SUMMARY

S.1 PROJECT DESCRIPTION

CEMEX (RMC Pacific Materials, dba CEMEX) operates two quarries near Davenport in Santa Cruz County, the "Limestone Quarry" and the "Shale Quarry", collectively called the Bonny Doon Quarries. The quarries are located off Bonny Doon Road. The quarries began production in November 1969 under the conditions of Use Permit #2863 (now #3236-U) issued by the County of Santa Cruz. The permit grants the quarries the vested right to operate within specified boundaries (Quarry Legal Limit). The ore extracted from the cut slopes of each quarry is transported three miles by a conveyor belt to a cement plant in Davenport for the manufacture of Portland cement, which is used for making concrete.

CEMEX has submitted an application to the County of Santa Cruz to expand its current mining boundary within its vested or legal mining limit as defined by the Legal Mining Limit. The project proposal also includes amending the revegetation plan concept within the Bonny Doon Quarries 1996 Reclamation Plan for both the Shale and Limestone Quarries. No mining plan changes are proposed for the Shale Quarry. These actions require an amendment to the current Use Permit (#3236-U), amendment to the Certificate of Compliance (COC) for Use Permit 3236-U, a Coastal Development Permit, and an amendment to the 1996 Reclamation Plan.

S.2 IMPACTS AND MITIGATION

The Bonny Doon Limestone Quarry Boundary Expansion Project and Reclamation Plan Amendment Draft Environmental Impact Report (EIR) identifies potentially significant impacts related to planning policies, geology, hydrology and water quality, biology, air quality, and noise. These impacts can be reduced to a less than significant level by implementing the identified mitigation measures. A summary of project impacts and mitigation measures is provided in Table S-1. A complete discussion of project impacts and mitigation measures is provided in the EIR sections pertaining to each environmental discipline (see Sections 3.0 through 9.0).

Table S-1 Summary of Project Impacts and Mitigation Measures	
COUNTY PLANS AND POLICIES	
IMPACT: Loss of habitat for the San Francisco dusky-footed woodrat, a California Species of Special Concern, conflicts with GP/LCP Biotic Resources Protection policies 5.1.7 and 5.1.10, Mining Regulation 16.54.050 Sensitive Habitat Protection standards, and Mining Regulations 16.54.055 Performance Standards for Wildlife Habitat. **Potentially Significant Impact**	**Measure BIO-1 and BIO-2** (see Biology below or Section 6.4 of the Draft EIR for a complete description). **Less than Significant Impact After Mitigation.**
IMPACT: Loss of three sensitive habitat plant communities (needlegrass grassland, maritime chaparral, diverse native grassland) conflicts with GP/LCP Biotic Resources Protection policies 5.1.7 and 5.1.10, Mining Regulation 16.54.050 Sensitive Habitat Protection standards, Mining Regulations 16.54.055 Performance Standards for Revegetation, and COC Condition III.D.6. **Potentially Significant Impact**	**Measure BIO-3 and BIO-5** (see Biology below or Section 6.4 of the Draft EIR for a complete description). **Less than Significant Impact After Mitigation.**
IMPACT: Increased sedimentation of Liddell Spring, a municipal water supply for the City of Santa Cruz, conflicts with GP/LCP policies on Water Resources, Surface Water Quality, and Erosion, Mining Regulations 16.54.050 Drainage and Erosion standards, Mining Regulations16.54.055 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. **Potentially Significant Impact**	**Measure HYD-1, HYD-2, and HYD-3** (see Hydrology and Water Quality below or Section 5.4 of the Draft EIR for a complete description). **Less than Significant Impact After Mitigation.**
IMPACT: Increased 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 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. **Potentially Significant Impact**	**Measure HYD-2** (see Hydrology and Water Quality below or Section 5.4 of the Draft EIR for a complete description). **Less than Significant Impact After Mitigation.**

Table S-1
Summary of Project Impacts and Mitigation Measures

IMPACT: Excessive fugitive dust emissions if areas larger than 2.1 acres (significance threshold of the Monterey Bay Unified Air Pollution Control District) are stripped at any one time. Impact conflicts with GP/LCP Air Quality Policy 5.18.1 and Mining Regulations 16.54.050 Air Pollution standards. **Potentially Significant Impact**	**Measure AQ-1** (see Air Quality below or Section 7.4 of the Draft EIR for a complete description). **Less than Significant Impact After Mitigation.**
IMPACT: Dust emissions could be blown across the northern property line conflicts with Use Permit 3236-U Condition 25. **Potentially Significant Impact**	**MeasureAQ-1** (see Air Quality below or Section 7.4 of the Draft EIR for a complete description). **Less than Significant Impact After Mitigation.**
IMPACT: Temporary increase in noise levels above the 60 dBA standard at the northern property line conflicts with GP/LCP Noise policy 6.9.4 and Mining Regulations 15.54.050 Noise and Vibration standard. **Less than Significant**	**No mitigation required.**
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. **Potentially Significant Impact**	**Measure BIO-7** (see Biology below or Section 6.4 of the Draft EIR for a complete description). **Less than Significant Impact After Mitigation.**
IMPACT: Settlement basin levees may fail in a seismic event resulting in the release of increased storm runoff and sediment loads from the Boundary Expansion Area into downstream areas in conflict with GP/LCP Policies on Maintaining Surface Water Quality and Erosion, Mining Regulations 16.54.050 Drainage and Erosion standard, Mining Regulation 16.54.055 Performance Standards for Surface Drainage Control, and Use Permit Conditions III.26 and III.27. **Potentially Significant Impact**	**Measure GEO-1** (see Geology below or Section 4.4 of the Draft EIR for a complete description). **Less than Significant Impact After Mitigation.**
IMPACT: Final cut slopes do not meet the minimum width requirement of 30 feet as specified in Use Permit Condition III.8. 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). This conflicts with Mining Regulations 16.54.055 Performance Standards	**Measure GEO-2** (see Geology below or Section 4.4 of the Draft EIR for a complete description). **Less than Significant Impact After Mitigation.**

Table S-1
Summary of Project Impacts and Mitigation Measures

for Backfilling, Regrading, Slope Stability, and Recontouring. **Potentially Significant Impact**	
GEOLOGY AND SOILS	
IMPACT: Increased runoff volumes and sediment loads 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. **Potentially Significant Impact**	**Measure GEO-1:** Update seismic stability evaluations for the settlement basins that will be receiving runoff from the quarry and modify the levees as needed based on recommendations. **Less than Significant Impact After Mitigation.**
IMPACT: Landsliding of proposed Boundary Expansion Area slopes could result in accelerated erosion, water quality impacts, or encroachment of landslides onto lands adjacent to the proposed Boundary Expansion Area. **Potentially Significant Impact**	**Measure GEO-2:** Update the slope stability analysis of the cut slopes using methods for jointed rock slopes and update the slope stability analysis for the overburden cut slopes using methods appropriate for soft rock or soil slopes. All project slopes shall be redesigned as needed to achieve the minimum safety factor. **Less than Significant Impact After Mitigation.**
IMPACT: Renewed movement of the Liddell Spring landslide could be caused if drainage is diverted towards the landslide or dumping of overburden, off-spec rock or other waste occurs on the slopes above the spring. **Potentially Significant Impact**	**Measure GEO-3:** Prohibit placement of quarry waste (e.g., overburden and off-spec rock) on the slopes surrounding Liddell Spring. Control drainage in areas above Liddell Spring and prevent runoff from flowing across the landslide mass and older quarry spoils above the spring. **Less than Significant Impact After Mitigation.**
IMPACT: Accelerated erosion within the Boundary Expansion Area, potentially impacting water quality or quantity flowing to Liddell Spring. **Potentially Significant Impact**	**Measure HYD-1:** (see Hydrology below or Section 5.4 of the Draft EIR for a complete discussion. **Less than Significant Impact After Mitigation.**
HYDROLOGY AND WATER QUALITY	
IMPACT: Increased turbidity at Liddell Spring and sedimentation of downstream drainages. Exposing perched water zones. Mining to within 20 feet or less of maximum ground water elevations. Reduced ground water flow to Liddell Spring and loss of water production levels for the City of Santa Cruz. **Potentially Significant Impact**	**Measure HYD-1:** Design an engineered drainage plan, which supersedes the approved Final Drainage Plan. Dispose of overburden and spoils across the entire floor of the quarry pit with an engineered graded filter or other sediment barrier beneath to prevent sediment from reaching the karst aquifer through fractures and other pathways. Design the fill to retain and slowly infiltrate drainage from the quarry pit into the karst aquifer. Limit retention pond depths to avoid retaining water year-round. Direct any unretained water to settlement basins. Establish drainage and erosion

Table S-1
Summary of Project Impacts and Mitigation Measures

	controls for use in the Boundary Expansion Area during overburden removal. **Measure HYD-2:** Augment the water level monitoring program with at least one additional well drilled to coincide with the planned northeast corner of the floor of the Boundary Expansion Area. Install continuously reading water level data loggers in monitoring wells. Continue monitoring through the mining period, or at least until water levels during consecutive significantly higher than average rainfall seasons are recorded. **Measure HYD-3:** CEMEX shall enter into a written agreement with the City of Santa Cruz for the purposes of reducing project generated turbidity at Liddell Spring to acceptable levels set by the Environmental Protection Agency. **Less than Significant Impact After Mitigation.**
BIOLOGICAL RESOURCES	
IMPACT: Loss of 17.1 acres of San Francisco dusky-footed woodrat (SFDW) habitat and displacement and/or take of up to 40 individuals in the Boundary Expansion Area. **Potentially Significant Impact**	**Measure BIO-1:** Assess three identified sites to determine which site has best suitable SFDW habitat. Collect additional data on habitat conditions and use in the Boundary Expansion Area to determine: a) whether the atypical redwood forest habitat is suitable for long-term use by SFDW and can be used for the conservation easement; and b) how many acres of SFDW habitat will require replacement at the 1:1 ratio. Based on assessment, select the preferred site and place a habitat conservation easement over suitable SFDW habitat at a ratio of 1:1 (one acre habitat preserved for one acre of habitat removed). **Less than Significant Impact After Mitigation.** **Measure BIO-2:** Actively relocate up to 40 SFDW from the Boundary Expansion Area prior to land-clearing activities in accordance with a SFDW Mitigation Plan. Passively relocated any remaining SFDW. **Less than Significant Impact After Mitigation.**
IMPACT: Loss of maritime chaparral, coast live oak forest, and native grasslands sensitive habitats from revegetation plan changes. **Potentially Significant Impact**	**Measure BIO-3:** Revise the proposed 1996 Reclamation Plan Amendment to incorporate sensitive habitats, reinstate a test plot system and to update the vegetation maps by incorporating the 2005 Alternative Revegetation Plan approach. Also, revise the 1996 Reclamation Plan Amendment to include the hydrophytic species necessary to

Table S-1
Summary of Project Impacts and Mitigation Measures

	revegetate the quarry floor with water tolerant (seasonal wetland) species. **Less than Significant Impact After Mitigation.**
IMPACT: Disturbance of nesting raptor and non-game bird species that may establish nests within the Boundary Expansion Area. Special status raptors that could be impacted include Cooper's hawk, golden eagle, long-eared owl, white-tailed kite and sharp-shinned hawk. **Potentially Significant Impact**	**Measure BIO-4:** Prohibit tree removal or land clearing that removes nesting habitat during nesting season from February 15 to August 31. Alternatively, conduct pre-construction nesting surveys prior to disturbance during nesting season. If nesting birds are detected within the construction zone, develop methods of avoiding active nest sites in coordination with CDFG. **Less than Significant Impact After Mitigation.**
IMPACT: Increased sediment levels entering Liddell Spring and discharged downstream to Liddell Creek could impact central coast steelhead habitat. **Potentially Significant Impact**	**Measure HYD-1** (see Hydrology below or below or Section 4.4 of the Draft EIR for a complete description). **Less than Significant Impact After Mitigation.**
IMPACT: The Revegetation Plan component of the proposed 1996 Reclamation Plan Amendment does not provide adequate performance standards that meet the standards provided in Section 16.54.055 of the County Code. **Potentially Significant Impact**	**Measure BIO-5:** Implementation of the Performance Standards outlined in Section 16.54.055 of the County Code. Incorporation of Revegetation Performance Standards into the revised Revegetation Plan component of the 1996 Reclamation Plan Amendment (see BIO-3). **Less than Significance Impact After Mitigation.**
IMPACT: The Revegetation Plan component of the proposed 1996 Reclamation Plan Amendment does not provide the required detail governing the management or use of the stockpile resource as specified in Section 6.54.055(h) of the County Code Performance Standards for Topsoil Salvage, Maintenance, and Redistribution. **Potentially Significant Impact**	**Measure BIO-6:** Implementation of the Performance Standards outlined in Section 16.54.055(h) of the County Code. **Less than Significance Impact After Mitigation.**
AIR QUALITY	
IMPACT: Site preparation including vegetation clearing and overburden removal would occur in several stages over the initial 2-year period. These activities would result in increased emissions of fugitive dust in addition to existing mining operations. **Potentially Significant Impact**	**Measure AQ-1:** CEMEX shall limit active work areas for site preparation to less than 8.2 acres for vegetation clearing or 2.2 acres for overburden stripping at any point in time. **Less than Significant Impact After Mitigation.**

Table S-1 **Summary of Project Impacts and Mitigation Measures**	
NOISE	
IMPACT: Site preparation will result in occasional high noise levels at the northern property line. Site preparation and mining noise levels at nearby residences would not exceed General Plan policy levels for residential use. **Less than Significant**	**No mitigation required.**
ENERGY AND NATURAL RESOURCES	
IMPACT: The irreversible loss of timberland would be addressed by the acquisition of a Timberland Conversion Permit. The effect on timberland would be considered less than significant, as the area is small in comparison to the mixed conifer woodland remaining. **Less than Significant**.	**No mitigation required.** However, a Timber Harvest Plan and Timberland Conversion Permit will be required from the California Department of Forestry.
CUMULATIVE IMPACTS	
IMPACT: Extension of mining into the 9.4-acre remaining area of the Limestone Quarry could overlap with the proposed Boundary Expansion Area Project impacts resulting in cumulative impacts. There are no other projects in the Bonny Doon Planning Area that would significantly add to cumulative impacts. Mining the remaining area would have environmental impacts similar to those identified for the proposed project. As a result of project mitigation, there would be no significant cumulatively considerable impacts associated with the project. **Less than Significant**	**No mitigation required.**

Source: TRA Environmental Sciences, Inc., 2007.

S.3 PROJECT ALTERNATIVES

Alternatives Considered and Rejected

The range of project alternatives considered in this section is limited due to the site-specific nature of the project resources and the project objective of continuing mining operations within the Quarry's vested mining limit. Several potential project alternatives were considered and rejected due to infeasibility and/or not reducing or avoiding the environmental effects of the project. The rejected alternatives include:

1) **Alternative Project Locations** - Alternative unmined project locations are infeasible because the nature of the project is mineral resource extraction, which ties the project

location to where the limestone marble occurs. Also, CEMEX does not have vested mining rights in other locations.

2) **Full Boundary Expansion** - Mining all remaining 26.5 acres of the vested rights area was initially considered by CEMEX at project application, but was rejected in favor of the proposed 17.1 acre project in order to reduce or avoid potential water quality and water quantity impacts to Liddell Spring. This alternative does not reduce any environmental impact of the project.
3) **Modified Legal Mining Limit** - Modifying the Legal Mining Limit of the Limestone Quarry to expand operations toward the north is infeasible due to general plan and zoning constraints of the adjacent properties; the Quarry does not have vested mining rights outside of the established Legal Mining Limit.
4) **Reduced Boundary Expansion Area** - Reducing the size of the Boundary Expansion Area to less than the proposed 17.1 acres would offer less than the 3-year extension of quarry life provided by the project. This reduction in quarry life is not practical for the quarry operation.
5) **Modified Overburden and Spoils Disposal** - Modifying the proposed placement of overburden and spoils on the quarry floor was considered during the environmental review for the purpose of reducing water quality impacts to Liddell Spring. This approach would enable the overburden to be constructed as a filter for percolating surface water. This modified design to overburden disposal was determined to be feasible and was adopted as project mitigation.

   The Modified Overburden and Spoils Disposal Alternative was considered as a design alternative and ultimately accepted as project mitigation (see Measure HYD-1 in Section 5.4). Therefore, the No Project Alternative is the only project alternative considered for the Bonny Doon Limestone Quarry Boundary Expansion Project.

No Project Alternative

Under the No Project Alternative, the Use Permit amendment, COC amendment, Coastal Development Permit, and the proposed 1996 Reclamation Plan Amendment would be denied. The limestone reserves within the Boundary Expansion Area of the Legal Mining Limit of the quarry would not be mined. The Reclamation Plan as conditionally approved in 1997 would remain in effect. Quarry life would not be extended by three years. The Limestone Quarry has reached its final contours under the existing approved mining plan perimeter. Therefore, the denial of permits under the No Project Alternative would result in an earlier closure of both the Limestone and Shale quarries.

The No Project Alternative is the environmentally superior alternative; however, it does not meet the project objectives. There are no project alternatives that can meet or partially meet the objectives of the proposed mining expansion project other than the proposed project.