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Open-File Report Release

OFR 2000-18 *Mineral Land Classification of Concrete-Grade Aggregate Resources in Tehama County, California* -- by Brent D. Foster, 40 pages, 5 plates, map scales: 1:48,000 to 1:125,000, \$50.00– Folded.

Dr. James F. Davis, State Geologist, is pleased to announce the release of Department of Conservation, California Geological Survey (CGS) [formerly Division of Mines and Geology (DMG)] Open-File Report (OFR) 2000-18: MINERAL LAND CLASSIFICATION OF CONCRETE-GRADE AGGREGATE RESOURCES IN TEHAMA COUNTY, CALIFORNIA, by Brent D. Foster.

BACKGROUND

The California Surface Mining and Reclamation Act (SMARA) of 1975 requires the State Geologist to classify land into Mineral Resource Zones (MRZs) according to the known or inferred mineral potential of that land. The process is based solely on geology without regard to existing land use or land ownership. The primary goal of mineral land classification is to ensure that the mineral resource potential of land is recognized by local government decision-makers and considered in the land-use planning process.

Upon completion of the formal acceptance procedures, the State Mining and Geology Board (SMGB) will transmit this report, OFR 2000-18, to city, county, and federal agencies that regulate land use within the scope of this report. Lead agencies are required to incorporate the mineral resource information contained in this report into their general plans.

SUMMARY

This report provides information concerning the location, quantity, and quality of concrete-grade aggregate resources in Tehama County, including a projected demand for construction aggregate for the next 50 years. Emphasis is given to the classification of concrete-grade aggregate which includes alluvial aggregate suitable for use in portland cement concrete (PCC) as well as alluvial aggregate suitable for use in asphaltic concrete (AC), commonly known as asphalt. An analysis is also made of the relative importance of aggregate resources within modern stream courses.

Areas of Tehama County that contain aggregate resources that are known to be of concrete grade occur within six aggregate resource areas (ARAs) that cover approximately 27,000 acres (1.4 percent of Tehama County), and contain approximately 1.5 billion tons of aggregate. Approximately 41 million tons of concrete-grade aggregate are contained within the boundaries of currently permitted mining operations.

Analysis of historical production indicates an expected demand of approximately 52 million tons of construction aggregate, through the year 2050, and approximately two thirds of this (35 million tons) must be suitable for use as concrete aggregate. Currently permitted reserves are adequate to meet this demand, assuming this material is only used to manufacture concrete. However, aggregate producers commonly supply concrete-grade material for other uses such as base. In Tehama County, concrete-grade aggregate has been used to supply an average of 90 percent of the construction aggregate needs over the last 30 years. If currently permitted concrete-grade reserves continue to be used to supply other construction aggregate needs in this proportion, depletion of these reserves would be expected by the year 2041.

A Tehama County ordinance currently prohibits mining in the 100-year floodplains of the Sacramento River and Cottonwood Creek, as defined by the Federal Emergency Management Agency (FEMA). If the prohibition against instream mining were extended to include the 100-year floodplains of all creeks, significant concrete-grade reserves would be lost. If such a prohibition were instituted, the total area of land containing concrete-grade aggregate potentially available for mining would be reduced by approximately 76 percent, and the amount of potentially available concrete-grade aggregate resources would be reduced by over 87 percent. In addition, the currently permitted concrete-grade aggregate reserves would be reduced by approximately 68 percent. As a result of this reduction, depletion of reserves would be expected by the year 2017.