COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT

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TOM BURNS, PLANNING DIRECTOR

June 6, 2008

Agenda Date: July 23, 2008
Item #: 8
Time: After 9 AM

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

Subject: Graniterock Quail Hollow Quarry 2007 Annual Report

Members of the Commission:

Background

On October 10, 2007 your Commission concluded a five-year review of operations at Quail Hollow Quarry. In the motion to accept and file the five-year review, your Commission directed staff, after receipt of the 2007 Annual Report, to report back and provide an update on several issues discussed during the hearing including neighborhood concerns and drainage issues. In addition, your Commission requested more information on revegetation activities at the quarry.

The Conditions of Approval for the Graniterock Quail Hollow Quarry require the annual reports to be placed on the Planning Commission's consent agenda with a staff recommendation that the Commission accept and file the annual report of quarry operations. As required, in April of this year Graniterock submitted the Annual Report for 2007, which contains all of the required elements listed in the County Mining Regulations supplemented by the Conditions of Approval for the mine. The Annual Report includes an evaluation of operational compliance with each of the Conditions of Approval, as well as a summary of activities in 2007 and projected activities in 2008. Attached to the Annual Report are consultant's reports on revegetation activities, hydrogeologic monitoring and endangered species monitoring, and reports on water quality, air quality and noise monitoring. In addition, the Annual Report includes a current aerial photograph of the site and annual production in tons.

Neighborhood Issues

As directed by your Commission, a 24-hour hotline number was posted on the entrance gate to the quarry in November 2007. In January 2008, the hotline was included in a mailing to the surrounding neighborhood (Exhibit A). Graniterock obtained the mailing list for this mailing from the Planning Department.

Complaints from a neighbor were received by the Planning Department on December 6 and 12, 2007 regarding sediment–laden runoff from the quarry entrance road. Response to these complaints has included: additional inspections by Planning Department staff, a site meeting of Graniterock and the complainant, and follow up by the Planning Department with the complainant. Storm water runoff issues are discussed below in the surface drainage section.

Trucker education at the quarry consists of annual verbal and written notice to all truckers regarding the requirements of the quarry permit. The written notice to all truckers includes required shipment hours and haul routes, restrictions on the use of Hwy 17, and speed limits. The written notice is appropriately posted in the scale house that all truckers enter before leaving the site.

As in the past, the quarry is planning to invite neighbors to another annual open house at the quarry scheduled for July 23, 2008.

Surface Drainage

The winter of 2007/2008 produced rainfall totals a little below average. No rainfall events, or accumulation of events, were large enough to overtax the pond system at the quarry. The pond system performed as designed, meaning runoff from the operational area of the mine was retained entirely on site and the emergency pump was not needed. The only runoff that leaves the site under normal circumstances is from rain that falls on the entrance road between Quail Hollow Road and the end of the paved driveway and on the natural slope immediately above the driveway. Following the October 2007 five-year review hearing, increased efforts to manage and monitor driveway runoff have included additional best management practices (BMPs) and complaint response as described above. While water quality monitoring continued as required by the existing California Regional Water Quality Control Board (RWQCB) General Permit for storm water discharges associates with industrial activities, the monitoring this past winter received increased local scrutiny.

Historically, BMPs implemented on the driveway to address potential sediment laden storm water runoff have included street sweeping and two sediment traps at the bottom of the driveway, consisting of concrete blocks and gravel. According to Graniterock sweeping has occurred on a regular basis and prior to storm events. This past winter, as a result of several site inspections, complaint follow up and water quality monitoring, it was determined that additional BMPs were needed. Additional BMPs installed last winter include gravel bags to divert runoff to the sediment traps, straw wattles on trails above the driveway, and a sand berm at a turnout. It appears that elevated levels of total suspended solids seen in water quality monitoring test results from early in the wet season were reduced as a result of the added BMP's and maintenance of existing BMP's. However, the test results from later in the wet season continue to be cause for concern and indicate that additional BMP's are needed. Therefore, the following additional measures are planned prior to next wet season: Additional sediment traps and filters along the edge of the driveway, an additional diversion berm across the top of the driveway, and a gravel filter along the driveway shoulder. Driveway sweeping will be monitored more closely as well.

Revegetation

The primary goal of the revegetation program at Quail Hollow Quarry is to establish on the mined slopes a cover of self sustaining sandhills vegetation indigenous to the site that includes the four special status species: Ben Lomond spineflower, Ben Lomond wallflower, silverleaf manzanita, and naked-stemmed buckwheat. Since approval in 1997, implementation of the revegetation plan in previously mined areas (designated as Areas A and B, and the High Wall (Figure 1)) includes, in general, spreading available salvaged topsoil on mined benches (slopes are too steep to hold topsoil), and seeding and planting of benches and slopes. Difficult site conditions exist for revegetation, which include steep slopes, nutrient poor hard sand substrate, and wind. Therefore, supplemental seeding and planting occurs, as needed, and each area is monitored for progress toward success criteria for a minimum of 15 years.

Success criteria parameters include plant survival, cover, species richness, density of woody species, erosion, and invasive exotic species. Qualitative monitoring and maintenance is conducted on an ongoing basis with quantitative monitoring of cover, species richness and density using established vegetative sampling techniques. This occurs in years 3, 5, 8, 11 and 15. Extensive field testing using test plots has also helped determine the most appropriate planting procedures. Future revegetation will continue in phases concurrent with the phased mining plan.

Based on the approved revegetation plan and annual reports for the past 10 years following is a synopsis of revegetation activities and progress toward success criteria for each area.

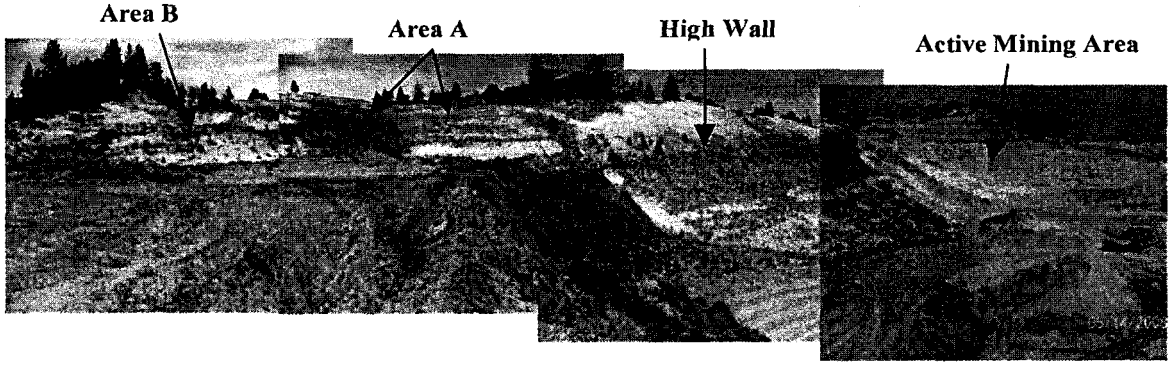


Figure 1: Photo showing Area A, Area B, High Wall and active mining area.

High Wall

The High Wall (Figure 2) is the most challenging revegetation area in the quarry due to extremes of slope height (no benches), hard sand and wind. Bare areas persist at the top due to excessive wind erosion. In the middle zone sand deposition from above sometimes buries plants. The excessive slope length has led to rill erosion at the bottom of the slope.

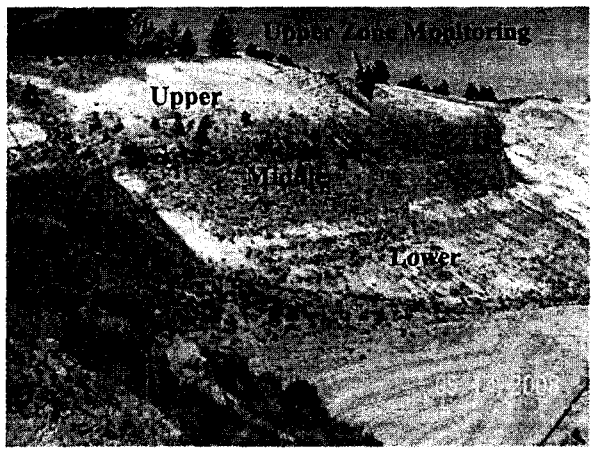


Figure 2: High Wall reclamation. Active revegetation treatment in Upper Zone includes dense planting with brush. Plantings throughout the upper zone are not sufficiently established to begin monitoring except for a small section in the northern most portion.

Despite these conditions, by 2002 successful plant establishment in the middle and lower zones allowed formal monitoring to begin. The lower and middle zones are monitored as one unit while the upper zone is monitored separately. The first quantitative monitoring of these zones occurred in 2005, which indicated that 3-year success criteria were met to varying degrees. The monitoring results indicate areas that meet intermediate success criteria as well as areas that need supplemental seeding and planting to ensure 15-year targets are met. Overall, the middle and lower sections of the highwall are progressing well and are on track to ultimately meet the 15-year success criteria.

Due to particularly difficult site conditions plant establishment in the upper zone of the High Wall has not progressed sufficiently to begin formal monitoring. The revegetation consultant has developed a technique in Area B, which is being applied to the upper zone of the high wall, using denser plantings protected with natural material (brush) instead of artificial plant protectors (Figure 3). However, a small area of dense planting with brush in the northern-most portion has become sufficiently established to begin the monitoring program (Figure 2). Qualitative monitoring and early quantitative monitoring (2-year) indicate this area is progressing well to meet the 15-year success criteria. Scheduled quantitative monitoring (3-year) in spring 2008 will be documented in the annual report to be submitted in April 2009.

Figure 3: Example of dense planting with brush in upper zone of highwall. The limbs are well anchored to the slope. Middle and lower zones are in the background.

Area A

Area A consists of benches and slopes of different orientations, east facing and north facing, and planting with two different plant assemblages. (Figures 4, 5 and 6). Based on these factors, Area A is broken up into five different units for the purposes of monitoring: Sand Parkland Buffer planting on slopes 1 and 2, and benches 1 and 2; Sandhills Plant Assemblage planting on north-facing slopes 3 and 4, east-facing slopes 3 and 4, and benches 3 and 4.

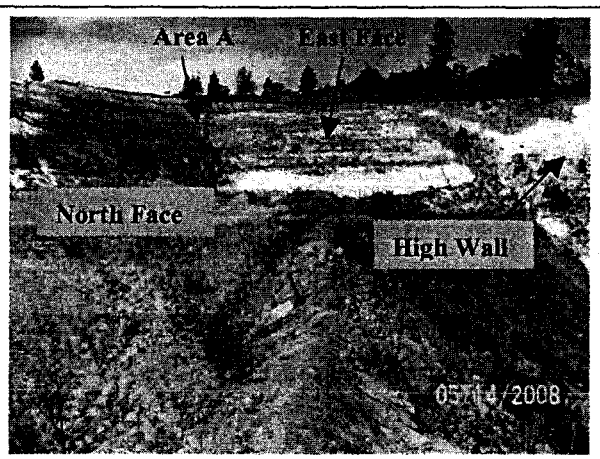


Figure 4: Area A

Quantitative monitoring in all revegetation units in Area A occurred in 2003 (3-year) and 2005 (5-year). For the most part, the entire area is progressing well and is on track to meet 15-year success criteria. Additional planting and broadcasting is intended to increase species richness and density in certain areas. As seen in Figures 4 and 5, the variations in vegetative cover are reflective of different plant assemblages and slope aspects. For example, it is normal for the Sand Parkland Buffer planting on slope 1 and 2 to have a lower percent cover than Sandhills Plant Assemblage on slopes 3 and 4, and effects of a harsher environment on east facing slopes can be seen in the differences in percent cover on the east and north facing slopes 3 and 4.

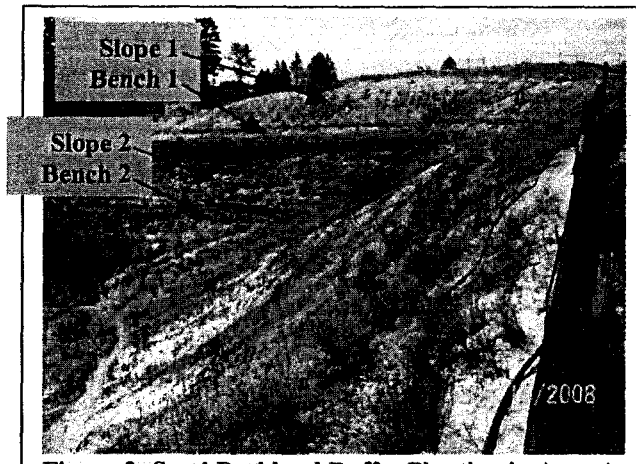


Figure 5: Sand Parkland Buffer Planting in Area A slopes and benches 1 & 2. The silt fencing at the top of Area A seen on the right side of the photo prevents exotic grass seed from drifting onto the slope from adjacent areas.

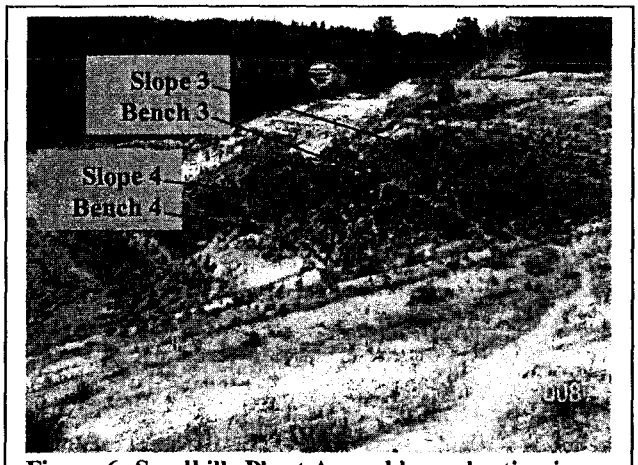


Figure 6: Sandhills Plant Assemblage planting in Area A north-facing slopes and benches 3 & 4. Active revegetation does not occur below slope 4 seen on the center left side of the photo because this area may be disturbed in future mining and reclamation activity.

Area B

In an effort to eliminate the need to access the slope in the future for maintenance and supplemental planting, which can damage existing plantings, Area B is being revegetated using the dense planting with brush technique and a more naturalistic layout of plantings. (Figure 7) This technique also reduces the potential safety hazard of working on steep slopes, but it means that in-situ monitoring is replaced by visual and photographic monitoring from adjacent vantage points. To date this area is not meeting the success criteria for the target vegetation community, Northern Maritime Chaparral, but it would be on track to meet success criteria for Sand Parkland Buffer planting. Whether it is appropriate to change the target vegetation community in Area B has yet to be determined. Area B has been a popular area with some locals for trespassing to sandboard on the bare slopes. An additional benefit of the dense planting with brush technique is that the large brush, if well anchored and spaced, discourages this damaging activity.

Figure 7: Area B dense planting with brush needs additional brush anchored to bare area of slope.

In all revegetation areas non native weedy species are continuously checked by hand removal and prevention techniques, such as the silt fencing at the top of Area A seen on the right side of Figure 5. The fencing prevents exotic grass seed from drifting onto the slope from adjacent areas. Raptor perches have been constructed in the revegetation area in an attempt to control the gopher population. There is some evidence the perches are being used by raptors.

A fenced seed orchard/increase plot was established on site in 2002 to increase production of seed for use in revegetation. It also reduces seed cost and labor and environmental cost of collecting seed in adjacent protected areas, and provides a facility for ongoing testing.

The primary goal of the revegetation program at Quail Hollow Quarry is being met. That is to establish a cover of self sustaining sandhills vegetation indigenous to the site on the mined slopes. The revegetation consultant has been successful at establishing all four special status species in the revegetation area in addition to natural colonization by some of the species in older revegetation areas.

Long Term Management and Maintenance Plan

As revegetation areas complete the 15-year monitoring period and meet final success criteria they will be incorporated into the Long Term Management and Maintenance

Plan (LTMMP) for the site. This plan was finalized in September 2007. The current focus of the LTMMP is on the conservation areas that surround the mining area, but its scope will expand to incorporate revegetated mined areas ultimately encompassing the entire site at the completion of mining.

Formal implementation of the LTMMP will start this year and will build on existing management and monitoring activities. Implementation will generally consist of vegetation and species population monitoring, mapping using GIS, invasive species removal, other management and enhancement activities, adaptive management, and annual reporting. Annual reports will be submitted to the County Planning Department, the U.S. Fish and Wildlife Service and California Department of Fish and Game, which will provide an opportunity for agency staff and other experts to review and comment in order to support the plan's highly adaptive and research oriented approach. Your Commission will receive an update on the implementation of the LTTMP at this time next year.

Conclusion and Recommendation

Based on a review of the 2007 Annual Report combined with quarterly site inspection, and improved measures to prevent sedimentation off site, Planning Department staff concludes that the Quail Hollow Quarry is in compliance with all Conditions of Approval. In keeping with our historic practice, a copy of the report, with all proprietary information removed, is on file in the Planning Department and available for Planning Commission review.

It is therefore RECOMMENDED, that your Commission accept and file this report.

Sincerely,

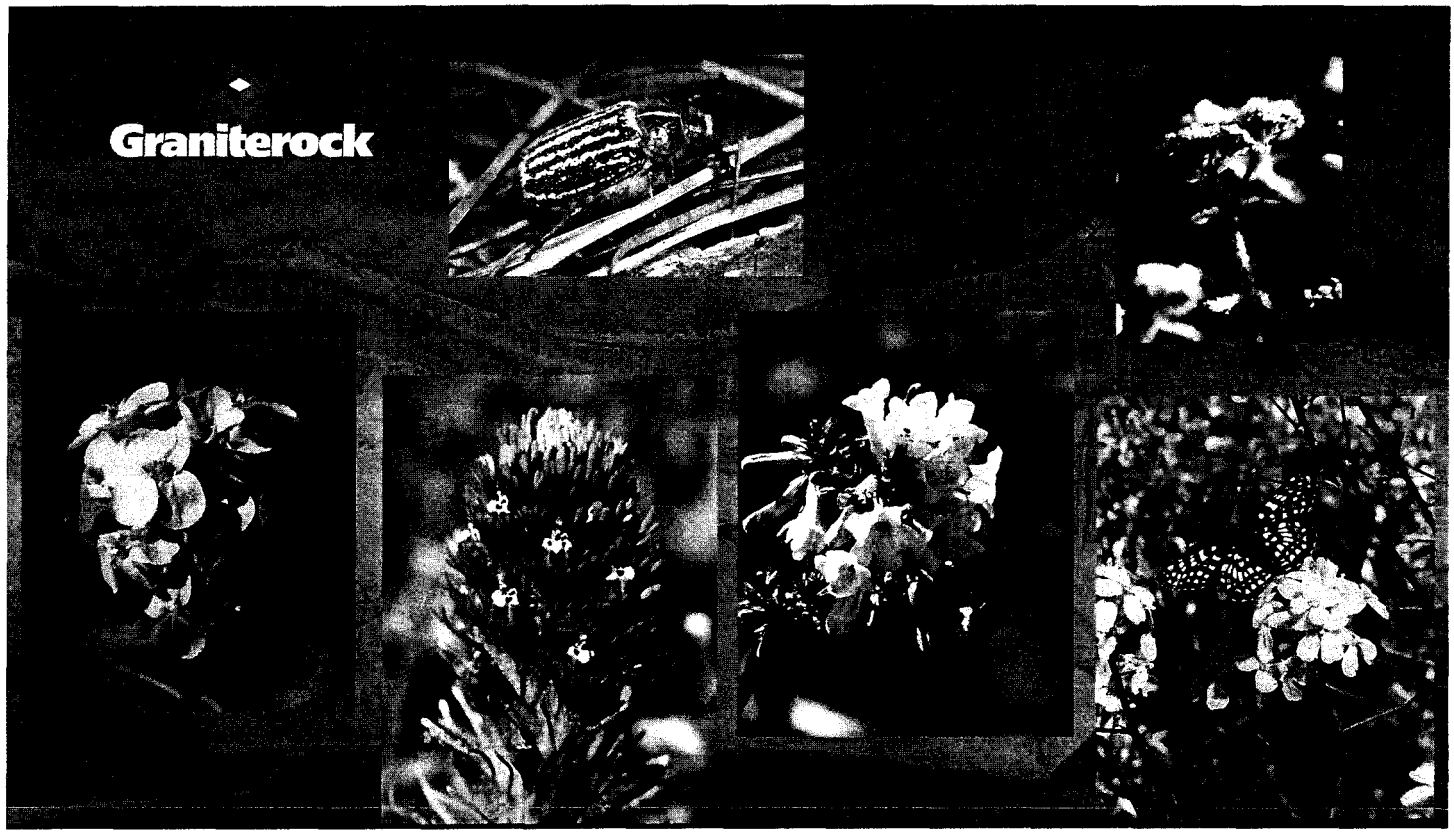
David Carlson
Resource Planner
Environmental Planning

Reviewed By:

Mark Deming
Assistant Director
Development Review

Exhibits

A Neighborhood mailing
B Graniterock Quail Hollow Quarry 2007 Annual Report (on file)



QUAIL HOLLOW SAND PLANT • 405 Quail Hollow Road • Felton, CA 95018-9424

NEWS FROM GRANITEROCK'S QUAIL HOLLOW QUARRY

- The Quarry's 24-hour emergency contact number is 831.471.3480.
- Graniterock is proud to introduce local resident Marvin Brandt as the Quarry's new manager. His number is 831.471.3483.
- The Long Term Maintenance and Management Plan (LTMMP) is complete, and both electronic and hard copies are available at the Felton Library. This comprehensive plan is an important component of a region-wide effort to preserve the habitat in the area's sandhills.
- Several conservation projects will be initiated in the coming years as part of the LTMMP, and Graniterock would like to partner with outside groups to make this a community effort. If you have a service organization or group that would like to participate in a project for a fun, learning experience, or as a possible fund raiser, please call JoAnn at 831.471.3480.
- Sand to fill emergency sandbags is available at the Quarry during working hours, free of charge to our neighbors. Please call 831.471.3480 for further information about the bags.
- The Quarry's next Open House is planned for early summer, 2008. Please watch for the notice and plan to join us for a short tour and light refreshments.