

State of California
MINING AND GEOLOGY BOARD

ANNUAL REPORT

1980



LIMESTONE AND TRAP DYKE NEAR SONORA.

a. Superficial detritus. *b.* Trap dyke. *c.* Limestone.

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State Mining and Geology Board's
Annual Report to the Governor and
the Legislature - 1980

INTRODUCTION

We herein present the highlights of the Mining and Geology Board's activities during the past year, particularly in implementing the Surface Mining and Reclamation Act of 1975 (SMARA).

This report combines the Board's report to the Legislature on actions taken during the 1979-80 fiscal year pursuant to SMARA, and a report to the Governor and the Legislature on needed earth science research (Sections 2717 and 674 of the Public Resources Code).

MAJOR BOARD ACTIONS

The Mining and Geology Board hereby submits its Annual Report on actions taken during 1980.

A. Mineral Resource Conservation

1. Progress in designating significant mineral deposits in the San Fernando Valley Region of Los Angeles County

Designation of mineral deposits in the Tujunga and Pacoima Wash areas of the San Fernando Valley Region will be the first under SMARA's unique approach to mineral resource conservation. These areas were recommended by the State Geologist, in the Division of Mines and Geology's Special Publication 143, because of their potential for supplying the region's 50-year needs.

Under SMARA, lands are classified as to their mineral content by the State Geologist. Those lands classified or identified as having significant mineral deposits and which may be subject to land-uses which would prevent mining may be designated by the Mining and Geology Board.

Designation is viewed by the Board as a state activity which provides geologic and mineral-economic information to local government. This activity aids local government in its management of mineral resources within the context of its general plan goals and in consideration of regional land-uses.

The objective of this cooperative planning process is to assure that local lead agencies have information regarding valuable mineral deposits which are located within their jurisdictions and are needed for future use.

Following a field visit to the Tujunga Wash and Pacoima Wash in September, 1979, the Board hosted a workshop to allow representatives from government, industry, and the public to comment on the need for designation in this area. Environmental impacts associated with future

mining, made more likely by designation, were also discussed with the Board and staff from the Division of Mines and Geology.

Advice from the Attorney General's Office (SO 78/5 IL) pointed to the need for compliance with the California Environmental Quality Act (CEQA) when considering designation. The Board adopted CEQA guidelines and SMARA supplement applicable to designation on December 7, 1979 following a public hearing.

A draft Environmental Impact Report on designation in the San Fernando Valley Region was subsequently prepared by the Division of Mines and Geology under the Board's direction and heard at a July 25, 1980 public hearing.

2. Board responds to request for mineral lands classification in Ventura County.

In response to requests by Ventura County and local aggregate producers, the Mining and Geology Board altered its classification priorities in the Los Angeles Metropolitan area. This allowed the Division of Mines and Geology to classify sand and gravel deposits in the Simi and Western Ventura County Regions in advance of the County's decision about extending mining permits in the Santa Clara River area.

A preliminary draft of this classification report was released to Ventura County on November 29, 1979 to assist in its deliberations on permitting of sand and gravel extraction in this area. Estimates of sand and gravel resources available, as well as projected 50-year needs for the two regions, were discussed in the report. This information provided an economic and mineral resource availability context in which the county's decision could be made.

The report was formally accepted by the Board on January 16, 1980 and transmitted to all affected local governments.

Subsequently the Board hosted a field trip and workshop, on August 29-30, 1980, to visit aggregate deposits recommended for designation and to discuss the need for designation with representatives from local government and industry.

3. First Classification petition.

A petition process was established by the Mining and Geology Board to provide a means for bringing important mineral deposits, which are threatened by incompatible land-uses, to its attention for classification-designation consideration.

Classification of Pfizer Corporation's limestone deposits in the Lucerne Valley, San Bernardino County, was begun in early summer 1980 following acceptance of a petition by the Board. A draft of the classification report was submitted by the State Geologist to the Board for review on October 31, 1980.

4. "Letters of Intent" provided to keep the classification petition process open

Experience with the new petition process soon showed that existing Division of Mines and Geology staff could not process more than one petition per year without jeopardizing its existing program of classifying threatened mineral resources in urban areas first. Currently, the Division is classifying Pfizer's petitioned Lucerne Valley limestone deposits.

To refuse to consider petitions to classify important and threatened mineral resources in nonurban portions of the state, which represents 95% of the state's land area and contributes about 75% of its annual mineral production, would be contrary to SMARA's mineral resource conservation objectives.

The Mining and Geology Board also felt it important to keep the petition process open to allow for a flow of information on the nature and imminency of land-use decisions which threaten important mineral deposits. Because of these facts, the Board provided for the use of a "letter of intent" to submit a petition, in lieu of canceling the petition process.

This letter is used to establish priority for processing and considering future petitions, but does not replace the formal petition as provided for by the Board's guidelines.

During 1980, the Board received and accepted four such letters. Letters from the Gladding McBean Company, Pacific Clay Company, and Riverside Cement Company pointed to urbanization threats to clay deposits in the Santa Ana Mountains in Orange and Riverside Counties. Granite Rock Company alerted the Board to the effects of Monterey County's local coastal program for the Big Sur area on the Company's Pico Blanco limestone deposit. In each of these cases, affected local jurisdictions were contacted by the Board to alert them to the potential for land-use conflicts in these situations. SMARA's process for classification and designation was also discussed as a means to resolve such conflicts.

Under newly enacted legislation, Senate Bill 1300, Nejedly - 1980 statutes, funding was provided to support the petition process as well as classification and designation in nonurban areas.

5. Federal and local land-use plans reviewed to assure that SMARA's mineral resource conservation objectives are met.

One of the two principal objectives of SMARA is to assure that land-use decisions which may affect mining are made with adequate information. This provides an economic context in which the importance of a particular mineral deposit to a region or state can be assessed, thereby aiding decision makers in striking a reasonable land-use balance. Accordingly, the Board has taken an active interest in major planning efforts by local and federal governments which impact mineral resources.

- a) California Desert Conservation Area (CDCA) Plan - For the past several years, the Mining and Geology Board has closely monitored the progress of the U. S. Bureau of Land Management's development of a comprehensive land-use plan for the California desert. A February, 1980 draft of this plan was made available for review early this year. The Board found four major flaws in the mineral element of this draft.

These were: (1) mineral resource conservation and mined land reclamation provisions of SMARA are not incorporated into the plan; (2) guidelines for mineral resource exploration and development as applied to the plan's four multiple-use classes (Controlled, Limited, Moderate, and Intensive) are not clear; (3) the data base used to determine the mineral potential of the CDCA is not presented clearly, nor does the draft discuss how these data influenced development of the plan alternatives; and (4) discussions of the environmental impacts resulting from mining is contradictory and does not allow for an independent assessment of their cumulative effects under each plan alternative.

The Mining and Geology Board recognizes the need for planning in the California desert and strongly supports the continued and intensified efforts by the Bureau of Land Management in this regard. The Board feels that it is not in the best interests of the State to have the plan's mineral element so open ended that it is no plan at all nor so closed that it cannot be adapted to new information and changing needs. The Board urged the Bureau to develop an improved mineral resource element which will strike a reasonable balance between these two extremes.

- b) Sonoma County's Aggregate Resource Management Study (ARMS) Sonoma County's "ARMS" report was developed to assure future supplies of construction aggregates while minimizing associated environmental and land-use conflicts. The study focused on existing gravel mining in the flood plain of Dry Creek and portions of the Russian River as well as potential hard rock quarry sites in the County.

The Mining and Geology Board reviewed a draft of the "ARMS" report. The Board strongly supported the County's efforts, through this plan, to manage its construction aggregate resources in a way consistent with SMARA while seeking to conserve other important nonrenewable resources. Specifically, the Board endorsed the plan's commitment to: (1) assure a 50-year supply of construction aggregate for Sonoma County and other north bay counties dependent on these resources; (2) manage

instream mining activities to assure that their replenishment rate is not exceeded; (3) investigate and provide for alternative sources of construction aggregate in less environmentally sensitive areas; (4) assure that sand and gravel resources are used for their highest and best use by reexamining existing product specifications, and (5) assure that resource use costs are not deferred to future generations.

- c) Monterey County's Local Coastal Program for the Big Sur Area - A local coastal plan was developed by Monterey County for managing the Big Sur area, as required by the California Coastal Act. This area is famed for its unique scenic beauty and recreation potential. It also contains an important deposit of high purity limestone.

In its review, the Mining and Geology Board found that the draft plan did not recognize the importance of existing mineral resources nor the existence of applicable state laws such as SMARA. Specific language to remedy these oversights was recommended to the County.

6. Federal mining regulations reviewed to prevent regulatory overlap and assure uniformity of statewide reclamation standards.

The Board has followed the progress of proposed federal regulations which may be applied to California's mining industry. This interest stems from the Mining and Geology Board's long-standing efforts to eliminate overlapping regulation of surface mining and assure that uniform reclamation standards are applied to both private and public lands in California.

This interest resulted in a state-federal agreement on surface mining and reclamation coordination signed by the Resources Agency, U.S. Bureau of Land Management and the U.S. Forest Service in 1979. During 1980, the Board closely monitored federal activities with regard to the study of possible federal regulation of the surface mining of noncoal minerals as well as proposed regulations for mining on public lands subject to the 1872 Mining Law.

- a) Federal Regulation of Noncoal Minerals Mining - The Federal Coal Act, which began as an all minerals bill, directed the Council on Environmental Quality to study the feasibility of applying the Coal Act's regulatory approach to noncoal minerals. The Academy of Sciences was contracted to do this study which resulted in the "COSMAR" report.

During the public hearings conducted in California by the Academy on construction materials and iron mining, the Mining and Geology Board testified on the State's experience with regulating surface mining and reclamation under SMARA. In subsequent written

testimony to the Council on Environmental Quality on the completed report, the Board commented that with a strong state law, such as SMARA, there is no need for further federal laws to regulate surface mining and reclamation in California.

In contrast to the Coal Act, the Board noted that California's SMARA is more flexible being "results" rather than "practice" oriented. This reflects California's attempt to deal with a diversity of mining technology (open pit, quarry, underground, solution mining, and dredging) and geographic settings (desert, mountain, valley, coast). The State's law also balances the political realities of California's tradition of local land-use decision making, long history of mining, and long-standing concern for the environment. The Board further noted that California can be viewed as a microcosm of the nation, and perhaps provide some insights for the Council's deliberations from the standpoint of its regulatory solution.

The Board further stated that any recommendations concerning federal regulation of surface mining should consider the effectiveness of existing state laws. Based on the Board's experience with SMARA and its optimism that the Act can be strengthened as the need arises, the Board felt it would be counter productive to apply additional federal requirements to California at this time.

- b) Federal Regulations for Surface Mining on Public Lands - Mining regulations for public lands were developed by the Bureau of Land Management in response to the Federal Land Policy and Management Act. These regulations applied to public lands governed by the Mining Law of 1872. The Mining Law provides for mineral and mining rights, but does not require reclamation of mined lands. Proposed Bureau regulations addresses this situation.

The Board's overriding concern with the proposed regulations, as expressed to the Bureau, is that SMARA's more stringent environmental protection requirements be applied to public lands in California, and that state and federal regulatory activities be coordinated.

B. Mined Lands Reclamation

- 1. A Reclamation Workshop was conducted to disseminate technical information needed by local government in their administration of SMARA's reclamation provisions

Mined-lands reclamation was the subject of a workshop co-sponsored by the Mining and Geology Board, Division of Mines and Geology, and the Department of Conservation. Over 200 planners, technical specialists, and representatives from state and local government and from industry attended the University of California at Davis hosted activities.

This workshop evolved from the Board's concern that a more active state program was needed to provide technical information on reclamation to those local agencies which implement SMARA.

The workshop also provided a forum for discussion and dissemination of reclamation information to other users whether planner, mine operator or concerned citizen. Topics, such as preparing reclamation plans, reclamation in arid regions, visual resource management, instream mining, revegetation, and bonding were included in the program. Speakers addressing these and other topics came from across the nation.

2. Operator and Lead Agency compliance with SMARA monitored.

As part of its overview responsibility for the implementation of SMARA's reclamation requirements, the Mining and Geology Board has continued to monitor lead agency progress in adopting SMARA ordinances. With the increase in mining activity in the State, a number of cities, especially in rural areas, are becoming lead agencies. A canvass conducted in July, 1980 indicated that 17 cities in addition to California's 58 counties have active or potentially active mining operations thus requiring the adoption of a SMARA ordinance.

Past inaction by a number of local lead agencies in adopting SMARA ordinances prompted the Board to recommend an ordinance certification process in its 1979 Annual Report. This recommendation was incorporated into Senate Bill 1300, Nejedly - 1980 statutes. It requires that local SMARA ordinances be reviewed and certified by the Board as meeting the requirements of the Act and state policy. In the absence of a certified ordinance the authority to approve reclamation plans passes from the local government to the Mining and Geology Board.

The Board also has acted in cases involving operator compliance in jurisdictions without a SMARA ordinance and where irreparable environmental impacts were involved. Sand mining in the Antioch Dunes in Contra Costa County is an example of such action.

3. Policy on administrative exemptions (borrow pitting in rural areas) developed to provide flexibility to lead agencies in administering SMARA.

Surface mining activities involving less than 1,000 cubic yards in any location of one acre or less are exempt from the Act's reclamation requirements. Other exemptions include excavations connected with farming, on-site construction, restoration of flood-damaged areas, and assessment work to protect mining claims. The Mining and Geology Board also can exempt infrequent mining activities involving minor surface disruption.

The timber industry and several counties contended that the operation of borrow pits (mining for road construction materials) also should be exempted under certain circumstances in rural areas.

The Board visited borrow pit sites in Mendocino County in February, 1980 and conferred with local officials, industry representatives, and concerned state agencies. It was concluded that many of the borrow pits seen were either exempt under existing provisions of SMARA or involved "minor surface disruption" which would permit an administrative exemption under the Act. Slope stability and protection of water quality were important considerations in the formulation of further exemptions in these cases.

The Board is currently considering a policy on borrow pit exemptions to provide guidance to local government in their implementation of SMARA.

C. Senate Bill 1300, Nejedly - 1980 Statutes, strengthens SMARA and provides additional funding to carry out the Act's mandates.

Changes recommended by the Mining and Geology Board in its 1979 Annual Report to strengthen SMARA were embodied in Senate Bill 1300. In summary, the bill:

- 1) Provides for the classification and designation of California's important mineral resources without regard to geographical location,
- 2) strengthens the state's overview role to assure compliance with SMARA's reclamation objectives through an ordinance certification process,
- 3) clarifies that local jurisdictions without active mining may defer adopting a SMARA ordinance until an application to mine is received, and
- 4) provides criteria to be used by lead agencies in making land-use decisions in areas containing significant mineral resources which have been designated to be of regional or statewide importance.

The bill also provides \$1.1 million annually to support the State's activity in administering the Act; \$570,000 of this total replaces general funding support of existing SMARA activities while \$530,000 represents new funding. This support comes from federal funds derived from mineral leases on public lands in California and remitted to the State.

Of the \$1.1 million, \$760,000 will be used for classification-designation activities, including an extension of these activities into nonurban areas in which the accessibility of minerals may be at risk; \$249,000 for enhanced activities in reclamation compliance and related technical support for local government; and \$91,000 for the support of the Board's operations and activities

related to the administration of SMARA. Under SB 1300, the augmented appropriation is subject to approval by the Department of Finance and funds to support activities in successive years will be proposed in the Governor's budget for legislative review.

RECOMMENDATIONS FOR NEEDED EARTH SCIENCE RESEARCH

The Mining and Geology Board recommends the following program areas as needing further administrative consideration:

A. Mineral Resource Conservation

The United State's dependency on foreign sources of critical mineral commodities is now of national concern. Pressure to exploit California's vast mineral wealth to lessen this dependency can be expected. This points to the need for authoritative and current mineral information as an aid to identifying areas of mineral potential as well as in assisting land-use decision makers in their natural resource management responsibilities.

As an example, the Bureau of Land Management estimates that known deposits in the California desert may be capable of producing over \$760 billion in mineral value. However, a 1980 federal land-use plan for this area has been criticized by the Department of Conservation as not having adequately assessed its mineral potential before classifying certain lands for uses which would restrict or prohibit mining.

In 1979, \$1.7 billion of mineral commodities were produced in the State. In addition, major deposits under development in the Central Valley (oil impregnated shale), Klamath Mountains (nickel-cobalt) and Coast Ranges (gold) point to the equally high potential for mineral resources throughout California. Urbanization, preservation of wilderness, protection of water quality, and the preservation and enhancement of fisheries point to some of the many competing resource values encountered by mineral development projects in these areas.

There is clearly a need for more adequate information regarding the extent and significance of California's mineral resources, to assure that mineral values are adequately considered in federal, state and local resource management decisions. Basic geologic information in the form of maps and technical reports also aids in the discovery of mineral deposits. Such information finds wide use with governmental planners and decision makers, industry, and the scientific community.

The Division of Mines and Geology is the state agency with primary responsibility for gathering, compiling, and disseminating geologic and mineral data.

This responsibility encompasses:

- 1) basic geologic information such as the State Geologic Atlas and other technical reports,

- 2) mineral potential investigations of which the California Mineral Appraisal Program (CMAP) is characteristic,
- 3) mineral economic studies, and
- 4) mineral lands classification studies to identify threatened mineral resources under SMARA's mineral resource conservation program.

Continued emphasis on mineral resource assessment programs and related geologic data gathering activities of the Division of Mines and Geology is clearly needed.

The Board, therefore, recommends that the following activities be augmented or supported.

1. The Regional Geologic Map Series (State Geologic Atlas) program should be augmented.

Demands for California's natural endowment, whether for living space, food and fiber, minerals and energy, or water by a growing population is placing increasing pressure on the land's ability to support this growth and sustain the State's high standard of living. In addition, shifts in population from urban to rural areas intensifies the land-use conflicts resulting from this growth.

Resolution of these conflicts places a premium on factual information about the earth and its resources. The first qualitative assessment of the earth is the geologic map.

California's Geologic Atlas, scale 1:250,000 is currently being completely replaced by the Division of Mines and Geology under its regional geologic mapping program. The Division's work program anticipates completion of mapping of over 40% of the state by 1985. This atlas replaces an earlier one which took 20 years to complete (1950-1970).

In light of the revolution in geologic thought and explosive increase in geologic data which has occurred since the earlier atlas was completed, the new state atlas needs to be completed and available well before the end of this decade. Up-to-date geologic maps for land-use planning and natural resource management decisions are needed now, by decision makers at all levels of government, by industry, and by the general public.

The Board strongly supports the Division's five-year regional geologic mapping program and recommends that it be accelerated to allow completion of the new state atlas by 1985. Adequate supporting staff, such as drafting technicians and funding for the atlas publication also should be provided.

2. Mineral-economics expertise is needed to assess the availability and importance of critical mineral commodities.

Currently, the Division of Mines and Geology does not conduct studies to provide economic data on future needs for critical mineral commodities. Understanding the past trends of mineral production and consumption is imperative to comprehending the mineral needs of the future and to aid in planning for the availability of these commodities. The State needs an authoritative source of information on the future economic demand for vital minerals to aid in the assessment of their availability.

The Mining and Geology Board recommends that the Division hire or contract for staff versed in mineral economics to aid its minerals programs, such as SMARA's classification-designation program and the assessment of strategic mineral resources. These programs require development of economic parameters with which to judge the significance of mineral resources.

B. Geological Hazards

1. The Strong Motion Instrumentation Program (SMIP)

The Strong Motion Instrumentation Program (SMIP) was established about ten years ago to develop and monitor a statewide program for recording strong ground-motion from earthquakes in representative geological environments and engineering structures. The Division of Mines and Geology is responsible for implementing the program as advised by the Seismic Safety Commission.

The Mining and Geology Board has the responsibility, under SMARA, to represent the State's interest in the development of geologic information necessary to the understanding and utilization of the State's terrain, and information pertaining to earthquakes and other geological hazards. Accordingly, the Board has followed the implementation of the SMIP program with interest.

The Board supports the following Division activities involved in the program's implementation:

- a) The recent acquisition of an electronic data processing system to process the strong-motion records obtained from the State's strong-motion network, and the utilization of this system for other applications concerned with solving the State's hazards and mineral resource problems as time for these other applications is available.
- b) The rapid completion of the installation of the State's strong-motion instrumentation network on free field, buildings, bridges, dams, and life-line sites, in accord with the plans of the Division and the Seismic Safety Commission, and
- c) The acquisition of geological and geophysical information concerning strong-motion instrumentation sites to the extent that this information is deemed necessary by the Seismic Safety Commission.

2. Landslide hazard prevention measures are recommended

Slope failures in the Los Angeles area following severe winter storms in 1979-80 resulted in widespread damage to homes and businesses. This focused attention on the need for mitigative measures to prevent or minimize landslide hazards. Estimates by the Division of Mines and Geology point to this hazard as representing a \$9.9 billion problem to the State over the period 1970-2000.

In considering the State's role in addressing this hazard, the Mining and Geology Board feels that certain activities might serve to reduce the hazard potential. These include:

- a) providing geologic information on landslide hazard potential to affected local jurisdictions for use in their land-use planning, and
- b) developing provisions to ensure enforcement of existing statutes which require that every city and county adopt a modern grading ordinance where there is hillside grading.

Beyond these general recommendations as to possible means to lessen or prevent the hazards of landslides, the Board intends to formulate, in cooperation with the Department of Conservation, more specific recommendations during the coming year.