

**MASTER RESPONSE NO. 4 - GROUNDWATER MONITORING
AND MANAGEMENT PLAN**

BACKGROUND INFORMATION

The Metropolitan Water District of Southern California (Metropolitan) and the United States Department of the Interior, Bureau of Land Management (BLM) are jointly evaluating the implementation of the Cadiz Groundwater Storage and Dry-Year Supply Program (Cadiz Project). With this project, Metropolitan will utilize the groundwater basins underlying a portion of the Cadiz and Fenner Valleys to store Colorado River water imported from the Colorado River Aqueduct during periods of excess water supply. When needed, such as in dry years, the stored water and indigenous groundwater will be extracted and returned to the Colorado River Aqueduct for use within Metropolitan's service area. All Cadiz Project operations, including extraction of groundwater, would be governed by and subject to the provisions of the Groundwater Monitoring and Management Plan (Management Plan).

Cadiz Inc. is the owner of property overlying the groundwater basins that will be used for the project spreading basins and extraction wellfield. Cadiz cultivates approximately 1,600 acres of its property and uses groundwater for irrigation in its agricultural operations. In 1993, the County of San Bernardino approved the expansion of the agricultural operations to a total of 9,600 acres. The extraction of groundwater for use in Cadiz' agricultural operations will be performed in accordance with the provisions of the Management Plan to ensure that such extraction, in conjunction with Metropolitan's project operations, does not cause adverse impacts to groundwater-related critical resources. All aspects of the agricultural operations other than extraction of groundwater are outside the scope of the Management Plan and are subject to the terms of approval by the County of San Bernardino.

The Cadiz Project Draft EIR/EIS was circulated for public review and comment from November 26, 1999 through March 8, 2000. A number of the comments were received on the Draft EIR/EIS regarding the potential for impacts to springs, the Cadiz and Fenner groundwater basins, adjacent groundwater basins, and the potential for increased dust mobilization from Bristol and Cadiz dry lake beds. Notable among these comments was a February 23, 2000 memorandum prepared by the U.S. Geological Survey (USGS) for the BLM and appended to the National Park Service (NPS) letter of comment on the Draft EIR/EIS. This memorandum raised a number of concerns, including the amount of natural recharge to the project area.

Metropolitan and BLM convened discussions among experts to determine if the technical disagreements could be resolved. Participating in these discussions were Metropolitan, BLM, NPS, USGS, Cadiz Inc. and the County of San Bernardino. The NPS and USGS became cooperating agencies pursuant to NEPA for purposes of providing assistance based on their special expertise in groundwater and air quality issues. The USGS limited its role to providing scientific and technical support and advice to the BLM on the design of the Management Plan.

While there remains disagreement among experts regarding the amount of natural recharge to the project area, the parties agreed that the overriding objective is to ensure the protection of environmental resources, and that this objective would best be accomplished through the development and implementation of the Management Plan.

Preparation of the Groundwater Monitoring and Management Plan was identified as mitigation measure WR-1 in the Draft EIR/EIS, and it was intended that such a Management Plan would be presented in the Final EIR/EIS. In response to comments received on the Draft EIR/EIS, a Supplement to the Draft EIR/EIS (Supplement) which included the draft Management Plan was

prepared. The Supplement discussed the potential groundwater related impacts of the project in light of the Management Plan, and described the monitoring features and management procedures for operating the project without causing adverse impacts to critical resources. The Supplement was circulated for public review and comment from October 20, 2000 through January 8, 2001 to provide the public with the opportunity to review and comment on clarifications to Cadiz Project water resources information, including the Management Plan.

OUTLINE OF THE MANAGEMENT PLAN

The Management Plan, which is set out in Volume IV of the Final EIR/EIS, is an integral part of the Cadiz Project governing water storage and extraction for the Cadiz Project. The Management Plan will also ensure that groundwater use for irrigation of Cadiz Inc. agricultural operations in the Cadiz Valley is conducted without adverse impacts to critical resources.

The Management Plan is designed to ensure there will be no adverse impacts by providing “early warning” of potential adverse impacts to critical resources that could result from Cadiz Project operations. With such early warning, adverse impacts would be prevented by implementation of corrective actions.

Critical resources are identified in the Management Plan, Section 2, as follows:

- Springs Within Affected Watersheds Including Springs of the Mojave National Preserve and BLM-Managed Lands
- Aquifer System
- Brine Resources of Bristol and Cadiz Dry Lakes
- Air Quality in the Mojave Desert Region.

To accomplish the goal of providing an early warning of potential impacts, the Management Plan requires a comprehensive network of monitoring and data collection facilities. The monitoring facilities will gather data on spring flows, groundwater levels, water quality, land surface elevations, brine, soil moisture, weather, and wind-mobilized particulate matter. A detailed description of each of the 24 monitoring features is set out in Section 5 of the Management Plan, and monitoring procedures are described in Section 6.

Groundwater data will be incorporated into water resource models that provide a predictive tool to identify how project operations will affect the aquifer and groundwater-related resources. The groundwater models are described in Section 3 of the Management Plan. Air quality data will be utilized in statistical analyses to identify the relationship between groundwater levels, soil moisture, and dust mobilization from the surface of the dry lakes. The air quality analyses are described in Section 7.4 of the Management Plan.

The Management Plan includes a set of action criteria that will trigger a decision-making process upon measurement of quantified changes in conditions relating to critical resources. These action criteria have been set at conservative levels to provide an early warning of potential future impacts. There is a defined process for scientific review of the monitoring data and modeling results when an action criterion has been reached. If the review results in a determination that the changed conditions are attributable to project operations and constitute a potential adverse impact to critical resources, corrective measures must be implemented to avoid the adverse impact.

Action criteria and corrective measures have been developed for potential impacts to springs, groundwater quality, wells owned by neighboring landowners, land subsidence, liquefaction related to spreading basin operations, hydrocompaction, movement of the groundwater-brine interface, brine resources, and air quality related to wind-blown particulate matter from the dry lakes. The corrective measures that may be implemented to avoid adverse impacts include modification or suspension of project operations that are creating the potential for the impact. Specific action criteria, decision processes, and corrective measures that apply to each type of resource are set forth in Section 7.

The collection of data prior to project operations will provide a baseline that reflects natural fluctuations in the resources that are monitored. Data collected during project operations will provide further information with which to calibrate the water resource models and perform the air quality analyses. This data and scientific analysis may result in determinations that monitoring features should be adjusted or refined to gather more appropriate data. Action criteria may also be refined to reflect natural conditions.

Metropolitan will operate the Cadiz Project in accordance with the Management Plan. Extraction of groundwater for use in Cadiz' agricultural operations will be conducted without adverse impacts to critical resources in accordance with the Management Plan. Metropolitan will be responsible for the construction and maintenance of the monitoring facilities and the collection and analysis of data. BLM will retain authority to enforce the Management Plan through the terms and conditions of the right-of-way grant for the project. Further details of the responsibilities and enforcement provisions are set forth in the Master Response "Governance."

The Management Plan provides measures to protect against the potential adverse impacts to groundwater-related critical resources. The potential impacts are identified and described in both Section 5.6.4 of Volume I, and in Section 2 of Volume IV, of the Final EIR/EIS. The monitoring features and procedures that will be implemented to provide the early warning and avoidance of potential adverse impacts are detailed in the Management Plan. The provisions of the Management Plan are enforceable obligations of Metropolitan under California law, and may be enforced by BLM under federal law. Operation of the Cadiz Project in accordance with the Management Plan will avoid adverse impacts to critical resources.