

3.0 COUNTY PLANS AND POLICIES

3.1 ENVIRONMENTAL SETTING

The Bonny Doon Quarries are located in the Bonny Doon Planning Area within the County of Santa Cruz. The Quarries are located in the coastal mountains approximately 1.5 miles east of Davenport. Numerous natural resources occur in this region including mineral resources, timberland, coastal streams, ground water recharge, sensitive habitats, and open space. The County of Santa Cruz governs the use of these resources through its General Plan/Local Coastal Program (GP/LCP) and various ordinances.

3.2 REGULATORY SETTING

The County regulations relevant to the Bonny Doon Limestone Quarry Boundary Expansion Project and Reclamation Plan Amendment include the General Plan/Local and Local Coastal Program (GP/LCP), Mining Regulations, Use Permit 3236-U, Certificate of Compliance and Reclamation Plan Approval 89-0492 (COC), and the Sensitive Habitat Ordinance.

County Use Permits issued to the Bonny Doon Limestone and Shale Quarries in May 1964, April 1967 and December 1968 grant the quarry operator the right to mine within the established Legal Mining Limit. This vested right enables the quarry operator to continue mining as long as operations conform to the Use Permit conditions and the provisions of the County Mining Regulations. The Quarry operator must submit a mining plan that delineates the active mining boundary within the Legal Mining Limit to the County for review and approval. The current mining plan boundary for the Limestone Quarry was approved by the County at the time of permit issuance prior to 1969. Quarry operations have since developed the quarry pit close to the active mining boundary.

The Reclamation Plan for the Bonny Doon Quarries was conditionally approved by the State Mining and Geology Board (SMGB) in November 1996. In 1997, the County conditionally approved the Certificate of Compliance for Use Permit 3236-U, the Reclamation Plan and Coastal Permit for the quarry operation.

The proposed project is an application for a Major Amendment to Use Permit 3236-U, COC and a Coastal Permit to expand the working area of the Limestone Quarry into an adjacent 17.1 acres within the Legal Mining Limit (Boundary Expansion Area), to fill a portion of the existing mining pit with overburden, and to modify the revegetation plan component of the 1996 Reclamation Plan. The proposed Boundary Expansion Area and the Legal Mining Limit are delineated in Figure 5.

The County will impose additional conditions or restrictions only in the case that the stricter standards are necessary to mitigate a potentially significant environmental impact, and/or to protect public health or safety, and/or to respond to a public nuisance. Should additional limitations be found to be necessary to prevent significant environmental impacts or threats to public health and safety, the risks associated with these impacts must be weighed against the effects of such restrictions on quarry operations to ensure that they do not unreasonably constrain the permit holder from exercising its vested rights.

3.2.1 General Plan/Local Coastal Program

The County of Santa Cruz GP/LCP Land Use Plan designates the Limestone and Shale mining areas as Mineral Resource Areas with a Quarry ("Q") designation. The continuation and expansion of mining activities is encouraged within these designations pursuant to a valid Mining Permit and Reclamation Plan. The Boundary Expansion Area is designated Quarry by the GP/LCP and is zoned Heavy Industrial (M-3). The use of the Boundary Expansion Area for mining purposes is consistent with the GP/LCP Land Use and Zoning designations. The zoning districts for the quarry property and surrounding parcels are shown in Figure 15, Zoning Map.

Policies of the GP/LCP Land Use Plan (Section 16.54.010) relevant to the mining operations at the Bonny Doon Quarries are implemented through the Mining Regulations. GP/LCP policies relevant to the project are listed in Table 3-1. Project conformance to the General Plan policies is described below in Section 3.3.2. Project compliance with the Mining Regulations would result in project compliance with the GP/LCP policies. Project conformance with the Mining Regulations requirements are described in Sections 3.3.3 and 3.3.4 below.

Table 3-1 Relevant County General Plan Policies for the Bonny Doon Limestone Quarry Boundary Expansion Project and Reclamation Plan Amendment	
Policies — Land Use	
2.19.1	Siting of Heavy Industries and Quarries. Any change in use or major expansion shall be subject to full environmental and economic analysis and review by the County for the adequacy and appropriateness of the site for the proposed use.
2.19.2	Operation of Existing Quarries. Allow continued operation of existing quarries and allow expansion within areas designated as Mineral Resources, including those located in the Coastal Zone, where impacts of environmental and scenic resources and surrounding residential uses can be mitigated. Require that all existing quarries meet the requirements of the County's Mining Ordinance. Require that all mining operations maintain and implement a County approved reclamation plan as required under the California Surface Mining and Reclamation Act (SMARA) and ensure that the rehabilitation and future uses of depleted quarry sites are in accordance with conservation and open space values.
Policies — Biotic Resources	
5.1.7	Site Design and Use Regulations. Protect sensitive habitats against any significant disruption or degradation of habitat values in accordance with the Sensitive Habitat Protection ordinance.
5.1.9	Biotic Assessments. Require a biotic assessment as part of project review in areas of biotic concern and sensitive habitats.
5.1.10	Species Protection. Require protection of these individual rare, endangered and threatened species and continue to update policies as new information becomes available.
Policies – Water Resources	
5.5.1	Watershed Designations. Designate on the General Plan and LCP Resources Maps those Water Supply Watersheds listed in Figure 5-1. (This policy designates Liddell Spring a water supply watershed for City of Santa Cruz.)

Table 3-1 Relevant County General Plan Policies for the Bonny Doon Limestone Quarry Boundary Expansion Project and Reclamation Plan Amendment	
5.5.9	Development Activities Within Water Supply and Least Disturbed Watersheds. Require all grading, building, and timber harvesting in Water Supply and Least Disturbed Watersheds to meet strict standards for erosion control and protection of water quality as outlined in the Erosion hazard and Drainage Facilities sections of this Plan and as identified in the San Lorenzo River Watershed Management Program.
Policies – Maintaining Adequate Streamflows	
5.6.2	Designation of Critical Water Supply Streams. Designate the following streams, currently utilized at full capacity, as Critical Water Supply Streams: ...Liddell, San Vicente... Oppose or prohibit as legal authority allows, new or expanded water diversion from Critical Water Supply Streams. Prohibit new riparian or off stream development, or increases in the intensity of use, which require an increase in water diversions from Critical Water Supply Streams. Seek to restore in-stream flows where allocation may harm the full range of beneficial uses.
Policies – Maintaining Surface Water Quality	
5.7.1	Impacts From New Development on Water Quality. Prohibit new development adjacent to marshes, streams and bodies of water if such development would cause adverse impacts on water quality which cannot be fully mitigated.
5.7.3	Erosion Control for Stream and Lagoon Protection. For all new and existing development and land disturbances, require the installation and maintenance of sediment basins, and/or other strict erosion control measures, as needed too prevent siltation of streams and coastal lagoons.
5.7.7	Storm Water Discharge Requirements. Once the State and Regional Water Quality Control Boards promulgate new storm water discharge permit requirements for municipal and industrial storm water systems, obtain appropriate permits for all existing storm drainage systems and proposed drainage facilities and adhere to best management practices.
Policies – Overdrafted Groundwater Basins	
5.8.1	Primary Groundwater Recharge Area Designation. Designate on the General Plan Resource Maps those areas where local soil conditions and underlying geologic formations allow for infiltration and percolation of rainfall and runoff into groundwater basins.
5.8.3	Uses In Primary Groundwater Recharge Areas. Require retention of storm water runoff from impervious surfaces for all new development in Primary Groundwater Recharge Areas through on-site percolation methods so as not to exceed predevelopment runoff levels. Utilize on-site detention methods were percolation methods are not feasible; either system should be designed for a minimum design storm as determined by the County Design Criteria.
Policies — Mineral Resources	
5.16.7	Adherence to the County’s Mining Ordinance. Require any new or expanded mining operation to obtain a Mining Approval, including a reclamation plan, according to the requirements of the County’s Mining ordinance and applicable provisions of state law.

Table 3-1 Relevant County General Plan Policies for the Bonny Doon Limestone Quarry Boundary Expansion Project and Reclamation Plan Amendment	
5.16.8	Existing Mining Operations. All mining operations shall obtain a Mining Certificate of Compliance as specified in the County Mining Ordinance. All existing mining operations shall maintain an approved reclamation plan as required under SMARA. The reclamation plan shall consider depleted quarry sites for recreational uses or for future use as solid waste disposal sites where consistent with the protection of water quality.
5.16.9	Environmentally Sound Quarry Operations. Require environmentally sound quarry operations through compliance with the County Mining Ordinance. Require environmental impact assessments, implementation of approved reclamation plans and posting of adequate financial security insuring the reclamation of mined areas.
5.16.10	Protection of Riparian Corridors and Wetlands. Carefully control the impacts of mineral extraction or processing operations adjacent to riparian corridors in accordance with the provisions of the Riparian Corridor and Wetlands Protection ordinance.
5.16.11	Quarry Operations to be Consistent with General Plan Policies. Require any future quarry expansion not already authorized under a Mining Approval to be consistent with all General Plan and LCP Land Use Plan policies, including resource protection policies.
Policies – Air Quality	
5.18.1	New Development. Ensure new development projects are consistent at a minimum with the Monterey Bay Unified Air Pollution Control District Air Quality Management Plan and review such projects for potential impact on air quality.
Policies – Slope Stability	
6.2.3	Conditions for Development and Grading Permits. Condition development and grading permits based on the recommendations of the Hazard Assessment and other technical reports.
Policies — Erosion	
6.3.4	Erosion Control Plan Approval Required for Development. Require, as a condition of development approval, abatement of any grading or drainage condition on the property which gives rise to existing or potential erosion problems.
6.3.5	Installation of Erosion Control Measures. Require installation of erosion control measures by October 15, or the advent of significant rain. Prior to October 15, require adequate erosion control to prevent erosion from early storms.
6.3.6	Earthmoving in Least Disturbed or Water Supply Watersheds. Prohibit earthmoving operations in areas of very high or high erosion hazard potential between October 15 and April 15, unless preauthorized by the Planning Director. Measures to control erosion must be in place at the end of each day's work.
6.3.7	Reuse of Topsoil and Native Vegetation Upon Grading Completion. Require topsoil to be stockpiled and reapplied upon completion of grading to promote regrowth of vegetation. Use native vegetation replanting disturbed areas.

Table 3-1 Relevant County General Plan Policies for the Bonny Doon Limestone Quarry Boundary Expansion Project and Reclamation Plan Amendment	
6.3.8	On-site Sediment Containment. Require containment of all sediment on-site during construction and require drainage improvements for the completed development that will provide runoff control, including onsite retention or detention where downstream drainage facilities have limited capacity. Runoff control systems or Best Management Practices shall be adequate to prevent any significant increase in site runoff over pre-existing volumes and velocities and to maximize on-site collection of non-point source pollutants.
Policies – Noise	
6.9.4	Commercial and Industrial Development. For all new commercial and industrial developments which would increase noise levels above the maximum allowable standards of the Land Use Compatibility Guidelines in Figure 6-1, or Figure 6-2, the best available control technologies will be used to minimize noise levels. In no case shall the noise levels exceed the standards of Figure 6-2.

Source: County of Santa Cruz 1994.

3.2.2 Mining Regulations 16.54.050, Required Conditions and Standards for Mining Approval, Certificate of Compliance, Reclamation Plan Approval

The proposed project amends the COC and is subject to the required conditions and standards of the Mining Regulations 16.54.050. The conditions and standards of the Mining Regulations 16.54.050 relevant to the project are listed below in Table 3-2. A complete listing of all standards of the Mining Regulations is presented in Appendix B. Project conformance to the Required Conditions and Standards is described below in Section 3.3.3.

Table 3-2 County Mining Regulations 16.54.050 Required Conditions and Standards for Mining Approval, Certificate of Compliance, Reclamation Plan Approval	
1. Noise and Vibration	
All facilities and equipment shall be constructed, maintained and operated in compliance with the Industrial Performance Standards of Section 13.10.445 and County General Plan Section 3.6.1. Maximum noise level measured at property boundaries shall be no greater than 60 dBA for a cumulative period of 15 minutes in any hour of operation. A lower noise level may be required by the Planning Commission if a health or safety effect or nuisance related noise level is demonstrated. A higher noise level may be authorized by the Planning Commission if the increase in noise level is from construction related activity, the noise is generated only on a specified temporary basis and all neighbors within 1000 feet of the property have been notified in writing of the increase in noise level by the operator.	
2. Air Pollution	
(i) Each mining operation and reclamation activity shall be conducted in compliance with the requirements of the Monterey Bay Unified Air Pollution Control District	
(ii) Removal of vegetation shall only be permitted in accordance with the approved phasing plan.	
(iii) Each mining operation shall be conducted so as to minimize dust, particulate matter (PM10), crystalline silica, and any other potentially significant effect of wind erosion.	

Table 3-2 County Mining Regulations 16.54.050 Required Conditions and Standards for Mining Approval, Certificate of Compliance, Reclamation Plan Approval
(iv) Each interior road within the mining site shall be surfaced, treated or watered frequently enough to preclude wind and traffic generated dust from creating a nuisance affecting any nearby property or public road.
(vi) In a dry weather period during high wind conditions, each mining operation on an exposed slope shall be curtailed. Stockpiled sand products shall be watered or treated in a manner approved by the Planning Director during periods of high wind conditions so as to minimize off-site dust nuisance to nearby property.
(viii) Each unvegetated disturbed area not actively involved in a mining operation, including any interim slope which does not meet final contours, shall be hydromulched, hydroseeded or otherwise treated by the start of the rainy season each year by a method and in a manner approved by the Planning Director so as to minimize off-site dust nuisance.
3. Water
(i) The use and discharge of water shall be conducted in compliance with all applicable Water District, County, state, and federal laws.
(iii) The lowest elevation of any mining operation at any time shall be 20 feet above the peak groundwater elevation unless the Planning Commission determines that a lower or higher elevation will ultimately benefit the recharge of the aquifer.
(iv) The groundwater recharge capacity of each aquifer or spring within the mining site shall be maintained at a pre-approval level
(v) If the Planning Director determines that reasonable cause exists to suspect adverse impacts from a mining operation on groundwater supply, aquifer, sole source aquifer or spring, a complete hydrogeological report pursuant to Section 16.54.040(c)(11) shall be prepared. However, if the potential impacts are limited, the Planning Director may limit the report to address only the limited impacts identified.
4. Drainage and Erosion
(iii) Runoff originating from the mining site, stockpiles, unpaved on-site roads or other disturbed areas shall be contained on-site except as permitted under the Mining Approval, Certificate of Compliance, Reclamation Plan Approval only or amendment thereof. Runoff leaving any mining site shall comply with the requirements of the regional Water Quality Control Board. Monitoring of runoff discharged by an independent laboratory, and/or installation of a continuous monitoring device, may be required as a condition of such Mining Approval, Certificate of Compliance, Reclamation Plan Approval only or amendment thereof. The results of such required monitoring shall be submitted to the Planning Director within thirty days after the monitoring results are obtained and shall also be included in the annual report.
(v) Each Operator shall minimize the surface area of the mining site which is stripped, mined or otherwise disturbed at any given time to the greatest extent compatible with reasonable mining and marketing requirements.
(vi) Mining operation and reclamation shall be conducted to protect on-site and downstream beneficial uses of water in accordance with the state and federal law, including (without limitation) Porter-Cologne Water Quality Control Act, California Water Code Section 13000, et seq., and the federal Clean Water Act, 33 USC Section 1251, et seq., and their respective successor laws.

Table 3-2 County Mining Regulations 16.54.050 Required Conditions and Standards for Mining Approval, Certificate of Compliance, Reclamation Plan Approval
(vii) The quality of water, recharge potential, and storage capacity of groundwater aquifers which are the source of water for domestic, agricultural, or other uses dependent on the water, shall not be diminished, except as allowed in the applicable Mining Approval, Certificate of Compliance Reclamation Plan Approval only or amendment thereof.
(viii) Erosion and sedimentation shall be controlled during construction, operation, reclamation, and closure of a mining operation to minimize siltation of lakes and watercourses, and to ensure that land and water resources are protected from erosion, gulying, sedimentation and contamination.
5. Setbacks
(iii) Prior to excavating, clearing, o otherwise disturbing the land within 200 feet of a mining site boundary, a licensed surveyor or civil engineer employed by the operator shall provide survey markers at 200 foot intervals along both the mining site boundary line and the 150 foot setback line. Each marker shall be maintained in place until a clear, readily identifiable working face is established at an approved setback line.
6. Sensitive Habitat Protection
(i) and (ii) Each sensitive habitat for rare, endangered, threatened, or unique wildlife or plants or communities thereof, located on the mining site shall be mapped and appropriate conditions imposed to assure that mining operation and reclamation reasonably preserve such sensitive habitats. Mining operation and reclamation shall be conducted to protect sensitive habitats in accordance with the California Endangered Species Act and the federal Endangered Species Act or the respective successor laws.

Source: County of Santa Cruz Mining Regulations, 1996.; Appendix B

3.2.3 Mining Regulations 16.54.055, Reclamation Standards

The Mining Regulations specify Reclamation Standards for returning the land disturbed by a mining operation to a safe and usable condition upon cessation of mining activity. The proposed project activities are subject to the Mining Regulations Reclamation Standards. The Mining Reclamation Standards relevant to the project are identified in Table 3-3. A complete listing of Reclamation Standards specified in Chapter 16.54.055 of the Mining Regulations is presented in Appendix B. Project conformance to the Reclamation Standards is described below in Section 3.3.4.

Table 3-3 County Mining Regulations 16.54.055 Reclamation Standards
(d) Performance Standards for Wildlife Habitat
<p>Wildlife and wildlife habitat shall be protected in accordance with the following standards:</p> <p>(1) Rare, threatened or endangered species as listed by the California Department of Fish and Game (California Code of Regulations, Title 14, sections 670.2-670.5), the U.S. Fish and Wildlife Service (50 CFR 17.11 and 17.12), or species of special concern as listed by the California Department of Fish and Game in the Special Animal List, Natural Diversity Data Base, shall be protected and their respective habitat conserved as prescribed by the federal Endangered Species Act, 16 USC Section 1531, et seq., and the California Endangered Species Act, Fish and Game Code Section 2050, et seq. If avoidance cannot be achieved through the available alternatives, mitigation shall be proposed by the owner(s) and/or operator(s) in accordance with the provisions of the California Endangered Species Act, Fish and Game Code section 2050 et seq., and the federal Endangered Species Act, 16 USC Section 1531, et seq.</p> <p>(2) Wildlife habitat shall be established on disturbed land in a condition at least as good as that which existed before the lands were disturbed by the mining operation, unless the proposed end use precludes its use as wildlife habitat or the approved Reclamation Plan establishes a different habitat type than that which existed prior to mining.</p>
(e) Performance Standards for Backfilling, Regrading, Slope Stability, and Recontouring
<p>(3) Piles or dumps of mining waste products, by-products or overburden shall be stockpiled in such a manner as to facilitate phased reclamation. Such piles or dumps shall be segregated from topsoil and topsoil substitutes or growth media salvaged for use in reclamation.</p> <p>(4) Final reclaimed fill slopes, including permanent piles or dumps of mining waste products, by-products, rock and over-burden, shall not exceed 2:1 (horizontal: vertical), except when a site-specific geologic and engineering analysis demonstrates that the proposed final slope will have a minimum factor of safety that is suitable for the proposed end use, and when the proposed final slope can be successfully revegetated.</p> <p>(5) At closure, all fill slopes, including permanent piles or dumps of mining waste products, by-products and overburden shall conform with the surrounding topography and/or approved end use.</p> <p>(6) Final cut slopes, including highwalls or quarry faces of a sand mining operation, shall have a minimum slope stability factor of safety that is suitable for the proposed end use with a stability factor of safety not less than 1.2, and shall be no steeper than 1.5:1. (33 degrees) and shall be benched at a 30-foot vertical interval, and shall conform with the surrounding topography and/ or approved end use. Final cut slopes, including highwalls and quarry faces of a hard rock mining operation, may be steeper than 1.5:1 (33 degrees) and have a greater bench interval than 30 feet if it can be demonstrated that a steeper slope or different bench interval is geologically stable, has a minimum slope stability factor of safety that is suitable for the proposed end use with a stability factor of safety not less than 1.2, and conforms with the surrounding topography and/or approved end use, does not create a threat to public health and safety, adversely affect a natural resource or reduce the feasibility of reclamation of a mining site.</p>

Table 3-3
County Mining Regulations 16.54.055
Reclamation Standards

(f) Performance Standards for Revegetation

(1) Revegetation shall be part of the approved Reclamation Plan, unless it is not consistent with the approved end use. A native species vegetative cover suitable for the proposed end use and capable of self-regeneration without continued dependence on irrigation, soil amendments or fertilizer shall be established on disturbed land (including roads, ponds, streambeds, and other areas used in the mining operation) unless introduced species are consistent with the approved Reclamation Plan or unless native species prove infeasible. Vegetative cover or density, and species-richness shall be, where appropriate, sufficient to stabilize the surface against effects of long-term erosion and shall be similar to naturally occurring habitats in the surrounding area. The vegetative density, cover and species richness of naturally occurring habitats shall be documented in baseline studies carried out prior to the initiation of mining activities. However, for areas that will not be reclaimed to prior conditions, the use of data from reference areas in lieu of baseline site data is permissible.

(2) Test plots conducted simultaneously with mining shall be required to determine the most appropriate planting procedures to be followed to ensure successful implementation of the proposed revegetation plan. The Planning Director may waive the requirement to conduct test plots when the success of the proposed revegetation can be documented from experience with similar species and conditions or by relying on competent professional advice based on experience with the species to be planted.

(7) Native species shall be used for revegetation, except when introduced species are consistent with the approved Reclamation Plan or native species prove infeasible. Areas to be developed for industrial, commercial, or residential use shall be revegetated for the interim period, as necessary, to control erosion. In this circumstance, non-native plant species may be used if they are not noxious weeds and if they are species known not to displace native species in the area.

(13) The revegetation plan shall provide for re-establishing or enhancing any rare and endangered, or locally unique plant communities disturbed by any mining operation.

(14) Success of revegetation shall be judged based upon the effectiveness of the vegetation for the approved end use, and by comparing the quantified measures of vegetative cover, density, and species-richness of the reclaimed mined lands to similar parameters of naturally occurring vegetation in the area. Either baseline data or data from nearby reference areas may be used as the standard for comparison. Quantitative standards for success and the location(s) of the reference area(s) shall be set forth in the approved Reclamation Plan. Comparisons shall be made until performance standards are met provided that, during the last two years, there has been no human intervention, including, for example, irrigation, fertilization, or weeding. Standards for success shall be based on expected local recovery rates. Valid sampling techniques for measuring success shall be specified in the approved reclamation plan. Sample sizes must be sufficient to produce at least an 80 percent confidence level. Standard statistical methods in commonly available literature may be utilized for determining an 80 percent confidence level on a site-by-site basis. Examples of such literature include (without limitation) D. Mueller-Dombois and H. Ellenberg, 1978 "Aims and Methods of Vegetation Ecology," John Wiley & Sons, Inc., or D.D. Bonham 1988 "Measurement for Terrestrial Vegetation."

(h) Performance Standards for Topsoil Salvage, Maintenance, and Redistribution

When the approved Reclamation Plan calls for revegetation or cultivation of disturbed lands, the following performance standards shall apply to topsoil salvage, maintenance, and redistribution activities:

(1) All salvageable topsoil suitable for revegetation shall be removed as a separate layer from areas to be disturbed by mining operations. Topsoil and vegetation removal shall not precede surface mining activities by more than one year, unless a longer time period is approved by the Planning Director.

Table 3-3
County Mining Regulations 16.54.055
Reclamation Standards

(2) Topsoil resources shall be mapped prior to stripping and the location of topsoil stockpiles shall be shown on a map in the Reclamation Plan. If the amount of topsoil needed to cover all surfaces to be revegetated is not available on site, other suitable material capable of sustaining vegetation (such as subsoil) shall be removed as a separate layer for use as a suitable growth media. Topsoil and suitable growth media shall be maintained in separate stockpiles. Test plots may be required to determine the suitability of growth media for revegetation purposes.

(3) Soil salvage operations and phases of reclamation shall be carried out in accordance with a schedule that: (i) is set forth in the approved Reclamation Plan; (ii) minimizes the area disturbed; and (iii) is designed to achieve maximum revegetation success allowable under the mining plan.

(4) Topsoil and suitable growth media shall be used to phase reclamation as soon as can be accommodated by the mining schedule presented in the approved reclamation plan following the mining of an area. Topsoil and suitable growth media that cannot be utilized immediately for reclamation shall be stockpiled in an area where it will not be disturbed until needed for reclamation. Topsoil and suitable growth media stockpiles shall be clearly identified to distinguish them from mine waste dumps. Topsoil and suitable growth media stockpiles shall be planted with a vegetative cover or shall be protected by other equally effective measures to prevent water and wind erosion and to discourage weeds. Relocation of topsoil or suitable growth media stockpiles for purposes other than reclamation shall require prior written approval from the Planning Director.

(5) Topsoil and suitable growth media shall be redistributed in a manner that results in a stable, uniform thickness consistent with the approved end use, site configuration, and drainage patterns.

(k) Performance Standards for Surface Drainage Control

(1) All final surface drainage control measures shall be designed for a 10-year storm, 6-hour duration and shall be incorporated into the Reclamation Plan. Passive drainage control measures such as broad berms and swales are encouraged.

(2) Surface mining and reclamation activities shall be conducted to protect on-site and downstream beneficial uses of water in accordance with the Porter-Cologne Water Quality Control Act, Water Code Section 13000, et. seq., and the federal Clean Water Act, 33 USC Section 1251, et seq.

(3) The quality of water, recharge potential, and storage capacity of ground water aquifers which are the source of water for domestic, agricultural, or other uses dependent on the water, shall not be diminished, except as allowed in the approved Reclamation Plan.

(4) Erosion and sedimentation shall be controlled during all phases of construction, operation, reclamation, and closure of a surface mining operation to minimize siltation of lakes and watercourses, as required by the Regional Water Quality Control Board or the State Water Resources Control Board.

(5) Surface runoff and drainage from surface mining activities shall be controlled by berms, silt fences, sediment ponds, revegetation, hay bales, or other erosion control measures, to ensure that surrounding land and water resources are protected from erosion, gulying, sedimentation and contamination. Erosion control methods shall be designed to handle runoff from not less than the 10 year/6 hour intensity storm event.

Source: County of Santa Cruz Mining Regulations, 1996.; Appendix B

3.2.4 Use Permit 3236-U

Use Permit 3236-U grants the quarry operator the right to mine the Bonny Doon Quarries and places specific conditions on the mining operation. Part III of Use Permit 3236-U pertains to mining operations at the Limestone Quarry. The proposed project expands the mining operation into 17.1 acres within the originally permitted Use Permit Boundary (Legal Mining Limit). The

Use Permit conditions that apply to the proposed project are listed in Table 3-4 below. Project conformance with these conditions is discussed in Section 3.3.5 below.

Table 3-4 Conditions of Use Permit 3236-U Part III Bonny Doon Limestone Quarry	
No.	Use Permit Condition Text
6	No mining below elevation 750 feet.
7	Protection of the waters of Liddell Spring #1 from detrimental effects of mining operations shall be in accord with terms of an agreement between permittee and the City of Santa Cruz; said agreement is attached hereto (to Use Permit 3236-U) as Exhibit Z.
8	Final cut slopes shall not exceed the normal angle of repose of the natural materials. In any case, when cut slopes steeper than one to one (1:1) exceed 60 feet vertically, they shall be stepped at intervals not exceeding 60 feet vertically and such steps shall be at least 30 feet wide.
9	In any event, the top of cut slope in no case shall be brought closer than 25 feet to any exterior property line of the actual site to be excavated.
10	Finished excavation shall in all cases be graded in such a manner as to prevent the accumulation of storm waters or natural seepage (COC 89-0492 Condition of Approval III.B.1 through III.B.12 [Drainage]).
11	Finished grades in all cases shall have slopes not less than one and one-half percent (1-1/2%).
22	Overburden or waste materials to be excavated from this quarry site shall not be stockpiled for the purpose of recapture, recovery, or retaking.
23	Dust or other such materials originating from operations, including covered belt conveyor system, shall be held to a minimum by the use of dust arresting equipment on the conveyor system and the use of water wagons or other dust control devices and in no case shall dust be permitted to blow onto adjacent land or in any way accumulate on public roads.
24	Noise and ground vibration shall be reduced to a minimum.
25	The operation of Part III of this permit shall not cause a diminution in either quantity or quality of any water supply.
26	Drainage facilities and devices to control storm water runoff shall be constructed as required in order to minimize erosion and prevent pollution of natural water courses or the Pacific Ocean by sand, silt, or other materials, that in any way will result in damage, to fish, aquatic or marine life.
27	Prior to the construction of settling ponds, slurry ponds, water reservoirs, or storm drainage facilities, final plans based on design by a Registered Civil Engineer shall be approved by the Dept. of Public Works.
28	All requirements of the Regional Water Quality Control Board and Department of Fish and Game shall be met.
29	Non-compliance with any of the foregoing conditions shall be cause for revocation of Part III of this use permit pursuant to provisions of Santa Cruz County Code, Sections 13.04.324, and 13.04.332.

Source: Appendix B.

3.2.5 Certificate of Compliance and Reclamation Plan Approval 89-0492

The COC was conditionally approved by the County in 1997. The conditions of approval were designed to bring the existing quarry operations and reclamation plan into compliance with the Mining Regulations and Use Permit. The conditions of the COC augment, or supersede, where in conflict with the provisions of Use Permit 3236-U. Most of the conditions apply broadly to the entire quarry operation and reclamation activities. The conditions most directly relevant to the mining expansion or reclamation plan amendment are listed below in Table 3-5. A complete list is presented in Appendix B.

Table 3-5 Certificate of Compliance and Reclamation Plan Approval 89-0492 1997 Conditions of Approval
III.D. Vegetation
6. The Shale and Limestone Quarries Landscape Program shall include changes, planting methods, replacement of lost native plant communities, and test plot program as identified in the Mitigation and Monitoring Program, VEG-4, VEG-5, and VEG-6. Revisions to drawings shall include revegetation of all areas impacted by mining activities, roadways, and settlement basins (see III.D.7 below), needlegrass grasslands, and sensitive plant replacement and be submitted to the Planning Director for review and approval within 90 days of approval of this Certificate of Compliance.
III.E. Wildlife
1. The Quarry shall comply with the provisions of the United States Endangered Species Act regarding the California red-legged frog, Coho Salmon, and other federally listed species. No take shall occur unless authorized by a Section 10(a) permit from the U. S. Fish and Wildlife Service (USFWS). Until such time a Section 10(a) permit is issued by USFWS for the Habitat Conservation Plan currently in preparation for the red-legged frog, the operator shall consult with USFWS prior to conducting operations in areas where frog presence is known or anticipated in either the Limestone or Shale Quarries and shall proceed only as approved by USFWS. Communications with USFWS regarding monitoring procedures as approved by USFWS and implementation by the operator shall be submitted to the Planning Director. Once the Habitat Conservation Plan/Section 10(a) permit is issued, the County shall retain a copy of said permit, and requirements shall be incorporated in the Reclamation Plan as required. Within 90 days of approval of this Certificate of Compliance, the Quarry shall submit written verification of compliance with the U. S. Fish and Wildlife Service and the Endangered Species Act, and written verification of the compliance with the California Department of Fish and Game Streambed Alteration Agreement (#849-95). (WIL-1) The Quarry shall comply with provisions of the Endangered Species Act for California red-legged frog and Coho salmon.
III.G. Air Quality
2. In dry weather, watering shall be done each morning before operations begin and then continue periodically, as needed throughout the day. The frequency of watering shall be increased during drier periods and when wind speeds exceed 15 miles per hour. Lignin sulfonate or other U. S. Fish and Wildlife Service approved surfactant may be used as needed. (AIR-2) 3. At least monthly maintenance of the dust control devices on stationary equipment in each quarry shall be performed and kept in a maintenance log by the Quarry. The maintenance log shall be submitted to the Planning Director in the Quarry's annual report. (AIR-3) 4. At the time that compliance with Mitigation Measure AIR-1 (Condition III.G.1 above) is shown, the Quarry may request an amendment to Use Permit 3236-U, Condition III.23, citing state ambient air quality standards be the measurement for compliance. (AIR-4) 5. Each unvegetated disturbed area not actively involved in a mining operation, including interim slopes which does not meet final contours, shall be hydromulched, hydroseeded, or otherwise treated to reduce off-site dust nuisance. (Section 16.54.050(c) (2)(vii)) 6. Removal of vegetation shall be only permitted in accordance with the approved phasing plan. Section 16.54.050(c)(2)(ii)
H. Noise
1. Whenever feasible, rock-breaker equipment shall be located more than two levels below the Limestone Quarry rim, and use shall be limited to minimum necessary to allow safe transfer of rocks to the crusher. (NOI-1) 3. Prior to blasting, the Quarry shall notify neighbors. A written log of calls made and whether contact was made at the residence shall be maintained by the Quarry and submitted with the Quarry's Annual Report to the Planning Director. (NOI-3)

Table 3-5
Certificate of Compliance and Reclamation Plan Approval 89-0492
1997 Conditions of Approval

I. Blasting

1. The blasting design for the Limestone Quarry shall be modified as follows: a) Timing between holes in a row shall be a minimum of 1.8 msec per foot of spacing; b) Timing between rows shall be a minimum of 3.0 msec per foot of burden. If blast design parameters, explosives, and/or material mass blasted change considerable, new single hole signature analysis may be required to estimate delay interval. (BLS-1)
3. Limestone Quarry blasting practices shall include the following to mitigate for dust and fumes from drifting offsite: a) Wherever practical maintain increased stemming length at 18 feet; b) Water trucks and hoses shall moderately wet down all bench floors in the direction where blasted material is anticipated. (BLS-3)
4. At the time any future amendment to the mining area is applied for, the Quarry shall consider wider bench widths and changing blast direction to shoot sideways or 90 degrees to the current blasting directions. Analysis of potential impacts of implementation of above blasting practices shall be included in the amendment package submitted to the Planning Department. (BLS-4)
5. To mitigate for potential nitrate contamination due to blasting, the following practices shall be employed at the Limestone Quarry: a) A back up initiation system; b) In severe wet hole conditions, only water resistant explosives for the entire length of the explosive column; c) In holes containing small amounts of water, use water resistant cartridge explosives as a bottom load to a height above the water level. The last cartridge shall be slit to form a fully coupled plug, which acts as a barrier for the top load of ANFO explosive from coming into contact with the water; d) To aid in identifying ANFO spillage during loading operations in the blast area, the red, orange or pink dye currently in use shall continue to be used in the fuel oil. This will also act as a good quality control measure to indicate that the ammonium nitrate has been properly sensitized before use; e) Detonate the blast on the same day in which it was loaded to minimize potential for ground water seepage coming in contact with ANFO; f) Utilize an anti-static plastic or not-sparking funnel to assist in hole loading. (BLS-5)

Source: Bonny Doon Quarry 1997 Conditions of Approval (Appendix B).

3.2.6 Sensitive Habitat Protection Ordinance

The Sensitive Habitat Protection Ordinance was enacted "to minimize disturbance of biotic communities which are rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activity." The Sensitive Habitat Ordinance states that no one may engage in a development activity in a sensitive area unless "a development permit has been obtained and is in effect which authorizes such development activity" (Section 16.32.130 (a)).

The following definitions of sensitive habitat are relevant to the project:

- (b) Areas which provide habitat for locally unique biotic species/communities including but not limited to: oak woodlands, coastal scrub, maritime chaparral, and mapped grassland in the Coastal Zone.
- (c) Areas adjacent to essential habitats of rare, endangered or threatened species as defined in (e) and (f) below.
- (d) Areas which provide habitat for species of special concern as listed by the CDFG in the Special Animals list, Natural Diversity Database.
- (e) Areas which provide habitat for rare or endangered species which meet the definition of Section 15380 of the California Environmental Quality Act guidelines.

- (f) Areas which provide habitat for rare, endangered or threatened species as designated by the California Fish and Game Commission, USFWS or California Native Plant Society (CNPS).

Section 16.32.090(b) specifies that the following conditions shall be applied to all development within any sensitive habitat area: 1) All development shall mitigate significant environmental impacts, as determined by the Environmental Coordinator; 2) Dedication of an open space or conservation easement or an equivalent measure shall be required as necessary to protect the portion of a sensitive habitat which is undisturbed by the proposed development activity or to protect a sensitive habitat on an adjacent parcel; and 3) Restoration of any area which is a degraded sensitive habitat or has caused or is causing the degradation of a sensitive habitat shall be required, provided that any restoration required shall be commensurate with the scale of the proposed development.

3.3 PROJECT IMPACTS

3.3.1 Thresholds of Significance

According to the CEQA Guidelines (Appendix G), a project will have a significant effect on the environment if the following conditions occur:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

3.3.2 Conformance with General Plan/Local Coastal Program

Land Use Policies. In Compliance. The proposed mining expansion for the Limestone Quarry is subject to environmental review. The Quarry occurs in a Mineral Resource zone and its expansion is appropriate for the land use designation of the site. The existing quarry operations meet the requirements of the Mining Regulations. A COC was approved for the Quarry in 1997. The Quarry has an approved Reclamation Plan (1996) and concurrent reclamation of completed quarry areas is occurring. The proposed mining expansion complies with the Mining Regulations as described below in Section 3.3.3. Reclamation of the Boundary Expansion Area would occur in accordance with the approved 1996 Reclamation Plan as modified by the proposed 1996 Reclamation Plan Amendment. The project is in conformance with the GP/LCP Land Use Policies.

Biotic Resource Policies. In Compliance, with Mitigation. The sensitive habitats defined by the Sensitive Habitat Protection Ordinance include locally unique plant communities and areas that provide habitat for special status species listed by the CDFG, USFWS, or CNPS. The Sensitive Habitat Ordinance prohibits development activity in a sensitive area unless a development permit has been obtained and is in effect which authorizes such development activity (See Sensitive Habitat Ordinance in Section 3.2.6 above).

Project mining of the Boundary Expansion Area would remove 2.5 acres of northern coastal scrub and 0.9 acre of coast live oak forest (see Table 6-2, Biology and Figure 29), which are identified by the Sensitive Habitat Protection Ordinance as sensitive habitat. Avoidance of impacts to the habitat areas cannot be achieved due to the site-specific nature of the mining operation. Replacement of the northern coastal scrub and coast live oak forest habitats would occur through implementation of the Mitigated 1996 Reclamation Plan Amendment; the revegetation plan proposed in the 1996 Reclamation Plan Amendment.

The proposed 1996 Reclamation Plan Amendment specifies plant species more suitable to post-mining soil conditions, and would eliminate the planting of three sensitive habitats (needlegrass grassland, maritime chaparral, and diverse native grassland) required by the 1997 COC Conditions of Approval. The removal of these habitats from the 1996 Reclamation Plan was proposed in the 1996 Reclamation Plan Amendment based on test plot trials showing poor success of plant species that require better developed soil conditions. However, the recent discovery of previously stockpiled topsoil at the quarry has led to plantings of these communities that are showing signs of success (see Biology discussion for further analysis). Therefore, the successful creation of these sensitive vegetation communities as required by the COC Conditions of Approval should be achievable. The re-instatement of needlegrass grassland, maritime chaparral, needlegrass grassland, and mixed grassland into the revegetation plan (Measure BIO-3) is provided as project mitigation.

The Boundary Expansion Area contains habitat for the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*; "SFDW"), a California Species of Special Concern (CSC). Impacts to this special status species is described in Chapter 6.0 Biological Resources. A Woodrat Mitigation Plan has been prepared and is incorporated into Biological Resources chapter of this EIR. A mitigation program has been identified (Measures BIO-1 and BIO-2) to offset the impacts to the SFDW.

Implementation of Measures BIO-1, BIO-3, and BIO-4 brings the project into conformance with the GP/LCP Biotic Resource Policies 5.1.7 and 5.1.10.

Water Resources. In Compliance, with Mitigation. Liddell Spring is a Water Supply for the City of Santa Cruz. The Quarry operations must meet erosion control and water quality protection standards. Mining in the proposed Boundary Expansion Area would be subject to the Drainage and Erosion Control Plan approved for the existing Quarry operation. Mining expansions could result in erosion and sedimentation affecting the water quality of Liddell Spring. Mitigation Measure HYD-1 would improve erosion control during removal of the overburden and to protect the spring from sedimentation. Measure HYD-2 provides for additional monitoring of water quality and Measure HYD-3 requires that CEMEX enter into an agreement with the City of Santa Cruz for additional treatment of Liddell Spring waters. Implementation of these measures brings the project into conformance with the GP/LCP Water Resource Policy 5.5.9.

Maintaining Adequate Streamflows. In Compliance. Liddell Creek is a Critical Water Supply Stream. The Limestone Quarry is situated in the headwaters of Liddell Creek. CEMEX diverts up to 21 gallons per minute (927,000 gallons per month) from Plant Spring for its existing operation. This diversion represents approximately 2 percent of the combined baseflow of Plant Spring and Liddell Spring which feed Liddell Creek. The proposed mining expansion

would result in the continuation of the existing mining operation and diversion from Plant Spring. No increase in water diversion from Plant Spring is proposed or required. Streamflows in Liddell Creek are therefore unaffected by the proposed project. The project is in conformance with the GP/LCP policies on Maintaining Adequate Streamflows.

Maintaining Surface Water Quality. In Compliance, with Mitigation. Expansion of the Limestone Quarry boundary does not occur adjacent to marshes or streams. However, the expansion would occur roughly 2000 feet from Liddell Spring, which is a Water Supply for the City of Santa Cruz. Mining the Boundary Expansion Area could result in sedimentation of Liddell Spring (see Water Quality impact discussion in Hydrology, Section 5.3.3.2). Continuing maintenance of existing sediment basins is required as conditions for the existing operation. Additional drainage and erosion controls measures (Measure HYD-1) and improved ground water monitoring (Measure HYD-2) have been specified as project mitigation. This mitigation brings the project into compliance with GP/LCP Surface Water Quality Policies 5.7.1, 5.7.3, and 5.7.7.

Overdrafted Groundwater Basins. In Compliance, with Mitigation. The Bonny Doon Limestone Quarry is located in a Primary Groundwater Recharge Area. The Limestone Quarry expansion project would remove 17.1 acres of overburden, which provides percolation of storm water to the ground water basin feeding Liddell Spring. Removal of the overburden would expose the less porous limestone marble beneath the surface layer resulting in increased storm water runoff draining to the quarry floor. The approved Final Drainage Plan for the quarry would drain this increased runoff volume to Settlement Basin 3, which is outside of the Liddell Spring ground water recharge zone. Thus, the expansion project would result in a loss of ground water recharge volume to Liddell Spring. A modified drainage plan is identified as project mitigation (Measure HYD-1) that would retain the increased storm water runoff volume on the quarry floor to allow for ground water recharge to Liddell Spring (see Hydrology Mitigation, Section 5.3). This mitigation brings the project into compliance with the GP/LCP Overdrafted Groundwater Basins Policy 5.8.3.

Mineral Resources. In Compliance. The proposed mining expansion is subject to a Mining Approval in accordance with the Mining Regulations. The existing mining operation has obtained a COC and an approved Reclamation Plan (1996). An environmental impact assessment of the proposed mining expansion has been performed and is the subject of this EIR. Mitigation is identified for all significant environmental impacts. Riparian corridors and wetlands would not be impacted by the mining expansion. The proposed expansion complies with the GP/LCP land use policies and resource protection policies. The project is in conformance with the GP/LCP mineral resources policies.

Air Quality. In Compliance, with Mitigation. The Bonny Doon Quarries operate under air quality permits issued by MBUAPCD. No new equipment or point source emissions are proposed as part of the mining expansion project. No new permits from MBUAPCD are required. Expansion of the limestone quarry mining operation boundary would result in fugitive dust emissions as a continuation of existing air quality impacts of the quarry operation. Excessive dust emissions could occur if the overburden removal work areas exceed the acreage limits identified by MBUAPCD. With existing control measures in place as required by the Mining Regulations, COC Conditions of Approval, and project mitigation limiting the size of the overburden removal phases (AQ-1), the project effects on air quality is determined to be less

than significant (see Air Quality discussion in Section 7.0). With this mitigation, the project complies with the MBUAPCD Air Quality Management Plan and therefore complies with GP/LCP Air Quality Policy 5.18.1.

Slope Stability. In Compliance. Slope stability studies have been performed by the Quarry to assess the stability of the proposed quarry expansion slopes. These studies have been reviewed as part of the environmental impact analysis contained in this EIR (see Geology, Section 4.0). Revisions to the slope stability studies have been identified as project mitigation. Approval of the mining expansion would be conditioned based on the recommendations of the geotechnical slope stability studies performed for the project in compliance with the GP/LCP policies on slope stability.

Erosion. In Compliance, with Mitigation. The removal of overburden from the mining Boundary Expansion Area would result in increased erosion and potential sedimentation of Liddell Spring, which is used as a water supply for the City of Santa Cruz. Development of additional drainage provisions is necessary to reduce erosion and runoff during overburden removal, and to protect Liddell Spring (see GP/LCP Water Resources Policy and Maintaining Surface Water Quality discussions above). Overburden removal would occur during the dry season to minimize erosion potential. Topsoil from the Expansion Area would be stockpiled and reapplied to quarry reclamation areas to promote regrowth of vegetation. Only native vegetation would be planted in accordance with the approved 1996 Reclamation Plan. All sediment would be contained on site through existing drainage controls at the Quarry and through the additional control measures specified in Measure HYD-1. This mitigation brings the project into compliance with GP/LCP Erosion Policies 6.3.2, 6.3.4, 6.3.6, and 6.3.8.

Noise. In Compliance. The General Plan Land Use Compatibility Guidelines (Figure 6-1) identifies 70 Ldn as “normally acceptable” for industrial land uses. A stricter standard of 60 dBA is applied to mining operations under the Mining Regulations 16.54.050. See Mining Regulations 16.54.050 Noise and Vibration discussion in Section 3.3.3 below. With the Boundary Expansion Area, the Bonny Doon Quarry would continue mining both the Shale and Limestone at their current rates; there would be no change in equipment or intensification of operations. Mining the 17.1-acre Boundary Expansion Area would add approximately three years of additional life to the quarry operation, effectively in the time frame from 2012 to 2015. Although proposed project would extend the ongoing impact of quarry operations, monitoring has shown that the current operation meets County Mining Regulation noise standards. Limestone mining in the Boundary Expansion Area would not cause sound levels at nearby residences to exceed the Land Use Compatibility Guidelines for residential use.

3.3.3 Conformance with Mining Regulations 16.54.050, Required Conditions and Standards for Mining Approval, Certificate of Compliance, Reclamation Plan Approval

County Mining Regulations 16.54.050 sets forth Required Conditions and Standards that apply to the proposed Limestone Quarry Boundary Expansion and the proposed revisions to the Revegetation Plan component of the approved 1996 Reclamation Plan. Applicable standards are presented in Table 3-2 above. Project compliance with these conditions and standards is noted below. With implementation of mitigation measures specified in the various sections of the EIR,

the project conforms to all required conditions and standards specified in the Mining Regulations 16.54.050.

Noise and Vibration. In Compliance. Due to the proximity of the quarry pit to the northern property boundary, maximum noise levels measured at the northern property boundary would exceed the 60 dBA standard during the initial phases of mining expansion when vegetation and overburden is being removed from the Boundary Expansion Area. The overburden removal would occur in stages during the spring and summer months spread over a two-year period. The 60 dBA standard would also be exceeded in the short term when mining occurs on the upper benches nearest the northeast property line. The increased noise level would not significantly impact adjacent properties because sound levels would be within acceptable levels for residential use at the location of nearby existing residences. Once overburden removal is complete and the upper bench of the expanded quarry pit is established, the noise level of the mining operation would again comply with the 60 dBA standard of Mining Regulation 16.54.050.

Air Pollution. In Compliance, with Mitigation. The existing quarry operation has been permitted by the MBUAPCD. No new equipment or point source emissions are proposed as part of the mining expansion project and no new permits from MBUAPCD are required. Existing dust control practices applied to the current mining operation would be applied to the Boundary Expansion Area. These measures are identified in the 1997 COC Conditions of Approval (Section 3.2.5). CEMEX must demonstrate that the overburden removal active work area would not exceed MBUAPCD limits of 2.1 acres at any point in time (Measure AQ-1). With the existing control measures in place and implementation of Measure AQ-1, the project is in compliance with the air pollution standards of Mining Regulations 16.54.050.

Water. In Compliance, with Mitigation. The project does not propose changes to the use and discharge of water. New drainage facilities constructed in accordance with Measure HYD-1 would meet all applicable local, state, and federal laws. The lowest elevation of the mining expansion would match the current elevation of the quarry floor, which would not be less than 750 feet. This elevation maintains the required 20 feet above the known peak ground water elevation at the quarry floor. However, ground water elevations in the quarry area may be subject to large rapid fluctuations. More surveyed locations and a longer period of record are needed in order to determine a minimum mining surface at least 20 feet above maximum ground water levels. An improved water level monitoring program with additional wells and continuous reading data loggers installed in all wells is needed to closely monitor ground water levels to ensure that mining in the Expansion Area does not intercept ground water flows. Improvements to the monitoring well program are identified in Measure HYD-2 and would bring the project into compliance with the water standards of Mining Regulations 16.54.050.

The expansion of the quarry pit by 17.1 acres and diversion of the increased storm runoff may reduce the ground water recharge capacity of Liddell Spring. Project mitigation would retain the increased runoff within the ground water recharge zone of Liddell Spring to avoid loss in spring water flow (Measure HYD-1). A hydrogeological report was prepared for CEMEX by P.E. LaMoreaux & Associates (2005) to investigate the connectivity between the Bonny Doon Limestone Quarry and Liddell Spring. A subsequent hydrogeological report has been prepared by Nolan Associates and Nicholas M. Johnson (2007) as a technical appendix to this EIR (Appendix F). The conclusions of the hydrogeologic studies are incorporated into the impact

analysis contained in the EIR. With protection of Liddell Spring (Measure HYD-1) the project complies with the water standards of Mining Regulations 16.54.050.

Drainage and Erosion. In Compliance with Mitigation. Runoff from the Expansion Area would be directed to the quarry floor. Presently drainage collects on the quarry floor and percolates into the ground water basin. All runoff leaving the quarry site complies with the requirements of the Regional Water Quality Control Board (RWQCB). Under the approved Final Drainage Plan, drainage from the quarry floor would be diverted to Settlement Basin 3. Mining the Expansion Area would result in increased volume of runoff and increased sediment loads in the runoff. Modification to the Final Drainage Plan is necessary to reduce the sediment loads in the runoff and protect the quantity and quality of water recharging to Liddell Spring. A new settlement basin on the quarry floor is identified as project mitigation (Measure HYD-1). Modifications to the drainage plan would comply with RWQCB standards.

The surface area of the Expansion Area would be stripped in phases over a two-year period. Mining within the quarry pit occurs in multiple areas dependent upon the quality of rock being mined and the blending requirements needed for the cement product being manufactured. On-site and downstream beneficial uses would not be impacted by the mining expansion project (see GP/LCP Water Policy and Maintaining Adequate Streamflow Policy discussion).

Mining the Expansion Area has the potential to impact the quality of ground water recharge and reduce the quantity of ground water available to Liddell Spring. These impacts are mitigated by a modified drainage plan as presented in Measure HYD-1 (see GP/LCP policy discussion on Surface Water Quality and Overdrafted Groundwater Basins). The Bonny Doon Quarries have an approved Drainage and Erosion Control Plan. Additional drainage and erosion control measures are required as project mitigation in Measure HYD-1 to control erosion and sedimentation during the overburden removal in the Expansion Area. With the existing approved drainage controls for the quarry and Measure HYD-1, the project complies with the drainage and erosion standards of Mining Regulations 16.54.050.

Setbacks. In Compliance. Along the northern property line, the proposed expansion project would comply with the 25-foot setback standard of Use Permit 3236-U, which pre-dates the 150-foot setback standard of Mining Regulations 16.54.050. The 25-foot setback is considered reasonable in light of the vested right established by Use Permit 3236-U. The proposed Boundary Expansion Project would maintain the 1,000-foot setback from the eastern property boundary. The Expansion Area boundary line and the 25-foot setback line would be surveyed by a licensed surveyor or civil engineer prior to vegetation clearance and overburden removal. Survey markers would be placed and maintained at 200-foot intervals.

Sensitive Habitat Protection. In Compliance, with Mitigation. See General Plan Biotic Resources Policy discussion above. With the implementation of measures BIO-1, BIO-2, BIO-3 and BIO-4, the project conforms to the sensitive habitat protection standards of Mining Regulations 16.54.050.

3.3.4 Conformance with Mining Regulations 16.54.055, Reclamation Standards

Performance Standards for Wildlife Habitat. In Compliance, with Mitigation. The Expansion Area contains habitat for the SFDW, a CSC. Impacts to these special status species

are described in Biology, Section 6.0. Avoidance of impacts to the habitat area cannot be achieved due to the site-specific nature of the mining operation. Mitigation Measures BIO-1 and BIO-2 offset impacts to this species and brings the project into compliance with the Reclamation Performance Standards for Wildlife Habitat. See GP/LCP Biotic Resources Policy discussion above.

Performance Standards for Backfilling, Regrading, Slope Stability, and Recontouring. In Compliance, with Mitigation. Topsoil removed from the Boundary Expansion Area would be stockpiled in Disposal Area C for future use in reclamation. Overburden removed from the Boundary Expansion Area would be placed as compacted fill along the western wall of the existing quarry pit with a finished slope of 2:1 (horizontal:vertical). A stability analysis for the fill slopes was performed and the slopes were found stable. However, further review by Nolan Associates determined that the stability analysis should be updated using laboratory strength data and current seismic coefficients (Appendix F). This updated analysis for fill slopes is required as project mitigation (Measure GEO-2). The fill slope would conform to the topography of the quarry pit. Placing the overburden in the quarry pit does not alter the surrounding landform.

Finished slopes must have a safety factor not less than 1.2 and shall be no steeper than 1.5:1. (33 degrees) and shall be benched at a 30-foot vertical interval, and shall conform to the surrounding topography and/ or approved end use. Final cut slopes may be steeper and have a greater bench interval if geologic stability can be demonstrated. The Quarry Use Permit Condition 8 allows for a steeper gradient as discussed below. The final development plan for the Boundary Expansion Area (Figure 9) has 16-foot wide benches every 40 feet vertically, cut on an overall slope of 60 degrees. A geotechnical analysis of the proposed quarry slopes was performed by Jo Crosby and Associates (JCA) and concluded that the planned quarry slopes would be stable. Further review by Nolan Associates determined that updated slope stability analysis using methodologies appropriate for jointed rock slopes should be conducted to confirm the stability of the proposed slopes (Appendix F). If the updated analysis demonstrates that the safety factor cannot be met, the proposed quarry slopes must be reduced in gradient to meet the County standards. This new analysis for cut slopes is required as project mitigation (Measure GEO-2).

With implementation of Measure GEO-2, the project conforms to the Reclamation Performance Standards for Backfilling, Regrading, Slope Stability and Recontouring.

Performance Standards for Revegetation. In Compliance, with Mitigation. The Boundary Expansion Area would be revegetated with native plant species adapted to the post-mining soil conditions of the disturbed quarry slopes without dependency upon irrigation or fertilizer. The proposed 1996 Reclamation Plan Amendment would eliminate use of test plots in conflict with Mining Reclamation Standards (Section 16.54.055(f)(2) of the County Code). The proposed plan would also eliminate the planting of three sensitive plant communities (needlegrass grassland, mixed grassland, and maritime chaparral) required by the COC Conditions of Approval in conflict with Mining Regulations Reclamation Standards (see also General Plan Biotic Resources Policy discussion; Section 3.3.2 and Table 3-1). Measure BIO-3 would reinstate the planting of these sensitive plant communities and the use of test plots into revegetation plan component of the proposed 1996 Reclamation Plan Amendment. The approved 1996 Reclamation Plan includes a revegetation maintenance and monitoring program that

specifies success criteria for vegetation density, cover and species richness. Sampling techniques for measuring success are also identified in the Reclamation Plan and are sufficient to produce an 80 percent confidence level. Measure BIO-5 incorporates the revegetation performance standards into the 1996 Reclamation Plan Amendment. With implementation of Measure BIO-3 and Measure BIO-5, the proposed project conforms to the Mining Regulations Performance Standards for Reclamation.

Performance Standards for Topsoil Salvage, Maintenance, and Redistribution. In Compliance with Mitigation. Topsoil from the Boundary Expansion Area would be removed and stockpiled in Disposal Area C for future use in revegetation. The stockpile locations are mapped on the Disposal Area C Topsoil Stockpile Plan (Bowman & Williams Sheet 6 of the Mining Plan Amendment). The proposed 1996 Reclamation Plan Amendment states that topsoil would be stockpiled “to the extent possible” however it does not provide the required detail governing the management or use of the stockpile resource. Measure BIO-6 requires that the proposed 1996 Reclamation Plan Amendment be revised to address the specific requirements of the Topsoil Performance Standards identified in the Mining Regulations Section 16.54.055(h). Specifically, topsoil and suitable growth media shall be maintained in separate stockpiles. It shall be demonstrated that topsoil stockpiles will not be disturbed by ongoing fill activity of Disposal Area C. Measures shall be specified to protect stockpile from wind and water erosion and weeds. With this modification to the proposed 1996 Reclamation Plan Amendment, the project conforms to the Reclamation Performance Standards for Topsoil Salvage, Maintenance, and Redistribution.

Performance Standards for Surface Drainage Control. In Compliance, with Mitigation. The existing surface drainage controls operated by the quarry comply with the County’s design requirements for a 10-year 6-hour event storm. Modifications to the Final Drainage Plan are required in Measure HYD-1 and would be designed in compliance with County requirements. With the new drainage controls, on-site and downstream beneficial uses of water would not be impacted by increased sediment loads in storm runoff and the quality and quantity of Liddell Spring would not be significantly impacted. With implementation of Measure HYD-1, the project conforms to the Mining Regulations Reclamation Performance Standards for Surface Drainage Control. See also General Plan policy discussions on Water Resources, Maintaining Surface Water Quality, and Erosion. Also see Mining Regulations 16.54.050 discussion of Drainage and Erosion.

3.3.5 Conformance with Use Permit 3236-U

No Excavation Below 750 foot Elevation. In Compliance. The current elevation of the mining floor is 752 feet. The project would continue mining at the same floor elevation. The final elevation of the quarry floor shown on the Final Development Plan (Figure 9) is 750 feet.

Protection of Liddell Spring. In Compliance, with Mitigation. In recognition that commencement of quarrying could have a potential adverse effect on the municipal water supply, an agreement was established on December 1, 1964 between the City of Santa Cruz and the quarry operator. The City agreed not to contest the quarry operation and the quarry agreed to indemnify the City against diminution of quantity or deterioration of quality of the water issuing from Liddell Spring. The agreement sets forth minimum flow rates to be met each month and

water quality parameters governing bacteria, turbidity, color, taste and odor, and chemicals. The agreement establishes the procedure for determining indemnity.

Mining the Boundary Expansion Area could result in water quality and/or water quantity impacts to Liddell Spring (see Hydrology, Section 5.0) and thus violate the terms of the 1964 Agreement. Any loss of production due to reduced quantity or diminution of quality would be a significant impact to the city's water supply. Mitigation Measures HYD-1, HYD-2, and HYD-3 are recommended to protect this municipal water source. With implementation of these measures, the project would comply with the Use Permit Condition III.7 to protect Liddell Spring. See also Diminution of Water Supply discussion below.

Final Cut Slopes. In Compliance, with Mitigation. The Use Permit Condition III.8 requires benches of minimum 30 foot width every 60 feet vertically for slopes inclined steeper than 1:1 (horizontal:vertical), at an inclination of 45 degrees. The Final Development Plan for the Boundary Expansion Area (Bowman and Williams, 2000 as shown in Figure 9) has 16-foot-wide benches every 40 feet vertically, cut on an overall slope of 60 degrees. This benching is proportionally equivalent to a bench of 24-foot width every 60 feet vertically and does not meet the requirements of the Use Permit Condition III.8. Use Permit Condition III.8 also specifies that final cut slopes shall not exceed the normal angle of repose of the natural materials. Although the Use Permit does not define a means for determining the normal angle of repose, the COC Condition III.A.7(2) states that "all final cut slopes completed after September 12, 1996, shall have a stability factor of safety not less than 1.2 ..." Therefore, all slopes with a stability factor of safety not less than 1.2 are considered to be at or below the normal angle of repose. Slopes with a stability factor in conformance with COC Condition III.A.7(2) would be found in conformance with Use Permit Condition III.8.

Overburden slopes around the proposed Expansion Area, consisting of loose soil and Santa Margarita Sandstone, would be cut back to an inclination of 1½:1 (horizontal:vertical), an inclination of about 34 degrees.

Measure GEO-2 requires that additional slope stability analysis be conducted to confirm the stability of proposed gradient of cut slopes. If stability cannot be demonstrated to a factor of safety of not less than 1.2, the slope gradient must be reduced until the minimum safety factor can be achieved. Implementation of Measure GEO-2 brings the project into compliance with Use Permit Condition III.8.

25 foot Buffer from Cut Slope to Property Line. In Compliance. The top of the proposed cut slope in the Boundary Expansion Area is 25 feet from the northern property line (see Final Development Plan in Figure 9).

Excavation Areas Graded for Drainage. In Compliance. Bench slopes are graded to direct storm drainage away from cut slopes (see Storm Drainage Plan in Figure 10 and COC 89-0492 Condition of Approval III.B.1 through III.B.12 (Drainage)).

Slope of Finished Grades. In Compliance. Proposed quarry benches are sloped at 2 percent inward. Finish grades must also comply with the provisions of Use Permit 3236-U and the Exhibits and Conditions of Approval of COC 89-0492.

No Recovery of Overburden or Waste Materials. In Compliance. Overburden and quarry waste (e.g., overburden and off-spec rock) removed from the Boundary Expansion Area would be disposed of in existing Disposal Area C and in a new fill area created in the quarry pit. The disposal areas are subject to final reclamation. No recovery of overburden or quarry waste material is proposed.

Dust Controls. In Compliance, with Mitigation. Overburden removal and subsequent mining within the Boundary Expansion Area would occur 25 feet from north property line in accordance with Use Permit setback requirements. The Use Permit requirement of no dust blown onto adjacent land is technically impractical to meet on the north property line boundary. The project would not result in violation of state ambient air quality standards. Use Permit Condition III.23 can be amended to cite the state ambient air quality standards as the appropriate measure for project compliance. Revision of this permit requirement is an option identified in COC 89-0492 Condition of Approval III.G.4. Dust control measures such as daily watering would be employed in the Boundary Expansion Area as currently practiced under COC 89-0492 Conditions of Approval III.G.1 through III.G.6 (Air Quality). Dust from the Boundary Expansion Area would not impact public roads. Measure AQ-1 restricts the active work areas for site preparation to not exceed 8.2 acres for clearing or 2.1 acres for overburden stripping at any point in time. This would keep the dust levels under the significance thresholds established by MBUAPCD. This measure brings the project into compliance with Use Permit Condition III.23.

Noise and Ground Vibration. In Compliance. Noise and ground vibration generated by the project would be minimized through implementation of control measures required in the COC 89-0492 Conditions of Approval III.H.1 through III.H.3 (Noise) and III.I.1 through III.I.5 (Blasting). These measures include locating the rock breaker equipment at least two levels below the Limestone Quarry rim, maintaining equipment in proper working order, noise monitoring, and notification of neighbors prior to blasting. No additional control measures are necessary.

Diminution of Water Supply. In Compliance, with Mitigation. The proposed mining expansion would result in increased sediment and/or loss of flow in ground water supplying Liddell Spring, which is a water supply for the City of Santa Cruz (see Hydrology, Section 5.0). Impacts to Liddell Spring shall be mitigated in accordance with COC 89-0492 Condition of Approval III.C.3. Mitigation Measure HYD-1 would protect both the water quality and quantity of the spring from the project impacts by retaining and filtering the surface water flows from the quarry Boundary Expansion Area that enter the spring recharge zone. Measure HYD-2 provides for additional monitoring of water quality and Measure HYD-3 requires that CEMEX enter into an agreement with the City of Santa Cruz for additional treatment of Liddell Spring waters. With these measures, the project is in compliance with Use Permit Condition III.25.

Construction of Drainage Facilities. In Compliance, with Mitigation. Existing drainage controls at the Quarry have been reviewed and approved by the County. No changes to the settlement basins or drainage system are proposed as part of the project. However, Measure HYD-1 requires modification of the existing Final Drainage Plan to retain and filter runoff on the quarry floor and implement erosion control measures during overburden removal. These drainage improvements would be designed by a Registered Civil Engineer and approved by the County Department of Public Works. The drainage improvements would be subject to the COC 89-0492 Conditions of Approval in III.A and III.B (various conditions).

Mining the Expansion Area would result in increased runoff volumes and sediment loads entering Settlement Basin 3. A liquefaction assessment of the quarry settlement basin levees has not been performed. A displacement analysis for seismic shaking shows basin levees would move under seismic shaking. Sedimentation of downstream areas could occur if settlement basin levees receiving runoff from the quarry Boundary Expansion Area fail during a major seismic event. Updated analysis and modification of the levees as recommended is identified in Measure GEO-1. Implementation of this measure would bring the project into compliance with Use Permit Condition III.26 and III.27.

RWQCB and CDFG Requirements. In Compliance. The continuation of mining into the proposed Boundary Expansion Area would remain subject to the General Storm Water Permit for Industrial Activities. New drainage features implemented in accordance with Measure HYD-1 would be subject to review and permit approval by RWQCB. The continued mining operation would also remain subject to requirements of CDFG for periodic cleanout of settlement basins through provisions of a Streambed Alteration Agreement. CDFG has review authority over project impacts to the SFDW and the CRLF, which are both CSC. Project impacts to SFDW are mitigated through Measures BIO-1, and BIO-2 that include habitat conservation, habitat enhancement, dismantling nests to avoid direct loss of individuals, and data collection. Mitigation for the SFDW has been developed in consultation with CDFG and is subject to CDFG review.

Non-compliance Cause for Permit Revocation. In Compliance, with Mitigation. The project requires mitigation to comply with Use Permit Conditions III.7 and III.25 regarding water quality impacts at Liddell Spring, Condition III.8 regarding final cut slopes of the quarry, and Condition III.23 regarding dust impacts on adjacent property. With implementation of Measures HYD-1, HYD-2, HYD-3, GEO-2 and AQ-1, the project complies with Use Permit 3236-U Conditions.

3.3.6 Conformance with Certificate of Compliance and Reclamation Plan Approval 89-0492

Vegetation. In Compliance, with Mitigation. The Revegetation Plan component of the 1996 Reclamation Plan Amendment does not include the replacement of lost native vegetation communities and a test plot program as required in COC Condition III.D.6. See discussion of General Plan Biotic Resources Policies above in Section 3.3.2 and Table 3-1. Implementation of Measure BIO-3 would re-instate these communities into the Revegetation Program and bring the project into compliance with COC Condition III.D.6.

Wildlife. In Compliance, with Mitigation. The proposed project could increase runoff volumes and sediment loads discharged to Settlement Basin 3, which is known breeding habitat for CRLF. Maintenance of the settlement basins and possible impacts to CRLF are addressed in the Bonny Doon Quarries Settlement Ponds Habitat Conservation Plan (HCP). The mining expansion project is subject to the conditions of the HCP. The proposed project would not impact Coho salmon or steelhead habitat in the lower reaches of Liddell Creek. Construction of a filter base on the quarry floor as required in Measure HYD-1 would reduce sediment loads in storm water runoff recharging to Liddell Spring or discharging to Settlement Basin 3 thereby reducing the potential for sediment to be discharged downstream to Coho salmon or steelhead habitat in Liddell Creek. With Measure HYD-1 and existing drainage controls at the quarry, the

project would not impact steelhead or Coho salmon. Implementation of Measure HYD-1 bring the project into compliance with COC Condition III.E.1

Dust. In Compliance. COC Conditions III.G.2 through III.G.6 specifies dust control measures that are currently employed at the quarry. These measures would also be applied to the mining activities in the proposed Boundary Expansion Area.

Noise. In Compliance. COC Conditions III.H.1 and III.H.3 specifies noise control measures that are currently employed at the quarry. These measures would also be applied to the mining activities in the proposed Boundary Expansion Area.

Blasting. In Compliance. COC Conditions III.I.1 through III.I.5 specifies blasting control measures that are currently employed at the quarry. These measures would also be applied to the mining activities in the proposed Boundary Expansion Area.

3.4 MITIGATION MEASURES

Implementation of the following measures would bring the project into compliance with applicable County policies and standards.

***IMPACT:** Project mining of the Boundary Expansion Area would result in loss of habitat for the SFDW, a CSC. Impacts to these species conflict with GP/LCP Biotic Resources Protection policies 5.1.7 and 5.1.10, Mining Regulations 16.54.050 Sensitive Habitat Protection standards, and Mining Regulations 16.54.055 Performance Standards for Wildlife Habitat.*

Measures BIO-1 and BIO-2: (See Section 6.4).

Implementation:	by CEMEX
Effectiveness:	Implementation of the above mitigation measures would reduce impacts to below a level of significance.
Feasibility:	Feasible
Monitoring:	County staff and CDFG.

***IMPACT:** The proposed 1996 Reclamation Plan Amendment would remove three sensitive vegetation communities (needlegrass grassland, maritime chaparral, and mixed grassland) from the revegetation component of the 1996 Reclamation Plan that were required as COC Conditions of Approval. Loss of these vegetation communities conflicts with GP/LCP Biotic Resources Protection policies 5.1.7 and 5.1.10, Mining Regulations 16.54.050 Sensitive Habitat Protection Standards, Mining Regulations 16.54.055 Performance Standards for Reclamation, and COC Condition III.D.6.*

Measure BIO-3 and BIO-5: (See Section 6.4).

Implementation:	by CEMEX
Effectiveness:	Implementation of the above mitigation measures would reduce impacts to below a level of significance.
Feasibility:	Feasible
Monitoring:	County staff.

IMPACT: Project mining of the Boundary Expansion Area would result in increased sedimentation of storm water runoff entering Liddell Spring either as surface water drainage or through ground water recharge. Liddell Spring is a municipal water supply for the City of Santa Cruz. This impact conflicts with GP/LCP policies on Water Resources, Surface Water Quality, and Erosion, Mining Regulations 16.54.050 Drainage and Erosion Standards, Mining Regulations 16.54.055 Performance Standards for Surface Drainage Control, and Use Permit 3236-U Conditions 7 and 25 regarding protection of Liddell Spring and diminution of water supply.

Measures HYD-1, HYD-2, and HYD-3: (See Section 5.4).

Implementation:	by CEMEX and the City of Santa Cruz
Effectiveness:	Implementation of the above mitigation measures would reduce impacts to below a level of significance.
Feasibility:	Feasible
Monitoring:	County staff and the City of Santa Cruz.

IMPACT: Project mining of the Boundary Expansion Area would increase the volume of storm water runoff drained to the quarry floor and subsequently removed from the Liddell Spring recharge zone by the approved Final Drainage Plan for the Quarry. This impact would reduce the water supply available as recharge to Liddell Spring and conflicts with GP/LCP policies on Overdrafted Groundwater Basins, Mining Regulations 16.54.050 Water standards, and Use Permit 3236-U Conditions 7 and 25 regarding protection of Liddell Spring and diminution of water supply.

Measures HYD 1 and HYD-2: (See Section 5.4).

Implementation:	by CEMEX
Effectiveness:	Implementation of the above mitigation measures would reduce impacts to below a level of significance.
Feasibility:	Feasible
Monitoring:	County staff and CEMEX.

IMPACT: Overburden removal from the 17.1-acre Boundary Expansion Area could result in excessive fugitive dust emissions if areas larger than 2.1 acres (significance threshold of the MBAPCD) are stripped at any one time. This impact would conflict with GP/LCP Air Quality Policy 5.18.1 and Mining Regulations 16.54.050 Air Pollution standards.

Measure AQ-1: (See Section 7.4).

Implementation:	by CEMEX
Effectiveness:	Implementation of the above mitigation measures would reduce impacts to below a level of significance.
Feasibility:	Feasible
Monitoring:	County staff.

IMPACT: Overburden removal and initial mining in the Boundary Expansion Area would occur in close proximity to the northern property line as permitted by the 25 foot setback limit.

This would result in dust emissions that could be blown across the property line in conflict with Use Permit 3236-U Condition 25.

Measure AQ-1: (See Section 7.4).

Implementation:	by CEMEX
Effectiveness:	Implementation of the above mitigation measures would reduce impacts to below a level of significance.
Feasibility:	Feasible
Monitoring:	County staff.

IMPACT: *The proposed 1996 Reclamation Plan Amendment does not provide required detail governing the management or use of the stockpile resource in conflict with Mining Regulations 16.54.055 Performance Standards for Topsoil Salvage, Maintenance, and Redistribution.*

Measure BIO-6: (See Section 6.4).

Implementation:	by CEMEX
Effectiveness:	Implementation of the above mitigation measures would reduce impacts to below a level of significance.
Feasibility:	Feasible
Monitoring:	County staff.

IMPACT: *Mining the Boundary Expansion Area would result in increased runoff volumes and sediment loads entering quarry settlement basins. A liquefaction assessment of the basin levees has not been performed. The project may result in sedimentation of downstream areas if settlement basin levees receiving runoff from the quarry Boundary Expansion Area fail during a major seismic event. This potential impact conflicts with GP/LCP Policies on Maintaining Surface Water Quality and Erosion, Mining Regulations 16.54.050 Drainage and Erosion standard, Mining Regulations 16.54.055 Performance Standards for Surface Drainage Control, and Use Permit Conditions III.26 and III.27.*

Measure GEO-1: (See Section 4.4).

Implementation:	by CEMEX
Effectiveness:	Implementation of the above mitigation measures would reduce impacts to below a level of significance.
Feasibility:	Feasible
Monitoring:	County staff.

IMPACT: *The final cut slopes have equivalent bench widths of 24 feet, which do not meet the minimum width requirement of 30 feet as specified in Use Permit Condition III.8. The final cut slopes in the Boundary Expansion Area may not meet the minimum required stability factor of safety of 1.2 required by COC Condition III.A.7(2) when stability analyses are conducted using appropriate methodology. The overburden fill slopes may not be stable when analyzed using current seismic coefficients and laboratory strength data. This potential for slope instability conflicts with Mining Regulations 16.54.055 Performance Standards for Backfilling, Regrading, Slope Stability, and Recontouring.*

Measure GEO-2: (See Section 4.4).

Implementation:	by CEMEX
Effectiveness:	Implementation of the above mitigation measures would reduce impacts to below a level of significance.
Feasibility:	Feasible
Monitoring:	County staff.