Mitsubishi Cement Corporation South Quarry Project
Final
Environmental Impact Report/Environmental Impact Statement
San Bernardino County, California

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Abstract: This Final Environmental Impact Statement (EIS) documents the analysis of three alternatives (including the No Action/No Project alternative) that were developed for the proposed Mitsubishi Cement Corporation South Quarry project (Project). Alternative 2 – Partial Implementation is the Forest Service's preferred alternative. The Notice of Intent (NOI) to prepare a joint EIR/EIS was published in the *Federal Register* on February 22, 2012. The NOI was also published as a legal notice in the San Bernardino *Sun* newspaper on March 5, 2012. The Notice of Availability (NOA) for the Draft EIR/EIS was filed at the San Bernardino County Clerk and California State Clearinghouse on December 15, 2016, and published in the San Bernardino *Sun* on December 19, 2016, reflecting a February 1, 2017 end period for the public comment period. The NOA was published in the *Federal Register* on December 30, 2017, which

extended the public comment period to February 13, 2017. A corrected NOA was published in the San Bernardino County *Sun* on January 11, 2017 notifying the public of the extended comment period. Nineteen comment letters were received during the public comment period. Four comment letters were received after the public comment period had closed. Copies of these letters and the responses to the comments provided in the letters received during the public comment period are provided in Appendix L. Several minor changes have been made to this Final EIR/EIS in response to comments received on the Draft EIR/EIS. These changes are summarized in Chapter 1, Section 1.8, Table 1-4.

MCC has submitted to the San Bernardino National Forest (SNBF) and the County of San Bernardino (County) a Plan of Operations and Reclamation Plan for the proposed South Quarry project, which would be located south of the existing East Pit and approved West Pit at MCC's Cushenbury Mine, approximately 6 miles south of the community of Lucerne Valley. The South Quarry would be used to provide higher grade limestone rock to blend with lower-grade limestone to meet the limestone specifications to support MCC's adjacent existing Cushenbury Cement Plant. Should a source of high-quality limestone not be developed near the existing cement plant, the high-quality limestone for blending would need to be mined elsewhere in the region and trucked to the plant to ensure the proper blend to manufacture cement. Two action alternatives and the No Action/No Project Alternative were analyzed in the Draft EIR/EIS. Alternative 1 – Proposed Action would provide high-grade limestone to blend with lower-grade limestone mined from the West Pit for the life of the West Pit's current estimated life of 120 years. The total disturbance area would be 153.6 acres in four phases. Reclamation would be completed five years after the completion of mining at the quarry. Alternative 2 – Partial Implementation would provide high-grade limestone to blend with lower-grade limestone mined from the West Pit for 40 years. Higher-grade limestone would be trucked to the cement plant from elsewhere in the region from approximately year 41 to year 120. Total disturbance area would be 133.6 acres and reclamation would be completed five years after the completion of mining at the quarry. With Alternative 3 – No Action/No Project, MCC would not develop the limestone deposit in the South Quarry area under the proposed Plan of Operations. MCC's existing Cushenbury Cement Plant would continue to operate for the length of the West Pit's current estimated life of 120 years. Higher-grade limestone for blending could be trucked to the plant from elsewhere in the region or could be mined locally under a different future project.

To ensure coordination between the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) processes, and to avoid duplication of effort, a joint Environmental Impact Report/Environmental Impact Statement (EIR/EIS) has been prepared. The County is the CEQA Lead Agency and the U.S. Department of Agriculture, Forest Service (Forest Service) is the NEPA Lead Agency for the EIR/EIS.

SUMMARY

MCC has submitted a Plan of Operations and Reclamation Plan for the proposed South Quarry to the Forest Service and the County. The County and Forest Service have prepared this EIR/EIS in accordance with their statutory obligation to respond to MCC's submissions in a timely manner.

S.1 Project Setting

The proposed South Quarry is located approximately 6 miles south of the community of Lucerne Valley in San Bernardino County, California. The South Quarry is within portions of Sections

14, 15, 22, and 23 Township 3 North, Range 1 East San Bernardino Baseline Meridian (SBBM). The South Quarry site and the adjacent surrounding land uses consist of vacant public lands administered by the Forest Service. MCC currently operates two quarries on private land outside of the San Bernardino National Forest just north of the proposed South Quarry, the existing East Pit on 214 acres and the West Pit (under development) on 191 acres. The existing Cushenbury Cement Plant is also located north of the proposed South Quarry. The Cushenbury Cement Plant, East Pit and West Pit, as well as the proposed South Quarry site, are accessed from Highway 18 south of Lucerne Valley. Specialty Minerals, Inc.'s Marble Canyon Quarry is located to the west of the proposed South Quarry on 132 acres and other quarries, waste rock stockpiles, and a process plant operated by Specialty Minerals, Inc. are located to the northwest of the proposed South Quarry.

The proposed South Quarry is located within the portion of the San Bernardino National Forest designated as the Desert Rim Place in the Land Management Plan (USDA Forest Service 2006). The Desert Rim Place is remote and rugged, formed by complex geologic faulting. This is the location where the north slope of the San Bernardino Mountains links up to the Mojave Desert. Vegetation patterns in the Desert Rim Place are generally more dense in canyons and seeps and more sparse and scrubby toward the ridgeline and on calcium carbonate soils, such as within the proposed South Quarry Project area. The naturally-occurring calcium carbonate soils found in the area provide valuable habitat supporting four species of threatened and endangered plants endemic to this area. A collaborative effort between agencies and industry led to the development of the Carbonate Habitat Management Strategy (CHMS), which was finalized in 2003. The strategy is designed to provide long-term protection for the carbonate endemic plants and also provide for continued mining. The Desert Rim Place is also home to the Cushenbury herd of Nelson's bighorn sheep, a San Bernardino National Forest Watchlist Species and a California Department of Fish and Wildlife fully-protected mammal.

The Desert Rim Place has a long history of mining. In the 1800s, small amounts of gold, silver, and lead were extracted here. Today, the majority of land is valued for the presence of large quantities of high quality limestone mineral deposits used in the production of ground calcium carbonate and cement. The majority of the land is under mining claim for limestone or metals. Three large-scale industrial limestone mines are present, including the MCC Mine, comprised of the existing East Pit and approved West Pit, which supply the existing Cushenbury Cement Plant. The other large-scale mines in the Desert Rim Place are owned by Specialty Minerals, Inc., and Omya, California.

Ninety miles of road provide utility and transportation access throughout the Desert Rim Place, with SH-18 as the main thoroughfare between the mountains and the desert community of Lucerne Valley. Most of the private inholdings in the Desert Rim Place are patented mining claims.

S.2 Project Background

S.2.1 Project Purpose and Need - NEPA

The purpose of the action is to respond to MCC's Plan of Operations and Reclamation Plan to mine high-grade limestone in an area where MCC has a possessory interest in unpatented mining claims.

Under regulations of the U.S. Department of Agriculture, MCC must conduct mining operations in accordance with the regulations at 36 Code of Federal Regulations (CFR) 228 Subpart A under a Plan of Operations approved by the Forest Service. Pursuant to Federal mining laws and Forest Service regulations, the Forest Service is required to respond to a Plan of Operations for conducting mining operations. Under 36 CFR 228.5, the Forest Service must decide whether to approve the Plan of Operations as submitted by MCC or to require changes or additions that are necessary for the Plan of Operations to meet the requirements of the regulations for environmental protection in 36 CFR 228.8. These include conducting all operations so as to, where feasible, minimize adverse environmental impacts on National Forest surface resources. The decision to be made is based on statutes, regulations, and policies that govern mining on National Forest System land, as described in detail in Section 1.5.1.1 of the Draft EIR/EIS.

With regard to mining, the San Bernardino National Forest Land Management Plan (USDA Forest Service 2006) provides the following direction:

- "*Emphasize processing and administration of exploration and development proposals and operations while providing adequate protection of surface resources, wildlife habitat, scenery and recreation settings. (ME 1 – Minerals Management)*
- *Permits, leases, and Plans of Operations will require that adverse environmental effects are minimized, or mitigated, and that mined lands are reclaimed in a timely manner to regain surface production and use. Reasonable access for approved mineral operations will be allowed. The emphasis will be consistent with the requirements of the Carbonate Habitat Management Strategy to sustain mineral production by providing refugia for resource protection. (ME 1- Minerals Management and Lands 4 – Mineral Withdrawals)*
- *Staff expect to increase the carbonate plant habitat reserve by approximately 2,600 acres through land acquisition or exchange, allowing for future mining in other areas*" *(Lands 1 – Land Ownership Adjustment)*

The Project is located in the Desert Rim Place. The Land Management Plan's Desired Condition for the Desert Rim Place is "*maintained as a modified to natural appearing landscape that functions as a sanctuary for a large number of federally-listed native plants and a highly valued area for limestone production.*" (USDA Forest Service 2006).

The Forest Service is preparing this EIR/EIS in accordance with its statutory obligation to respond to MCC's Plan of Operations in a timely manner. The Forest Service need for action is the regulatory obligation under the mining laws of the United States to respond to a proposed Plan of Operations.

It should be noted that the Plan of Operations is inconsistent with the Land Management Plan scenery integrity objectives for the Desert Rim Place. A project-specific amendment to the Land Management Plan to change the scenic integrity objectives for the Project area would be needed should the Plan of Operations or another action alternative be selected. The current LMP Scenic Integrity Objectives (SIOs) map identifies the regional setting in which the Project is located as High. The Land Management Plan amendment would be subject to pre-decisional administrative review under 36 CFR 218, not the review process for Forest Plans under 36 CFR 219. When a plan amendment is made together with, and only applies to, a project or activity decision, the analysis prepared for the project or activity may serve as the documentation for the preliminary identification of the need to change the plan (36 CFR 219.13(b)(1)). This documentation is found in Section 3.11, Scenery.

S.2.2 Project Objectives - CEQA

In accordance with Section 15124 of the State CEQA Guidelines, an EIR must present a statement of objectives sought by the proposed project. A description of the project's objectives defines the project's intent and facilitates the formation of project alternatives. In addition to the purpose and need of the Project described above, MCC identified the following objectives for the Project in the Plan of Operations and Reclamation Plan:

- To develop a high-grade limestone resource to blend with the existing East and approved West Pits' limestone to supply the required feed specifications for the adjacent existing Cushenbury Cement Plant for an extended period;
- To supply cement for construction and other uses in an efficient and environmentally sound manner;
- To continue to realize the economic value from the investment made in the existing Cushenbury mine and cement plant and the limestone resource at the Project site;
- To avoid logistical and environmental costs associated with non-contiguous operations;
- To meet the Forest Service regulations to cause no undue and unnecessary degradation;
- To meet the State's and County's Surface Mining and Reclamation Act (SMARA) requirements;
- To be consistent with the intent of the SBNF's CHMS in order to provide long-term protection for the rare carbonate endemic plants through contribution of lands to the Carbonate Habitat Reserve;
- To minimize impacts to rare plants and wildlife, such as the Cushenbury herd of Nelson's bighorn sheep, through quarry design and offsite mitigation;
- To reclaim the site for post-mining uses which will include open space and wildlife habitat;
- To contour mining features and revegetate disturbed areas to minimize aesthetic and erosion impacts; and
- To reclaim and maintain the site as necessary to eliminate hazards to public safety.

S.2.3 Project Background, Scoping, and Draft EIR/EIS Comment Period

S.2.3.1 Project Background

The Cushenbury area has been mined since 1861, and limestone mining has occurred since the early 1950s. In 1988, MCC acquired the Cushenbury Cement Plant and the existing East Pit from Kaiser Cement Corporation. The cement produced at the Cushenbury plant has been used to meet local southern California and southern Nevada building and infrastructure needs. In 1999, planning to identify a source of limestone to replace diminishing reserves in the East Pit was initiated. During this process the location for a new quarry, the West Pit, was identified. The West Pit required approval of a Mining and Reclamation Plan (2004M-001) by the County of San Bernardino and associated CEQA review, which was completed in 2004.

Geologic reconnaissance during completion of the final plans for the West Pit confirmed the projected supply of low-grade limestone, but also identified a shortage of the anticipated high-grade material needed for cement production. MCC initiated a comprehensive survey of properties in the Burnt Flats area, near existing operations, in an effort to identify high-grade limestone sources. In addition to relying on the traditional exploration approaches of examination of historic data and geologic inference, MCC conducted a drilling program in two, two-week, phases in 2009 and 2010. Analysis of samples gathered during the drilling program confirmed both quality and quantity of the high grade limestone resource in the location of the proposed South Quarry.

MCC has identified that the most efficient and effective means to continue Cushenbury Cement Plant operations would be to combine low-grade material from the West Pit with high-grade material from the proposed South Quarry at a ratio of approximately 50/50 to meet the limestone specifications necessary to feed the Cushenbury Cement Plant. Current estimates project that the South Quarry, in combination with the West Pit, could feed the cement plant for approximately 120 years (MCC 2012).

MCC's Cushenbury Cement Plant requires a limestone feed of approximately 2.6 million tons per year (MTPY) of a specific blend of limestone to manufacture cement. In 2004, as the existing East Pit neared its exhaustion of cement grade limestone, the West Pit expansion was approved by the County of San Bernardino on 191 acres to the west of the existing East Pit, with approximately 217 million tons of limestone reserves. Based on subsequent limestone testing, the amount of high-grade limestone to blend with the lower grades of limestone to meet the feed requirement for the cement plant will not be adequate for the life of the East and West Pits. Based on drilling sampling conducted during 2009 and 2010, the proposed South Quarry site has estimated proven and inferred reserves of over 200 million tons of high- to medium-grade limestone rock. This higher grade limestone rock would be blended with lower-grade limestone excavated from the East and West Pits at a ratio of approximately 50/50 to meet the limestone specifications to feed the adjacent Cushenbury Cement Plant. Should a source of high-quality limestone not be developed near the existing cement plant, the high-quality limestone for blending would need to be mined elsewhere in the region and trucked to the plant to ensure the proper blend to manufacture cement.

In July 2011, MCC submitted a Plan of Operations and Reclamation Plan for the South Quarry to the SBNF and the County in July 2011. This plan was revised in January 2012 in response to SBNF and County comments (MCC 2012). This EIR/EIS evaluates the potential environmental effects from implementing the Plan of Operations and Reclamation Plan.

S.2.3.2 Summary of Scoping

Input was requested from the public, interested groups and agencies during the scoping period for the EIR/EIS. Using the input received during the scoping process, a list of issues to address in the EIR/EIS was developed. The Forest Service published a Notice of Intent (NOI) to prepare a joint EIR/EIS on February 22, 2012 in the *Federal Register* Volume 77, Number 35. The NOI was also published as a legal notice in the San Bernardino County *Sun* on March 5, 2012. Publication of the NOI in the *Federal Register* began a 45-day comment period that ended April 6, 2012.

The County of San Bernardino Land Use Services Department published a Notice of Preparation (NOP) to prepare a joint EIR/EIS on March 5, 2012 in the daily publications of the San

Bernardino County *Sun* and the *Victorville Daily Press*. The NOP was also published on March 7, 2012 in the weekly publications of the *Big Bear Grizzly* and the *Lucerne Valley Leader*. The NOP was also sent to the State Clearinghouse and a mailing list of 97 addresses of agencies, organizations, and interested parties. Public Scoping Meetings were held on March 13, 2012 in Lucerne Valley and on March 20, 2012 in Big Bear to inform the public about the proposed Project.

Eleven comment letters were received within the comment period ending on April 6, 2012. Three comment letters were received after April 6, 2012. Issues and areas of controversy that have been identified through the scoping process include the potential for adverse effects to air quality, biological resources, cultural/heritage resources, geology and soils, greenhouse gas emissions/climate change, hazards and hazardous materials, mineral resources, noise/vibration, recreation, scenery resources, traffic, and water resources. These issues lead to the development of alternatives to the proposed action as described in Section S.3.

S.2.3.3 Summary of Draft EIR/EIS Comment Period

The County of San Bernardino Land Use Services Department filed a Notice of Availability (NOA) for the Draft EIR/EIS at the San Bernardino County Clerk and California State Clearinghouse on December 15, 2016, and published in the San Bernardino County *Sun* on December 19, 2016, reflecting a February 1, 2017 end period for the public comment period. The NOP was also sent to the State Clearinghouse and a mailing list of 91 addresses of agencies, organizations, and interested parties.

The Forest Service published the NOA in the *Federal Register* on December 30, 2017, which extended the public comment period to February 13, 2017. A corrected NOA was published in the San Bernardino County *Sun* on January 11, 2017 notifying the public of the extended comment period. Nineteen comment letters were received during the public comment period. Four comment letters were received after the public comment period had closed. Copies of these letters and the responses to the comments provided in the letters received during the public comment period are provided in Appendix L. Several minor changes have been made to this Final EIR/EIS in response to comments received on the Draft EIR/EIS. These changes are summarized in Chapter 1, Section 1.8, Table 1-4. Copies of these letters and the responses to the comments provided in the letters received during the public comment period are provided in Appendix L.

S.3 Summary of Project Alternatives

The following considerations were taken into account when designing the proposed South Quarry:

- Recovery of the high- to medium-grade limestone to blend with West Pit lower grades at a ratio of 50/50;
- Avoid drainages to the extent feasible;
- Avoid sensitive bighorn sheep areas to the extent feasible;
- Avoid the inactive Mohawk Mine and its access;
- Develop the smallest footprint to recover high grade ore;

- Develop the quarry to deposit all overburden/waste rock permanently within the quarry itself to avoid additional land disturbance and additional visual impacts common to other mining methods; and
- Limit visual impacts to the San Bernardino National Forest and Lucerne Valley.

Nine action alternatives were evaluated. Two of these alternatives were carried forward for analysis and seven were rejected because they did not meet the purpose and need or project objectives, or were substantially similar to the alternatives that were carried forward for analysis. The action alternatives carried forward for analysis include Alternative 1 – Proposed Action and Alternative 2 – Partial Implementation. In addition, Alternative 3 – No Action/No Project was also evaluated. The components of each alternative are summarized in Table S-1.

Table S-1
Comparison of Alternatives Carried Forward for Analysis

Project Element	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation[1]	Alternative 3 – No Action/No Project[2]
Quarry Area (acres)	128	108	Not Applicable
Haul Road (acres)	22.2	22.2	Not Applicable
Landscape Berm (acres)	2.7	2.7	Not Applicable
Temporary Construction Road (acres)	0.7	0.7	Not Applicable
Total Disturbed Area (acres)	153.6	133.6	Not Applicable
Total Material Excavated (ore reserves/waste rock) (millions of tons)	174.0 (156.0/18.0)	58.2 (52.1/5.9)	Not Applicable
Maximum Depth (feet amsl)	5,365	5,860	Not Applicable
Number of Phases	4	2	Not Applicable
Years of Operation	120	40	Not Applicable

Project Element	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation[1]	Alternative 3 – No Action/No Project[2]
Quarry Equipment	1-2 Dozers 2-9 Off Road Haul Trucks 1 Drill Rig 1-2 Water Trucks 2-3 Front End Loaders	1-2 Dozers 2-9 Off Road Haul Trucks 1 Drill Rig 1-2 Water Trucks 2-3 Front End Loaders After year 40, additional on-road haul trucks would be used to truck material to the Cushenbury Cement Plant from elsewhere in the region. Three alternative sites (2 in California and 1 in Nevada) were identified as potential sources for high-grade limestone. Approximately 52,000 haul truck trips per year or approximately 150 haul truck trips per day for 350 days each year would be required.	There would be no new equipment on the site, but a similar equipment mix would likely be operated at a site elsewhere in the region. Three alternative sites (2 in California and 1 in Nevada) were identified as potential sources for high-grade limestone. In addition, on-road trucks would be used to transport high-grade limestone from elsewhere in the region to the Cushenbury Cement Plant. Approximately 52,000 haul truck trips per year or approximately 150 haul truck trips per day for 350 days each year would be required.
Final Reclamation Year	Year 126/monitoring to continue until success criteria are achieved	Year 46/monitoring to continue until success criteria have been achieved	Not Applicable
Project-Specific LMP Amendment to Scenic Integrity Objectives	Required	Required	Not Required

Notes:

[1]With Alternative 2 - Partial Implementation, only Phases 1A, 1B, and 2 would be implemented and the quarry would be operated for 40 years rather than 120 years. Higher-grade limestone for blending would be trucked to the cement plant from elsewhere in the region (or could be mined locally under a different future project) from approximately year 41 through year 120. Although three scenarios have been provided for alternatives comparison purposes, the exact location and environmental conditions at a future source are unknown and would be subject to separate permitting and CEQA and/or NEPA review.

[2]With the No Action/No Project Alternative, MCC would not develop the limestone deposit in the South Quarry under the proposed Plan of Operations. The existing Cushenbury Cement Plant would continue to operate for the length of the West Pit's current estimated life of 120 years. Higher-grade limestone for blending could be trucked to the plant from elsewhere in the region or could be mined locally under a different future project. Although three scenarios have been provided for alternatives comparison purposes, the exact location and environmental conditions at a future source are unknown and would be subject to separate permitting and CEQA and/or NEPA review.

S.4 Summary of Environmental Analysis

Based on the evaluation of potential environmental effects during scoping, the following environmental resources were evaluated in this EIR/EIS:

- Air Quality
- Biological Resources
- Cultural/Heritage Resources
- Geology, Soils, and Mineral Resources
- Greenhouse Gases and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Recreation
- Scenery Resources

The effects of each alternative on these resources are summarized in Table S-2.

Table S-2
Summary of Environmental Effects[1]

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
Air Quality	Construction and operations emissions would be less than MDAQMD thresholds and less than federal *de minimis* thresholds with implementation of design features/mitigation measures. Cancer risks for all receptors are below the OEHHA significance threshold of 10 in a million for both construction and operations. Visibility and acidic compound disposition impacts at the nearest Class I area (San Gorgonio Wilderness) would be below FLAG thresholds.	Impacts of construction and operation of the South Quarry would be similar to the Proposed Action, and would be below thresholds established by the MDAQMD and OEHHA with implementation of design features/mitigation measures. On-site emissions would end 80 years sooner. Higher grade limestone would be trucked to the plant from elsewhere in the region from year 41 to year 120. Such transport could likely increase vehicle trips on public roadways by approximately 52,000 trips per year or 150 trips per day for 350 days per year. This would result in air emissions impacts related to truck traffic that would be greater than Alternative 1 – Proposed Action. Emissions from trucking from the Omya and Moapa sites would be below emissions thresholds for all pollutants. Emissions from trucking from the Big Maria Mountains source would be less than significant for all pollutants except particulates. Both daily and annual PM_{10} and $PM_{2.5}$ emissions from trucking from Big Maria Mountains would be above thresholds and would be significant.	No emissions from mining higher-grade limestone on the South Quarry site would occur. However, the existing Cushenbury Cement Plant would continue to operate for 120 years. Higher grade limestone would be trucked to the plant from elsewhere in the region during that 120-year period. Such transport could likely increase vehicle trips on public roadways by approximately 52,000 trips per year or 150 trips per day for 350 days per year. This would result in air emissions impacts related to truck traffic that would be greater than Alternative 1 – Proposed Action and Alternative 2 – Partial Implementation. Emissions from trucking from the Omya and Moapa sites would be below emissions thresholds for all pollutants. Emissions from trucking from the Big Maria Mountains source would be less than significant for all pollutants except particulates. Both daily and annual PM_{10} and $PM_{2.5}$ emissions from trucking from Big Maria Mountains would be above thresholds and would be significant. Visibility and acidic compound disposition impacts at the nearest

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
		Visibility and acidic compound disposition impacts at the nearest Class I area (San Gorgonio Wilderness) would be below FLAG thresholds.	Class I area (San Gorgonio Wilderness) would be below FLAG thresholds.
Biological Resources	Impacts to general and special status plants and wildlife would be less than significant with the implementation of design features/mitigation measures. The exception is direct, indirect, and cumulative effects to the Cushenbury herd of Nelson's bighorn sheep, which would remain significant even after the implementation of design features/mitigation measures. Approximately 153.6 acres of habitat would be disturbed with this alternative. After each phase of mining, the site would be reclaimed and revegetated according to regulations; however, due to the removal of material, a large pit would remain. Approximately 540 acres of habitat would be added to the CHMS. In addition to direct effects of removal, indirect effects from increased noise and human presence would occur during the life of the project. The 12.1 percent increase in water use would not affect Cushenbury Springs, because	Impacts would be similar to Alternative 1 – Proposed Action, but mining would end 80 years sooner and 20 fewer acres would be disturbed. Approximately 540 acres of habitat would be added to the CHMS. Effects to general and special-status plants and wildlife are expected to be less than significant with the exception of direct, indirect, and cumulative effects to the Cushenbury herd of Nelson's bighorn sheep. Even after implementation of design features/mitigation measures, direct, indirect, and cumulative effects to the Cushenbury herd would remain significant. With this Alternative, higher-grade limestone would be trucked from elsewhere in the region for the remaining life of the East and West Pits (approximately 80 years). Effects to biological resources would also occur at the alternate site, the severity of which would depend on the exact location of the resource. With this alternative, truck traffic on local roads	No ground-disturbing activities from mining under the proposed Plan of Operations would occur. Approximately 540 acres would not be added to the CHMS. Mining could still occur on the site as part of a different Plan of Operations, or higher grade limestone would be trucked to the Cushenbury cement plant from elsewhere in the region. Effects to biological resources would also occur at the alternate site, the severity of which would depend on the exact location of the resource. With this alternative, truck traffic on local roads and State Highway 18 may increase, potentially resulting in greater risk to wildlife, such as desert tortoise or bighorn sheep.

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
	the wells used to supply the water are disconnected from the springs by faulting.	and State Highway 18 may increase, potentially resulting in greater risk to wildlife, such as desert tortoise or bighorn sheep.	
Cultural/Heritage Resources	There would be no adverse effects to historic properties (eligible for the NRHP) or historical resources (eligible for the CRHR).	Impacts would be the same as with Alternative 1 – Proposed Action.	Impacts would be the same as with Alternative 1 – Proposed Action.
Geology, Soils, and Mineral Resources *Faulting and Seismicity*	No active faults are known to cross or trend towards the Project site; however, lurching or cracking of the ground surface as a result of nearby seismic events is possible. With incorporation of design features/mitigation measures these impacts would be reduced to a less than significant level.	Impacts would be the same as with Alternative 1 – Proposed Action.	Effects to the ground surface from nearby seismic events would be the same as with Alternative 1 – Proposed Action. However, no Project facilities would be in place to be affected by these seismic events. If other mining facilities were proposed under a different Plan of Operations, project-specific mitigation may be required.
Unstable Slopes	Unstable soils underneath three landslide deposit areas within the quarry could affect the stability of cut slopes in the quarry, resulting in a potentially significant impact. Design features/mitigation measures would reduce this impact to a less than significant level.	Impacts would be the same as with Alternative 1 – Proposed Action.	The unstable soils would remain undisturbed in the Project area. If other mining facilities were proposed under a different Plan of Operations, project-specific mitigation would be required.
Soils	Impacts from expansive soils, compressible soils, and corrosive soils would be less than significant.	Impacts would be the same as with Alternative 1 – Proposed Action.	Soils would remain undisturbed in the Project area. If other mining facilities were proposed under a different Plan

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
	There is no potential for loss of agricultural soils.		of Operations, project-specific mitigation may be required.
Mineral Resources	Development of the limestone resource is consistent with the policies of the Forest Service, SMARA, and the County. The conveyance of conservation easements and relinquishing of unpatented mining claims on over 540 acres to compensate for potential impacts to carbonate plant species is consistent with the requirements of the SBNF Land Management Plan and the Carbonate Habitat Management Strategy. The loss of these compensation lands is unlikely to affect the regional or statewide availability of limestone.	Impacts would be similar to those described for Alternative 1 – Proposed Action.	Effects of mining limestone at the South Quarry site under a different Plan of Operations or at an unknown offsite location would be subject to the same regulations as at the Project site and would be expected to be less than significant.
Greenhouse Gases and Climate Change	Construction and operations greenhouse gas (GHG) emissions would be less than the significance threshold of 10,000 MT $CO2_e$/year. Impacts would be less than significant. Alternative 1 – Proposed Action would not conflict with the County of San Bernardino's *Greenhouse Gas Reduction Plan*.	Impacts of construction and operation of the South Quarry with Alternative 2 – Partial Implementation would be similar to the Proposed Action, and would be less than the significance threshold of 10,000 MT $CO2_e$/year and would not conflict with the County's *Greenhouse Gas Reduction Plan*. Impacts would be less than significant. With this alternative, the existing Cushenbury Cement Plant would	With this alternative GHG emissions associated with South Quarry operations described for Alternative 1 – Proposed Action or Alternative 2 – Partial Implementation would not occur because the construction and operation components of the Project would not occur. However, the existing Cushenbury Cement Plant would continue to operate. The ore reserves in the West Pit, when blended with high grade ore, are sufficient to feed the cement plant for

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
		continue to operate after year 40. The ore reserves in the West Pit, when blended with high grade ore, are sufficient to feed the cement plant for approximately 120 years. Therefore, it is assumed that higher grade limestone would be trucked to the plant from elsewhere in the region from year 41 to year 120. Approximately 52,000 on-road truck trips per year (150 truck trips per day) could likely be required. Such transport would increase vehicle trips on public roadways; thereby resulting in GHG emissions related to truck traffic that would be greater than Alternative 1 – Proposed Action. Depending on the location of the off-site quarry, impacts could be significant. GHG emissions would range from 18,215 to 35,292 MT CO_2e per year depending on the offsite location selected. Emissions for all locations would be above the 10,000 MT CO_2e threshold and would be significant.	approximately 120 years. Therefore, it is assumed that higher grade limestone would be trucked to the plant from elsewhere in the region during that 120-year period. Approximately 52,000 on-road truck trips per year (150 truck trips per day) could likely be required. Such transport would increase vehicle trips on public roadways; thereby resulting in traffic and air quality impacts related to truck traffic that would be greater than Alternative 1 – Proposed Action or Alternative 2 – Partial Implementation. GHG emissions would range from 18,215 to 35,292 MT CO_2e per year depending on the offsite location selected. Emissions for all locations would be above the 10,000 MT CO_2e threshold and would be significant.
Hazards and Hazardous Materials	BMPs would be applied during refueling and maintenance of the mine equipment. The equipment would be moved to the existing Cushenbury Cement Plant area shops for major maintenance or repairs. With BMPs required by existing regulations, hazardous	The impacts from hazards and hazardous materials (diesel fuel and lubricants) and blasting on the project site would be the same as Alternative 1 – Proposed Action during operation, but use of blasting and equipment-related fuels, oils, and lubricants would end earlier at the South Quarry.	No blasting or heavy equipment would be used on the proposed South Quarry site. The effects of developing the limestone resource on the site under a different Plan of Operations or mining limestone at an off-site location would also be less than significant, as blasting (if required)

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
	materials or wastes associated with transportation, refueling and maintenance of mine equipment are not reasonably anticipated to result in a significant hazard to the public or environment. Mining operations would require two blasts per week, reducing the number of blasts from the existing mining operations at the East Pit by a similar number. Therefore, the overall current levels of blasting would remain the same. Blasting operations would continue to be conducted by licensed individuals in such a manner as to meet or exceed Cal-OSHA and BATF&E requirements. Blasting materials are secured in an existing appropriate magazine located at the adjacent cement plant facilities. All explosives and detonators would be transported, handled, and stored in accordance with all federal, State, and local regulations and permitted under the San Bernardino County Sheriff's Department and San Bernardino County Fire Department pursuant to Uniform Fire Code adopted by the Department. In compliance with County regulations, blasting would only be conducted by a licensed blaster upon issuance of a blasting permit	The effects of mining limestone at an off-site location after Phase 2 (years 40 to 120) would also be less than significant, as blasting (if required) and maintenance and fueling of equipment at the off-site location would also be subject to all federal, state, and local environmental regulations.	and maintenance and fueling of equipment under these scenarios would also be subject to all federal, state, and local environmental regulations.

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
	and a site-specific blasting permit. A significant hazard risk to the public is not anticipated from blasting activities. It is unlikely that excavation of the mine would disturb contaminated soils or groundwater based on the historic undeveloped use of the property and lack of environmental concerns identified during the database search and site visit. The proposed South Quarry is located in Fire Safety Review Area 1 (FS-1), which is characterized by areas with moderate and steep terrain and moderate to heavy fuel loading contributing to high fire hazard conditions. The design of Alternative 1 – Proposed Action includes internal haul roads to allow for emergency egress and safe zones in the event of a wildfire, would not contribute to or be affected by surrounding fuel loads, and no human-occupied structures are proposed. Alternative 1 - Proposed Action would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.		

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
Hydrology and Water Quality	Offsite runoff from the quarry excavation would not be significant because the project has been designed to retain runoff within the excavation The project would meet waste discharge requirements as required by the State Water Resources Control Board. Alternative 1 – Proposed Action would not affect any waters that are subject to the jurisdiction of the U.S. Army Corps of Engineers and, therefore, would not require a Clean Water Act Section 404 permit or a Regional Water Quality Control Board Clean Water Act Section 401 authorization under this nexus. However, Alternative 1 – Proposed Action would affect approximately 0.74 acre and 3,622 linear feet of streambed under the jurisdiction of the CDFW, requiring a Streambed Alteration Agreement. Alternative 1-Proposed Action would increase the demand for groundwater by approximately 58.6 acre-feet/year for the South Quarry. Combined with the water demand for the West Pit, the cumulative increase in water demand would be 101.3 acre-feet/year. This increase in demand would not exceed MCC's allotted	Hydrology or water quality impacts would be similar to the impacts that would result from the implementation of Alternative 1 – Proposed Action, but they would occur in a slightly smaller area (20 fewer acres). Water use would occur over a shorter time frame (40 years).	If Alternative 3 - No Action/No Project is implemented and the South Quarry is not developed under this Plan of Operations, there would be no change to hydrology and water quality at the site.

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
	free production allowance from the Mojave Basin Judgement.		
Noise *Increases in Noise Levels from Mining Activities*	Blasting would be perceptible approximately 2,780 feet from the proposed South Quarry boundary when blasting is occurring along the South Quarry wall. Other representative sites in the SBNF, located 2,350 to 14,500 feet from the proposed South Quarry, would have increases of less than 3 dBA L_{eq} (considered barely perceptible). Due to the shift in operation to the south, quarry operational noise is expected to decrease at the nearest sensitive receptors in Lucerne Valley. Noise from off-road haul trucks and water trucks would not exceed the County's noise standards for adjacent mobile noise sources. The addition of employee vehicle round-trips together would result in a negligible increase in noise on local roads.	Noise impacts would be similar to Alternative 1 – Proposed Action, during the operation of the South Quarry, but would end sooner. After Phase 2 (years 40 to 120), trucking in limestone from an off-site location may cause an increase in road noise and vibration on local roads from on-road haul trucks. Approximately 52,000 haul truck trips per year could likely be required, assuming import of 1.3 million tons per year of high-grade limestone using 25-ton on-road trucks (approximately 150 truck trips per day assuming deliveries 350 days per year). Depending on the location of the alternative limestone source, noise and vibration impacts from these on-road haul trucks to sensitive receptors may occur. Depending on the location of the alternative limestone source, noise and vibration from mining may also affect sensitive receptors.	If the South Quarry is not developed under this Plan of Operations, there would be no direct or indirect adverse noise impacts from mining at the South Quarry site. Development of the limestone reserve under a different Plan of Operation may result in similar noise impacts as Alternative 1 – Proposed Action. With this alternative, approximately 52,000 haul truck trips per year could likely be required to haul limestone from an alternate location, assuming import of 1.3 million tons per year of high-grade limestone using 25-ton on-road trucks (approximately 150 truck trips per day assuming deliveries 350 days per year). Noise and vibration from on-road haul trucks may affect sensitive receptors. Depending on the location of the alternative limestone source, noise and vibration from mining may also affect sensitive receptors.
Project-generated Ground Vibration and Air Overpressure	Groundborne vibration as a result of blasting would be less than the County criteria of 0.2 in/sec at the nearest industrial and commercial	Ground vibration and air overpressure impacts as a result of blasting would be similar to Alternative 1 – Proposed Action, during the operation of the South Quarry, but would end sooner.	If the South Quarry is not developed under this Plan of Operations, there would be no direct or indirect adverse vibration or air overpressure impacts related to blasting at the South Quarry

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
	zoned areas and the closest residential receptor. Blast-generated air overpressure at the closest residential structures would not exceed the USBM threshold.	Additionally, the effects of trucking in limestone after Phase 2 (years 40 to 120) may cause an increase in road noise and vibration on local roads from on-road haul trucks. Depending on the location of the alternative limestone source, vibration impacts from additional haul truck trips (estimated at 150 trips per day) may affect sensitive receptors.	site. Development of the limestone reserve under a different Plan of Operations may result in similar ground vibration impacts as Alternative 1 – Proposed Action. Depending on the location of the alternative limestone source, vibration impacts from additional haul truck trips (estimated at 150 trips per day) may affect sensitive receptors.
Recreation	*Workforce Effects:* The addition of three new workers could be accommodated through the existing local workforce and would not increase the local population; therefore, there would be no impacts in the use of neighborhood and regional parks. *Dust Effects:* Direct and indirect effects from dust are expected to be minimal, and are not expected to negatively affect the recreation setting or recreational uses in the analysis area in the short or long term. *Effects from Displacement and Changes to Quality of Recreation Experience:* Potential indirect recreation effects include the displacement of recreation activities from the Project area. However,	Effects would be similar to those of Alternative 1 - Proposed Action, but would be shorter in duration. The adverse effects of noise on the natural soundscape adjacent to the property line would also be similar to Alternative 1 – Proposed Action during mine operation, but would also cease 80 years earlier than with implementation of the Proposed Action. The effects of trucking in limestone after Phase 2 (years 40 to 120) would occur outside the area of analysis and would have a neutral effect on the recreation setting.	If the South Quarry is not developed under this Plan of Operations, there would be no direct or indirect adverse effect on recreation. Recreation opportunities, activities and setting would continue to be very similar to existing conditions. The effects of developing the site under an alternative Plan of Operations would likely be similar to Alternative 1 – Proposed Action. The effects of trucking in limestone would occur outside the area of analysis and would have a neutral effect on the recreation setting.

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
	visitor displacement is not expected to result in noticeable changes to the surrounding recreation setting because of the lack of developed recreational facilities, existing and expected low levels of recreation traffic, the minimal extent of visitor impacts, and because alternative settings are readily available nearby. Industrial noise in the soundscape of the area of analysis would increase from blasting and heavy equipment. The modeled worst case scenario (blasting noise) would have a neutral to minor effect on the soundscape in areas within 0.25 mile from the proposed South Quarry and haul road boundary, and would diminish as the distance increases. The areas with adverse changes to the soundscape would be restricted from public use for safety reasons. Changes to the natural soundscape would be minimally noticeable above existing operational sound levels from dispersed recreation sites within the Desert Rim Place and would not be noticeable from the Big Bear Backcountry Place.		
Scenery Resources	The scenic integrity from the four (4) viewpoints within Lucerne Valley would incrementally	Effects would be similar to Alternative 1 – Proposed Action during Phases 1 and 2 for 40 years, then would trend	No changes to scenery resources on the Project site would occur. An LMP amendment would not be required.

Environmental Resource	Alternative 1 – Proposed Action	Alternative 2 – Partial Implementation	Alternative 3 – No Action/No Project
	decrease during Phases 1 through 3 and then trend higher as concurrent reclamation succeeds. Scenic integrity would decrease from an existing level of High to Very Low during Phase 2 through 4, and then gradually increase to a level of Low. In 120 years, after full reclamation, the scenic integrity of the Project area would be at a level consistent with Low. Impacts would be localized, but long term (over 20 years). This would not be consistent with the area's SIO of High. Overall direct effects of implementing Alternative 1 - Proposed Action would be major and adverse to the site's level of scenic integrity resulting in a potentially significant impact to a scenic vista and the existing visual character of the site and its surroundings. Project-level impacts would remain significant even after the implementation of design features/mitigation measures. Cumulative impacts would be less than significant. A Project-specific LMP amendment would be required for this alternative	higher as concurrent reclamation begins to succeed. A project-specific LMP amendment would be required for this alternative. Project-level impacts would be significant and unmitigable. Cumulative impacts would be less than significant.	Existing permitted mining activities from multiple operators on the North Slope would continue to affect scenery resources on a cumulative level.

Notes: [1]Acronyms in this table are defined as follows:

BATF&E = Bureau of Alcohol, Tobacco, Firearms, and Explosives
BMPs = Best Management Practices
Cal-OSHA = California Division of Occupational Safety and Health
CHMS = Carbonate Habitat Management Strategy
CRHR = California Register of Historical Resources
dBA = decibels on the A-weighted scale
FLAG= Federal Land Manager Air Quality Related Values Workgroup
LMP= Land Management Plan
MDAQMD = Mojave Desert Air Quality Management District
NRHP = National Register of Historic Places
OEHHA - Office of Environmental Health Hazard Assessment
SBNF = San Bernardino National Forest
SMARA = Surface Mining and Reclamation Act of 1975
SWPPP = Stormwater Pollution Prevention Plan
USBM = United States Bureau of Mines

S.5 Issues to be Resolved

Given the purpose and need and project objectives, the Lead Agencies will review the proposed action, the alternatives, and the environmental consequences to make certain decisions regarding the project. These decisions are described below.

S.5.1 Forest Service Decision To Be Made

The Forest Service has the authority to manage surface uses associated with mining activities but not the authority to deny the proponent's right to mine valid claims on National Forest System lands. The Forest Service Responsible Official will decide whether to approve the Plan of Operations as submitted following the environmental analysis. The Responsible Official will also decide whether to approve a project-specific Amendment to the San Bernardino National Forest Land Management Plan for a reduction in the Scenic Integrity Objectives for the project area in the Desert Rim Place.

S.5.2 San Bernardino County Decision To Be Made

San Bernardino County will decide whether to approve or deny the proposed Reclamation Plan under SMARA . The Project will also require a minor revision to the Cushenbury Cement Mine and Reclamation Plan (2004M-001) to include the northern extension of the proposed South Quarry haul road into the East Pit. If the decision is made to approve the proposed Project, this decision would include certifying the EIR and adoption of the findings and Statement of Overriding Considerations.