



# STATE MINING AND GEOLOGY BOARD

## EXECUTIVE OFFICER'S REPORT

For Meeting Date: June 14, 2007

**Agenda Item No. 3: Acceptance of California Geological Survey Special Report 200, Mineral Land Classification of the Granite Construction Company Liberty Quarry Site, Temecula, Riverside County, California – For Portland Cement Concrete-Grade Aggregate, as Being Prepared in Accordance with the Mineral Classification and Designation Guidelines.**

**INTRODUCTION:** The Surface Mining and Reclamation Act of 1975 provides under Public Resources Code (PRC) Section 2761 for the State Geologist to identify specific areas of the State that contain valuable mineral resources, and to classify those mineral resources according to guidelines developed by the State Mining and Geology Board (SMGB). One method by which the SMGB is made aware of areas for potential mineral classification is through the petition process, whereby a person may petition the SMGB to have specific lands undergo a mineral classification review. Petitions for mineral classification received by the SMGB are transmitted to the State Geologist for preliminary review. If the State Geologist believes sufficient information is available to conduct a mineral study, it will be recommended that the SMGB accept the petition and authorize the State Geologist to commence the study. Following submittal of a petition to the SMGB for mineral land classification of the proposed Liberty Quarry project located in Riverside County, the SMGB accepted the petition, and the State Geologist subsequently commenced the study.

**REGULATORY AUTHORITY:** The SMGB has developed guidelines to help implement SMARA by providing the State Geologist with direction in carrying out mineral resource classification of lands in California (Guidelines for Classification and Designation of Mineral Lands). These guidelines are supported by statute. Pursuant to PRC 2761(b), "*the State Geologist shall classify, on the basis solely on geologic factors, and without regard to existing land use and land ownership... any area for which classification has been requested by a petition which has been accepted by the board,...*"

Pursuant to PRC 2761(b)(3), "*The State Geologist shall require the petitioner to pay the reasonable costs of classifying an area for which classification has been requested by the petitioner...*"

Pursuant to PRC Section 2761(c), "*The State Geologist shall transmit the information to the board for incorporation into the state policy and for transmittal to lead agencies.*"

**BACKGROUND:** The project site is located approximately 4 miles south of Temecula in Riverside County. Granite Construction controls the 310-acre property, which has not been mined. Granite Construction Company submitted a petition to the SMGB dated December 18, 2006, for mineral land classification of the proposed Liberty Quarry project located in

Riverside County. In accordance with the "Guidelines for Classification and Designation of Mineral Lands", the State Geologist reviewed the petition and recommended acceptance of the petition by the SMGB. At its regular business meeting held on March 8, 2007, the SMGB accepted the petition and instructed the State Geologist to commence the classification study.

The petition application was reviewed by the California Geological Survey Minerals Resource Unit (CGS) staff using revised criteria for consideration of petitions adopted in 1994 by the SMGB. The following determinations were made:

- Based on test information provided by the petitioner, the material likely will meet the quality specifications for PCC aggregate.
- Preliminary calculations based on information provided by the petitioner indicate that the parcel contains aggregate resources in excess of the threshold value of \$12,550,000 (1998 dollars), or \$15,500,000 (2006 dollars), required for classification as MRZ-2a for PPC-grade aggregate.

Based on this preliminary review, the State Geologist recommended acceptance of the petition by the SMGB, and the SMGB subsequently accepted the petition at its March 8, 2007, regular business meeting.

The State Geologist subsequently investigated and classified a portion of the Temecula 7.5 minute Quadrangle, Riverside County, from MRZ-3a to MRZ-2a for Portland cement concrete (PCC) aggregate, as documented in CGS Special Report 200. The following conclusions were reported:

- Aggregate test results provided by the petitioner and analyzed by CGS staff indicated that the material present on the site meets the specification for use in PCC.
- Aggregate resources present at the site exceed the minimum threshold value of \$16.41 million (2007 dollars) established by the SMGB.
- Approximately 290 acres of the 310-acre Granite Construction Company Liberty Quarry Site has been reclassified MRZ-2a for PCC-grade aggregate.

**EXECUTIVE OFFICER'S RECOMMENDATION:** The Executive Officer has reviewed the CGS Special Report 200, and finds that it has been prepared in accordance with the SMGB's Mineral Classification and Designation Guidelines and the Surface Mining and Reclamation Act (SMARA; PRC Section 2710 et seq.), and the Executive Officer recommends that the

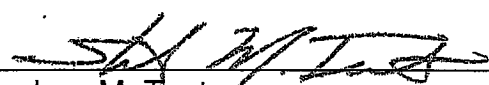
SMGB accept the Report and forward copies to Riverside County and to other affected lead agencies.

**SUGGESTED MOTION LANGUAGE:**

To accept CGS Special Report 200:

Mr. Chairman, in light of the information before the SMGB today, I move that the SMGB find that California Geological Survey Special Report 200, "*Mineral Land Classification of the Granite Construction Company Liberty Quarry Site, Temecula, Riverside County, California*", has been prepared in accordance with the SMGB's guidelines and policies, and that the SMGB accepts the Report and instructs the Executive Officer to transmit the Report to Riverside County and other affected lead agencies.

Respectfully submitted:

  
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Stephen M. Testa  
Executive Officer

## EXECUTIVE SUMMARY

In response to a petition submitted under the provisions of the Surface Mining and Reclamation Act of 1975 (SMARA; Public Resources Code § 2712 et seq.), the State Geologist has investigated and subsequently classified a portion of the Temecula 7.5 minute Quadrangle, Riverside County, as MRZ-2a for portland cement concrete (PCC) aggregate.

This study is an evaluation of the aggregate potential of the 310-acre Liberty Quarry Site based upon geologic and materials testing data provided by the petitioner, Granite Construction Company. Core samples were examined at Granite Construction Company's regional office in Indio California on April 17, 2007 and a field examination of the petitioned property was made on April 24, 2007.

This report explains the classification of the property and presents the conclusions reached in this study. It is intended for the use of the State Mining and Geology Board (SMGB), the petitioner, and the lead agencies that have decision-making authority over this property under SMARA.

For a mineral deposit to be considered significant, and therefore eligible for MRZ-2 classification, it must meet criteria established by the SMGB for material quality, marketability, and economic value. The significance of the resources was determined by evaluating the quality of the deposit and its suitability as a marketable commodity and by calculating the available volume, tonnage, and value of aggregate resources contained within the property. Data necessary to evaluate the property were compiled from geologic literature, proprietary company files, and limited field study by the California Geological Survey (CGS) staff.

It is concluded that:

- Aggregate test results provided by the petitioner and analyzed by CGS staff indicate that the material present on the Granite Construction Company Liberty Quarry Site meets the specifications for use in PCC.
- Aggregate resources present at the Granite Construction Company Liberty Quarry Site exceed the minimum threshold value of \$16.41 million 2007 dollars established by the SMGB.
- Approximately 290 acres of the 310-acre Granite Construction Company Liberty Quarry Site has been reclassified MRZ-2a for PCC-grade aggregate as shown on Figure 3 of this report.

## CLASSIFICATION OF THE LIBERTY QUARRY SITE

### Geologic Summary

The Granite Construction Company Liberty Quarry Site lies on a steep-sided, prominent ridge with elevations ranging from about 1500 feet to 2,100 feet. The site is part of the large basement complex of Mesozoic granitic and metamorphic rocks known as the Peninsular Ranges Batholith.

The Liberty Quarry Site is included in a geologic map of the Temecula 7.5 minute quadrangle in southwestern Riverside County published by CGS (Tan and Kennedy, 2000). This geologic map indicates that the quarry site is underlain by a geologic unit identified as the Granodiorite of Rainbow.

Granite Construction Company mapped the site at a scale of one-inch equals 800 feet in 2006 (Light, 2006). Light's study indicates the site is underlain by Mesozoic-age felsic intrusive rocks (granite, quartz monzonite, granodiorite, and quartz diorite), with gabbroic rocks outcropping to the west of the site. Rare quartz veins, pegmatites, and mafic dikes cut the felsic intrusives. Air photo analysis reveals a prominent lineament oriented N15E along the western side of the site. Additional lineament sets orientated N80W, N45W, N15E, and N45E were identified.

Surface conditions consist of moderately weathered spheroidal boulders of felsic intrusive rock imbedded in highly weathered decomposed granite. This weathering profile, generally, is less than twenty feet thick.

Subsurface conditions were sampled by core drilling performed by Granite Construction Company. The deepest drill-hole penetrated to a depth of 390 feet below the ground surface revealing fresh, competent felsic intrusive rock throughout the drilled interval. Rock types present beneath the site consist of massive to slightly foliated biotite granodiorites and granites with traces of hornblende and garnet (Light, 2006).

### Material Quality

Proprietary materials testing results provided by the petitioner were compared to published Caltrans specifications (California Department of Transportation website, 2006) by CGS staff. The results show that, with appropriate processing, the material present on the Granite Construction Company Liberty Quarry Site could meet the specifications for a variety of construction aggregate products up to and including PCC.

The decomposed granite present at the surface of the site does not meet the standards for PCC-grade aggregate but may be suitable for use as base material or fill. The weathered material can be economically stripped during the quarrying process and does not affect the classification of the underlying bedrock.

## Threshold Value

CGS staff made volumetric calculations of aggregate resources contained in the Granite Construction Company Liberty Quarry Site based on field mapping and laboratory data provided by the petitioner. These calculations indicate that the site contains resources of construction aggregate that exceed the threshold value of \$16.41 million (2007 dollars). The results of these calculations are confidential (Public Resources Code Section 2207.1) and are not released in this report.

It is possible to demonstrate that the Granite Construction Company Liberty Quarry Site contains aggregate resources that exceed the minimum threshold value without revealing proprietary data. Assuming an average selling price of \$10.00 per ton for construction aggregate, approximately 1.6 million tons of resources are needed to meet the minimum threshold value of \$16.41 million. Using an average in-place density of 2.2 tons per cubic yard and a waste factor of 10%, the depth of mining necessary to exceed the threshold value over 100 acres of the 310-acre site is less than six feet. The thickness of suitable rock on the Liberty Quarry Site meeting various construction aggregate specifications is much greater than six feet.

## Property Evaluation

A field investigation of the property by CGS staff, along with an evaluation of the subsurface information and materials test data provided by the petitioner, indicates the following:

- The Granite Construction Company Liberty Quarry Site contains aggregate resources suitable for use in PCC.
- The resources present exceed the threshold value requirements established by the SMGB for inclusion into the MRZ-2a category for PCC-grade aggregate.
- The reclassified area of the Granite Construction Company Liberty Quarry Site is shown in Figure 3 (red outline).

## CONCLUSIONS

In accordance with the mandates of the SMARA, the staff of CGS, under the direction of the State Geologist, has evaluated the Granite Construction Company Liberty Quarry Site, and it is concluded that significant PCC-grade aggregate resources are present on 290 acres of this property. These resources meet the suitability and threshold criteria established by the SMGB for inclusion into the MRZ-2a category for PCC-grade aggregate. The area reclassified from MRZ-3a for construction aggregate to MRZ-2a for PCC-grade aggregate is shown on Figure 3.