large, very little bedload was transported into the pit, causing the upstream side of the pit (the knickpoint) to erode approximately 1,500 feet upstream of the pit. Lateral bank erosion during this event was small relative to the headcutting. The applicant has not provided any additional evidence to suggest that, absent a large storm event during the 2009/2010 wet season, the current erosion problem will not get worse or heal itself in the immediate future.

As EPA notes, in-stream mining will increase the amount of turbidity during times of surface flow in the river because the mining will expose loose sediments (e.g., the berms, the redeposited unmarketable fines). The issue of turbidity is relatively minor given the site conditions. When the Cuyama River flows, it transports enormous amounts of sediment, especially silt during low-flow conditions. Any additional sediment contribution from the mining operation would be small. In addition, monitoring data from the Santa Barbara Water Project has shown that the Cuyama River contains a high level of total dissolved solids relative to other major rivers in the region. Finally, the applicant is not proposing to mine in standing or flowing water, and therefore, would not be creating additional turbidity at those times.

As stated by EPA, in-stream mining would reduce the quality of habitat for wildlife in the riverbed, including blunt-nosed leopard lizards, San Joaquin kit fox, and other sensitive species adapted to live in the arid region riparian areas (e.g., coast horned lizard). Adverse impacts to the riverbed are especially important because most of the Cuyama River Valley has been converted into agricultural production and is thus poor wildlife habitat. The 15 acres proposed for mining is small relative to the area of riverbed surrounding the site. Furthermore, the 15 acres slated for mining have historically been mined and are low quality habitat relative to the terraces and islands containing mature scalebroom scrub. However, at full built-out size the mine pit would substantially narrow the width of the migration corridor used by species such as kit fox, and additional headcutting or downstream channel incision could eliminate additional scalebroom scrub habitat.

Based on available information, the Corps agrees that the originally proposed project with an extraction rate of 500,000 tons per year is not the least environmentally damaging practicable alternative. As



discussed in the alternatives analysis, the Corps investigated several practicable alternatives, including a reduced footprint, a reduced mine depth, a modified pit design, and a combination of these alternatives. As a result, the Corps determined that the LEDPA is a reduced footprint, reduced depth, and the modified layout as described above.

The Corps also agrees that the Cuyama River has experienced major modifications after construction of Twitchell Reservoir in 1956. Arguably, Twitchell Reservoir has contributed to long-term adverse environmental degradation in downstream reaches of the watershed through the aggradation of sediment behind the dam, and the controlled release of water from the dam. However, Twitchell Reservoir is located in a narrow canyon approximately 60 river miles downstream of the proposed project site. The EPA has not provided data demonstrating a direct or indirect effect of the dam on the project site. The applicant's agent has argued that the mining would have a beneficial effect on the reservoir by extracting alluvium that would otherwise end up filling the reservoir and reducing the capacity behind the dam. This is questionable given that the residence time of alluvium in the river upstream of the dam, and the life span of the reservoir are both unknown. Nevertheless, in the absence of Twitchell Reservoir alluvium from the project site would eventually flow into the Santa Maria River and then the Pacific Ocean, and after Twitchell Reservoir is removed the accumulated sediment would likely flow into the Santa Maria River and then the Pacific Ocean.

Regarding EPA's reference to 40 CFR 230.10(c) – the effects of pollutants contributing to significant degradation – the Cuyama River is not on EPA's 303(d) list of impaired waters. Meanwhile, the one waterway, Alamo Creek, within the Cuyama River drainage basin that is on the EPA's 303(d) list of impaired waters is hydrologically separated from the project site (i.e., it flows directly into Twitchell Reservoir). Given that the project itself does not involve the discharge or use of pollutants, the potential for significant degradation from pollutants is very small.

The Corps also agrees the proposed project, in combination with the proposed Diamond Rock Mine, could cause a major modification to the hydraulic conditions in the river. Together, the two mining proposals would extract 1,000,000 tons of alluvium per year. Thus far, the applicant has prepared a rough sediment transport analysis using a calculation from Twitchell Reservoir. These data suggest an annual average sediment inflow of approximately 300,000 tons. This would create a deficit of approximately 700,000 tons per year in the river with both mines in place. This figure is highly unreliable given the lack of data used in the models and the stochastic nature of rainfall and runoff in the region. Anecdotal historical evidence suggests that during very

large runoff events, mine pits – some as large as 800,000 cubic yards and equivalent to 1,200,000 tons of alluvium – can fill in a matter of hours or days. Other events have shown that a 1,500-foot-long headcut can form from a 50-foot-deep mine pit.

- 2) U.S. Fish and Wildlife Service (FWS): No comment.
- 3) National Marine Fisheries Service (NMFS): No comment.
- 4) U.S. Coast Guard (USCG): No comment.
- 5) Bureau of Land Management: No comment.
- 6) Bureau of Reclamation: No comment.
- 7) Federal Emergency Management Agency: In a letter dated 20 March 2007, FEMA summarized the National Flood Insurance Program (NFIP) building requirements. The first requirement is that all buildings constructed within a riverine floodplain must be elevated that the lowest floor is at or above the Base Flood Elevation level. Second, a hydrologic and hydraulic analysis must be performed prior to the start of development to demonstrate that any development (including mining) must not increase base flood elevation levels. Third, all buildings constructed within a coastal high hazard area must be elevated on pilings and columns, so that the lowest horizontal structural member, is elevated to or above the base flood elevation. Finally, FEMA directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision.

**Response:** The current FIRM map does not show any buildings or stationary processing equipment associated with the proposed project within the mapped Flood Zone A. Although the proposed project is in-stream mining, it is considered a development by FEMA. The applicant's agent has stated that empirical evidence from past flooding events clearly demonstrates that the in-stream mining does not increase base flood elevations and thus a hydrologic and hydraulic analysis is not necessary.

The proposed project is not located within a coastal high hazard area and therefore this comment does not apply. The proposed project does not include any changes to the existing Special Flood Hazard Areas.

- 8) Federal Energy Regulatory Commission: No comment.
- 9) Federal Highway Administration: No comment.

- 10) National Park Service: No comment.
- 11) Natural Resources Conservation Service: No comment.
- 12) Advisory Council - Historic Preservation: No comment.

b. **State and local agencies:**

- 1) State Coastal Zone Management Agency: No comment.
- 2) State Fish and Game agency: No comment.
- 3) State Lands agency: No comment.
- 4) State Historic Preservation Officer: No comment.
- 5) State Water Quality agency: No comment.
- 7) Soil and Water Conservation District: No comment.

c. **Other organizations and individuals:**

(1) Los Padres Forest Watch: In a letter dated 3 April 2007, LPFW expressed serious concerns about the project and the potential indirect impacts to the Los Padres National Forest. Specifically, LPFW is concerned that trucks transporting aggregate will adversely affect Highway 33, a California State Scenic Highway and National Forest Scenic Byway. LPFW points out that many of the recreational and scenic destinations in the LPNF are located immediately adjacent to Highway 33. LPFW contends that additional truck traffic will cause significant impacts to the recreational opportunities and scenic qualities of the Highway 33 corridor. The LPFW also suggests the NEPA document analyze the project's consistency with the U.S. Forest Service's Corridor Management Plan and the proposed State Scenic Highway designation. LPFW suggests the NEPA document also evaluate the project's impacts on Sespe Creek (between Chorro Grande Canyon and Rock Creek) because it has been recommended for designation as a Wild & Scenic River

**Response:** The applicant does not propose to transport aggregate south on Highway 33 through the Los Padres Nation Forest. Aggregate mined from the GPS property would travel north on Highway 33 for approximately 5 miles to Highway 166 and therefore the impacts discussed in the comment letter would not occur with the proposed or modified project designs.

d. **Requests for public hearings:** None.

2. **Evaluation:**

I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application as well as the stated views of other interested agencies and the concerned public. In doing so, I have considered the possible consequences of this proposed work in accordance with regulations published in 33 CFR Part 320 to 330 and 40 CFR Part 230. The following paragraphs include our evaluation of comments received and of how the project complies with the above cited regulations.

a. **Consideration of comments:** The comments provided to the Corps have highlighted serious issues with the proposed project and its anticipated effect on waters of the United States. In particular, the potential indirect and cumulative impacts of the proposed project and the two other reasonably foreseeable mining projects in this reach of the Cuyama River could be contrary to the public interest without incorporating appropriate avoidance and minimization measures. These comments were taken into consideration while developing the least environmentally damaging practicable alternative (modified project design). The least environmentally damaging practicable alternative complies with the Corps regulations and provides the applicant with a viable project and would not be contrary to the public interest.

b. **Evaluation of Compliance with 404(b)(1) guidelines (restrictions on discharge, 40 CFR 230.10). (A check in a block denoted by an asterisk indicates that the project does not comply with the guidelines.)**

1) **Alternatives test:**

Yes     No

a) Based on the discussion in II B, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the United States" or at other locations within these waters?

Yes     No

b) Based on II B, if the project is in a special aquatic site and is not water-dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

2) **Special restrictions. Will the discharge:**

Yes     No

a) violate state water quality standards?

Yes     No

b) violate toxic effluent standards (under Section 307 of the Act)?

X    
Yes    No

c) jeopardize endangered or threatened species or their critical habitat?

       X    
Yes    No

d) violate standards set by the Department of Commerce to protect marine sanctuaries?

  X         
Yes    No

e) Evaluation of the information in II C and D above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s).

(X) based on the above information, the material is not a carrier of contaminants

( ) the levels of contamination are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas

( ) acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site

3) **Other restrictions.** Will the discharge contribute to significant degradation of "waters of the U.S." through adverse impacts to:

       X    
Yes    No

a) human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites?

       X    
Yes    No

b) life states of aquatic life and other wildlife?

       X    
Yes    No

c) diversity, productivity and stability of the aquatic ecosystem, such as the loss of fish or wildlife habitat, or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy?

       X    
Yes    No

d) recreational, aesthetic and economic values?

  X         
Yes    No

4) Actions to minimize potential adverse impacts (mitigation). Will all appropriate and practicable steps (40 CFR 23.70-77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?

The following special conditions would be added to the Corps' authorization to define the LEDPA:

1. The permittee shall not directly impact an area greater than 14 acres for aggregate mining in the Cuyama River. These impacts include mechanized land clearing, construction of a perimeter safety berm, temporary stockpiles of mined material. In order to facilitate the natural flow of water past the project site, the permittee shall avoid mining the 1 acre located at the southeast corner of the 15 acre parcel.
2. The permittee shall not directly impact an area greater than 0.35 acre (approximately four feet tall, ten feet wide, and 1500 feet long) for the construction of a diversion berm along the southern and eastern sides of the 14 acre mine footprint. The diversion berm shall not interfere with the approximately 700-foot-wide flow path along the eastern bank of the Cuyama River. The permittee shall not directly impact an area greater than 0.50 acre (approximately 20 feet wide 1100 feet long) for the construction of an at-grade access road from the processing area to the mine pit.
3. The permittee shall not impact waters of the United States to a depth greater than 45 feet below the grade of the riverbed prior to the channel incision event that occurred during the winter of 2007/08. The elevation at the southwest corner of the 15 acre parcel was approximately 2674 feet above sea level and the elevation at the northwest corner of APN 149-210-011 (near the northwest corner of the 15 acre parcel) was approximately 2658 feet above sea level prior to the winter of 2007/08 (a slope of approximately 1.0%, based on Google Earth image dated 22 January 2007 and the SEI topographic survey of the site dated April 2003). Therefore, the base of the mine pit shall not be deeper than 2629 feet above sea level at the southwest corner and 2613 feet above sea level at the northwest corner of APN 149-210-011 (near the deepest point of the narrow northern part of the mine pit), and all depths in between shall be along the same 1.0% slope plane for the 14 acre mine footprint.
4. The permittee shall maintain a 5:1 (horizontal:vertical) pit wall slope on the upstream side (i.e., southern side) of the mine pit. The permittee shall maintain a 3:1 pit wall slope for the other sides (i.e., eastern, western, and northern sides) of the mine pit.
5. This Corps permit does not authorize you to take any threatened or endangered species, in particular the blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin kit fox (*Vulpes macrotis mutica*), and Kern primrose sphinx moth (*Euproserpinus euterpe*) or adversely modify their designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed U.S. Fish and Wildlife Service BO (1-8-08-F-8) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit.
6. To minimize impacts to and avoid take of the federally listed blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin kit fox (*Vulpes macrotis mutica*), and Kern primrose sphinx moth (*Euproserpinus euterpe*), the permittee shall implement the following

minimization measures, which were included in the project design submitted as part of the permit application for the project:

- a. Monitoring by a qualified biologist prior to initial earth moving in the mining area.
  - b. An employee education program.
  - c. Traffic and dust control.
  - d. Clear boundary markings to confine ground-disturbing activities to the project site.
  - e. A trash removal program.
  - f. Daily monitoring of work areas for trapped and secretive sensitive species.
  - g. Topsoil banking and re-vegetation of select acreage.
  - h. A reclamation program for areas in which mining has been completed.
7. Prior to initiation of project construction (i.e., land clearing, berm construction, and mining), the permittee shall notify the U.S. Fish and Wildlife Service in writing of the intended project initiation date and anticipated duration of the mining.
8. The permittee shall ensure all mining equipment and associated vehicles remain on the single access road when travelling between the processing facility and mine pit.
9. The permittee shall conduct annual surveys of the surface elevation of the mine pit and river (both up- and downstream of the mine pit).
- a. The permittee shall conduct the first survey no greater than 30 days prior to the initiation of mining.
  - b. The permittee shall clearly identify a benchmark (i.e., a permanent stable monument) located outside of the river for all surveys.
  - c. Annual surveys (after the initiation of mining) shall be conducted during the month of October.
  - d. Survey results shall be submitted to this office within 30 days of completion.
  - e. The surveys shall be conducted by an independent licensed land surveyor.
  - f. The surveys shall include a longitudinal profile of the centerline of the Cuyama River for at least 5,000 feet up- and downstream of the mine pit.
  - g. The surveys shall include a cross-sections of the Cuyama River at 250-, 500-, 1500-, and 5000-foot intervals both up-and downstream of the mine pit.
  - h. The surveys shall include cross-sections of Santa Barbara Canyon and Ballinger Canyon 500 feet upstream of their confluence with the Cuyama River.
  - i. Cross-sections and the longitudinal profile shall be taken at the same location each year for comparison.
  - j. The surveys shall include the perimeter of the mine (i.e., the safety berms) and the perimeter of the mine pit at its base (i.e., at the bottom of the mine slopes).
  - k. The surveys shall include the location of the upstream diversion berm and access road.
10. The permittee shall conduct semi-annual photographic surveys of the mining operation in the river. The photographic surveys shall be conducted once in the month of October and once in the month of April. Photo points shall be established at the approximate midpoint of each side of the mine pit and in the center of the base of the pit. From each point the permittee shall take one photo each in the north, south, east, and west direction. The midpoint photos should show the berms, the

- wildlife fencing, and the entire pit wall. The permittee shall submit the photos to this office within 30 days of being taken.
11. The permittee shall not conduct any work in standing or flowing water.
  12. The permittee shall ensure that no trash, waste, or debris contaminates the water located in the wash water desilting basins in the processing facility.
  13. The permittee shall notify this office in writing if the diversion berms are breached by a runoff event in the river and water enters the pit. The notification shall be submitted within 30 days of the event. The notification shall include a description of where the berm was breached, the approximate volume of water and sediment that entered the pit, and any bed or bank erosion that occurred (i.e., location and approximate length and width of the erosion).
  14. The permittee shall submit to this office an annual report detailing the volume of the mine pit and weight of material extracted from the mine pit as well as the weight of material re-deposited back in the mine pit following processing.
  15. The permittee shall ensure dust generated by the mining operation is minimized by wetting the disturbed areas of the riverbed, stockpiles of sediments, and berms. The use of any other dust suppressant than pure water shall be approved by this office in writing after coordination with the U.S. Fish and Wildlife Service and Regional Water Quality Control Board.
  16. If the permittee chooses to renew this authorization or modify this authorization, they shall notify the Corps at least six months prior to its expiration. This notification shall identify the depth to groundwater in the riverbed (i.e., within the mine pit footprint) during the wet season and dry season. This notification shall also include annual rainfall and runoff data with corresponding sediment transport data for this reach of the Cuyama River.

c. **General Evaluation (33 CFR 320.4(a)):**

- 1) **The relative extent of the public and private need for the proposed work:** The proposed project would meet a private need to generate income through a mining operation. The project would meet an important public need to supply PCC-grade aggregate to the surrounding counties. The mining operation would also meet a public need for job creation.
- 2) **The practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work:** The 404(b)(1) alternatives analysis did not identify a superior location beyond the proposed location. The proposed method of aggregate mining (i.e., the construction of diversion and safety berms, temporary stockpiling in the river, and the construction of access roads) is the most practicable method of accomplishing the project objective. Based on the above alternatives analysis, the modified pit design that limits the pit depth to 45 feet would avoid and minimize direct and indirect impacts to the aquatic environment to the maximum extent practicable and, therefore, represents the least environmentally damaging practicable alternative.



- 2) **The extent and permanence of the beneficial and/or detrimental effects that the proposed structures or work may have on the public and private uses to which the area is suited:** The proposed project would have long-term temporary adverse impacts to the Cuyama River with the potential for permanent adverse impacts to waters of the United States. Channel erosion (i.e., upstream headcutting or downstream channel incision) from the mine could potential effect public lands administered by the BLM located up- and downstream from the project site. The proposed project would serve a private benefit of generating economic revenue through high quality aggregate extraction.

The extent and permanence of the detrimental impacts will depend upon future rainfall and runoff events in the Cuyama River. For example, a series of years with only small to moderate runoff events may cause severe bed and bank erosion. Under such a scenario, future mining operations may need to be curtailed or halted until the site recovers as sediment is transported to and deposited in the mine pit. It is unlikely that the applicant could implement measures to ameliorate the indirect adverse effects of severe erosion – should they occur – because of the large size of the site. Future Corps permitting evaluations and actions will rely on the morphology and extraction data collected over the next five years. Without the avoidance and minimization measures that were identified in the least environmentally damaging practicable alternative and without the special conditions identified above, the proposed project would have had the potential to cause significant adverse cumulative impacts to waters of the United States.

The LEDPA (modified project design) would provide the applicant an aggregate mining business that is similar in size and extraction volumes to historic mining operations at the site. The LEDPA (modified project design) would avoid and minimize adverse direct and indirect impacts to waters of the United States by slightly reducing the footprint of the proposed mine, reducing the depth of the proposed mine, and modifying the pit layout. The LEDPA (modified project design) would address the major concerns expressed by the public in opposition to the proposed project by limiting the depth of the mine to avoid impacting groundwater resources, by limiting the volume of the mine to minimize potential adverse channel erosion events, and by modifying the upstream mine pit wall to have a shallower slope to minimize the potential for headcutting. The LEDPA (modified project design) would be conditioned to closely monitor the conditions of the mine pit and adjacent channel sections in order to record what effects the mine may have on the river's form and processes. It is anticipated that the applicant would apply to continue mining at the end of the five permit

term to maximize their private benefit of the project. The current LEDPA (modified project design) may need to change in response to the results of the monitoring program. This adaptive management approach is critical to avoiding potentially significant cumulative adverse impacts to the aquatic environment.

**3. Determinations:**

a. **Finding of No Significant Impact (FONSI) (33 CFR Part 325).** Having reviewed the information provided by the applicant, all interested parties and our assessment of environmental impacts contained in part II B of this document, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

b. **404(b)(1) Compliance/Noncompliance Review (40 CFR 230.12):**

( ) The discharge complies with the guidelines. The proposed project is the least environmentally damaging practicable alternative (LEDPA).

(X) All of the appropriate and practicable conditions listed in III.B.2.b.4 to minimize pollution or adverse effects to the affected ecosystem have been included as part of the proposed action or were required by special conditions of the permit. This modified and/or conditioned project is the LEDPA.

( ) The discharge fails to comply with the requirements of these guidelines because:

( ) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem and that alternative does not have other significant adverse environmental consequences.

( ) The proposed discharge will result in significant degradation of the aquatic ecosystem under 40 CFR 230.10(b) or (c).

( ) The discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem, namely...

( ) There is not sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with the guidelines.

c. **Public interest determination:** I find that issuance of a Department of the Army permit (with special conditions), as prescribed by regulations

published in 33 CFR Parts 320 to 330, and 40 CFR Part 230, is not contrary to the public interest.

In this analysis, the relevant public interest factors included conservation, economics, aesthetics, general environmental concerns, fish and wildlife values, flood hazards, floodplain values, considerations of property ownership, water supply and conservation, safety, mineral needs, and needs and welfare of the people. The owners of the project site and the applicant have an economic interest to continue mining in the river. The mine would contribute to the mineral needs of the region and would benefit the local economy; however some residents of the Cuyama River Valley are concerned about the degradation of the environment associated with the proposed project.

In response to this mine application, and the two other proposed mines, a group of local property owners united to form the Save the Cuyama Valley (SCV). While the majority of their comments in opposition to the proposed project were received after the Public Notice comment period expired, the Corps has addressed their concerns in this document. In particular, SCV is concerned the mines would adversely impact their water supply, cause irreversible bed and bank erosion, and disrupt their quality of life. Water supply and water quality issues are their primary concern because the community relies on well water. The operation of mining equipment and increased truck traffic are the primary quality of life issues. Mining equipment generates loud noises while operating in the mine and trucks on the two-lane undivided Highway 33 are a safety concern. Traffic outside of the mine and processing facility is outside of the Corps' scope of analysis. Irreversible bed and bank erosion is a major concern of some property owners on the river.

The special conditions added to the permit would avoid and minimize many of the adverse individual and cumulative impacts of the proposed project. These special conditions would ensure the proposed project is the least environmentally damaging practicable alternative. The Corps' LEDPA is different than the project approved by the County in their Environmental Impact Report (EIR). Given the applicant's limited studies of sediment transport and population dynamics of the federally listed blunt-nosed leopard lizard and San Joaquin kit fox, the Corps has limited the footprint of the fill, the layout of the pit, and the depth of fill activities to avoid and minimize potentially significant indirect and cumulative impacts to waters of the United States. With the modified project design combined with the required mitigation measures, this permit action would not be contrary to the public interest.

## References

Kondolf, G.M. 1997. Hungry Water: Effects of dams and gravel mining on river channels. *Environmental Management* 21: 533-551.

Mount, J.F. 1995. *California Rivers and Streams: The conflict between fluvial process and land use*. Los Angeles: University of California Press. 359 pages.

Subject: **RE: Case No. 11APL-00000-00006 Diamond Rock Mine**

From: **Kaiser, Gary** <[gkaiser@co.santa-barbara.ca.us](mailto:gkaiser@co.santa-barbara.ca.us)>

Sent: **Fri Apr 22 12:35:13 2011**

[xitlalli@hughes.net](mailto:xitlalli@hughes.net), [grussell@co.santa-barbara.ca.us](mailto:grussell@co.santa-barbara.ca.us), [caoemail@co.santa-barbara.ca.us](mailto:caoemail@co.santa-barbara.ca.us),  
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[dfarr@countyofsb.org](mailto:dfarr@countyofsb.org), [SupervisorCarbajal@co.santa-barbara.ca.us](mailto:SupervisorCarbajal@co.santa-barbara.ca.us), [Dianne@co.santa-barbara.ca.us](mailto:Dianne@co.santa-barbara.ca.us), [Zoraida@co.santa-barbara.ca.us](mailto:Zoraida@co.santa-barbara.ca.us)

Cc: [zannon@sbpistachios.com](mailto:zannon@sbpistachios.com), [babaknaficy@sbcglobal.net](mailto:babaknaficy@sbcglobal.net), [curry@ucsc.edu](mailto:curry@ucsc.edu),  
[g.r.hensley@sbcglobal.net](mailto:g.r.hensley@sbcglobal.net)

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Hi Jennifer,

Your questions regarding the state and federal permits should be directed to the state and federal agencies. On May, 11, 2011, the SB County Planning Commission will consider your appeal of an approved Time Extension for Diamond Rock.

On the same day, the Planning Commission will consider a proposed Revision to the Diamond Rock CUP that would allow raw materials from Diamond Rock to be hauled to the existing processing facility at GPS.

I will send you the staff reports as soon as they are available and you are always welcome to make an appointment to review my files.

Gary

**From:** JENNIFER LEE [<mailto:xitlalli@hughes.net>]

**Sent:** Friday, April 15, 2011 6:00 PM

**To:** Russell, Glenn; CAO email; Villalobos, David; Wolf, Janet; Lavagnino, Steve; Kaiser, Gary; Hunt, Jeff; [Bruce.A.Henderson@usace.army.mil](mailto:Bruce.A.Henderson@usace.army.mil); Gray, Joni; Farr, Doreen; SupervisorCarbajal; Black, Dianne; Abresch, Zoraida

**Cc:** [xitlalli@hughes.net](mailto:xitlalli@hughes.net); [zannon@sbpistachios.com](mailto:zannon@sbpistachios.com); [babaknaficy@sbcglobal.net](mailto:babaknaficy@sbcglobal.net); [curry@ucsc.edu](mailto:curry@ucsc.edu); [g.r.hensley@sbcglobal.net](mailto:g.r.hensley@sbcglobal.net)

**Subject:** Case No. 11APL-00000-00006 Diamond Rock Mine

Dear Gary Kaiser, members of the Santa Barbara County Planning and Development Department, Santa Barbara County Board of Supervisors, and Bruce Henderson, SPL of the Army Corps of Engineers,

Our group, Cuyama Valley Conservancy, has some questions about Diamond Rock Mine. We are requesting responses to our questions under the Freedom of Information act.

- 1) We have noticed that the river bed or terrace was cleared the first week of April, 2011 and the cleared area has been surrounded by a red metallic border, is this the 7 acres mentioned in Bruce Henderson's email to us dated March 22, 2011?
- 2) Does Diamond Rock Mine have the necessary permits to begin excavation and have the permits been filed with the County and the Army Corps of Engineers and all other requisite agencies?
- 3) What exactly is the County's area of jurisdiction and what exactly is the U.S. Army Corps of Engineer's area of jurisdiction and what area of jurisdiction is assigned to the Regional Water Quality Control Board?
- 4) Does Diamond Rock have a monitoring plan filed with the County, Army Corps, and Regional Water Board?

If so please let us know how we can obtain copies.

- 5) If Diamond Rock and GPS have entered into an agreement to excavate and process aggregate together, this represents a significant change to the initial permit proposal outlined in the Diamond Rock EIR. Also, the Army Corps Environmental Assessments for the mines significantly limit the scope of both mining projects. How does the County plan to work with the Army Corps to monitor and enforce these changes?
- 6) How is it that the County approved the Diamond Rock Mine conditional use permit before the Army Corps had made their determination on the scope of the project?

We have appealed the Santa Barbara County Planning and Development Director's March 14, 2011 decision in part because some of our questions, which are attached to this email, have gone unanswered.

Finally, we would like to schedule time which is convenient for you Gary, to view the Diamond Rock paperwork and permits on file.

We would greatly appreciate if you all could email us to confirm that all of you received this email and the 4 related attachments.

Sincerely,

Jennifer Lee  
for Cuyama Valley Conservancy

**Subject: RE: #2 Questions for P&D re: Diamond Rock and GPS Mines**

**From: Kaiser, Gary <gkaiser@co.santa-barbara.ca.us>**

**Sent: Thu Mar 24 11:58:41 2011**

**To: xitlalli@hughes.net, zannon@sbpistachios.com**

**Cc: Zoraida@co.santa-barbara.ca.us, Doug@co.santa-barbara.ca.us, Rvanmull@co.santa-barbara.ca.us**

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Dear Jennifer and Gene,

In response to your second letter with questions regarding the Diamond Rock Time Extension, I will reiterate that the approved time extension solely extends the CUP and does not allow any changes to the approved project. As stated in my letter of March 20, 2011, all documents related to the CUP and the Time Extension are available for your review. As such, we will not extend the appeal period. The appeal period will close at 5:00 pm today. As stated in the notice that you received, appeals must include a completed appeal form (<http://www.sbcountyplanning.org/PDF/C/AppealSubReqAPP.pdf>) and appeal fee of \$603.00.

If you have questions about the time extension, please call me at (805) 934-6259.

Gary

**From:** JENNIFER LEE [<mailto:xitlalli@hughes.net>]

**Sent:** Tuesday, March 22, 2011 4:19 PM

**To:** Abresch, Zoraida; Kaiser, Gary; CAO email; Villalobos, David

**Cc:** [xitlalli@hughes.net](mailto:xitlalli@hughes.net); [zannon@sbpistachios.com](mailto:zannon@sbpistachios.com)

**Subject:** #2 Questions for P&D re: Diamond Rock and GPS Mines

Good Afternoon Zoraida, Gary, Planning Commissioners, and Supervisors,

Here are more questions about Diamond Rock and GPS Mines.

Thank you for your prompt attention to these issues.

Gene Zannon and Jennifer Lee  
for Cuyama Valley Conservancy

March 22, 2011

To: Zoraida Abresch, Supervising Planner  
Gary Kaiser, Senior Planner,  
Santa Barbara County Planning and Development Department,  
624 W. Foster Road, Suite C.,  
Santa Maria, CA 93455

RE: Diamond Rock Mine Time Extension

Dear Zoraida and Gary,

We have some additional questions regarding the approved economic hardship time extension and the Findings and Conditions of Approval accepted by the Director and we are requesting the following information under the Freedom of Information Act:

- 1) Please cite the applicable code and law that state “national economic recession” and not personal financial ability is reason to evoke “economic hardship”. Note: Troesh family recently sold their company to Mitsubishi for \$900,000,000.
- 2) We believe “substantive changes” have been proposed for the scope of the Diamond Rock Mine Project, (please refer to the Army corps of Engineers Environmental Assessment). The Santa Barbara County Planning and Development Department maintains the position that if proposed changes “lessen” the impact of a project they are not considered to be “substantive”. Please provide us with the applicable code and law that support this rationale.
- 3) It is our understanding that GPS and Diamond Rock are going to combine their operations into one, please explain why this is not considered a “substantive change”.
- 4) The Time Extension appears to allow southbound truck traffic to continue. Is this interpretation correct? If so, has Ojai’s “Stop the Trucks” been notified and how have they been notified?
- 5) Has the Land Use Permit been issued for Diamond Rock Mine?

Thank you for the response to our previous questions that we received by email on March 21, 2011. Your response indicated that the Director’s action has approved the time extension only. However, the action also “accepted the Findings and Conditions of Approval for 03CUP-000000-00037, including the



Final Environmental Impact Report (EIR) 05EIR-00000-00001, approved by the Board of Supervisors on September 23, 2008". The Corp's Environmental Assessment substantively changes the project's scope and monitoring requirements.

As the appeal period for this project ends at 5:00 PM on March 24, 2011 we ask that you respond to our questions by tomorrow afternoon at the latest so we may file an appeal in a timely manner. If you require more time in which to respond to our questions we request a 5 business day extension of time, to begin on the day we receive your written response, in which to file our appeal.

We would appreciate that your responses be directed specifically to the questions asked. We prefer to have information in writing as verbal communication can often be subject to misinterpretation.

Thank you for your prompt attention to these matters.

Sincerely,  
Gene Zannon and Jennifer Lee  
For Cuyama Valley Conservancy



## County of Santa Barbara Planning and Development

Glenn S. Russell, Ph.D., Director  
Dianne Black, Director of Development Services  
Jeffrey S. Hunt, Director Long Range Planning

March 20, 2011

Mr. Gene Zannon and Ms. Jennifer Lee  
c/o Santa Barbara Pistacio Company  
PO Box 21957  
Santa Barbara, CA 93121

RE: Questions Regarding Diamond Rock CUP Time Extension  
Case No. 10TEX-00000-00014 for 03CUP -00000-00037  
APN: 149-220-002, -011 and -065

Dear Gene and Jennifer,

Thank you for your March 9, 2011 email listing questions regarding the time extension for Diamond Rock. We talked in person last Thursday, Gene, and discussed these questions.

Attached in PDF format is a copy of the Time Extension Approval Letter that explains the basis for a time extension based on economic hardship. Also attached is the Notice of Pending Action by the Director, which explains that the Time Extension approval on March 14, 2011 is followed by an appeal period that ends at 5:00 pm on March 24, 2011. The Notice also explains how and where to file an appeal. The Planning Director's Action on March 14, 2011 will become final on March 25, 2011 provided no appeals are filed.

This action is a time extension only; the time extension does not authorize any changes to the project approved by the County on September 23, 2008. All of our records regarding the Diamond Rock or GPS project are available to the public.

I hope this is helpful and please do not hesitate to call me at 934-6259 if you have further questions.

Sincerely,

Gary Kaiser, Senior Planner  
Development Review North Division

Cc: The Pistacio Store, 3380 State Route 33, Maricopa, CA 93252  
Jennifer Lee, 115 Quatal Canyon Road, Cuyama, CA 93252

Response to Questions Regarding Time Extension  
Diamond Rock Mine and Processing Facility  
Case No. 10TEX-0000-00014 to 03CUP-0000-0037  
Page 2

Attachments: Time Extension Approval Letter  
Notice of Pending Action by the Planning Director

Subject: #1 Questions about Diamond Rock and GPS mines...

From: JENNIFER LEE <[xitlalli@hughes.net](mailto:xitlalli@hughes.net)>

Sent: Tue Mar 15 13:47:57 2011

To: [cao@co.santa-barbara.ca.us](mailto:cao@co.santa-barbara.ca.us), [dvillalo@co.santa-barbara.ca.us](mailto:dvillalo@co.santa-barbara.ca.us)

Cc: [zannon@sbpistachios.com](mailto:zannon@sbpistachios.com), [xitlalli@hughes.net](mailto:xitlalli@hughes.net), [jolaine@wildblue.net](mailto:jolaine@wildblue.net), [jslama@rain.org](mailto:jslama@rain.org)

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March 15, 2011

To the Planning Commissioners and Supervisors of Santa Barbara County:

Attached please find the Directors Notice dated March 2, 2011 and a list of questions we, Cuyama Valley Conservancy, have with regard

to Diamond Rock and GPS sand and gravel mines in the Ventucopa area of Santa Barbara County.

We believe significant changes will be made to the operation of both mines (please refer to our list of questions), and we are concerned about future monitoring of mining operations and proposed modifications to the two mines which will be operating next to each other in the Cuyama River. It appears that the two mines will be working together to extract and process sand and gravel from the Cuyama River bed. This fact was not mentioned in the Environmental Impact Reports for the Diamond Rock project or for GPS.

Diamond Rock Mine plans to begin excavation in the Cuyama River in January 2012. GPS mine is currently excavating on the river terrace near their existing processing site because they have been issued a cease and desist order by the EPA which prohibits them from excavating in the Cuyama River.

The cease and desist order was issued because they were releasing fines from processing into an American waterway and they also excavated a large pit in early 2007 without obtaining the required permits and without completing the Environmental Review process required by CEQA.

Santa Barbara County did not stop the illegal expansion of GPS Mine in 2007 because, when asked to investigate the situation, they determined that no "infrastructure" or man-made structures were damaged in the un-permitted expansion.

The Cuyama River and the Cuyama aquifers are the natural infrastructure which provides water to the Cuyama Valley and eventually to Santa Maria. Groundwater was exposed in 2007 during the un-permitted expansion and is still exposed as I am writing this email to you.

It is of concern to us that the EPA felt it necessary to issue a cease and desist order but Santa Barbara County did nothing to prevent the dumping of fines or the un-permitted expansion of GPS Mine.

In addition, the U.S. Army Corps of Engineers has issued Environmental Assessments for both Diamond Rock and GPS mines which significantly limit the scope of their proposed activities permitted by Santa Barbara County. Again, please refer to our list for some of the project modifications for Diamond Rock Mine.

Santa Barbara County Planning and Development Department has both Environmental Assessments in their files.

If you have any questions or would like more information please let us know.

You can contact Gene Zannon at (805)-962-5200 or [zannon@sbpistachios.com](mailto:zannon@sbpistachios.com) and Jennifer Lee at (661)-766-2191 or [xitlalli@hughes.net](mailto:xitlalli@hughes.net).

Thank you for your time and consideration of this matter.

Gene Zannon and Jennifer Lee for Cuyama Valley Conservancy

Subject: **March 14, 2011 deadline for Director action on DRM time extension?**

From: **JENNIFER LEE** <[xitlalli@hughes.net](mailto:xitlalli@hughes.net)>

Sent: **Mon Mar 14 15:15:50 2011**

To: **Zoraida**<[co.santa-barbara.ca.us](mailto:co.santa-barbara.ca.us)>

Cc: **zannon@sbpistachios.com**, [xitlalli@hughes.net](mailto:xitlalli@hughes.net), [gkaiser@co.santa-barbara.ca.us](mailto:gkaiser@co.santa-barbara.ca.us),  
[jolaine@wildblue.net](mailto:jolaine@wildblue.net), [g.r.hensley@sbcglobal.net](mailto:g.r.hensley@sbcglobal.net), [babaknaficy@sbcglobal.net](mailto:babaknaficy@sbcglobal.net)

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Good Afternoon Zoraida Abresch,

Thank you for your response and for the additional information.

I am concerned that the time to view the plans and staff analysis of the proposal ends today, March 14, 2011 as the notice says the documents will be available a week prior to the final action and the date of Director action is stated to be today, March 14, 2011.

When exactly is the final Director action?

Thank you again,  
Jennifer Lee  
for CVC

On Mar 14, 2011, **Abresch, Zoraida** <[Zoraida@co.santa-barbara.ca.us](mailto:Zoraida@co.santa-barbara.ca.us)> wrote:

Good Afternoon Ms. Lee,

We have received your letter dated March 9, 2011. Gary is working on your questions and will complete them when he returns. He is scheduled to be back on Wednesday. It sounded from your phone message that you had concerns regarding missing the appeal period due to Gary's absence. However, please note that the appeal period does not end until Thursday, March 24 at 5:00pm. I will scan the action letter and related attachments and send them via separate email for your review. The action letter includes the appeal deadline and associated fee. The application for an appeal may be obtained from our webpage under Applications, Forms & Documents found at <http://sbcountyplanning.org/>.

In addition, I will forward your request for an extension of time to review the documents to our division manager, Doug Anthony. Please let me know if I can be of further assistance.

Zoraida Abresch

**From:** JENNIFER LEE [<mailto:xitlalli@hughes.net>]

**Sent:** Monday, March 14, 2011 12:01 PM

**To:** Abresch, Zoraida

**Cc:** [zannon@sbpistachios.com](mailto:zannon@sbpistachios.com); [g.r.hensley@sbcglobal.net](mailto:g.r.hensley@sbcglobal.net); [jolaine@wildblue.net](mailto:jolaine@wildblue.net); [xitlalli@hughes.net](mailto:xitlalli@hughes.net)

**Subject:** Fwd: Questions for County P&D re: DRM Time Extension

Good Morning Zorada Abrecht,

I am sending this FOIA list of questions to you because Gary Kaiser is out of the office until Wednesday and we (Cuyama Valley Conservancy) would like to see the Staff Plans and Analysis for the Diamond Rock Time Extension. Also, we request a 10 day extension of time to review the documents as we were hoping to hear back from Gary kaiser on Friday of today, Monday March 14, 2011.

Thank you for your time and consideration.

Jennifer Lee,  
for Cuyama Valley Conservancy

----- Forwarded message -----

From: **JENNIFER LEE** <[xitlalli@hughes.net](mailto:xitlalli@hughes.net)>

Date: Mar 11, 2011

Subject: Questions re: DRM Time Extension

To: [gkaiser@co.santa-barbara.ca.us](mailto:gkaiser@co.santa-barbara.ca.us)

Cc: [xitlalli@hughes.net](mailto:xitlalli@hughes.net), [zannon@sbpistachios.com](mailto:zannon@sbpistachios.com), [g.r.henslev@sbcglobal.net](mailto:g.r.henslev@sbcglobal.net), [babaknaficv@sbcglobal.net](mailto:babaknaficv@sbcglobal.net), [jolaine@wildblue.net](mailto:jolaine@wildblue.net)

Hi Gary,

I have attached a list of questions about the Diamond Rock Time Extension in the form of a FOIA request.

I hope you are well.

Many thanks,

Jennifer Lee

March 9, 2011

To: Gary Kaiser, Senior Planner,  
Santa Barbara County Planning and Development Department,  
624 W. Foster Road, Suite C.,  
Santa Maria, CA 93455

RE: Diamond Rock Mine Time Extension

Dear Gary,

Thank you for emailing us a copy of the Notice of Pending Action by Director to Approve a Time Extension for the Diamond Rock Mine (DRM).

We have some questions regarding the Time Extension and the related approval process and we are requesting the following information under the Freedom of Information Act:

- 1) Please send us a copy of the plans and staff analysis of the proposal along with documentation explaining the "economic hardship" incurred by the DRM proponents in PDF format, which can be read by both PC and Mac. Also, when can the documents be reviewed and copied at the Santa Barbara Planning and Development office?
- 2) Please explain the Extension approval and appeal procedure in greater detail and let us know if there will be a public hearing and where or when it will be held. Also, will the Extension involve written appeals and then decisions by only the Santa Barbara County Planning and Development staff?
- 3) When will the Planning and Development Department Director's "final action" take place?
- 4) Please explain in detail the County's definition of "substantive changes".
- 5) If the Director is not approving any "substantive changes" to the project how will the changes and conditions mandated by the Army Corps of Engineers be addressed?  
Specifically, how does the County plan to address the following issues in the administration of the DRM project:
  - a) Reduction of the Mine footprint from 25 acres to 14 acres.
  - b) Reduction of Mine depth from 90 feet to 45 feet.
  - c) Reduction of annual extraction rate from a maximum of 750,000 tons per year to 200,000 tons per year.



- d) Requirement of a 5-year permit instead of a 30-year permit.
  - e) Requirement of an independent review of the mine operations by an independent surveyor to be done every October and photographic reviews of the Mine activities to be done twice a year in April and October.
- 6) We would like to know what access the public will have to the County's records of modifications and monitoring processes for both the Diamond Rock and GPS Mining projects considering that it is now rumored to be a joint project under common ownership as we previously predicted.

Thank you for your time and attention to these matters.

Sincerely,  
Gene Zannon and Jennifer Lee  
For CVC

Print

**Subject: 2nd DRAFT GPS Permits to mine and expand operations in the Cuyama River**  
**From: JENNIFER LEE <xitlalli@hughes.net>**  
**Sent: October 14, 2009 12:09:13 PM PDT**  
**To: zannon@sbpistachios.com, jolaine@wildblue.net**  
**Cc: xitlalli@hughes.net**

October 14, 2009

Dear Mr. Gary Kaiser-Supervising Planner, Mrs. Zoraida Abresch-Assistant Director, and Mr. Glenn Russell-Director,

This email is an official request under the Freedom of Information Act (F.O.I.A.) for the following:

- 1) All documentation of Santa Barbara County (hereafter referred to as the County) Regulations which allow GPS to mine in the Cuyama riverbed.
- 2) All documentation of regulations and the associated decisions made by the County which allow GPS to mine in the Cuyama River without a Federal permit.
- 3) All documentation of regulations and the associated decisions made by the County which allowed GPS to expand operations beyond their original 80 acre boundary without Federal permits or a reclamation plan filed with the State of California.
- 4) An explanation of who in the Santa Barbara County government is making the decisions to allow GPS to operate and expand without Federal permits and California State reclamation plans. We also want documentation of the qualifications which authorize them to make decisions of this magnitude.
- 5) A description, which includes supporting documentation, of the legal process required to report violations of the County mining regulations and who the violations should be reported to and how they should be reported.

In addition, please recall that in January 2007 I telephoned Gary Kaiser-Supervising Planner, Zoraida Abresch-Assistant Director and John Baker-Director of the Santa Barbara County Planning and Development Department to find out if GPS had been permitted for expansion of their excavation operations in the Cuyama River. I received a response at that time from Gary Kaiser which was similar to the response you will see in Gary Kaiser's October 13, 2009 email below.

We are asking for accountability and cooperation between Federal, California and Santa Barbara County decision-makers, the related law/code enforcement personnel and enforcement procedures in order to protect the interests of all stakeholders, residents, and inhabitants of the Cuyama Valley.

Thank you for your time and attention to this matter.

Jennifer Lee

On Oct 13, 2009, Kaiser, Gary <gkaiser@co.sand-pi-harbors.ca.us> wrote:

Hi Jennifer,

GPS has the necessary County permits to do mining in the riverbed and stockpile material in the processing area that lies on the adjoining river terrace, as they have done since the 1960's. I am working on a request to modify existing permits but the existing permits remain effective in the interim.

I do recall confusion between federal agencies that resulted in enforcement action by the US EPA. Essentially, the US Army Corps of Engineers told GPS in writing that GPS did not need a permit under Section 404 of the Clean Water Act. EPA then cited GPS for operating without a Section 404 permit.

If you have questions or concerns about the status of federal permits and/or federal enforcement actions you will have to contact them directly. Nothing you mentioned below would indicate a violation of County regulations.

Gary

**From:** JENNIFER LEE [mailto:jtall@hughes.net]

**Sent:** Monday, October 12, 2009 4:55 PM

**To:** Centeno, Joseph; Kaiser, Gary

**Cc:** jtall@hughes.net; zannon@cbpistachios.com; jozanne@ltdll.com; jstama@valn.org; jlt@inreach.com; carina@cajagbrushland.com

**Subject:** Re: GPS Mine in Cuyama River

October 12, 2009

Dear Supervisor Centeno and Mr. Kaiser,

I am concerned that GPS Mine is operating without a permit again. Their stock piles appear to have grown.

It was my understanding that they had been allowed to sell off the stock piles for the last two years but were not permitted to excavate in the Cuyama riverbed.

I believe they have been crushing their stock of boulders and large rocks for the last two years and they did not have many of those left in August 2009.

It appears to both me and Mr. Gene Zannon that the stock piles of processed materials have grown significantly in the last couple of weeks.

Will you please check into this situation for us?

Thank you for your time and consideration in this matter.

Jennifer Lee  
for Cuyama Valley Conservancy



U.S. Army Corps of Engineers  
Los Angeles District  
Regulatory Branch

James E. Mace, Dr. Env. c.  
Environmental Scientist and Engineer  
Regulatory Project Manager

2151 ALESSANDRO DRIVE, SUITE 110 VENTURA, CA 93001  
phone (805) 585-2146 [jmace@spl.usace.army.mil](mailto:jmace@spl.usace.army.mil) fax (805) 585-2154

[jmace@spl.usace.army.mil](mailto:jmace@spl.usace.army.mil)

15:06  
S. RiverRocks products.Ventucopa,Ca.

-----Original Message-----

**From:** Richard Casagrande  
**Sent:** Thursday, September 12, 2002 12:04 PM  
**To:** Richard Casagrande  
**Cc:** Rusty Risi (E-mail)  
**Subject:** RE: 404 mining operation: G.P.S. RiverRocks products.Ventucopa,Ca.

-----Original Message-----

**From:** Richard Casagrande  
**Sent:** Thursday, September 12, 2002 11:57 AM  
**To:** Larry Appel (E-mail)  
**Cc:** Rusty Risi (E-mail)  
**Subject:** FW: 404 mining operation: G.P.S. RiverRocks products.Ventucopa,Ca.

-----Original Message-----

**From:** Mace, James E SPL [<mailto:James.E.Mace@spl01.usace.army.mil>]  
**Sent:** Thursday, September 12, 2002 9:45 AM  
**To:** Richard Casagrande  
**Subject:** RE: 404 mining operation: G.P.S. RiverRocks products.Ventucopa,Ca.

Mr. Casagrande,

The mining activity referenced in your attached email would not require a Section 404 Clean Water Act authorization from the Corps of Engineers. Under current law, the Corps only regulates the discharge of dredge or fill materials within jurisdictional waters of the United States. Mining through "clean" excavation is not currently considered a discharge of dredge or fill materials, and as such, is not a regulated activity. Should your client decide to stockpile materials within the Ordinary High Water Mark in the future, please be advised that would require a permit. Please also be advised other law, such as a Streambed Alteration Agreement through the Department of Fish and Game, or a Section 10 take permit through the Endangered Species Act, among others, may still apply to the mining activity. This email only informs you the work would not require a Section 404 permit.

Thank you for participating in our Regulatory Program.

Jim Mace

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James E. Mace  
Regulatory Project Manager  
U.S. Army Corps of Engineers  
Los Angeles District

9/12/02



**RAM** ENVIRONMENTAL  
ENGINEERING  
SERVICES, INC.

July 31, 2002

James E. Mace, Dr.Env.c.  
2151 Alessandro Drive, Suite 110  
Ventura, CA 93001

**RE: Southwest Ready Mix, Sec. 404 Permit  
Project No.: 200708**

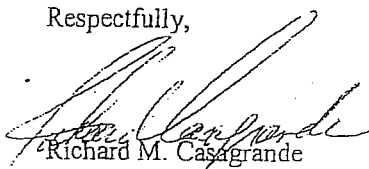
Dear Mr. Mace:

Thank you for meeting with representatives of GPS River Rock Products (GPS) on Friday, July 26 at your office in Ventura. At that time we discussed the mining activities currently being conducted by the company and whether those activities require authorization by the Army Corps. of Engineers below the high water mark.

As stated by Mr. Rusty Risi, Vice President of GPS, the operation excavates from the Cuyama River (dry) rock and sand into trucks that bring the material up to conveyors and crushers for processing far outside the high water mark. Material is taken out, never brought back into the stream, nor stockpiled below the high water mark. RAM provided SPCC plans and Business Plans to Santa Barbara County Fire Department and the Reclamation Plan to the SMARA office of the Santa Barbara County Planning Department and therefore has complete knowledge of the company operations. Based on the above information and knowledge, RAM believes that their activity is not covered by the Army Corp. of Engineers 404 permitting process. Should laws be promulgated or reinterpreted in this matter, we will revisit this issue at that time.

Thank you for your efforts in interpretation and review of GPS Operations. Your timely written response for concurrence with this letter will be greatly appreciated.

Respectfully,

  
Richard M. Casagrande  
President

RMC:tah

cc: Mr. Rusty Risi - GPSRR  
Mr. Larry Appel - Santa Barbara Co. Planning (SMARA)

2000\_02\_708\_ltr

Subject: **Re: RE: Deadline for comment on GPS EIR**

From: **JENNIFER LEE** <xitlalli@hughes.net>

Sent: **Fri Jun 5 09:26:46 2009**

To: **gkaiser@co.santa-barbara.ca.us**

**zannon@sbpistachios.com, jolaine@wildblue.net, xitlalli@hughes.net,  
urbaningalls@msn.com, g.r.hensley@sbcglobal.net, jkidd@inreach.com,  
CC: Karina@sagebrushannies.com, jslama@rain.org, tristanzannon@yahoo.com,  
w@quailsprings.org**

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June 5, 2009

Dear Gary,

Thank you so much.  
I will forward this info on to the group.

Have a good weekend.

Jenny

On Jun 4, 2009, **gkaiser@co.santa-barbara.ca.us** wrote:

Hi Jen.

By 5:00 pm on the 12th would be fine.

No PC date yet but it will probably be late summer or fall.

Gary

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**From:** JENNIFER LEE [mailto:xitlalli@hughes.net]

**Sent:** Wednesday, June 03, 2009 3:35 PM

**To:** Kaiser, Gary

**Cc:** xitlalli@hughes.net; zannon@sbpistachios.com; Centeno, Joseph; jolaine@wildblue.net

**Subject:** Deadline for comment on GPS EIR

June 3, 2009

Dear Gary,

Could you please confirm if my comment letter and the other  
comment letters to be submitted by Save Cuyama Valley can be  
submitted by 5:00 pm June 12, 2009?

Also, do you have an idea of when the Planning Commission

hearing for GPS will be scheduled?

Have a good afternoon.

Jennifer Lee

On May 28, 2009, [xitlalli@hughes.net](mailto:xitlalli@hughes.net) wrote:

May 28, 2009

Dear Gary,

Thanks for all your efforts to provide us with information.  
If I didn't ask questions I would not be doing my job.

Thanks for everything.

Jennifer Lee

On May 27, 2009, [gkaiser@co.santa-barbara.ca.us](mailto:gkaiser@co.santa-barbara.ca.us) wrote:

Hi Jen.

Not sure if I can keep doing this everyday but I did want to send you the information you requested on the Sediment Transport issue. Do not take the 2005 memo out of context because there was subsequent work done in this area. See recent memo from John Larson (also attached).

Gary

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**From:** JENNIFER LEE [mailto:[xitlalli@hughes.net](mailto:xitlalli@hughes.net)]  
**Sent:** Wednesday, May 27, 2009 8:42 AM  
**To:** Kaiser, Gary; Centeno, Joseph  
**Cc:** [xitlalli@hughes.net](mailto:xitlalli@hughes.net); [zannon@sbpistachios.com](mailto:zannon@sbpistachios.com); [jolaine@wildblue.net](mailto:jolaine@wildblue.net); [jkidd@inreach.com](mailto:jkidd@inreach.com); [Karina@sagebrushannies.com](mailto:Karina@sagebrushannies.com)  
**Subject:** Re: Re: RE: RE: request for information on GPS Mine

May 27, 2009

Dear Gary,

Maybe there is no hydrology report done by URS for GPS, is this true?

1) The "model" that I need is the one used by the County when Dr. Loaiciga's comment letter was discounted by the County because he was using a different "model" than the County used for his hydro-geological conclusions.

2) Who, and what organization has performed a hydrogeological analysis (if any) of the effects of GPS mine alone, and the cumulative effects of two contiguous mines (GPS and Diamond Rock) in the Cuyama River?

3) I would like extraction rate data for GPS which corresponds to the production data listed in table 2-1 of the GPS DEIR.

Is that available to the public? If the County does not have this information, where can I obtain it?

Can you please clarify these questions for me?

Many thanks,

Jennifer Lee

On May 26, 2009, [xitlalli@hughes.net](mailto:xitlalli@hughes.net) wrote:

May 26, 2009

Dear Gary,

Thank you for your response.

Can you please explain why the Sediment Transport Analysis is a non-issue?

I had originally requested the following documents:

- 1) The Hydrology Report done by URS for GPS.
- 2) The Groundwater model used by Santa Barbara county to study the single and cumulative impact of GPS Mine in the Cuyama River. And, the model used to determine the Cumulative impacts of GPS Mine and Diamond Rock Mine operating contiguously in the Cuyama river.
- 3) Supporting documentation for the figures in Table 2-1 of the GPS DEIR of RECENT HISTORIC MINE PRODUCTION.
- 4) A copy of the letter from the US Army Corps of Engineers stating that GPS did not require a permit to excavate in the Cuyama River.

I have received:

- 1) No Hydrology Report done by URS for GPS.
- 2) No groundwater model used by Santa Barbara County.
- 3) Sediment Transport Study done by URS for Diamond Rock Mine, to come tomorrow..Thank you!
- 4) Groundwater thresholds website. (These are thresholds not models).
- 5) Copy of email from USACE to GPS concerning permit...Thank you!

Please explain why there is no hydrology report and no groundwater model.

Thank you for the extra time.

On May 26, 2009, [gkaiser@co.santa-barbara.ca.us](mailto:gkaiser@co.santa-barbara.ca.us) wrote:

Hi Jen.

I have provided all the available info you have requested except the Sediment Transport Analysis, which I hope to get for you tomorrow. Again, it is the same study that was done for Diamond Rock and that is described in detail in the Diamond Rock EIR and commented on and responded to etc. This is a non-issue really and it does not affect your ability to submit a comment letter on time for GPS. but I offered more time because I felt bad it took me like three days to get back to you. All



public comment letters are due by 5.00m PM on Monday June 6th but we will accept your comment by Friday June 12th.

From what I understand, the weigh tickets and records for past production amounts are not public information but these figures are verified annually (or more frequently) by APCD and the Dept of Conservation.

Finally, I attached another copy of the USACOE letter that I sent to you last Friday.

Gary

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**From:** JENNIFER LEE [mailto:xitlalli@hughes.net]  
**Sent:** Tuesday, May 26, 2009 1:30 PM  
**To:** Kaiser, Gary; Centeno, Joseph  
**Cc:** xitlalli@hughes.net; jolaine@wildblue.net; zannon@sbpistachios.com  
**Subject:** Re: Re: RE: request for information on GPS Mine

May 26, 2009

Hi Gary and Supervisor Centeno,,

Please let me know as soon as possible when the URS report will be available. If the sediment transport study and any other documents I have requested are in Santa Barbara, either Gene Zannon or I could pick them up in Santa Barbara. Also, could you please send me the email from USACE in pdf format?

Thank you,

Jennifer Lee

On May 22, 2009, [xitlalli@hughes.net](mailto:xitlalli@hughes.net) wrote:

May 22, 2009

Hi Gary,

Thanks for getting back to me so quickly.  
How long will it take to get the sediment transport report?

Yes we will need a few more days to respond. Can we get this in writing?

Please send us the GPS weigh tickets as requested in my last email.

GPS excavated a lot more product in 2007 than was sold in 2007.  
How much was sold in 2008 and 2009? How much was excavated in 2008 and 2009?

The concern here is that what GPS excavated in 2007 cannot be replenished and the river system cannot support 1,000,000 tons excavated each year.

We are fully aware aggregate is needed but please do not destroy the watershed and riverbed which are irreplaceable.  
Aggregate is available in other locations.

If GPS Records are used to support Diamond Rock calculations and Diamond Rock studies are used for GPS  
we will need verified figures for GPS.

Also, could you please send me the attached email as a .pdf file?

Thank you again for everything.

Have a great weekend.

Jenny Lee

On May 22, 2009, [gkaiser@co.santa-barbara.ca.us](mailto:gkaiser@co.santa-barbara.ca.us) wrote:

Hi Jen.

I'm falling behind again.... if this delay causes you to need a few more days to complete your letter let me know.

1. I will send you the sediment transport memo prepared by URS in 2005 (which included GPS but was actually done as part of the Diamond Rock project) as soon as possible. My Diamond Rock files are all in Santa Barbara.

2. The "Hydro Report" you are looking for is the Water Resources Chapter of our Environmental Thresholds and Guidelines Manual, which is at:

[http://www.sbcountyplanning.org/PDF/Manuals/ResponseManuals/Environmental\\_Thresholds.pdf](http://www.sbcountyplanning.org/PDF/Manuals/ResponseManuals/Environmental_Thresholds.pdf)

3. This info is based on GPS records. GPS has a scale that all trucks entering and exiting the site must use. These weigh tickets show the difference between the trucks entering empty and leaving full and thus the tonnage exported from the site.

4. This letter (actually an email) is attached hereto.

Gary

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**From:** JENNIFER LEE [mailto:[xitlalli@hughes.net](mailto:xitlalli@hughes.net)]

**Sent:** Monday, May 18, 2009 3:04 PM

**To:** Kaiser, Gary

**Cc:** [xitlalli@hughes.net](mailto:xitlalli@hughes.net); [zannon@sbpistachios.com](mailto:zannon@sbpistachios.com); [jolaine@wildblue.net](mailto:jolaine@wildblue.net)

**Subject:** Re: request for information on GPS Mine

May 18, 2009

Dear Gary,

Thank you for speaking with me this morning.

I wish to request information pertaining to GPS Ventucopa Mine:

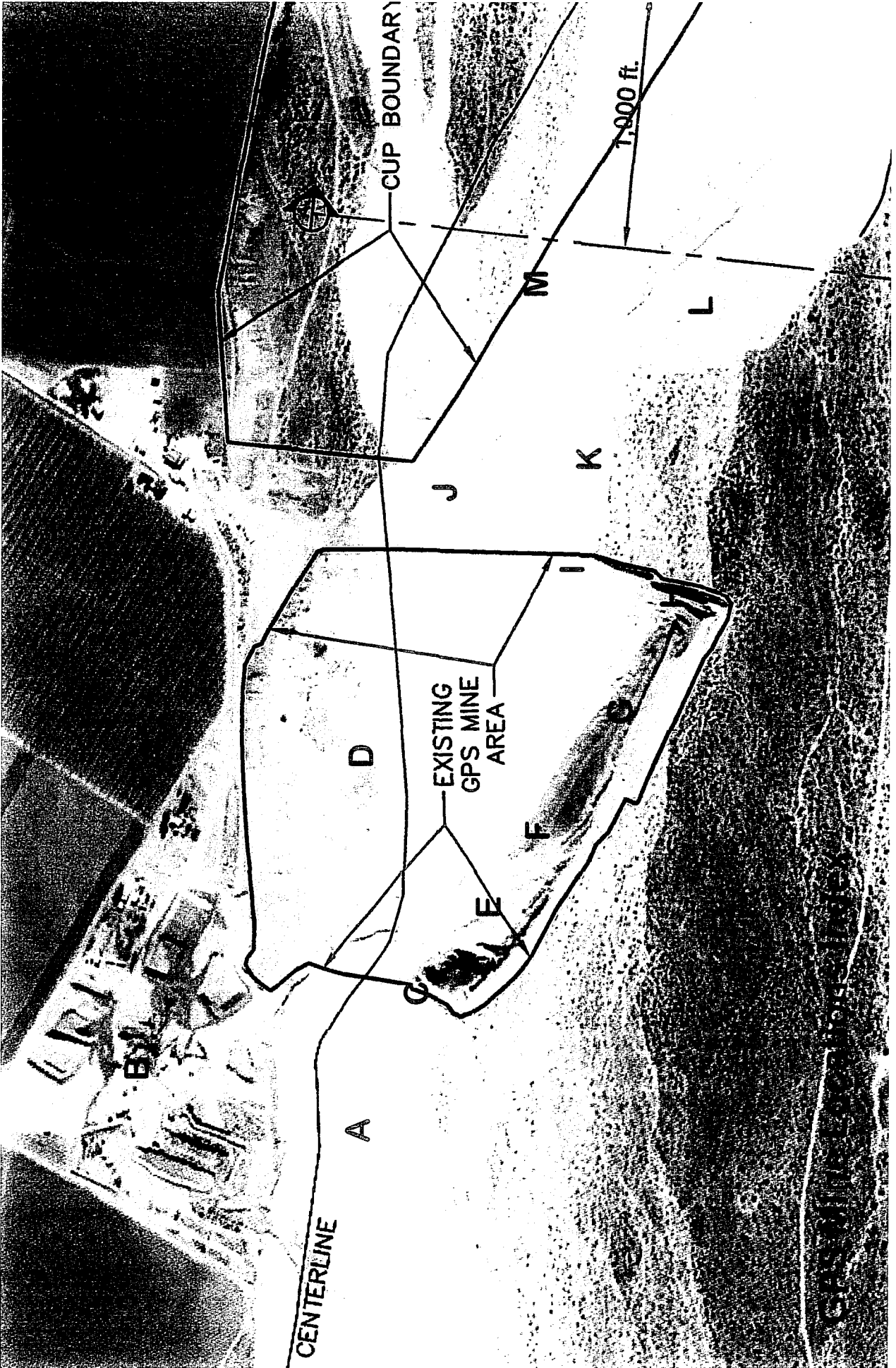
- 1) The Hydrology Report done by URS for GPS,
- 2) The groundwater model used by Santa Barbara County to study the single and cumulative impact of GPS Mine in the Cuyama River and the model used to determine the cumulative impacts of GPS Mine and Diamond Rock Mine operating contiguously in the Cuyama River,
- 3) Supporting documentation for the figures in TABLE 2-1 of the GPS DEIR of RECENT HISTORIC MINE PRODUCTION,
- 4) A copy of the letter from the US Army Corps of Engineers stating that GPS did not require a permit to excavate in the Cuyama River.

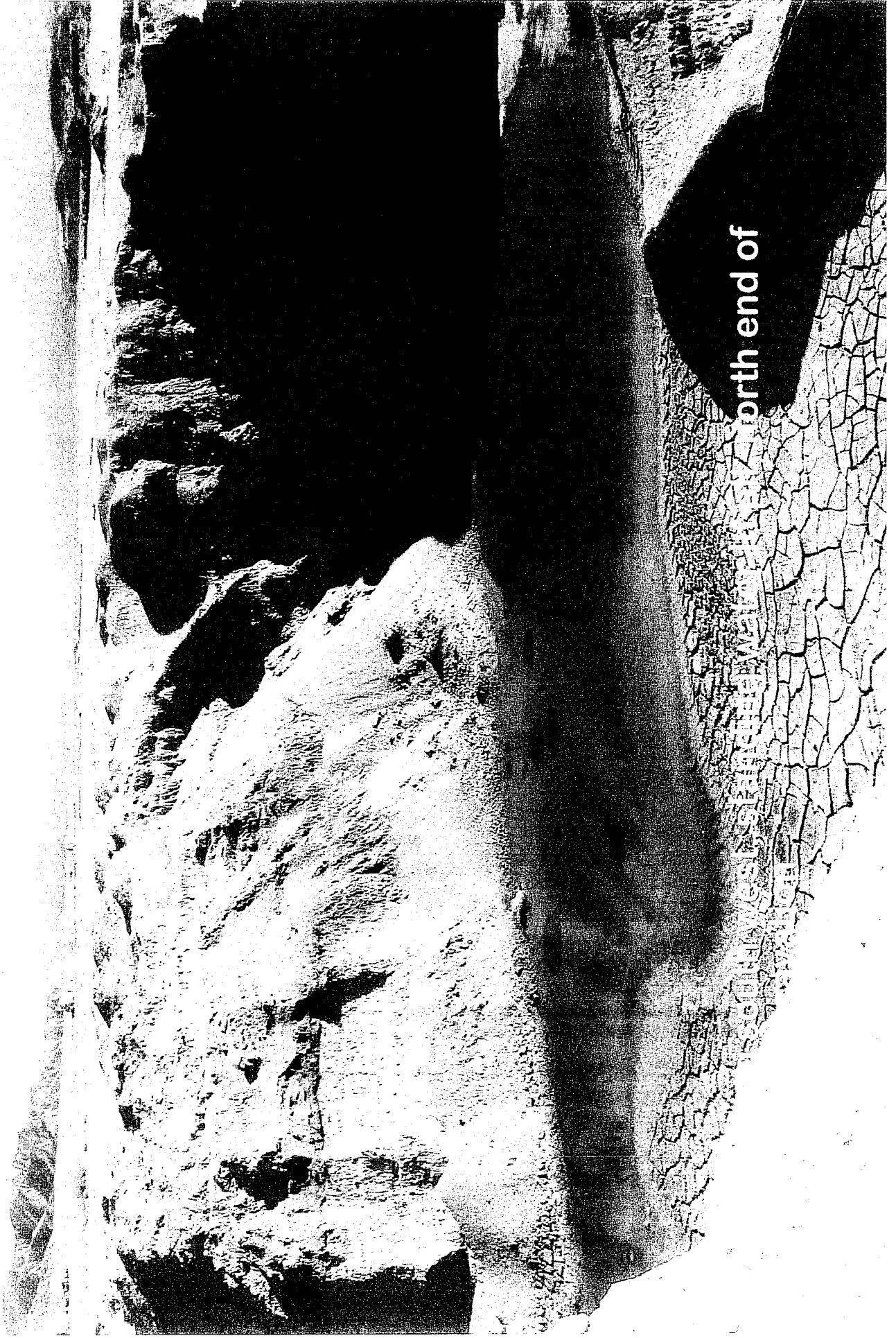
If possible I would like the information in order to meet the end of public comment period on June 8, 2009.

Sincerely,

Jennifer Lee





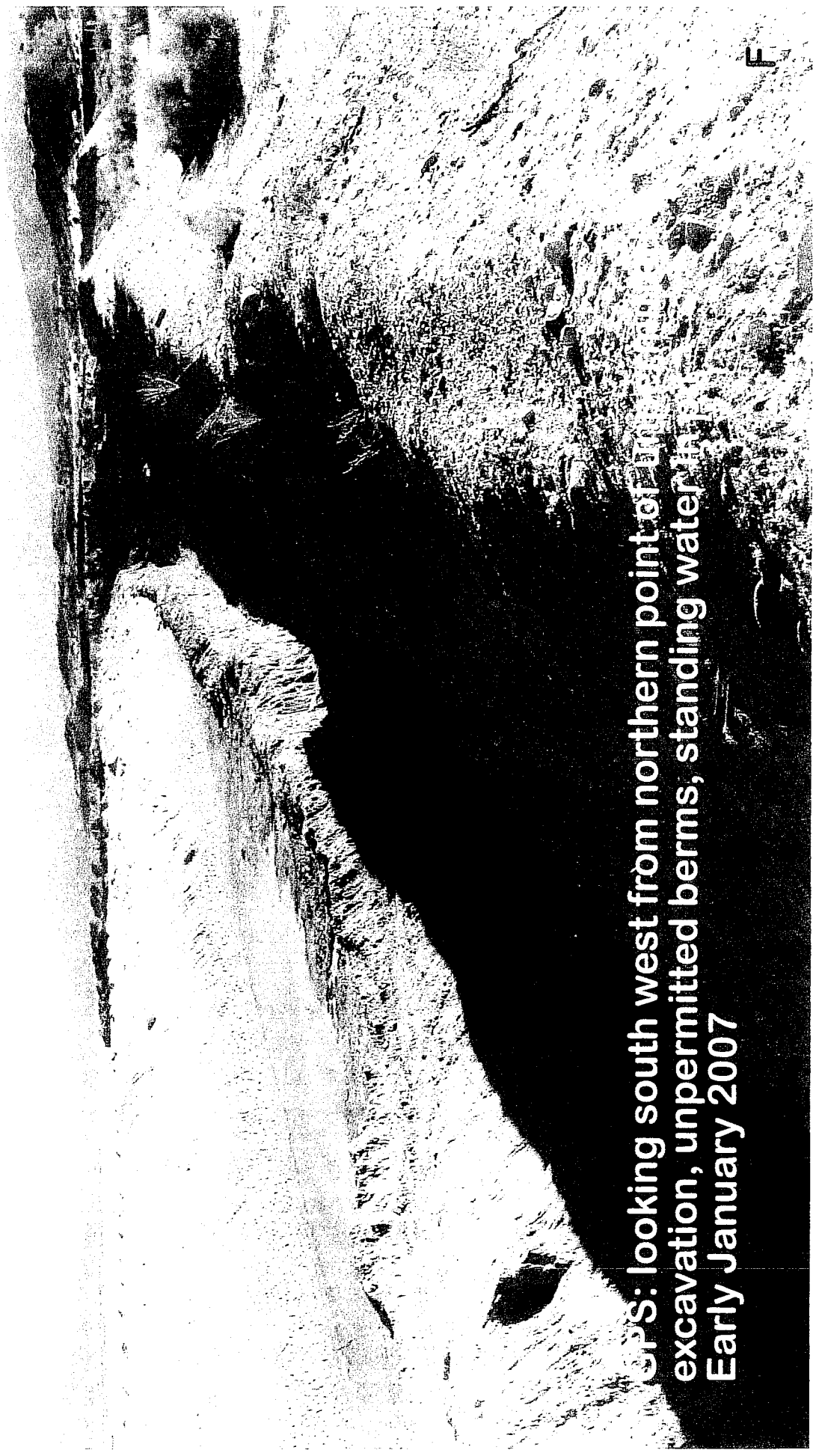


North end of

Rocky West, Sierra Nevada, California



CIPs: loose soil stability, standing water in pit, unpermitted berms,  
northern point, unpermitted excavation  
Early January 2007

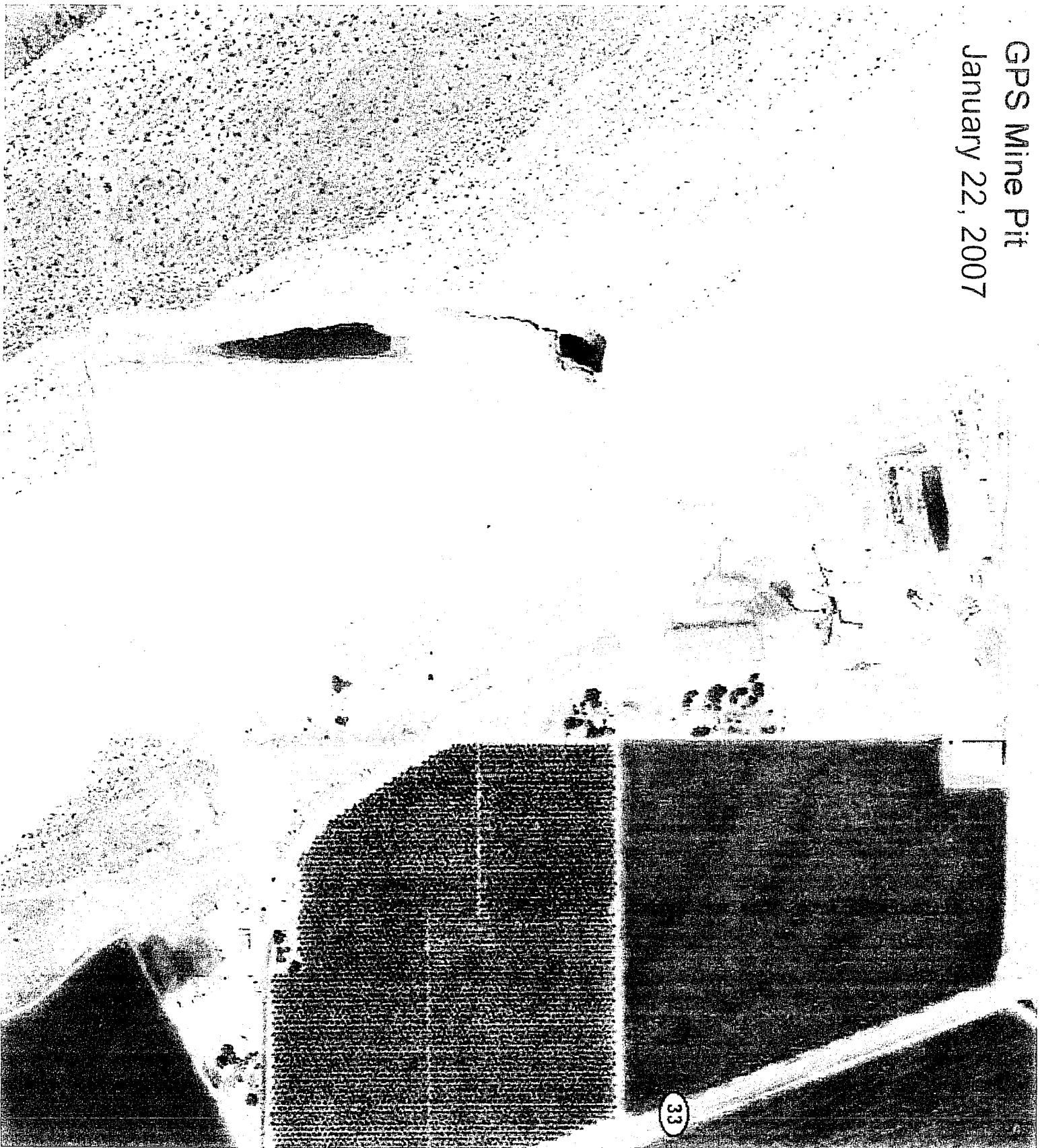


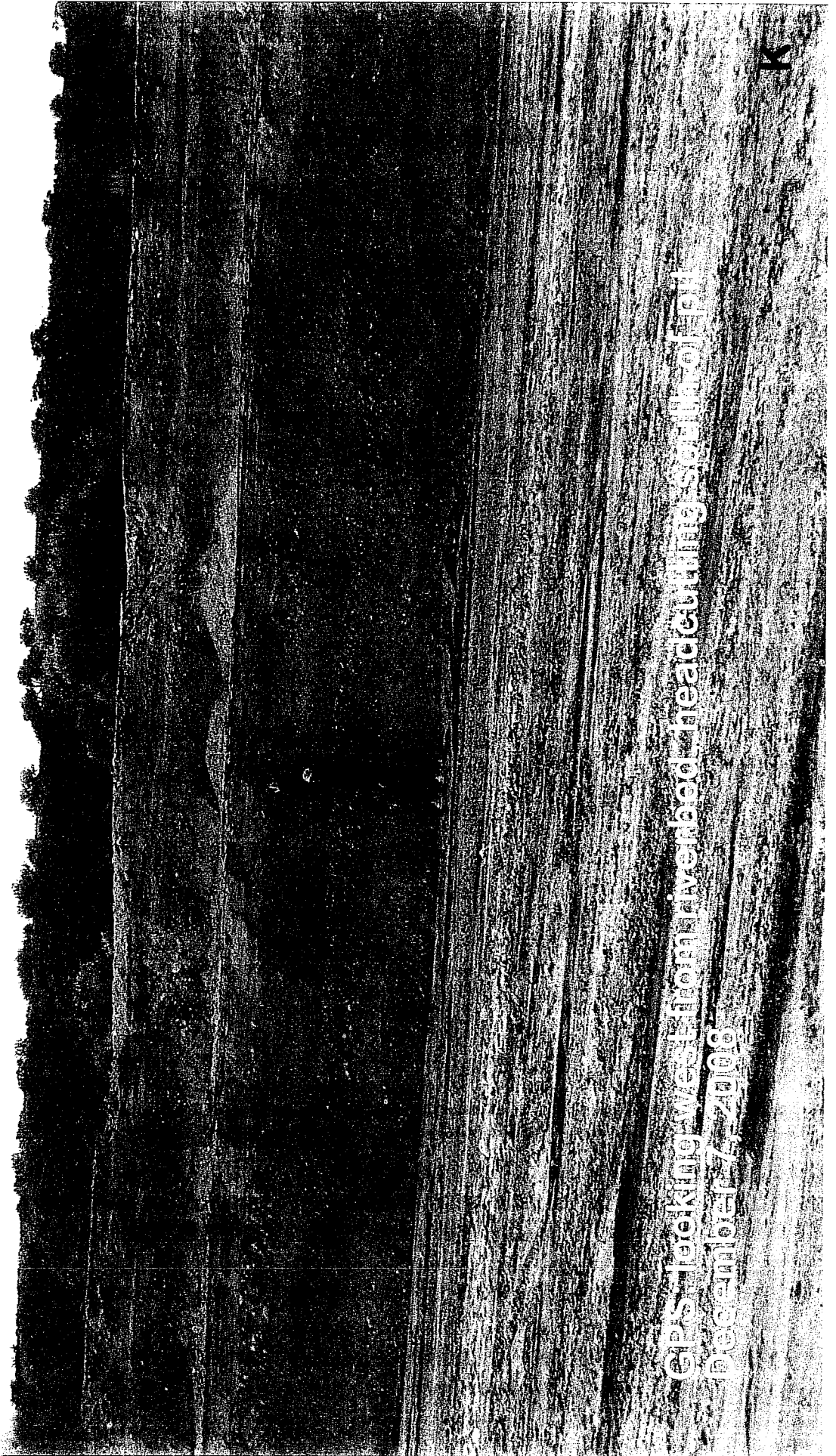
SPS: looking south west from northern point of unpermitted excavation, unpermitted berms, standing water in pit  
Early January 2007



GPS Mine Pit

January 22, 2007





GPS-tracking west from riverbed headcutting spall on rd  
December 7, 2006



GPS: standing water in southern point of pit  
December 7, 2008

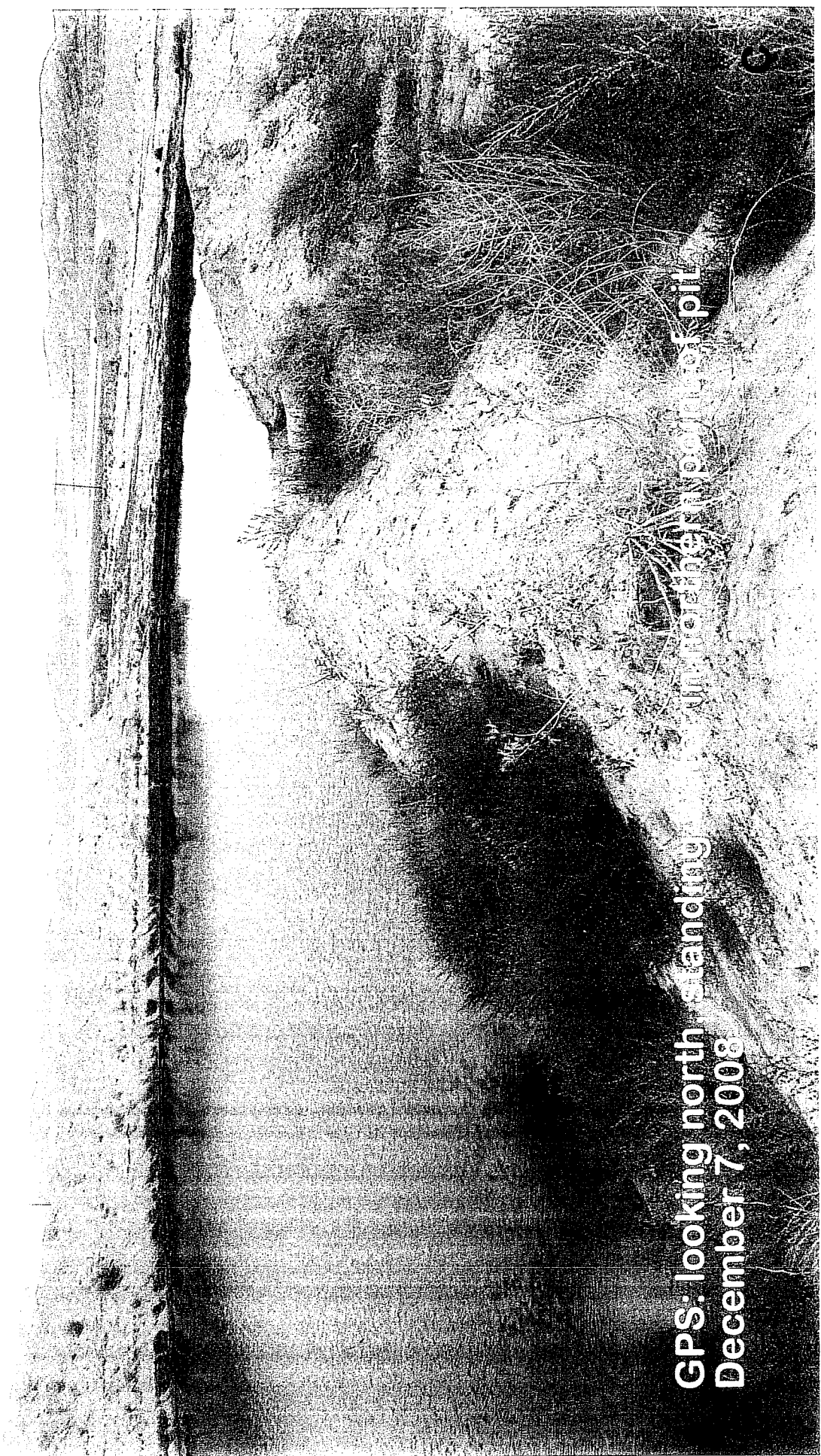
H

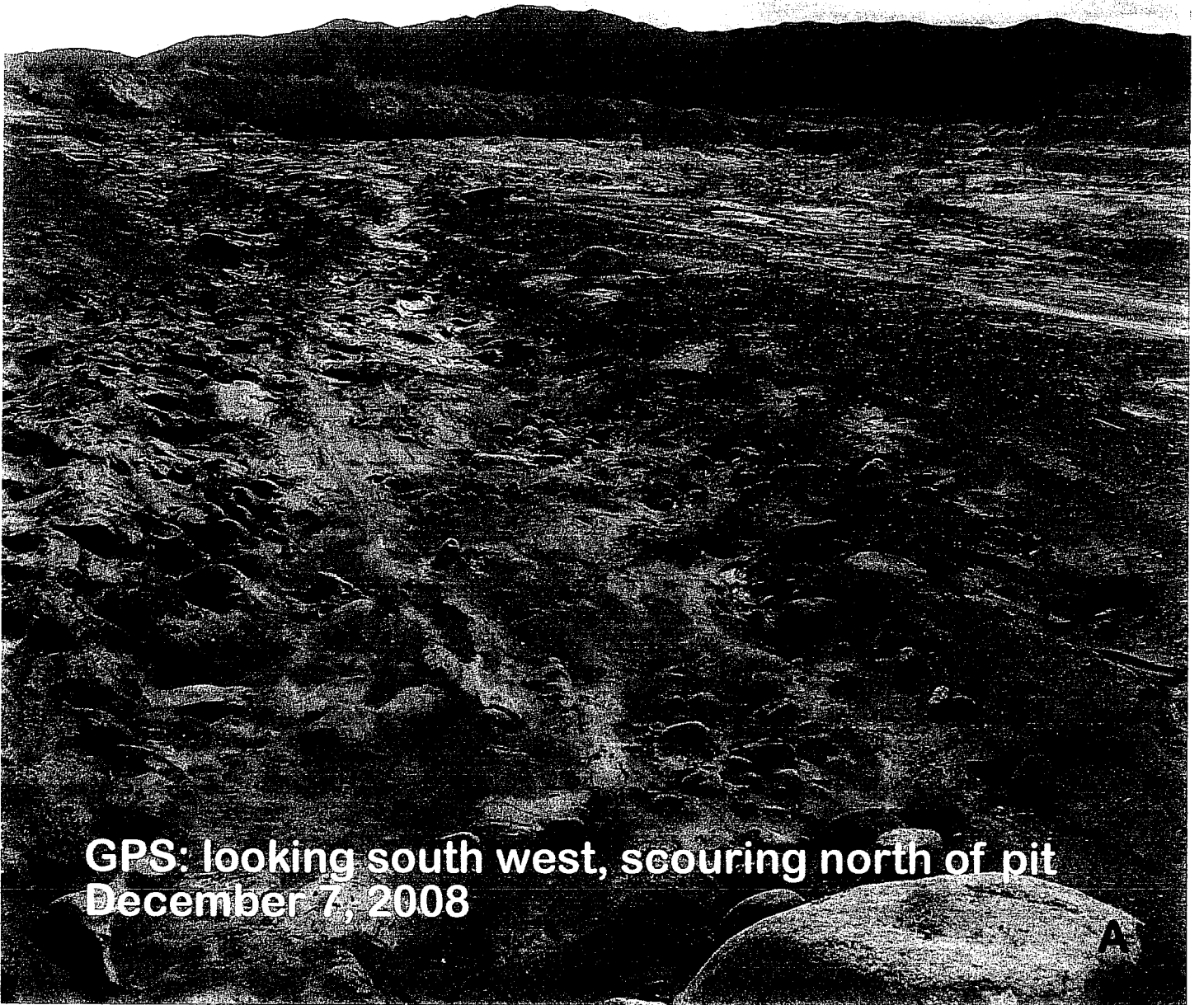


G



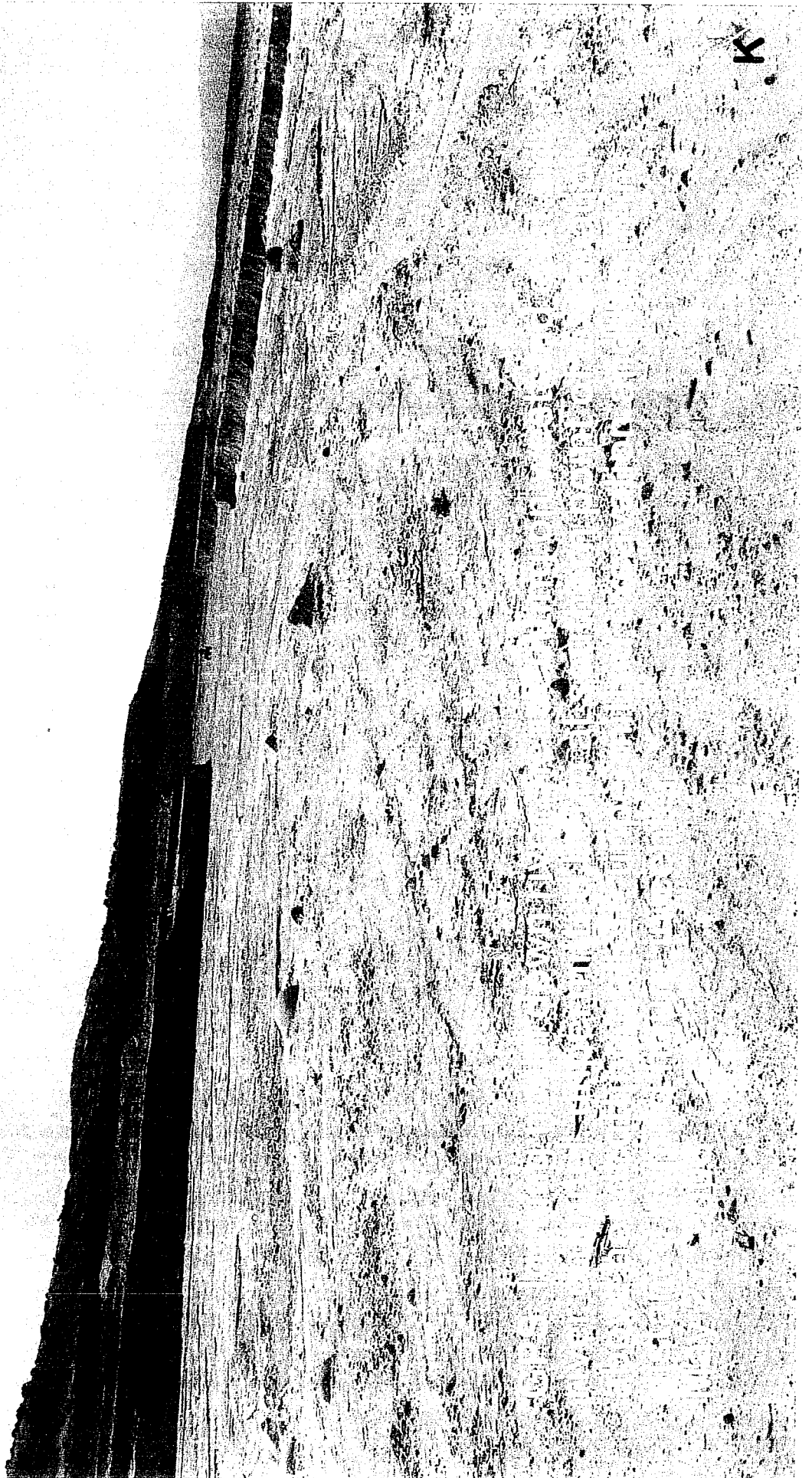
GPS: looking north standing on the rim of the north-south corner of pit  
December 7, 2008





**GPS: looking south west, scouring north of pit  
December 7, 2008**

**A**











Excavation, fines and clay have  
isolated down





GPS: looking south, southern point of unpermitted excavation,  
headcutting on east bank of riverbed,  
standing water, berm nonfunctional  
January 4, 2009

HJJ



GPS: looking south, standing water in southern point of pit  
January 4, 2009