

MINUTE ITEM

This Calendar Item No. 46
was approved as Minute Item
No. 46 by the State Lands
Commission by a vote of 3
to 0 at its 08/30/89
meeting.

CALENDAR ITEM

A)
S) N/A

46

08/30/89
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D. Brown

DELEGATION OF AUTHORITY
TO ENTER INTO INTERAGENCY AGREEMENT WITH
GREAT BASIN UNIFIED AIR POLLUTION DISTRICT
FOR OWENS LAKE DUST ABATEMENT PILOT PROJECT

The Budget Act of 1989 (Chapter 93/39) provided the Commission with \$675,000 to participate in a pilot project to determine the feasibility and effectiveness of various methods of abating the dust problem at Owens Dry Lake bed. This project is the first large scale testing of these potential methods proposed by previous studies conducted in part by the Commission.

Great Basin Unified Air Pollution District will function as lead agency for all contracting with the costs being shared by the State and the Los Angeles Department of Water and Power. First year funding will be \$670,000 and \$225,000 respectively. A copy of the project outline and funding proposal is attached. Future State funding will be subject to funds being provided in subsequent budgets. An Interagency Agreement is proposed with Great Basin for this purpose. Commission staff will review all contracts and workplans and be a participant in the developemnt and implementation of the various projects. \$5,000 of the appropriation will be withheld to offset the Commission's actual staff and travel costs for the project.

EXHIBIT: A. Great Basin Unified Air Pollution District
Project Outline and Funding Proposal

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IT IS RECOMMENDED THAT THE COMMISSION:

1. FIND THAT THE ACTIVITY IS EXEMPT FROM THE REQUIREMENTS OF THE CEQA PURSUANT TO 14 CAL. CODE REGS. 15061 BECAUSE THE ACTIVITY IS NOT A PROJECT AS DEFINED BY P.R.C. 21065 AND 14 CAL. CODE REGS. 15378.
2. AUTHORIZE THE EXECUTIVE OFFICER TO EXECUTE AN INTERAGENCY AGREEMENT WITH THE GREAT BASIN UNIFIED AIR POLLUTION DISTRICT FOR A TOTAL AGREEMENT NOT TO EXCEED \$670,000.

QK331

ELLEN HARDEBECK
CONTROL OFFICER



GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT

157 SHORT ST., SUITE 66 - BISHOP, CA 93514

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I. THE PROBLEM

A. Background

The United States Environmental Protection Agency (EPA) promulgated a new ambient air quality standard in July 1987 for particulate matter less than 10 microns in diameter. This new standard, called PM-10, replaced the old Total Suspended Particulate (TSP) standard that had existed since 1971. TSP included all airborne particulates without regard to particle size or ability to be inhaled into the human respiratory system. The PM-10 standard can be more easily associated with health impacts.

On August 7, 1987 EPA identified those regions of the country where the new standard was being violated. The Owens Valley between Tinemaha Reservoir and Haiwee Reservoir was one such area. The Federal PM-10 standard was observed to be exceeded 4 times at Lone Pine, 15 times at Keeler, twice at Darwin, and 4 times at Coso Junction from March 1985 through March 1988.

B. Source Identification

Since there are only a few major potential sources of PM-10 in the area, source identification was done on the basis of upwind-downwind comparisons. An analysis of wind direction and speed on the days when PM-10 levels were high shows that the single major source causing violations of the federal PM-10 standard within this area is Owens Dry Lake. Owens Lake covers 110 square miles near the south end of the planning area; about 60 square miles are dry. Large dust plumes have been observed coming off of this lake on windy days.

C. Air Quality Impacts

Owens Lake has been shown to cause concentrations over the significant harm to health level at distances greater than 25 miles downwind. Standard violations could occur more than 60 miles downwind, and visibility reduction has been observed more than 150 miles from this source. Figure 1 shows the extent of observed dust plumes from Owens Lake. These plumes sometimes contain enough sulfate to violate the California standard at Keeler. Because of the extent of the plumes, the health of an estimated 40,000 people may be affected by this one source.

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A calculation using the frequency of violations at all monitoring sites shows that Owens Lake causes more than 90% of the violations measured at Lone Pine, Keeler, Darwin and Coso; an average of 48 federal 24-hour PM-10 violations per year if corrected for the sampling frequency. There are several areas in the vicinity of Owens Lake where visibility should be protected: the John Muir Wilderness, a Class I area on the northwest boundary of the planning area; the Dome Land Wilderness, a Class I area 24 miles south-southwest of the boundary; the Golden Trout Wilderness on the southwest boundary; the Death Valley National Monument, 15 miles east of the planning area; and the China Lake Naval Weapons Center, partially located within the boundaries.

II. THE SOLUTION

A. Control Measures

Every wind storm does not cause dust from Owens Lake. The salt, sand and silt that make up the lake surface form under some conditions a hard crust that will not blow. Under other conditions the crust at the same place may be soft and fluffy, and easily lofted. Control measures must be designed to alter the natural conditions so that the soft crust does not form.

Not all of the 100 square miles must be controlled. There is a body of brine at the center of the lake, and the areas near this water stay too wet and crusted to blow. Figure 2 shows the areas of concern, and suggested control measures for each area.

The mitigation that seems most promising at this time for the sand-dominated areas is sprinkling with locally-produced ground water when a wind-storm is predicted and crust conditions are poor. The District plans to test this mitigation on a one-square mile area northwest of Keeler in 1989 (Control Measure #1 in the attached budget). We have already hired a hydrologist and an engineer to design a drilling program to determine if sufficient water exists under Owens Lake to run a sprinkler system. If the results are positive, they will also evaluate and design the one-square-mile irrigation system. If this mitigation fails, the area could be covered with four inches of screened gravel, 1/4 inch in diameter or greater. This measure has been tested, and is effective if sand is prevented from blowing into the controlled area and flash flooding is controlled.

The most promising mitigation at this time for the clay-dominated areas is flooding with locally-produced ground water to keep the clays moist. We do not plan to keep water ponded because of the high evaporation rate. The District will consult with its irrigation engineer to decide whether or not to test this mitigation on a one-square mile area southwest of Keeler in 1989. We may also attempt compaction of the clays, or altering the chemical composition of the salt crust. Very small scale tests of these methods are being made in 1989.

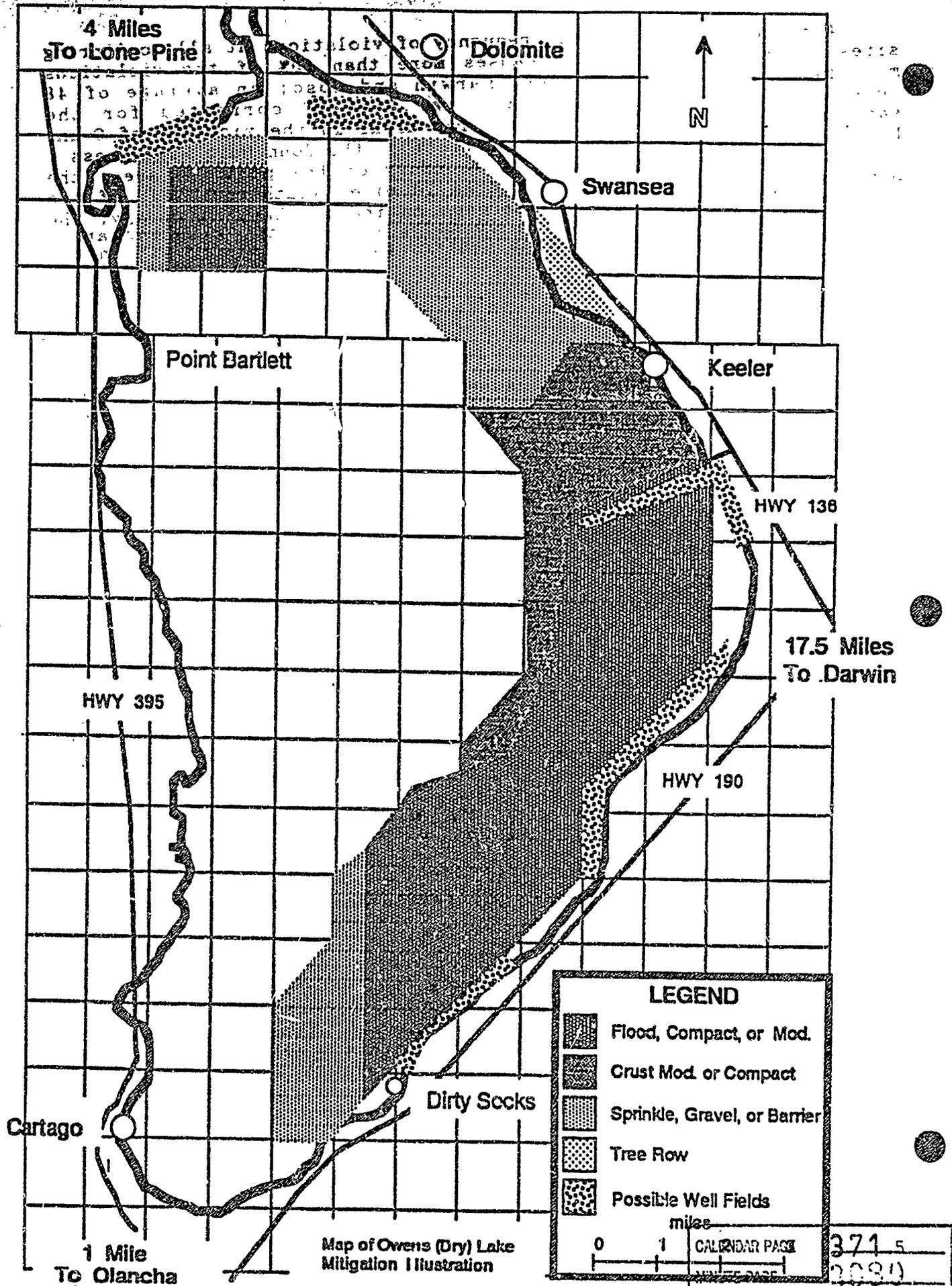


Figure 2

An area just off the lake bed between Swansea and Keeler could be controlled with wind breaks composed of rows of trees that do well in the Keeler area. We plan to test this mitigation in 1989 if we can get the appropriate approvals from the Bureau of Land Management.

B. Schedule

Control of forty-seven square miles (30,000 acres) will be a difficult and expensive task, and it is not clear what techniques will work, or how long a particular treatment may last. Therefore, this plan may change at any time due to test results. We intend to thoroughly test each chosen mitigation measure on a one-square-mile area for at least one year before expanding over the areas shown in Figure 2. An optimistically paced time schedule for the development and implementation of dust control on Owens Lake requires three years of testing and three years of implementation.

C. Funding

The Los Angeles Department of Water and Power (LADWP) has funded the hydrologist and engineer for one year to design the hydrologic study and to evaluate and design the sprinkler irrigation project. The two million dollars described in the attached budget would fund the hydrologic study to determine if sufficient resources exist to mitigate with underground water, the installation of approximately one square mile of sprinkler systems, some work on the lake-wide drainage or road system needed to gain access to all areas of the lake bed that need to be mitigated, and the tree row project if appropriate permits can be obtained.

If the sprinkler project is successful and sufficient water is available, the mitigation will be expanded over the part of the lake for which it is appropriate. This will require additional funding, which we assume would be available from the LADWP.

Eben Hardebeck
Control Officer



GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT

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TENTATIVE OWENS LAKE MITIGATION PLAN 3 Years - \$2,000,000

Fiscal Year 1989-90

July - Nov. 1989	Drill Test Wells to Confirm Hydrologic Resource	\$450,000
April - June 1990	Drill Production Well(s), Begin Installation Of Dust Control Measure #1	\$450,000
	TOTAL	\$900,000
	DWP Contribution	\$225,000
	State Contribution	\$675,000

Fiscal Year 1990-91

July - Sept. 1990	Finish Control Measure Installation	\$100,000
Oct '90 - May '91	Test Effectiveness of Measure #1	\$100,000
Feb - May 1991	Install Measure #2	\$450,000
May - June 1991	If Test #1 Successful, Begin To Expand That Control Measure	\$250,000
	TOTAL	\$900,000
	DWP Contribution	\$225,000
	State Contribution	\$675,000

Fiscal Year 1991-92

July - Oct 1991	Maintain Both Measures	\$200,000
July '91-June '92	Expand All Successful Measures	*
	DWP Contribution	\$50,000 *
	State Contribution	\$150,000

GRAND TOTAL **\$2,000,000**

*Additional Funds may be required from DWP under HSC 42316; this budget covers only state funding and DWP's match for that funding.

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