



United States Department of the Interior
BUREAU OF LAND MANAGEMENT



RECORD OF DECISION

for

**CALIFORNIA DESERT CONSERVATION AREA
PLAN AMENDMENT**

and

RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

for the

**CADIZ GROUNDWATER STORAGE AND
DRY-YEAR SUPPLY PROGRAM**

San Bernardino County, California

Lead Agency:
Bureau of Land Management

Cooperating Agencies:
National Park Service
US Geological Survey

BLM Case File No. CA-40467
OEPC DES 01-32
OEPC SES 01-32
OEPC FES 01-32

TABLE OF CONTENTS

EXECUTIVE SUMMARY 3

I. DECISIONS 7

II. AUTHORITY 10

III. RATIONALE 10

IV. ALTERNATIVES CONSIDERED 17

V. PUBLIC INVOLVEMENT 20

FIGURES

Figure 1: Approved Alignment and Generalized Location

Figure 2: Cadiz Project Alternatives

APPENDICES

Appendix A: Terms and Conditions

Appendix B: Fish and Wildlife Service Biological Opinion

Appendix C: Final Clean Air Act Conformity Determination

Appendix D: Findings and Determinations for Historic Properties

Appendix E: Response to Public Comments on FEIS/EIR

EXECUTIVE SUMMARY

This document constitutes the Record of Decision (ROD) of the Department of the Interior (DOI) and the Bureau of Land Management (BLM) for the Cadiz Groundwater Storage and Dry-Year Supply Program (Cadiz Project). This ROD includes both land use plan amendment and right-of-way grant decisions. An amendment of the California Desert Conservation Area (CDCA) Plan to allow an exception to the energy production and utility corridors element for Cadiz Project facilities was considered concurrently with the review of the proposed Cadiz Project. The ROD is prepared in accordance with the Federal Land Policy and Management Act (FLPMA) as well as the National Environmental Policy Act (NEPA), and other applicable Federal laws and regulations.

After extensive environmental analysis, consideration of public comments, and application of pertinent Federal laws and policies, it is the decision of the Department of the Interior and the BLM to amend the CDCA Plan's energy production and utility corridors element and to authorize a right-of-way grant and temporary use permit for the construction, operation, maintenance, and termination of a water pipeline and related facilities on an alignment identified as the Eastern Alternative in the Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR) and displayed in Figure 1 attached. A notice of availability of the FEIS/EIR was published in the Federal Register on October 5, 2001.

Project Description: The Cadiz Project is a proposal of the Metropolitan Water District of Southern California (Metropolitan) to use the groundwater basin underlying part of the Cadiz and Fenner Valleys in San Bernardino County, California, for storage of water from the Colorado River for later recovery, and for export of indigenous groundwater under specified conditions for use in dry years to supply water to Metropolitan's service area. Implementing the Cadiz Project requires the use of public lands administered by the BLM, consisting primarily of an 80-foot wide right-of-way, for the construction and operation of a 34.6-mile, six-foot diameter pipeline to convey water between Metropolitan's Iron Mountain Pumping Plant on the Colorado River aqueduct and private lands owned by Cadiz Inc. in the Cadiz and Fenner Valleys.

The Cadiz Project consists of facilities in five general areas: 1) project spreading basins in the Fenner Gap; 2) water conveyance and power distribution facilities between the Colorado River Aqueduct and the project spreading basins; 3) pumping plant to pump water from the Colorado River Aqueduct through the water conveyance facility to the project spreading basins; 4) project wellfield in the Fenner Gap to extract water from the groundwater aquifer system and pump it back to the Colorado River Aqueduct; and 5) groundwater basin monitoring and data gathering facilities located throughout the Cadiz and Fenner valleys.

The project spreading basins and wellfield will be located on land owned by Cadiz Inc. While the majority of the project area is undeveloped, Cadiz Inc. currently uses approximately 5,000-6,000 acre-feet of groundwater annually to irrigate 1,600 acres of agricultural lands on the west side of the proposed Cadiz Project wellfield. The proposed water conveyance and power distribution facilities will cross Federal lands managed by the BLM and, therefore, require a right-of-way grant from the BLM. Because the Cadiz Project water conveyance and power distribution facilities will be located outside of a designated utility corridor, the BLM was required to consider an amendment to the

applicable land use plan, the CDCA Plan of 1980, to allow an exception to the energy production and utility corridors element of that plan.

Need for the Project: By providing storage of surplus Colorado River water, and the export of indigenous groundwater under specified conditions, the Cadiz Project will help ensure needed dry-year water supply reliability and will assist California in efficiently managing its water supplies. Future water supply needs in Metropolitan's Southern California service area, without implementation of the Cadiz Project, would substantially exceed demands by the year 2020. The public benefits of the Cadiz Project are compelling reasons for the Department of the Interior to cooperate to the greatest extent possible in assisting California in meeting its water supply goals.

Plan Amendment and Environmental Review Process: The BLM must comply with the planning provisions of Section 202 of FLPMA as well as the implementing regulations for planning found in 43 Code of Federal Regulations (CFR) subparts 1601 and 1610 in considering amendments to land use plans. Planning requirements are integrated with the requirements for environmental review under NEPA. The BLM served as the Federal lead agency under NEPA for consideration of the Cadiz Project and CDCA Plan amendment. Metropolitan served as the lead agency pursuant to the California Environmental Quality Act (CEQA). The Cadiz Project and the CDCA plan amendment were analyzed in a jointly prepared EIS/EIR in compliance with NEPA and CEQA requirements, respectively. The National Park Service (NPS) and the U.S. Geological Survey (USGS) were cooperating Federal agencies, providing information, analysis and comment. The NEPA process included public scoping, a Draft EIS/EIR (DEIS/EIR), Supplement to the Draft EIS/EIR (SEIS/EIR), and a Final EIS/EIR (FEIS/EIR), which are hereby incorporated by reference into this ROD.

Public Involvement: Public review and comment on the Cadiz Project were extensive. Public scoping, including three public meetings, initiated the public review process. The combined comment periods on the DEIS/EIR and SEIS/EIR totaled seven and a half months. BLM and Metropolitan held six public hearings and more than 6,000 letters and comments were received. All public comments received were carefully analyzed and agency responses are included in the FEIS/EIR. As described further in this document, 13 protests to BLM's proposed plan amendment were received and carefully analyzed by the BLM's Director/Assistant Director. Finally, more than 300 unsolicited comments were received by BLM since the FEIS was published and those comments have been summarized and responses provided in Appendix E of this ROD.

Consultation with Other Agencies: In addition to the NPS and USGS, which served as official EIS/EIR cooperators, BLM also coordinated and consulted with the U.S. Environmental Protection Agency, Mojave Desert Air Quality Management District, U.S. Fish and Wildlife Service, California Department of Fish and Game, U.S. Army Corps of Engineers, and the County of San Bernardino.

Groundwater Monitoring and Management Plan: During the course of the NEPA/CEQA process, the agencies realized that information as to groundwater recharge in the project area was limited, and disputes among experts arose. In response, BLM and Metropolitan, in cooperation with NPS, USGS, and the County of San Bernardino, developed a Groundwater Monitoring and Management Plan (Management Plan) that will allow early indication of potential risks to prevent damage to critical resources. A key element of the Management Plan is the creation of a Technical

Review Panel (TRP) made up of representative of NPS, USGS, BLM, the County, and other State, Federal, and local agencies as appropriate to advise BLM on technical aspects of the project's operation. BLM and Metropolitan included the draft Management Plan in the SEIS and published the SEIS for additional public review and comment. Responding to those public comments, BLM and Metropolitan adjusted the Management Plan for the FEIS/EIR to ensure adequate protection of critical resources. Extraction of groundwater, whether indigenous or stored under the Cadiz Project, in accordance with the Management Plan represents the best efforts of these agencies to protect critical resources and is not an attempt to expand or diminish Federal or State jurisdiction, responsibility, interests, or rights in water resources development or control. Consideration was given to limiting export of indigenous groundwater during Project operations, but this idea was rejected as unnecessary given the scope and purpose of the Management Plan.

Extraction of Indigenous Groundwater: Given the limited availability of site-specific data and limitations in technology, and the dispute among experts as to the current estimates of natural recharge to the project area, the Management Plan was conservatively designed to ensure that the project will not result in any adverse impacts to critical resources, regardless of the amount of natural recharge. In order to protect critical resources, all Cadiz Project operations, including extraction of indigenous groundwater, shall be in accordance with the Management Plan.

Use of Colorado River Supplies. California has an apportionment of 4.4 million acre-feet of water from the Colorado River pursuant to the Boulder Canyon Project Act and the Decree of the United States Supreme Court in *Arizona v. California*. California currently uses in excess of 5 million acre-feet of water annually pursuant to annual decisions by the Secretary that surplus water is available. However, as recognized in the Colorado River Surplus Guidelines, (66 Federal Register 7772-82, January 25, 2001), and demonstrated by current hydrologic conditions in the Colorado River basin (annual runoff at 14% of normal in the 4th year of drought conditions), it is not reasonable to assume that surplus conditions will occur on a sustained basis in the future. If implemented, the Cadiz Project may provide California with the ability to store water if and when surplus conditions exist on the Colorado River for the use in years when surplus conditions do not exist. In addition, the diversion and use of indigenous groundwater supplies by the Cadiz Project may provide Metropolitan and other California water users with additional options that would not otherwise be available during times when surplus conditions do not exist on the Colorado River.

Decision Rationale: As described further in this document, the decisions to: (1) amend the CDCA Plan to allow an exception to the energy production and utility corridor element of that plan, and (2) grant the necessary right-of-way and temporary use permit to Metropolitan for the construction, operation, maintenance, and termination of the conveyance pipeline and appurtenant facilities, access road, and electrical power distribution facilities across public lands for the Cadiz Project reflect careful consideration and resolution of the issues by BLM and the Department of the Interior that have arisen in the Cadiz Project environmental review process.

These decisions fulfill both the spirit and legal requirements for managing public lands, as provided by FLPMA. Granting a right-of-way and temporary use permit for the Cadiz Project contributes to the public interest by facilitating a stable water supply for Southern California, as well as the national interest of long-term reduction of California's use of Colorado River water to its legal apportionment. The terms and conditions, as described in Appendix A, ensure that authorization

of the Cadiz Project will protect environmental resources and comply with environmental standards. These decisions reflect the careful balancing of the many competing public interests in managing the public lands for public benefit.

These decisions promote a stable water supply for Southern California by providing long-term storage of Metropolitan's Colorado River water and allowing for export of some indigenous groundwater to Metropolitan's service area. As discussed below and in the FEIS/EIR, Southern California's need for this storage space and additional water is real and immediate. Metropolitan and its member agencies face challenges to the dependability and quality of their diverse water supply resources. The Cadiz Project will contribute to stabilizing Southern California's water supplies over the long-term, thereby reducing California's dependence on allocations of Colorado River supplies.

These decisions are based on a comprehensive environmental analysis and full public involvement. BLM, NPS, USGS and Metropolitan have engaged highly qualified technical experts to analyze the environmental effects of the Cadiz Project. Members of the public have contributed to the analysis and consideration of the many environmental issues arising out of the environmental review process. BLM, DOI, and Metropolitan have used the best available science and technology to try to address the important issues of environmental resource protection. Moreover, BLM and the other agencies remain committed to continuing research and analysis through the TRP, described earlier in this ROD and in the Management Plan.

The terms and conditions set forth in Appendix A, and incorporated in the ROD by this reference, contribute significantly to minimizing and/or mitigating environmental damage and protecting public environmental resources. The most important affected resource is groundwater. Requiring compliance with the Management Plan will ensure that this important resource and the other environmental resources which depend on groundwater will receive adequate protection. The design of the TRP and the BLM decision process to respond to TRP concerns ensure that environmental damage will be prevented before a problem arises. The terms and conditions comply with all the objectives and standards that FLPMA provides for decisions on the granting of rights-of-way.

I. DECISIONS

A. Decision to Amend CDCA Plan

After considering the full agency and public record for the CDCA Plan amendment and the Cadiz Project, I have determined that the plan amendment is warranted and in the public interest. The plan amendment, however, is subject to the right-of-way grant and temporary use permit being issued with the conditions further described in this Record of Decision.

In accordance with Section 202 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1712) and the regulations implementing the Act's land use planning provisions (43 CFR subparts 1601 and 1610) and Section 102 of the National Environmental Policy Act of 1969 (42 U.S.C. 4332 et seq.) and the regulations of the Council on Environmental Quality implementing NEPA (40 CFR parts 1500-1508), **I approve the following:**

An amendment to the California Desert Conservation Area Plan for an exception to the energy production and utility corridors element of the Plan for the Cadiz Groundwater Storage and Dry-Year Supply Program Eastern Alternative, thereby allowing for the grant of a right-of-way and temporary use permit necessary for construction, operation, maintenance, and termination of a conveyance pipeline and appurtenant facilities, access roads, and electrical power distribution facilities on Federal lands administered by the Bureau of Land Management between the Iron Mountain Pumping Plant on the Colorado River Aqueduct and the Fenner Gap, where spreading basins and a wellfield will be located on private lands. A map depicting the approved exception alignment is shown as Figure 1.

Approved by:



Mike Pool
California State Director
Bureau of Land Management

AUG 29 2002

Date: _____

B. Decision to Issue Right-Of-Way Grant and Temporary Use Permit for Cadiz Project

After considering the full agency and public record for Metropolitan's application for a right-of-way, I have determined that BLM shall proceed with implementation of the Cadiz Project subject to the conditions contained in this Record of Decision as further described below. Although BLM will not physically build and operate the Cadiz Project, it will continue to have responsibility for overseeing project implementation on public lands and for protecting public resources. BLM will continue working closely with Metropolitan, the other Federal agencies involved in the Cadiz Project, and the County of San Bernardino to ensure protection of the public interest.

In accordance with Section 102 of the National Environmental Policy Act of 1969 (42 U.S.C. 4332 et seq.) and the regulations of the Council on Environmental Quality that implement NEPA (40 CFR parts 1500-1508), the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.), and the regulations implementing Title V of that Act (43 CFR Part 2800), **it is my decision to take the following actions:**

1. Issue a right-of-way grant and temporary use permit, subject to the terms and conditions in Appendix A, to Metropolitan Water District of Southern California for construction, operation, maintenance, and termination of the conveyance pipeline and appurtenant facilities, access road, and electrical power distribution facilities of the Cadiz Groundwater Storage and Dry Year Supply Program Eastern Alternative across Federal lands administered by the Bureau of Land Management. No right-of-way grant or temporary use permit shall issue absent Metropolitan's prior approval of the terms and conditions evidenced by the signature of its authorized representative on the right-of-way grant and temporary use permit.

The 80-foot wide right-of-way grant will terminate 65 years from the effective date of the grant, unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of the grant or any applicable Federal law or regulation. The 65-year grant covers a maximum five year pre-operational construction phase, a 50-year operational phase, and a closure phase for a minimum of 10 years. The grant is subject to renewal. If renewed, the right-of-way grant shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the Federal authorized officer deems necessary to protect the public interest. An additional 120-foot wide area necessary for construction purposes will also be authorized by permit. Its location will be identified in the approved Final Plan of Development. This temporary use permit will be for a period of three years from the effective date of the grant, unless prior thereto, it is relinquished, terminated, abandoned, or modified.

The approved alignment is shown on the map displayed in Figure 1. The terms and conditions set forth in Appendix A shall be incorporated as requirements in the right-of-way grant and temporary use permit. Metropolitan shall also comply with the Biological Opinion issued by the U.S. Fish and Wildlife Service shown in Appendix B, applicable laws, and regulations.

In accordance with 43 CFR 2803.1-4 and BLM Manual 2801.41(D)(2), a bond will not be required at this time. Metropolitan Water District is a public entity incorporated under the Metropolitan Water District Act of the State of California. It has no history of inability to meet the terms and conditions of previous right-of-way grants. In addition, BLM has no reason to believe that Metropolitan Water District does not possess the financial capability to comply with the mitigation obligations of the Groundwater Monitoring and Management Plan and other terms and conditions of the grant. If circumstances change, the Authorized Officer may require a bond from Metropolitan Water District in accordance with 43 CFR 2803.1-4.

2. Impose and implement the Groundwater Monitoring and Management Plan (Management Plan), incorporated by this reference, as one of the terms and conditions of the right-of-way grant. The Management Plan will govern the operation of the groundwater storage and extraction activities for the Cadiz Project. Compliance with the plan shall be a condition of the right-of-way grant and temporary use permit for the Cadiz Project. In the event of any conflict between the Management Plan and applicable laws, regulations, and the Biological Opinion, the laws, regulations, and Biological Opinion shall prevail.

Approved by:

Rebecca W. Watson

Rebecca W. Watson
Assistant Secretary, Land and Minerals Management
Department of the Interior

Date: August 29, 2002

II. AUTHORITY

FLPMA authorizes the Secretary to develop, revise and amend land use plans as well as issue rights-of-way across public lands for the transportation of water (43 U.S.C. 1712 and 1761). It also establishes policies and procedures to manage public lands in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use (43 U.S.C. 1701).

The regulations implementing FLPMA include further objectives for issuance of rights-of-way:

- protect the natural resources associated with the public lands and adjacent private or other lands administered by a government agency;
- prevent unnecessary or undue environmental damage to the lands and resources;
- promote the utilization of rights-of-way in common with respect to engineering and technological compatibility, national security and land use plans; and
- coordinate, to the fullest extent possible, all actions taken pursuant to this part with State and local governments, interested individuals and appropriate quasi-public entities (43 CFR 2800.0-2).

FLPMA also provides special direction for management of the CDCA designated by the Act. It states that public lands in the CDCA should be managed to provide for their immediate and future protection within the framework of a program of multiple use and sustained yield and the maintenance of environmental quality. It further directs preparation of a plan to, among other things, provide for maintenance of environmental quality and issuance of rights-of-way (43 U.S.C. 1781).

The National Environmental Policy Act provides that the Nation attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences (42 U.S.C. 4331(b)(3)). These objectives provide guidance in considering whether to issue a right-of-way grant and temporary use permit for the Cadiz Project.

FLPMA also requires the BLM to include certain terms and conditions when granting a right-of-way across public lands. Those terms and conditions must, among other things:

- minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment;
- require compliance with applicable air and water quality standards;
- require compliance with State standards for public health and safety, environmental protection, and siting, construction, operation, and maintenance of rights-of-way if these standards are more strict than Federal standards;
- protect Federal property and economic interests;
- locate the right-of-way along a route that will cause least damage to the environment, taking into consideration feasibility and other relevant factors (43 U.S.C. 1765 and 43 CFR 2801.2); and
- provide an authorized mechanism to protect important environmental resources. FLPMA's requirement of terms and conditions contributes to the criteria or standards for deciding whether and how to grant a right-of-way for the Cadiz Project.

III. RATIONALE

The decisions to approve the CDCA plan amendment and right-of-way grant and temporary use permit for the proposed Cadiz Project Eastern Alternative are based on a thorough review and consideration of the analyses contained in the FEIS/EIR for the project and the public comments received during the NEPA and plan amendment process. Mitigation measures have been adopted

to ensure that all practicable means to avoid or minimize environmental harm have been incorporated into the Cadiz Project. BLM has concluded that the Cadiz Project, as structured in the preferred Eastern alternative with all specified terms and conditions, is the environmentally preferred project alternative. These decisions are consistent with both the letter and spirit of the Secretary's legal authorities, as described above.

The majority of the comments on and concerns about the project focused on the need for the project, the consideration of alternative sites and the potential for the project to adversely affect groundwater resources and indirectly impact environmental resources dependent on groundwater conditions.

With respect to the alignment for the water conveyance pipeline and power distribution facilities, comments focused primarily on concerns about deviations from the utility corridor designated in the CDCA Plan. However, it has been determined that of all of the alignment alternatives, the Eastern Alternative best accomplishes the Cadiz Project objectives with the least environmental effects.

The major management considerations, which include environmental and administrative factors considered, are presented below. Resolution of these management issues, as described here, are integral to this ROD and are reflected in the terms and conditions in Appendix A.

Amendment to CDCA Plan Is Warranted: Proposed actions on lands administered by the BLM must be in conformance with the approved land use plan (43 CFR 1610.5-3). The CDCA Plan of 1980, as amended, is the applicable land use plan for the Cadiz Project. The CDCA Plan is a comprehensive land use management plan that provides for multiple uses of the public lands and resources in the plan area, including consumptive uses, preservation, and conservation. The CDCA Plan identifies economic, educational, scientific and recreational uses for this land which enhance, wherever possible, the environmental, cultural and aesthetic values of the California Desert and its future productivity. Since it was adopted in 1980, the CDCA Plan has been amended many times, but its goal to provide for desert conservation has remained unchanged. The CDCA Plan has several elements, one of which is the energy production and utility corridors element. The energy production and utility corridors element provides that pipelines of greater than 12-inches diameter are to be located within a designated planning corridor, to the extent practical. An alternative was considered which would have placed the Cadiz Project pipeline within the designated utility corridors presently existing in the area to the maximum extent possible. However, the degree of technical difficulty and environmental impact from that alternative was found to be unacceptable (see discussion below for further elaboration on alternative alignments). An amendment of the CDCA Plan to allow an exception to the utility corridor element for Cadiz Project facilities was considered concurrently with the review of the proposed Cadiz Project.

Cadiz Project Will Help Meet Need for Additional Water Supplies for Southern California: The benefits for the Cadiz Project was a consideration in this ROD. Metropolitan is the primary supplier of water to approximately 16 million people in a six-county Southern California area. Metropolitan imports water from the Colorado River (via its Colorado River Aqueduct) and northern California's Sacramento/San Joaquin Bay Delta (via the State Water Project's California Aqueduct). By 2020, dry-year supplies from all existing sources for Metropolitan's service area will be approximately 1.5 million acre-feet below dry-year demand levels, even with full implementation of Metropolitan's aggressive program of water conservation measures. To meet this demand, Metropolitan has developed an integrated approach to obtain additional dry-year supplies that includes water recycling, groundwater banking, water transfers, and other programs. The Cadiz Project is one element of Metropolitan's effort to meet dry-year demand.

Use of Colorado River Supplies. California has an apportionment of 4.4 million acre-feet of water from the Colorado River pursuant to the Boulder Canyon Project Act and the Decree of the United States Supreme Court in *Arizona v. California*. California currently uses in excess of 5 million acre-feet of water annually pursuant to annual decisions by the Secretary that surplus water is available. However, as recognized in the Colorado River Surplus Guidelines, (66 Federal Register 7772-82, January 25, 2001), and demonstrated by current hydrologic conditions in the Colorado River basin

(annual runoff at 14% of normal in the 4th year of drought conditions), it is not reasonable to assume that surplus conditions will occur on a sustained basis in the future. If implemented, the Cadiz Project may provide California with the ability to store water if and when surplus conditions exist on the Colorado River for the use in years when surplus conditions do not exist. In addition, the diversion and use of indigenous groundwater supplies by the Cadiz Project may provide Metropolitan and other California water users with additional options that would not otherwise be available during times when surplus conditions do not exist on the Colorado River.

The public benefits of the Cadiz Project are compelling reasons for the Department of the Interior to cooperate to the greatest extent possible in assisting California in meeting its water supply goals.

Groundwater Resources, Including Springs within Mojave National Preserve, Will Be Protected: The most controversial aspect of this project has revolved around the potential impact to groundwater and related resources, primarily from the export of indigenous groundwater to the Metropolitan service area. The protection of groundwater resources was a major consideration in this decision.

A number of comments received on the DEIS/EIR raised concerns regarding the proposed Cadiz Project operations related to potential impacts to springs, the Bristol, Cadiz and Fenner groundwater basins, adjacent groundwater basins, and the potential for increased dust mobilization from Bristol and Cadiz dry lakebeds. Notable among these comments was a February 23, 2000 memorandum prepared by the USGS for the BLM. This memorandum raised a number of concerns, including the amount of natural recharge to the project area.

BLM and Metropolitan, as joint leads under NEPA and CEQA, convened discussions among experts to determine if the technical disagreements and issues could be resolved. Participating in these discussions were Metropolitan, BLM, NPS, USGS, and the County of San Bernardino. Although the experts were not able to reach agreement regarding the amount of natural recharge to the project area, the parties did agree that the overriding objective was to ensure the protection of critical resources. They also agreed that this objective could best be accomplished through the development and implementation of the Groundwater Monitoring and Management Plan (Management Plan). Developed by the assembled team of experts and released for public review and comment, the Management Plan was included as part of the SEIS/EIR, to which USGS and NPS became official cooperators. Based on public comments, additional refinements were made to the Management Plan and the Plan was published in the FEIS/EIR.

Extraction of groundwater, whether indigenous or stored under the Cadiz Project, in accordance with the Management Plan represents the best efforts of these agencies to protect critical resources and is not an attempt to expand or diminish Federal or State jurisdiction, responsibility, interests, or rights in water resources development or control. Consideration was given to limiting export of indigenous groundwater during Project operations, but this idea was rejected as unnecessary given the scope and purpose of the Management Plan. A limitation on export raised legal questions of state water law and appeared to be an arbitrary solution to a problem that should be resolvable on a scientific basis.

The overall objective of the Management Plan is to ensure that project operations will not adversely impact the following critical resources due to changes in groundwater conditions caused by storage and extraction activities:

- 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; and
- air quality in the Mojave Desert region.

The Management Plan establishes a comprehensive network of monitoring and data collection facilities combined with procedures for comprehensive scientific review of all actions and decisions. It specifies early warning action criteria (trigger levels) and responses if an action criterion is reached. The action criteria have been set at conservative levels to provide an early warning of potential future impacts, and may be adjusted as appropriate consistent with modeling calibrated with collected field data. Adverse impacts will be avoided through the corrective measures specified in the Management Plan. BLM will be advised by a Technical Review Panel composed of scientific experts from BLM, USGS, NPS, and the County of San Bernardino, and other appropriate Federal, State, and local agencies. BLM, as the grantor of a right-of-way and temporary use permit for project facilities, is responsible for making final decisions regarding project water storage and groundwater extraction operations when necessary to protect the above critical resources. All Management Plan reports will be made available to the public.

In addition to the environmental protection provided by the Management Plan, the Secretary intends to enforce as necessary the water rights expressly reserved by Congress for wilderness areas designated in the California Desert Protection Act, 16 U.S.C. 410aaa-76 (2000). Figure 2 depicts the designated wilderness areas closest to the Cadiz Project.

An Adequate Array of Alignment Alternatives Is Addressed: Concerns were raised that an insufficient or inadequate array of alternatives was considered in the analysis of alignments. Ensuring that appropriate and reasonable alternatives, including the no action alternative, were considered was an important factor in the decision-making process.

Several comments suggested that the alignment for the Cadiz Project pipeline should utilize existing utility and/or transportation corridors and avoid lands that have been designated for limited use pursuant to the CDCA Plan. The Plan includes classifications for allowable uses and levels of resource conservation. The Plan also identifies planning corridors for meeting the future needs for utility, communications, and energy transmission lines crossing the Mojave Desert. The CDCA Plan classifications that are pertinent to the Cadiz Project include Multiple Use Classes L (Limited Use) and M (Moderate Use).

Multiple-Use Class L protects sensitive, natural, scenic, ecological, and cultural resource values. Public lands designated as Class L are managed to provide for generally lower-intensity, carefully controlled multiple use of resources, while ensuring that sensitive values are not significantly diminished. Within Class L areas, new gas, electric, and water transmission and trans-desert telecommunications facilities may be allowed only within designated corridors. New distribution systems may be allowed and would be placed underground where feasible except where this would have a more detrimental effect on the environment than a surface alignment. In addition, new distribution facilities shall be placed within existing rights-of-way where they are reasonably available.

Multiple Use Class M is based upon a controlled balance between higher intensity use and protection of public lands. This class provides for a wide variety of present and future uses such as mining, livestock grazing, recreation, energy, and utility development. Class M management is also designed to conserve desert resources and to mitigate damage to those resources that permitted uses may cause. The CDCA Plan land use classifications and designated utility corridors in the project area are shown in Figure 5.2-2 in Volume I of the FEIR/EIS.

In response to the comments, BLM and Metropolitan considered a potential alignment that maximizes the use of such corridors. A discussion of this potential alignment is set forth in Section 3.6 of Volume I of the FEIR/EIS. There is not a CDCA Plan utility corridor that directly connects the Iron Mountain Pumping Plant with the project spreading basins or wellfield. For this reason the project would require an amendment to the CDCA Plan for an exception to the utility corridor requirement regardless of the route selected.

However, there is a designated utility corridor for the above-ground utility lines (two 230 kilovolt power lines and telephone lines) that connect the Iron Mountain Pumping Plant with Hoover Dam. This utility corridor runs northeast from the Iron Mountain Pumping Plant across Danby Dry Lake, and eventually crosses another designated utility corridor northeast of the Old Woman Mountains Wilderness Area. This second utility corridor is used by natural gas pipelines that roughly parallel Route 66. Use of these two designated utility corridors would minimize the length of the Cadiz Project facilities that would be located outside of an existing designated utility corridor.

This potential alignment was rejected from further detailed analysis based on a review of three technical objectives (total length, operations and maintenance, and environmental impacts) used for screening alternative alignments. The length required to utilize the two utility corridors is 73 miles, compared to approximately 35 miles for the other alignments considered. The increased length would contribute to operational and maintenance impacts and costs, as well as the impacts due to construction. A portion of this potential alignment crosses the Danby Dry Lake, which poses construction and maintenance problems. Furthermore, this potential alignment creates potential environmental impacts not shared with the other alignments. It crosses approximately twice the length of Class L designated lands as the selected Eastern Alternative alignment, and approximately 60 miles of this potential alignment falls within designated critical habitat for the federally listed desert tortoise. Each of the alternative alignments analyzed in detail are outside of desert tortoise critical habitat. For these reasons, the potential alignment making maximum use of designated utility corridors was eliminated from further consideration.

Several who commented have suggested that the Cadiz Project alignment should follow the utility corridor that runs from the Iron Mountain Pumping Plant to the Arizona and California Railroad line and Cadiz-Rice Road, both of which travel to the project wellfield and spreading basin areas. The railroad and road are not located within a utility corridor designated in the CDCA Plan, so that an amendment to the Plan for an exception to the utility corridor requirement would still be necessary if the suggested route were followed. The north half of the Eastern Alternative does follow an alignment within or adjacent to Cadiz-Rice Road and the Arizona and California Railroad line. The southern half of the Eastern Alternative follows the southern side of the Danby Valley rather than cross the Danby Dry Lake. Several alternatives were initially considered for crossing the Danby Dry Lake, but these potential alignments were eliminated from detailed consideration for both engineering and environmental reasons.

The preferred Eastern Alternative alignment follows the existing railroad and road to the extent that is reasonably possible. The Eastern Alternative was determined to be the environmentally preferred alternative based on its lower level of impact to critical environmental resources.

The Formulation and Screening of Potential Projects Is Comprehensive and Adequate: Many comments and concerns were raised regarding the formulation and screening of potential projects considered in the environmental documents. Comments and suggestions were received regarding additional “alternative projects” such as limiting the project to storage operations or using water conservation measures to meet the project purpose and need. NEPA and CEQA both require that an EIS/EIR discuss a reasonable range of alternatives that would feasibly attain basic project goals and would substantially lessen or avoid environmental impacts. There is no minimum number of alternatives that must be discussed, although inclusion of a “no project” or “no action” alternative is required. In addition, the EIS/EIR should include a discussion of alternatives that were considered but eliminated from detailed analysis. Ensuring that a reasonable range of alternatives was considered in the environmental review process was an important consideration in the decision-making process.

Section 3 of the FEIS/EIR describes the screening of potential projects that led to the selection of the combined Cadiz storage and transfer projects for further analysis. The formulation and evaluation of potential projects was conducted in a series of increasingly detailed studies. Each potential project was formulated and reviewed in light of the project goal of developing storage and dry-year water supplies in the Colorado River area. A total of 13 potential projects were initially

identified, including 10 groundwater storage projects, one water transfer project, and two projects that would desalt agricultural drainage water.

For the reasons described in the FEIS/EIR, all of the potential projects except the Cadiz Valley Groundwater Storage Project, the Cadiz Valley Dry-Year Transfer Project, and the Hayfield Valley Groundwater Storage Project were eliminated from detailed analysis because of technical or environmental considerations that rendered them infeasible. The Hayfield Project is being separately analyzed by Metropolitan. The two projects located at Cadiz Valley were combined into one project.

There is no set amount of indigenous groundwater that will be exported to Metropolitan's service area under the Cadiz Project, and therefore the FEIS/EIR did not evaluate the potential impacts from the export of a set amount of water. Rather, the project will be implemented in accordance with the Management Plan, which requires operation of the aquifer so that no adverse impacts occur to critical resources.

A number of public comments or official protests on the Cadiz Project stated that a conservation-only alternative should be analyzed in detail. Since a wide variety of water conservation methods are already being implemented by Metropolitan and its member agencies, these measures are already part of the "no action" alternative. Water conservation is an important aspect of the use and management of this important resource and was discussed in some detail in the draft, supplemental, and final EIS/EIR. Section 2.4.1 of the Final EIS/EIR states that even with the conservation measures being implemented, the Cadiz Project is needed to meet dry-year demand within Metropolitan's service area.

Impacts Related to Topography, Geology, Soils and Seismicity Will Be Mitigated to Insignificant Levels: Impacts related to topography, geology, soils and seismicity were a consideration in this decision. Substantial topographic alterations will not be required for implementation of this ROD, nor is the area subject to landslides, sand flow, percolation of waste materials, or volcanic hazards. The Cadiz Project does have the potential to cause unstable soil conditions, erosion/sedimentation, land surface subsidence, and hydrocompaction. The Cadiz Project will also be exposed to regional seismic hazards due to its location. However, mitigation measures have been adopted to address and reduce these potential impacts to a level of insignificance.

Aesthetic Impacts Will Be Minimized: Aesthetic impacts were a consideration in this ROD. View changes as a result of construction of the Cadiz Project will result from disturbance of native vegetation, which will take a substantial period of time to reestablish and mature. However, these view changes will only be noticeable from limited portions of nearby BLM Wilderness Areas and eventually will mature enough to render the area disturbed indistinguishable from the surrounding landscape. Project facilities such as spreading basins and the wellfield will be evident from near views, but will be subordinate to the panoramic views of mountains and open expanse from further distances. In addition, spreading basins will only be noticeable on intermittent occasions when filled with water. Overhead power distribution facilities, while visible from portions of the nearby BLM Wilderness Areas within the region, would be viewed against the backdrop of distant mountain ranges and would be subordinate to these panoramic views. Mitigation measures are included to minimize potential impacts related to glare and night lighting.

Measures Are Adopted to Minimize Impacts to Threatened and Endangered Species and Other Species of Concern: Impacts to threatened and endangered species and other species of concern were a consideration in this ROD. Construction of the Cadiz Project would impact 1,278 acres (794 acres of temporary impact and 484 acres of permanent impact) of Category III habitat for the threatened desert tortoise, and mitigation measures to avoid and minimize potential impacts to the desert tortoise have been required. No endangered species occur within the Cadiz Project area. The implementation of the Management Plan would result in disturbance of at least 11 acres, of which two acres are designated critical habitat for the desert tortoise. Biological Opinion 1-8-00-F-

22 (Appendix B) has been provided by the FWS on the Cadiz Project and the provisions of that Biological Opinion are incorporated in the terms and conditions of the right-of-way grant and temporary use permit for the Cadiz Project (See Appendix A). In this opinion, FWS concluded that the Cadiz Project, as proposed, is not likely to jeopardize the continued existence of the desert tortoise, or adversely modify its critical habitat. On June 17, 2002, FWS issued Biological Opinion 1-8-01-F-16 addressing the California Desert Conservation Area Plan. Additionally, mitigation measures have been required to aid in the reestablishment of impacted habitat after construction activities are completed. Further, provision of off-site property that replaces impacted habitat at a 1:1 ratio (for both temporary and permanent impacts) has been required consistent with the requirements of the 1994 Desert Tortoise (Mojave Population) Recovery Plan and the "Compensation for the Desert Tortoise" (1991, Desert Tortoise Management Oversight Group), and fee title will be conveyed to the United States or State of California for protection and management purposes.

A special interest annual plant species, ribbed cryptantha, will also be impacted by construction of the Cadiz Project. Measures required to aid in the reestablishment of impacted habitat will provide for recurrence of this species.

Impacts to other species, including the western burrowing owl and American badger, due to removal of habitat are also possible and have been considered. Mitigation measures requiring surveys by qualified biologists prior to site preparation and relocation of such species should they be encountered will minimize potential impacts. Wildlife movement is not expected to be adversely impacted by construction or operation of the Cadiz Project.

Clean Air Act Conformity Requirements are Met: Air quality impacts and conformance with the Clean Air Act were a consideration in this ROD. Elevated emissions of carbon monoxide, oxides of nitrogen, sulfur dioxide, volatile organic compounds and particulate matter are anticipated during construction activities on the Cadiz Project. Mitigation measures have been developed to reduce those emissions. BLM has prepared an analysis to review the project's general conformity with the Clean Air Act, and has determined that the project conforms to the applicable State Implementation Plan for the Mojave Desert Air Basin (see Appendix C). The project will not cause or contribute to new violations of any national ambient air quality standards in the affected area, nor increase the frequency or severity of an existing violation. Additionally, the Cadiz Project is consistent with the Air Quality Attainment Plan prepared by the Mojave Desert Air Quality Management District and the Regional Comprehensive Plan and Guide prepared by the Southern California Association of Governments.

Adverse Impacts to Cultural Resources, Native American Traditional Cultural Values and Sacred Sites Are Avoided, and Historic Properties Are Adequately Considered and Protective Measures Adopted: Impacts to identified cultural resources, Native American traditional cultural values and sacred sites, and historic properties were a consideration in this ROD. Of the 12 cultural sites identified in the Area of Potential Effect for the Eastern Alternative, four sites were found eligible for inclusion on the National Register of Historic Places and BLM required modification and conditions to the project sufficient to avoid adverse effects to these four properties. Mitigation has been required to provide for monitoring during construction, a Buried Site Testing Plan, and preparation of a post-construction report. BLM's Findings and Determinations for Historic Properties for the Cadiz Project is set forth in Appendix D.

In addition, Chapter 2 of Part 512 of the Interior Department Manual, Departmental Responsibilities for Indian Trust Resources, requires each bureau to identify potential effects of its activities upon Indian trust resources and mandates meaningful consultation with tribes where activities directly or indirectly affect these resources. BLM's consultations with Native Americans and evaluation of potential effects on cultural, historical, and archaeological resources regarding the Cadiz Project meet all legal, regulatory, and policy requirements.

BLM conducted formal consultation with three tribes determined to be affected: Fort Mojave Indian Tribe, Chemehuevi Indian Tribe, and Colorado River Indian Tribes (CRIT). With regard to the Fort Mojave Indian Tribe, initial notification was sent by the BLM to the Fort Mojave Indian Tribe during February 1999. On June 29, 1999, representatives of the BLM made a presentation to the Fort Mojave Indian Tribal Council Chair and staff and a letter was submitted to BLM from the Fort Mojave Indian Tribe concerning the Cadiz Project. Presentations were made to the CRIT Tribal Council on August 17, 2001, October 11, 2001, and November 2, 2001, and to the Chemehuevi Tribal Council on September 14, 2001. On October 18, 2001, members of the Fort Mojave, CRIT, and Chemehuevi Tribes visited the Cadiz Project site and received a briefing. Also on October 23, 2001, a presentation was made to the Fort Mojave Indian Tribal Council and a letter was submitted to BLM by the AhaMakav Cultural Society. Additionally, numerous letters and telephone calls solicited input from the three tribes. Further, BLM provided notification of the proposed Cadiz Project to nine additional Native American tribes/ reservations from the surrounding region. In all cases, notifications included an offer to present more detailed information and receive comments concerning the Cadiz Project. No properties of religious or cultural significance to Native Americans have been identified within the Cadiz Project area.

Short Term Construction Impacts Will Be Lessened: Impacts associated with construction activities - including disruption in access and emergency service, and increases in noise and traffic - were a consideration in this ROD. Construction-related energy and mineral resources impacts have been addressed by including mitigation to ensure that access to mineral extraction operations will be maintained during construction. In addition, mitigation measures have been required to lessen the impacts of construction noise by requiring muffling of equipment and monitoring of blasting activities. Such impacts are also short term and temporary. Coordination with local police and fire departments, and use of warnings and barriers at open trenches, will ensure that construction-related impacts on emergency service providers are mitigated. Short-term traffic impacts due to construction of the Cadiz Project will be mitigated by a number of measures addressing coordination with local jurisdictions and emergency service providers, traffic assistance and control, and road capacity issues. Mitigation measures have also been required to address potential impacts during construction associated with project facility crossings of existing utilities and accidental damage to such utilities. As previously indicated, air quality impacts during construction will be minimized by a variety of mitigation measures to minimize the amount of exposed soils, require use of dust control methods, regulate disposal of materials, require maintenance of construction equipment and provide ride share and transit incentives.

Paleontological Resources Will Be Protected: Protection of paleontological resources was a consideration in this ROD. Construction of the Cadiz Project could affect paleontological resources by destroying or altering resources encountered and/or their environments in such a way that their significance would be diminished. Mitigation measures to provide for documentation, salvage, processing and funding of a paleontological resources program will minimize such impacts to the extent possible.

IV. ALTERNATIVES CONSIDERED

The FEIS/EIR considered and analyzed in detail five alternatives including the No Project Alternative (See Figure 2). The Eastern Alternative was selected as the preferred alternative because it best accomplishes the Cadiz Project objectives with the least environmental effects. In addition to the five alternatives reviewed in depth in the FEIS/EIR, a Utility Corridor Alternative was identified and considered in response to public comments. Because the Utility Corridor Alternative would have substantially greater impacts than other alternatives, it was not reviewed in detail. All project alternatives to the proposed action, including the Utility Corridor Alternative, would require an amendment allowing an exception to the CDCA Plan. The No Project Alternative was not selected because it failed to address project objectives to maximize efficiency of Colorado River Aqueduct operations and use of Colorado River water and would result in substantial impacts to

management of water resources in Metropolitan's service area. All practicable means to avoid or minimize environmental harm have been adopted.

Alternatives Analyzed in Detail

1. Proposed Action—Eastern Alternative

The proposed Cadiz Project consists of construction and operation of:

- an approximately 34.6-mile water conveyance pipeline and appurtenances extending from the Iron Mountain Pumping Plant on the Colorado River Aqueduct to the Fenner Gap across federal lands administered by BLM;
- approximately 390 acres of spreading basins to percolate Colorado River water into the underlying groundwater basin;
- a pumping plant adjacent to the existing Iron Mountain Pumping Plant to move water through the conveyance pipeline;
- a wellfield in the Fenner Gap area to extract stored Colorado River water and indigenous groundwater as allowed pursuant to the Groundwater Monitoring and Management Plan;
- overhead 69 kilovolt power distribution facilities paralleling the water conveyance pipeline to provide electrical power to the wellfield; and
- a Groundwater Monitoring and Management Plan to provide for storage and extraction of water.

Under this alternative, the pipeline would run south from the spreading basins and wellfield located on Cadiz Inc. land and parallel Cadiz-Rice Road and the Arizona California Railroad Company (ARZC) rail lines in a southeasterly direction to the vicinity of the abandoned Chubbuck Station. The pipeline would then turn south along the eastern flank of the Kilbeck Hills, and run between the Iron Mountains and the west side of Danby Dry Lake to Metropolitan's existing power transmission right-of-way and into the Iron Mountain Pumping Plant on the Colorado River Aqueduct where the pipeline would discharge into the Iron Mountain Pumping Plant forebay.

This pipeline route has fewer impacts to desert tortoise, wildlife habitat, and air quality during construction than the other alternative conveyance alignments. This alternative would also have fewer aesthetic impacts than the other alternatives due to the ability to locate the project pumping plant at the existing Iron Mountain Pumping Plant facility. Among the project alternatives, the Eastern Alternative alignment is the environmentally preferable alternative.

2. Western Alternative

The Western Alternative consists of the same elements as the Eastern Alternative, but would require the establishment of a new pumping plant facility location at the Colorado River Aqueduct west portal of the Iron Mountain Tunnel. The route of the water conveyance pipeline would run south from the Cadiz spreading basins and wellfield and parallel Cadiz-Rice Road and the ARZC rail lines in a southeasterly direction to a point located due north of the Kilbeck Hills. Here, the pipeline would turn south-southwest and run between the Cadiz Dunes Wilderness Area and the western slopes of the Kilbeck Hills and the Iron Mountains to join the Colorado River Aqueduct at the west portal of the Iron Mountain Tunnel.

As compared to the Eastern Alternative, this alternative has increased impacts to desert tortoise, wildlife habitat, aesthetics, and air quality during construction.

3. Combination Alternative

The Combination Alternative consists of the same elements as the Eastern Alternative, but would require the establishment of a new pumping plant facility location at the Colorado River Aqueduct

west portal of the Iron Mountain Tunnel. The route of the pipeline would run south from the Cadiz spreading basins and wellfield and parallel Cadiz-Rice Road and the ARZC rail lines in a southeasterly direction to the vicinity of the abandoned Chubbuck Station where the pipeline turns south, skirting the eastern slopes of the Kilbeck Hills. At the saddle between the Kilbeck Hills and the Iron Mountains, the pipeline turns southwest to skirt the western slopes of the Iron Mountains until it discharges into the Colorado River Aqueduct at the west portal of the Iron Mountain Tunnel.

As compared to the Eastern Alternative, this alternative has increased impacts to desert tortoise, wildlife habitat, cultural resources, aesthetics, and air quality during construction.

4. Eastern/Canal Alternative

The Eastern/Canal Alternative uses the same route as the Eastern Alternative, but this water conveyance pipeline and canal alternative would include an eight-mile-long canal section at the southern end of the alignment. It would require two pumping plants—one at the existing Iron Mountain Pumping Plant like the Eastern Alternative and an additional pumping plant eight miles to the north.

As compared to the Eastern Alternative, this alternative has increased impacts to wildlife habitat and movement corridors, and aesthetics.

5. No Project Alternative

Under the No Project (or No Action) Alternative, none of the project facilities would be built and the Cadiz Project would not be implemented. The No Project Alternative was rejected because it does not address Metropolitan's objectives to maximize the efficiency of its Colorado River Aqueduct and use of Colorado River water, does not contribute to filling deficits in Metropolitan's dry-year supply targets for the Colorado River Aqueduct, and, as a result, does not contribute to Metropolitan's ability to comply with California's Colorado River Water Use Plan. While the No Project Alternative would minimize impacts in the Mojave Desert project area, it would result in substantial impacts within Metropolitan's service area including water supply deficits, continued overdrafting of groundwater basins and associated salinity intrusions, and increased potential for sudden, high levels of water rationing.

Alternatives Considered but Eliminated from Detailed Analysis. Several other potential projects and site-specific alternatives were considered which were not analyzed in detail in the FEIS/EIR because they were determined not to be feasible or were being considered separately. These are summarized below.

1. Alternative Groundwater Storage Locations

Several alternative sites for a water storage project were considered including projects in the Palen Valley, Pinto Valley, Rice Valley, Shavers Valley, Upper Chuckwalla Valley, Vidal Valley, and Ward Valley. These potential projects were eliminated from further consideration due to technical considerations including indigenous groundwater quality, ability to control movement of stored groundwater, available storage capacity, location within or adjacent to National Park units, location within desert tortoise critical habitat, and presence of highly saline soils in pipeline alignment routes.

A water storage project in the Hayfield Valley was also eliminated from detailed review in the FEIS/EIR because it is being analyzed separately by Metropolitan. A groundwater banking project with the State of Arizona is under consideration, though its status is uncertain at this time. A potential project in the Upper Chuckwalla Valley is being examined by Metropolitan to determine whether potential environmental and water quality concerns can be overcome. Detailed feasibility studies for this potential project will not be completed until late 2002; consequently, this project was eliminated from further consideration in the FEIS/EIR. Additionally, an agricultural water

desalination project in the Coachella Valley was considered but eliminated, because of issues of cost, brine disposal, and effects on Salton Sea restoration.

2. Alternative Conveyance Facility Alignments

Fourteen alternative alignments for water conveyance between the Colorado River Aqueduct and the Fenner Gap, in addition to the alternatives described above for the Cadiz Project, were also considered but eliminated from detailed analysis. These alignments had higher costs, greater environmental impacts and/or greater exposure to corrosive saline soils than those alternative alignments that were carried forward for detailed review.

One of those alternatives was an alignment that closely followed existing utility corridors. The Utility Corridor Alternative would lie within designated utility corridors for approximately 65 miles, with the last eight miles traversing Class L lands outside a designated corridor. Additionally, this alignment would occur within designated critical habitat for desert tortoise, a species listed as threatened pursuant to the Endangered Species Act, for approximately 60 miles of its 73-mile length. Because of its extensive impacts on desert tortoise and because it would more than double the length of the pipeline needed to connect the Colorado River Aqueduct to the project spreading basins and wellfield, resulting in increased construction and operation and maintenance activities and associated environmental impacts, this alternative was also eliminated from detailed analysis.

V. PUBLIC INVOLVEMENT

A Notice of Intent to prepare an EIS for the proposed Cadiz Project was published in the Federal Register on March 1, 1999, and in local newspapers on February 10, 1999. A Notice of Intent to consider a CDCA Plan amendment to allow an exception to the energy production and utility corridors element was published in the Federal Register on May 4, 1999, and in local newspapers between April 28 and May 13, 1999. Three public scoping meetings were held on February 23, February 25, and May 10, 1999, in Cadiz, Twentynine Palms, and Needles, California, respectively. Notices were sent to 168 parties including Federal, State, regional, and local agencies; governmental officials from nearby cities; special interest groups; public libraries; and interested individuals.

A Notice of Availability for the DEIS/EIR was published in the Federal Register on November 26, 1999, and in local newspapers on November 28, 1999, and December 16, 1999. The Notice of Availability was mailed to more than 750 interested public agencies and members of the public. Public hearings were held on December 15, 1999, in Cadiz and Twentynine Palms, California, and on December 16, 1999, in Needles, California. Comments on the DEIS/EIR were received from 52 agencies, organizations, and individuals during the 104-day comment period on the DEIS/EIR, which ended March 8, 2000, after an extension in response to public requests.

In response to comments raising concerns for protection of desert groundwater resources, the decision was made in March 2000 to prepare a SEIS/EIR which incorporates the Groundwater Monitoring and Management Plan into the proposed action. In addition, the NPS and USGS became cooperating agencies for purposes of preparation of the SEIS/EIR and FEIS/EIR. A Notice of Availability for the SEIS/EIR was published in the Federal Register on October 20, 2000, and in local newspapers in the project area on October 19, 2000, and October 20, 2000. Public meetings were held on October 21, 2000, in Barstow, California, November 29, 2000, in Twentynine Palms, California, and December 18, 2000, in Los Angeles, California. Comments on the SEIS were received from over 6,000 agencies, organizations and individuals during the public comment period which ended January 8, 2001, after an extension in response to public requests.

BLM and Metropolitan also coordinated and consulted with the U.S. Environmental Protection Agency, Mojave Desert Air Quality Management District, U.S. Fish and Wildlife Service, California

Department of Fish and Game, U.S. Army Corps of Engineers, and the County of San Bernardino during the environmental review process.

A news release regarding the FEIS/EIR was issued September 28, 2001, and copies of the document or a notice of its availability were mailed to over 6,000 interested parties. Notice of the availability of the FEIS/EIR was published in the Federal Register on October 5, 2001, and the official 30-day period provided to the public to submit protests on the proposed plan amendment ended on November 5, 2001. Responses to oral and written comments received on the DEIS/EIR and SEIS/EIR are published in Volumes II and III of the FEIS/EIR. Due to mail receipt problems in the Washington, D.C. area, the public was provided an additional two weeks to re-file protests between February 1 and February 15, 2002.

A total of 13 protests of the proposed CDCA Plan amendment were received. After consideration of the protest issues, the Director/Assistant Director of the BLM determined that the issues raised had been fully addressed in the environmental documents, changes in the proposed decision were not warranted, and dismissed the protests.

Finally, BLM has received approximately 300 unsolicited comments since the notice of the availability of the FEIS/EIR was published on October 5, 2001. Most of these (about 280) were identical faxes stating their general opposition to the project. The other 20 included letters of support from several elected California officials, agencies, and local groups, as well as letters objecting to the project on general and specific terms. Finally, two affected agencies, the County of San Bernardino and the Southern California Association of Governments, indicated that their comments provided on the DEIS/EIR or SEIS had been adequately considered.

Issues raised in public comments are discussed in Appendix E which includes BLM's responses to those comment issues.

APPENDIX A
CADIZ GROUNDWATER STORAGE
AND
DRY-YEAR SUPPLY PROGRAM
RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT
TERMS AND CONDITIONS
CACA-40467

TERMS AND CONDITIONS
CACA-40467

A. GENERAL

1. **Authorized Officer** - The Authorized Officer is any employee of the Department of the Interior to whom has been delegated the authority to perform the duties described in 43 CFR Part 2800 in respect to this grant or permit.
2. **Final Plan of Development Content and Approval** - The holder shall submit for approval a Final Plan of Development that describes in detail the construction of the conveyance pipeline, electrical power distribution facilities, and their associated improvements and/or facilities in accordance with the provisions set forth in sections 4 and 11 of the FEIR/EIS for the Cadiz Groundwater Storage and Dry Year Supply Program (Cadiz Project) regarding the preferred alternative. The Plan shall reflect all applicable terms and conditions as set forth below. The Plan shall include drawings in sufficient detail to enable a complete evaluation of the right-of-way alignment location, and all of its associated structures and facilities. These drawings shall be the construction documents and must show dimensions, materials, finishes, etc. to demonstrate compliance with all of the requirements of the right-of-way grant and temporary use permit. The Final Plan of Development shall contain a schedule for construction activities. The Plan shall be reviewed and, if appropriate, modified and approved by the Bureau of Land Management (BLM) Authorized Officer. The approved Final Plan of Development shall be made a part of the right-of-way grant and temporary use permit. A copy of the complete right-of-way grant and temporary use permit, including all terms and conditions and the approved Final Plan of Development, shall be available on the right-of-way and temporary use permit areas during construction, operation, maintenance, and termination activities.
3. **Conformance with Final Plan of Development** - The holder shall construct the facilities, improvements, and structures within this right-of-way in strict conformity with the approved Final Plan of Development. Any relocation, additional construction, or use that is not in accord with the approved Final Plan of Development shall not be initiated without the prior written approval of the BLM Authorized Officer. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health or safety or the environment.
4. **Designated Representative** - The holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the BLM Authorized Officer. The holder's representative shall be available for communication with the BLM Authorized Officer within a reasonable time when construction or other surface disturbing activities are underway.
5. **Pre-construction Conference** - The holder shall contact the BLM Authorized Officer at least two weeks prior to the anticipated start of construction and/or any surface disturbing activities. The BLM Authorized Officer will schedule a preconstruction conference with the holder prior to the holder's commencing construction and/or surface disturbing activities on the right-of-way or temporary use permit areas. The holder and/or his representative shall attend this conference. The holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the right-of-way or temporary use permit, shall also attend this conference to review the terms and conditions of the grant and permit, including the Final Plan of Development.
6. **Notices to Proceed** - The holder shall not initiate any construction or other surface disturbing activities on the right-of-way or temporary use permit areas without the prior written authorization of the BLM Authorized Officer. Such authorization shall be a written Notice to Proceed issued by the BLM Authorized Officer. Any Notice to Proceed shall

authorize construction or use only as therein expressly stated and only for the particular location or use therein described.

7. ***Suspension/Termination of Notices to Proceed*** - The BLM Authorized Officer may suspend or terminate in whole, or in part, any Notice to Proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect public health or safety or the environment.
8. ***Posting of Bureau Serial Number*** - Upon completion of construction, the holder shall post, as directed by the BLM Authorized Officer, the Bureau serial number assigned to this right-of-way grant at appropriate locations on constructed facilities. The holder shall submit a proposal for placement of pipeline alignment markers and their design to the BLM Authorized Officer for review, modification, if necessary, and approval.
9. ***As-Built Drawings*** - The holder shall submit as-built drawings to the BLM Authorized Officer upon completion of construction activities. As-built drawings shall contain accurate legal descriptions and shall also be submitted in a geographic based digital format as prescribed by the BLM Authorized Officer.
10. ***Plan for Design and Location of Groundwater Monitoring Facilities*** - The holder shall prepare a Proposed Plan of Development for the design and location of the facilities and structures associated with the approved Groundwater Monitoring and Management Plan, including, but not limited to, the observation /cluster wells, meteorological towers, and nephelometers. The holder is encouraged to work collaboratively with BLM, U.S. Geological Survey (USGS), the National Park Service (NPS), and other interested agencies in development of the Proposed Plan. The Proposed Plan will be presented to the BLM's Authorized Officer for approval. The BLM Authorized Officer will consult with the Technical Review Panel (TRP) and make a decision on the plan in accordance with the Groundwater Monitoring and Management Plan. The holder shall submit applications to the BLM and the NPS, as appropriate, for necessary authorizations for the proposed monitoring facilities. Such applications shall be submitted within six (6) months of the commencement of construction of right-of-way facilities as evidenced by the signing by the BLM of the initial Notice to Proceed. The BLM and NPS shall conduct appropriate environmental review, make modifications as necessary and, if appropriate, approve authorizations for monitoring facilities.
11. ***Final Operation and Maintenance Plan*** - The holder shall prepare a Final Operation and Maintenance Plan and submit it to the BLM Authorized Officer for review, modification, if necessary, and approval prior to initiation of the operation of the pipeline. The plan shall contain detailed information on project operational strategies including operational constraints set forth in these terms and conditions.
12. ***Closure Plan*** - A Closure Plan shall be prepared by the holder no later than year 25 of project operations and be submitted to the BLM Authorized Officer for review and approval in accordance with the approved Groundwater Monitoring and Management Plan.
13. ***Permanent Cessation of Operations*** - In the event of a decision by the holder or BLM's Authorized Officer to end the operational phase of this right-of-way grant before the full authorized 50-year term, the holder shall, if not already completed, prepare and submit for BLM review and approval a Closure Plan in accordance with the approved Groundwater Monitoring and Management Plan.
14. ***Termination of Grant/Reclamation*** - At least 90 days prior to the conclusion of the closure phase of this right-of-way grant, the holder shall submit a Proposed Reclamation Plan to the BLM Authorized Officer, which addresses: (a) the removal or abandonment of the conveyance pipeline, electrical power distribution facilities, and their associated

- improvements and/or facilities; and (b) reclamation actions, including a proposed schedule for completion of reclamation activities. The BLM Authorized Officer shall review, modify as necessary and if appropriate, approve the Reclamation Plan. The holder shall implement the Reclamation Plan in accordance with the agreed upon schedule. The holder shall not be released from reclamation activities until reclamation has been successfully completed as determined by the Authorized Officer.
15. ***Safe and Proven Engineering Practices*** - All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
 16. ***Protection of Survey Monuments*** - The holder shall protect all survey monuments found within the right-of-way and temporary use permit areas. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the BLM Authorized Officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management monuments or references are obliterated during construction, operation, maintenance, or termination of the Cadiz Project, the holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the BLM Authorized Officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.
 17. ***Discovery of Cultural or Paleontological Resources*** - Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the BLM Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the BLM Authorized Officer. An evaluation of the discovery will be made by the BLM Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder shall be responsible for the cost of evaluation, and any decision as to proper mitigation measures will be made by the BLM Authorized Officer after consulting with the holder.
 18. ***Civil Rights Act Compliance*** - The holder of this right-of-way grant and temporary use permit or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.
 19. ***Accident Reporting*** - The holder shall inform the BLM Authorized Officer within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR Part 195.
 20. ***Excavation and Backfill Limitations*** - The holder shall limit excavation to the areas of construction. No borrow areas for fill material shall be permitted within the granted right-of-way or temporary use permit areas. All off-site borrow areas on Federal lands must be approved in writing by the BLM Authorized Officer in advance of excavation. Any excess excavated material shall be spread over the right-of-way and temporary use permit areas in a manner that preserves the existing surface drainage pattern.
 21. ***On-Site Sanitary Conditions and Waste Disposal*** - Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of

promptly at an appropriate waste disposal site. All waste material resulting from construction or use of the site by the holder shall be removed from the site.

22. ***Pesticide Use and Limitations*** - Use of pesticides shall comply with the applicable Federal and state laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the holder shall obtain from the BLM Authorized Officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the BLM Authorized Officer. Emergency use of pesticides shall be approved in writing by the BLM Authorized Officer prior to such use.
23. ***Clean Water Act Compliance*** - The holder is prohibited from discharging oil or hazardous substances into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone in violation of Section 311 of the Clean Water Act as amended, 33 U.S.C. 1321, and the regulations issued thereunder, or applicable laws of the State of California and regulations issued thereunder. The holder shall give immediate notice of any such discharge to the BLM Authorized Officer and such other Federal and State officials as are required by law to be given such notice.
24. ***Compliance with All Applicable Federal Laws and Regulations*** - The holder shall comply with all applicable Federal laws and regulations existing on the effective date of this grant and permit or hereafter enacted or promulgated, and in particular, with the Federal Land Policy and Management Act, 43 U.S.C. 1701 et seq., and the regulations at 43 CFR Part 2800. The holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601 et seq.) with regard to any toxic substances that are used, generated, or stored on the right-of-way and temporary use permit areas, or on facilities authorized under this right-of-way grant. (See 40 CFR Parts 702-799 and especially provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of hazardous substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR 302.4 shall be reported as required by section 102(b) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9602 (b). A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any hazardous substances shall be furnished to the BLM Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
25. ***Liability for Damage or Injury to United States*** - The holder shall be liable for damage or injury to the United States in accordance with 43 CFR 2803.1-5. The holder shall be held to a standard of strict liability for the following activities and facilities, each of which presents a foreseeable hazard or risk of damage or injury to the United States: construction, operation, maintenance, and termination of the conveyance pipeline, electrical power distribution facilities and their associated improvements and/or facilities. Operation of the conveyance pipeline shall include the export of water, whether indigenous or stored under the Cadiz Project, from Project wells through the conveyance pipeline. To the extent consistent with law, strict liability shall extend to the costs incurred by the United States for the control and abatement of any condition which threatens lives, property, or the environment, regardless of whether the condition occurs on areas that are under Federal jurisdiction. Strict liability shall not be imposed for damage or injury resulting primarily from an act of war, act of God, or from the negligent acts or omissions of the United States. The holder's liability under strict liability shall be limited to one million dollars (\$1,000,000.00) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred. This financial limitation shall not apply to the release or discharge of any hazardous substance, pollutant, or contaminant, or as otherwise allowed by law.

26. ***Indemnification of United States Against Liability*** - The holder agrees to indemnify the United States against any liability arising in connection with the use and occupancy of the right-of-way or temporary use permit areas including, but not limited to, any liability arising from the release or threat of release of any hazardous substance, pollutant, or contaminant (as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601 et seq.), any hazardous waste (as defined in the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 et seq.), oil or any petroleum product (as defined in the Federal Water Pollution Control Act, 33 U.S.C. 1321 et seq., and the Oil Pollution Act, 33 U.S.C. 2701 et seq.), and natural gas, natural gas liquids, liquefied natural gas or synthetic gas. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties. If any activity or facility within the right-of-way or temporary use permit areas causes the release or threat of release of any substance identified above in this paragraph, the holder shall be responsible for controlling, remediating, or otherwise responding to the release or threat of release, regardless of fault. The holder shall perform such actions to the satisfaction of the BLM and other Federal, State, or local agencies having jurisdiction over the release or threat of release. Upon failure of the holder to control, remediate, or otherwise respond to the release or threat of release, and repair all damages resulting therefrom, the authorized officer may take such measures as he deems necessary to control, remediate, or otherwise respond to the release or threat of release and restore the area, including, where necessary, natural resources, at the full expense of the holder. Such action by the authorized officer will not relieve the holder of any liability or responsibility.
27. ***Compliance with Title 43 CFR Part 2800*** - The holder shall comply with all applicable regulations contained in Title 43 CFR Part 2800.
28. ***Compliance with Biological Opinion*** - The holder shall comply with all applicable provisions of the U.S. Fish and Wildlife Service (FWS) Biological Opinion 1-8-00-F-22, incorporated herein by this reference.
29. ***Non-compliance and Grounds for Suspension*** - Noncompliance with any of the terms and conditions of this grant shall be grounds for an immediate temporary suspension of activities if, as determined by the BLM Authorized Officer, it constitutes a threat to public health or safety or the environment.
30. ***Non-compliance and Grounds for Suspension or Termination*** - Failure of the holder to comply with applicable laws, regulations, or any term or condition of this right-of-way grant or temporary use permit shall constitute grounds for suspension or termination thereof.
31. ***Valid Existing Rights*** - This right-of-way grant and temporary use permit are issued subject to valid existing rights.
32. ***Right-of-way Grant Reviews*** - This right-of-way grant shall be reviewed at the end of its 20th year and at regular intervals thereafter, not to exceed 10 years.

B. PROJECT FACILITIES

1. ***Water Conveyance and Power Distribution Facilities*** - The water conveyance pipeline, access roads, and power distribution facilities shall be contained within a right-of-way 80 feet in width.
2. ***Temporary Use Permit*** - A Temporary Use Permit is a revocable non-possessory, non-exclusive privilege, authorizing temporary use of public lands in connection with construction, operation, maintenance, or termination of a project. Temporary use of an additional 120 feet in width (approximately 503 acres) along the full length of the right-of-

way is provided for project construction activities. The location of this area will be identified in the approved Final Plan of Development. In addition, construction areas shall be narrowed in locations identified in the approved Final Plan of Development as Environmental Resource Areas (ERAs).

3. **Temporary Construction Staging Areas** - Temporary construction staging areas shall be as designated in the approved Final Plan of Development. Except as limited by ERAs, construction staging for the water conveyance and power distribution facilities may occur within the temporary 200 foot-wide construction area formed by the right-of-way and temporary use permit areas.
4. **Pipeline Hydraulic Characteristics** - The water conveyance pipeline shall be designed for a water pumping design flow of 200 to 250 cubic feet per second (cfs).
5. **Pipeline Depth** - The pipeline shall be buried, with a minimum earth cover of three feet.
6. **Pipeline Access Manholes** - For access to the pipeline, manholes shall be constructed at approximately 1,500 foot intervals. The manholes shall be denoted with permanent marker posts as specified by the BLM Authorized Officer.
7. **Pipeline Failure Procedures** - The design of the water conveyance pipeline shall include a leak detection system to alert the Iron Mountain Pumping Plant in the event of pipeline failure. The Cadiz Project shall be designed to allow the flow of water to be stopped from either end of the pipeline. The holder shall establish emergency procedures to implement in the event of pipeline failure that minimize impacts to surrounding utilities and the environment. A copy of such emergency procedures shall be provided to the BLM Authorized Officer.
8. **Power Distribution System** - A 69 kilovolt power distribution system shall be constructed for the project parallel to the water conveyance facilities between the Colorado River Aqueduct and the Fenner Gap area. The power poles shall be placed within the 80-foot wide right-of-way. The poles shall be 50 to 60 feet in length, with approximately 43 to 52 feet above ground. Each pole shall carry three conductors and shall have a minimum conductor ground clearance of 23 feet at maximum conductor sag.
9. **Project Spreading Basins** - The project spreading basins will involve an area of approximately 390 acres, with approximately 330 acres of usable recharge area. The basins are to be located on Cadiz Inc. land holdings, and will not require any rights-of-way from the BLM.
10. **Project Wellfield** - Approximately 30 wells will be constructed to recover stored Colorado River water and indigenous groundwater. The wellfield will be located on lands owned by Cadiz Inc., and will not be located on public lands. Production wells in the project wellfield shall not be drilled into carbonate bedrock.

C. MITIGATION OF IMPACTS TO TOPOGRAPHY, GEOLOGY, SEISMICITY AND SOILS

1. **Seismicity** - Final Cadiz Project design shall incorporate appropriate facilities and operational procedures to minimize potential impacts due to seismic events and water discharge due to earthquake-related damage. All the structures associated with the Cadiz Project, including the water conveyance facility and wellfield manifold, shall be designed and constructed in compliance with current engineering practices including the Uniform Building Code and all applicable seismic engineering guidelines.

2. ***Liquefaction*** - Detailed final design studies shall be prepared to document the actual soil conditions and groundwater depths along the water conveyance facility and wellfield manifold so that the liquefaction potential, if any, is documented, and to assure the final design is appropriate.
3. ***Slope and Foundation Instability*** - Commonly accepted design and construction practices, in accordance with applicable building codes and regulations, shall be implemented to reduce potential impacts to non-significant levels. In cases where groundwater is encountered along the pipeline alignment, commonly accepted construction dewatering methods (i.e. sumps, well points, shallow pumping wells) may be employed to temporarily lower water levels for ease of construction.
4. ***Erosion, Sedimentation and Flooding*** - Commonly accepted design and construction practices, in accordance with applicable building codes and regulations, shall be implemented to reduce potential impacts to non-significant levels. Conveyance pipeline and wellfield manifold pipelines shall be buried at a depth sufficient to protect them from minor erosion that may occur. The pipeline trench shall be compacted and recontoured to mitigate the potential for increased rates of erosion along the pipeline.
5. ***Surface Drainage Patterns*** - The ground surface shall be re-contoured to preserve the original runoff pattern.

D. MITIGATION OF IMPACTS TO GROUNDWATER AND AFFECTED RESOURCES

1. ***Approved Groundwater Monitoring and Management Plan*** - The approved Groundwater Monitoring and Management Plan (Management Plan) is fully incorporated into this right-of-way and temporary use permit authorization and it shall govern the operation of the groundwater storage and extraction activities for the Cadiz Project and also the extraction of water for Cadiz Valley agricultural development. The holder shall comply with all aspects of the Management Plan.
2. ***BLM Authority*** - The BLM has full authority to enforce the requirements of the Management Plan.
3. ***Groundwater Monitoring Network*** - The monitoring network - as specified in the approved Management Plan and containing monitoring features, such as observation wells, air quality monitoring instrumentation, and other items - shall be completed within one year of receipt of necessary permits for assessing potential impacts to the four critical resources identified in the approved Management Plan.

E. MITIGATION OF IMPACTS TO AIR QUALITY

1. ***Exposed Soil*** - Construction activities shall be conducted in a manner that minimizes the amounts of exposed excavated soil during and at the end of work periods.
2. ***Surplus Material Disposal*** - During construction and spreading basin maintenance, surplus excavated material shall be disposed of in accordance with local ordinances and sound engineering practices.
3. ***Equipment Cleaning*** - During construction and spreading basin maintenance, water shall be used on equipment in the morning and evening, as necessary, to prevent the transport of silt onto public roads.

4. ***Dust Control During Construction*** - During construction, soil binders or other dust control methods shall be used on the site, unpaved haul roads and unpaved parking areas.
5. ***Soil Stabilization During Construction*** - During construction, all application of non-toxic soil stabilizers shall be conducted in accordance with manufacturer's specification to all inactive construction areas (previously graded areas inactive for ten days or more).
6. ***Equipment Maintenance*** - Construction equipment shall be maintained and properly tuned and operated in a manner so as to reduce peak emission levels.
7. ***Ridesharing/Transit Incentives*** - Construction contractors shall provide rideshare or transit incentives for construction employees.
8. ***Dust Control in Spreading Basins*** - Accumulated sediments and algae in the spreading basins shall be left in place as a dust-controlling crust, and removed prior to the next spreading operation to facilitate percolation of water.
9. ***Dust Control During Maintenance*** - During spreading basin maintenance, watering shall be used on the site and on unpaved haul roads.
10. ***Soil Binders in Spreading Basins*** - Based on periodic visual inspection, soil binders shall be applied to the spreading basins following water spreading operations to control wind-blown dust emissions.

F. MITIGATION OF IMPACTS TO TRANSPORTATION

1. ***Public Road Crossings*** - During construction, the holder shall coordinate with the local jurisdictions where construction of water conveyance facilities will impact existing public roads.
2. ***Coordination With Emergency Service Providers*** - During construction, the holder shall coordinate with all emergency services providers, both public and private, in the development of construction scheduling and detour plans to ensure adequate access and travel routes for emergency vehicles in and around all construction areas.
3. ***Traffic Assistance*** - During all site preparation, grading and construction, the holder shall require the contractor to provide traffic assistance at all locations where construction access routes cross existing public roads. This assistance may include providing flagmen to control and direct traffic through and/or around construction areas; signing, flagging and/or placing cones at crossing areas; and/or the provision of detour routes, as needed, to ensure the safe flow of through traffic in and around construction areas.
4. ***Increase Transportation Capacity*** - Prior to any construction on Cadiz-Rice Road between SR 62 and Chubbuck, the holder shall require the project contractor to provide increased surface transportation capacity in the area of active construction.
5. ***MOU with County*** - Prior to construction on Cadiz-Rice Road between SR 62 and Chubbuck, the holder shall enter into a Memorandum of Understanding with the County of San Bernardino to address the County's requirements regarding the holder's obligations for mitigation of the temporary impacts of the Cadiz Project construction traffic. To mitigate these impacts, the holder will agree to pay a specific amount to be negotiated with the County.
6. ***Crossing of Railroad Lines*** - Construction of the Cadiz Project pipeline crossings of railroads shall be coordinated with affected railroads.

G. MITIGATION OF IMPACTS TO BIOLOGICAL RESOURCES

1. ***Management of Topsoil and Vegetation*** - Topsoil shall be salvaged by the contractor during construction and replaced following construction. The top 4 to 6 inches of topsoil, including all vegetative materials (shrubs, etc.) and biological soil crusts, where present, shall be salvaged during construction and stockpiled to help preserve the excavated native soil. Topsoil storage shall not exceed three months. Topsoil piles shall be kept dry and less than four feet high. The vegetation removed from the construction zone by grubbing or blading will act as mulch and shall be stored along with the topsoil. The subsoil removed during pipeline construction shall be stored separately and replaced after the pipeline is in place. The upper two feet of backfilled subsoil shall not be compacted. At the completion of construction in a given area, the temporary impact area shall be recontoured to approximate pre-project conditions and an estimated 4 to 6 inches of the topsoil and mulch shall be spread over the subsoil, leaving a rough surface. A sheep's foot roller shall be used to roughen the soil surface, providing microhabitats for seeds to germinate and capturing available rainfall. The holder shall submit to the BLM Authorized Officer the plans and specifications for topsoil storage locations and depths and necessary equipment for his/her review and approval.
2. ***Minimize Area Cleared of Topsoil and Vegetation*** - During construction, to the extent practicable, the areas to be cleared of all vegetation and topsoil shall be restricted to the pipeline construction trench and permanent access road. For all other areas, vegetation shall be crushed in place while maintaining most of the roots intact.
3. ***Invasive and Non-Native Plants*** - Following the completion of construction of any portion of the project, and for two years thereafter, invasive non-native plants such as mustards (*Brassica* spp.), Russian thistle (*Salsola tragus*), camel knapweed (*Centaurea* spp.), and tamarisk (*Tamarix pariflora*) shall be removed from the temporary impact area after summer and winter rains before these weed species can set seed. In addition, maintenance of the project spreading basins shall include eradication of invasive, non-native plants (including tamarisk) from the area after summer and winter rains before these weed species can set seed. No herbicides will be used for eradication in the project spreading basins.
4. ***Unauthorized Use*** - After construction has been completed, the holder shall discourage unauthorized access into the desert from any new access created by this project through such measures as barrier fences, boulders, topographic impediments (grading potential access points where vehicles will have difficulty gaining access) and signage. Measures to discourage unauthorized access into desert areas shall require prior approval by the BLM Authorized Officer.
5. ***Fueling Activities*** - No equipment shall be fueled in a wash. All fueling activities shall occur with adequate protection to provide the immediate clean-up of any accidentally spilled fuels. All maintenance (e.g., oil changes, repairs) shall take place in the designated staging areas. Provisions for the safe transport, storage, and disposal of all materials shall be provided.
6. ***Burrowing Owl Surveys, Relocation, and Avoidance*** - To reduce potential direct impacts on western burrowing owl below a level of significance, the following measures will be taken. Between the period of February and July prior to any site preparation, grading or clearing, focused surveys shall be conducted for burrowing owls in areas of suitable habitat (Mojave wash scrub, Mojave creosote bush scrub) extending 100 feet on either side of the right-of-way and temporary use permit areas. These surveys, conducted by a qualified biologist familiar with the owl and its habitat, will determine the location of burrowing owls, as well as the location and status of active burrows.

“Passive relocation” of owls shall be conducted during the non-breeding season (approximately February through July) wherever active burrows are found in the right-of-way or temporary use permit areas or within 100 feet of these areas. Passive relocation shall also involve the elimination of owl roosting sites in these areas (and within 100 feet therefrom) while the adult owls are away from their burrows, as well as the elimination of any other potentially suitable burrows within 100 feet of the right-of-way or temporary use permit areas. If owls are found at active nest sites within 100 feet of construction activity, construction shall cease and these areas shall be avoided until after the completion of nesting activities and the young are determined by the biologist to be independent of the adults.

7. ***American Badger and Kit Fox Burrows*** - Occupied American badger and desert kit fox burrows shall be identified during pre-construction surveys. Removal of these species and removal of the burrows from the right-of-way and temporary use permit areas shall be accomplished following coordination with the California Department of Fish and Game (CDFG).
8. ***Field Contact Representative*** - The holder shall designate a field contact representative (FCR) who shall be responsible for overseeing compliance with terms and conditions to protect the desert tortoise during construction and for coordination of compliance with the BLM. The FCR must be on-site during all project activities that occur within habitat for the desert tortoise. The FCR shall have the authority to halt all project construction activities that are in violation of the terms and conditions. The FCR shall have a copy of all terms and conditions when work is being conducted on the site. The FCR may be a crew chief or field supervisor, a project manager, any other employee of the holder, or a contracted biologist.
9. ***Desert Tortoise Education Program for Construction Employees*** - All construction employees who work on the Cadiz Project facilities shall participate in a desert tortoise education program sponsored by the holder. The holder is responsible for ensuring that the education program is developed and presented prior to construction activities. New employees shall receive formal approved training prior to working on the Cadiz Project facilities. The employee education program must be approved by the BLM prior to the presentation of the program. The program may consist of a class presented by an approved biologist (BLM or contracted) or a video. The program shall cover the following topics at a minimum:
 - Distribution of the desert tortoise.
 - General behavior and ecology of the desert tortoise.
 - Sensitivity of the desert tortoise to human activities.
 - Legal protection for the desert tortoise.
 - Penalties for violations of State or Federal laws related to protected species.
 - Reporting requirements.
 - Project specific minimization measures.
10. ***Authorized/Qualified Biologists*** - A “Qualified Biologist” is defined as a trained wildlife biologist who is knowledgeable concerning desert tortoise biology, tortoise migration techniques, tortoise habitat requirements, identification of tortoise sign, and procedures for surveying for tortoises. Evidence of such knowledge may include successful employment as a field biologist working with the desert tortoise and successfully completing the Desert Tortoise Council’s annual desert tortoise workshop. A qualified biologist must have successfully demonstrated proficiency at monitoring under the direct supervision of an approved monitor and must have been approved by FWS to survey for desert tortoises and to monitor construction and operation and maintenance activities. An “Authorized Biologist” is defined as a qualified wildlife biologist who has been authorized by the FWS and CDFG to handle desert tortoises. Authorization for handling desert tortoises is granted to specific individuals under the auspices of the Biological Opinion resulting from

consultation between the BLM and the FWS pursuant to section 7 of the Endangered Species Act. Requests for authorization shall be submitted to the FWS's Barstow Office and CDFG at least 30 days prior to anticipated work; requests shall be accompanied by a resume and supporting material for each person for whom authorization is requested. (See Biological Opinion 1-8-00-F22).

11. ***Project Construction and Work Areas*** - During project construction, the area of disturbance shall be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, public health and safety, and other limiting factors. Work area boundaries shall be delineated with flagging or other marking to minimize surface disturbance associated with vehicles. Special habitat features, such as burrows, identified by the qualified biologist shall be avoided to the extent possible. To the extent possible, previously disturbed areas within the project site shall be used for the stockpiling of excavated materials, storage or equipment, location of office trailers, and parking of vehicles. The holder, in consultation with the qualified biologist, shall ensure compliance with this measure.

A qualified biologist shall be present during construction activities on all portions of the pipeline corridor and wellfield. The qualified biologist shall monitor compliance with protection measures, assist work crews in compliance, install fencing as required and monitor fence integrity, and perform surveys prior to construction activities. In general, all project activities that could kill or disturb tortoises in any manner shall be assigned a qualified biologist who is performing the duties listed above.

Temporary tortoise fencing shall be installed around each drilling activity in the wellfield. The fencing may be above ground, but laid on the ground surface to prevent tortoise entry. A gate that prevents tortoise entry shall be included. After installation, the fence shall be inspected and approved by the qualified biologist who will search the area for tortoises. Any tortoises within the fenced area must be removed by an authorized biologist.

12. ***Vehicle Access*** - Except when absolutely required by the project and as explicitly stated in these terms and conditions, employees must use established or proposed roads. Established roads are those that are graded, bladed, or consist of an imbedded set of tire tracks. After receiving specific approval from the BLM Authorized Officer, "cross-country" vehicle use may be used to access monitoring feature locations for installation, operation or maintenance where the features are located at a great distance from an existing road and the use of a vehicle such as a drill rig or pump truck is needed to accomplish the task. To the extent possible, monitoring features will be located close to existing roads such that cross-country travel will be minimized. All proposed "cross-country" routes shall be submitted to the BLM for review and approval by the BLM Authorized Officer. Cross-country travel in desert tortoise habitat will be accomplished with the assistance of a qualified biologist to avoid desert tortoises and their burrows. All other cross-country vehicle use is prohibited.
13. ***Handling of Desert Tortoises/Desert Tortoise Records*** - Except as provided in G. 31 below, desert tortoises will be handled only by the authorized biologist and only when necessary. In handling desert tortoises, the authorized biologist shall follow the techniques for handling desert tortoises contained in "Guidelines for Handling Desert Tortoises during Construction Projects" (Desert Tortoise Council 1994, as revised 1999). The authorized biologist will maintain a record of all desert tortoises handled. This information shall include for each desert tortoise: the locations (narrative and maps) and dates of observations; general condition and health, including injuries and state of healing and whether animals voided their bladders; location moved from and location moved to; diagnostic markings (i.e., identification numbers or marked lateral scutes); and photograph of each handled desert tortoise.

14. ***Desert Tortoise Report Upon Completion of Construction*** - No later than 90 days after completion of construction or termination of activities, the authorized biologist shall prepare a report for the FWS and BLM and, as appropriate, NPS. The report shall document the effectiveness and practicality of the “minimization measures” (as described in the FWS Biological Opinion 1-8-00-F-22), the number of tortoises excavated from burrows, the number of tortoises moved from the site, the number of desert tortoises killed or injured, and the specific information for each handled desert tortoise as described in term and condition G-13 above. The report may make recommendations for modifying the stipulations to enhance protection of the desert tortoise or to make it more workable. The report shall provide an estimate of the actual acreage (by habitat types) disturbed by various aspects of the operation. In this report, the authorized biologist will address the initial installation of monitoring features within desert tortoise habitat, or when installation involves access by cross-country vehicle travel through desert tortoise habitat. Thereafter and throughout the life of the project, installation or modification of monitoring features or cross-country vehicle-assisted operation and maintenance (other than for travel via established roads) will be documented using the Completion Form procedure and procedures specified by the FWS, as directed by the BLM’s Authorized Officer.
15. ***Notification Requirements Regarding Injured/Dead Tortoises*** - The holder shall notify the FWS within three days of finding a dead or injured desert tortoise. The holder shall also notify the BLM, CDFG, and NPS, if on NPS-managed lands, within this same period. Written notification shall be given to the FWS’s Division of Law Enforcement, 370 Amapola Avenue, Suite 114, Torrance, California 90501. Notice shall be given by telephone and writing to the Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, California 93003, telephone number (805) 644-1766, and to the California Department of Fish and Game’s Eastern Sierra-Inland-Desert Region office, 4775 Bird Farm Road, Chino Hills, California 91709, telephone number (909) 597-9823. The information provided in writing will include the date and time of the incident (if known), location of the carcass or injured animal, a photograph, cause of death, if known, and other pertinent information.
16. ***Handling Injured Desert Tortoises*** - Care must be taken in handling injured animals to ensure effective treatment and care, and also in handling dead specimens to preserve biological material in the best possible state. Injured animals shall be transported to a qualified veterinarian for treatment at the expense of the holder. If an injured tortoise recovers, the Ventura FWS office shall be contacted for final disposition of the animal.
17. ***Speed Limits*** - As specified in FWS’s Biological Opinion, except for vehicle travel on Cadiz Road, all vehicle traffic is to observe a 20 miles per hour speed limit.
18. ***Vehicle Inspection Requirements for Construction Employees*** - Workers shall inspect for tortoises under a vehicle prior to moving the vehicle. Signage shall be designed and attached to each vehicle in the construction area and in the area of monitoring feature installation. The intent of the signage will be to remind the driver to inspect the area prior to moving the vehicle. Signage may be placed on a door handle, window, steering wheel or other visible location. If a desert tortoise is present, the authorized biologist shall be notified and shall move the tortoise from the construction site.
19. ***Dogs and Other Domesticated Animals*** - No dogs or other domesticated animals shall be allowed at the construction sites in desert tortoise habitat. Pack animals used in the installation, operation and maintenance of the monitoring facilities shall be controlled at all times, and not be allowed to wander within desert tortoise habitat.
20. ***Firearms Restrictions*** - Firearms shall be prohibited from all construction sites with the exception of paid security and law enforcement personnel. After construction, patrol personnel may carry firearms.

21. **Construction Trenches** - Prior to filling any construction trench, the trench shall be inspected by a qualified biologist to ensure that no desert tortoise may have entered into the trench. If a desert tortoise is found, the authorized biologist shall move the tortoise to a safe location.
22. **Trash and Food Containers** - During construction and monitoring facility installation, all trash and food items shall be promptly disposed of within raven-proof and wildlife-proof containers. The containers will be removed from the project site on a regular basis to an authorized site to reduce the attractiveness of the area to common ravens (*Corvus corax*) and other predators of the desert tortoise.
23. **Fencing** - A chain-link fence shall be constructed around the outside of the spreading basin facility immediately after construction of the facility has been completed. The depth that the fence shall be buried below the surface shall be approximately 12 inches.
24. **Raven Nesting Deterrence** - Power distribution facilities shall be designed such that the cross members slope downward at an angle of approximately 45 degrees to minimize the potential for raven nesting. Monitoring facilities shall be designed to discourage nesting by ravens.
25. **Raptor Protection** - Unless otherwise agreed to by the BLM's Authorized Officer in writing, power lines shall be constructed or modified to meet applicable specifications and guidelines in "Suggested Practices for Raptor Protection on Powerlines: The State of the Art 1996" (Edison Electric Institute/Raptor Foundation, 1996) and the FWS's "Service Guidance on the Siting, Construction, Operation, and Decommissioning of Communications Towers" (September 14, 2000). The holder shall assume the burden and expense of proving that pole designs not shown in the above publications are "raptor safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modifications on this right-of-way, if necessary to ensure the safety of raptors. Such modifications and/or additions shall be made by the holder without liability to the United States. If modifications are necessary, they must be implemented within one year from the effective date of this authorization.
26. **Road Construction** - All ditch slopes and berm slopes shall not exceed 30 percent in desert tortoise habitat. The holder shall place construction limit stakes, drainage slope stakes, road berm stakes, and grade stakes necessary to ensure construction of the road in accordance with the technical information provided in the approved Plan of Development for this right-of-way and temporary use permit. If the stakes are disturbed for any reason prior to construction, they shall be replaced before proceeding with construction of the road. The holder shall be responsible for preventive and corrective maintenance of the prescribed ditch slopes and road berm slopes.
27. **Non-emergency Pipeline Maintenance** - In areas of desert tortoise critical habitat, the holder shall schedule non-emergency maintenance of the pipeline and associated facilities which involve the use of mechanized equipment and any ground surface disturbance to occur between June 16- September 6 or November 8-February 28. This provision does not apply if the holder has secured a site-specific Biological Opinion for the maintenance activity to be undertaken.
28. **Desert Tortoise Clearance Survey** - A desert tortoise clearance survey shall be conducted no earlier than 5 days prior to any construction-related ground disturbance by a qualified biologist. Should a tortoise be identified, no disturbance shall occur within 20 feet or as specified by the qualified biologist until the tortoise is relocated in accordance with term and condition G-13 above. Should a burrow be identified (as specified in conservation measure 17 of the FWS's Biological Opinion) the burrow will need to be excavated in accordance

with adopted protocol in "Guidelines for Handling Desert Tortoises during Construction Projects" (Desert Tortoise Council 1999).

29. ***Desert Tortoise Habitat Compensation*** - In conformance with the 1994 Desert Tortoise (Mojave Population) Recovery Plan and the 1991 document entitled "Compensation for the Desert Tortoise" approved by the Desert Tortoise Management Oversight Group, the holder shall provide offsite property at a 1:1 ratio for impacts to Category III desert tortoise habitat (e.g., Mojave wash scrub, Mojave creosote bush scrub, and desert dunes/sandy fields). For installation of monitoring facilities, the impacted areas of desert tortoise habitat shall be compensated at the appropriate ratio (1:1 in BLM Category III and 5:1 in BLM Category I or in designated desert tortoise critical habitat). Mitigation property shall be permanently protected and managed with emphasis on the protection and preservation of desert tortoise. Fee title to such mitigation property shall be conveyed to either the United States or the State of California for protection and management purposes. If the BLM accepts funds to purchase lands in lieu of fee title, BLM will obtain California Department of Fish and Game concurrence on lands selected for acquisition.
30. ***Desert Tortoise Education Program for Operation and Maintenance Employees*** - All operations and maintenance employees who inspect, maintain, repair, or otherwise visit the Cadiz Project conveyance pipeline, spreading basins, well field or monitoring facilities within desert tortoise habitat shall participate in the desert tortoise education program sponsored by the holder prior to conducting field work in the specified areas.
31. ***Vehicle Inspection Requirements for Operations and Maintenance Employees*** - Operations and maintenance employees shall inspect under parked vehicles for tortoises prior to moving the vehicle. If a tortoise is present, the employee shall wait 15 minutes for the tortoise to move, and may move the vehicle thereafter if it can be done without harming the tortoise. If the tortoise does not move within 15 minutes and the vehicle cannot be moved without harming the tortoise, the operations and maintenance employees are authorized to pick up the tortoise and move it out of the way while wearing latex gloves. Should such handling occur, the holder shall notify BLM, FWS, California Department of Fish and Game, and NPS if on NPS-managed lands, and shall indicate the date and location of such incident.
32. ***Desert Tortoise Survey and Monitoring Requirements Prior to Use of Blow-off Valves*** - Prior to the first use of the blow-off valves to dewater the conveyance pipeline for routine maintenance purposes, the area in the vicinity of each valve to be so operated shall be surveyed for desert tortoise by an authorized biologist. The first operation of the blow-offs shall be monitored to evaluate the possible effects on desert tortoise and its habitat. The authorized biologist shall remove any tortoises present in affected areas that appear subject to possible harm from the operation of the blow-off valves, and shall promptly notify BLM, FWS, and CDFG if any tortoise was relocated. The holder shall submit a report to BLM, FWS, and CDFG documenting the findings from the operation of the blow-offs. This report and subsequent coordination among the holder, BLM, FWS, and CDFG shall be used to determine the appropriate level and focus of survey and monitoring, if any, required for subsequent operation of each of the blow-off valves.
33. ***Repair or Modification of Conveyance or Wellfield Pipeline*** - In the event of repair or modification of conveyance or wellfield pipelines that entail unearthing of substantial amounts of buried facilities, the repair/modification shall be treated as a construction activity. The following terms and conditions shall apply to the repair or modification of the conveyance or wellfield pipeline: G-1 through G-22, G-26, G-28, G-29, G-34 through G-36.
34. ***Grubbing and Removal of Vegetation and Topsoil*** - Grubbing and removal of vegetation and topsoil along the pipeline alignment shall be limited to the approximately 50-foot-wide

swath within the right-of-way that is needed for pipeline trenching and the access road. Vegetation shall be crushed in place on other portions of the pipeline right-of-way and temporary use permit areas. Within washes the holder shall mulch and stockpile vegetation grubbed from the approximately 50-foot wide swath along with the topsoil from this area.

35. ***Post Construction Treatment*** - Following completion of construction of each portion of the pipeline, the area of temporary disturbance shall be recontoured to approximate pre-project conditions and the stockpiled topsoil and mulched vegetation randomly spread across the recontoured area. A sheep's foot shall then be rolled across the treated area. Mulched vegetation and topsoil shall be stockpiled for a maximum of three months prior to re-spreading.
36. ***Inspection and Handling of Mulch, Vegetation, and Soil*** - An authorized biologist shall inspect each stockpile of mulch or vegetation and soil grubbed (as specified in Term and Condition G-34) for desert tortoises or their burrows prior to the recontouring of construction areas to approximate pre-project conditions with stockpiled material. Desert tortoises found during such inspections shall be moved to a safe location by the authorized biologist prior to the use of subject stockpile material for recontouring or other post-construction purposes. All stockpiled material shall be used in post-construction, removed, or otherwise smoothed back to grade. No unused stockpiles shall be left in place.
37. ***Compensation of Impacted Wash Habitat*** - The holder shall provide offsite property that replaces impacted wash habitat at a 1:1 ratio. This may be accomplished in conjunction with property acquired to compensate for impacts to desert tortoise habitat as identified in term and condition G-29, above.
38. ***Limitations on Cumulative Impacts to Desert Tortoise Habitat*** - Cumulative impacts to desert tortoise habitat associated with the installation of Management Plan monitoring facilities, excepting any cross-country vehicle travel, shall not exceed 25 acres. The holder shall provide to BLM the global positioning system coordinates for this surface disturbance when it occurs within a Desert Wildlife Management Area.

H. MITIGATION OF IMPACTS TO ENERGY AND MINERAL RESOURCES

1. ***Access to Mineral Extraction Operations*** - During construction, the holder shall maintain access into and out of any potentially affected mineral extraction operations authorized by the BLM and the County, to the greatest extent possible.

I. MITIGATION OF HAZARDOUS MATERIALS IMPACTS

1. ***Hazardous Military Ordnance Surveys*** - Prior to any earth moving activities, surveys shall be conducted for the purposes of locating potentially hazardous military ordnance or other explosives within the Cadiz Project construction area. These surveys shall use methodologies capable of locating objects that may have been buried or penetrated the ground surface at depths to which excavation is proposed, with an appropriate margin of safety.
2. ***Qualified Explosives Specialist*** - No person other than a qualified explosives or munitions emergency response specialist shall handle suspected military ordnance or other explosives, or the residues thereof, during project construction or operation.
3. ***Discovery of Military Ordnance and Explosives*** - Should any military ordnance or other explosives, or the residues thereof, be discovered during construction or operation of the Cadiz Project, the person discovering the material shall, without disturbing the material,

clearly mark the location and immediately notify the appropriate personnel. Work shall be diverted around the flagged area until the proper authorities have removed or otherwise eliminated the hazard.

4. ***Storage of Motor Vehicle Fuels*** - The holder shall ensure that all temporary storage areas for motor vehicle fuels used for project construction have an impermeable secondary containment system with a capacity of at least 100 percent of the total volume of all storage containers.
5. ***Oily Residue Disposal*** - Accumulated water within secondary containment areas exhibiting an oily sheen shall not be discharged directly into the environment. Oily residues shall be separated from the water prior to discharging or the water shall be collected in watertight containers and shipped off area for disposal consistent with State and Federal law.
6. ***Hazardous Waste Disposal*** - Any solid or hazardous wastes within the meaning of the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., and authorized state programs, excavated during construction of the Cadiz Project shall be disposed of in accordance with local, State, and Federal law.

J. MITIGATION OF NOISE IMPACTS

1. ***Muffling and Noise Control*** - During site preparation, grading, excavation and construction, the holder shall require all the construction contractors to incorporate feasible muffling and noise control devices into construction vehicles, equipment and construction methods and to maintain all construction vehicles and equipment in efficient operating condition.
2. ***Blasting Related Noise Control*** - The holder shall require all construction contractors to control and monitor noise during all blasting activities. The construction specifications shall identify the locations where blasting may occur and measures the contractor must implement to control blasting-related noise. Depending on the specific blasting requirements and rock conditions at each blasting location, these measures may include the use of smaller, deeper charges, variable spacing of charges, and/or phasing of charges.

K. MITIGATION OF IMPACTS TO PUBLIC SERVICES

1. ***Construction Phasing Plan*** - The holder, or its contractors, shall submit a construction-phasing plan to the San Bernardino County Fire Department (SBCFD). The plan shall be consistent with SBCFD Fire Code requirements for temporary fire control and emergency response.
2. ***Protection of Facilities and Services During Construction*** - The holder, or its contractors, shall coordinate with the applicable public service providers to determine their needs to protect existing facilities and services during the construction of the Cadiz Project.
3. ***Warning Signs and Construction Barriers*** - During construction, warning signs and construction barriers shall be provided to prevent access to open trenches and other active construction areas.
4. ***Public Safety*** - The holder shall provide for the safety of the public entering the right-of-way and temporary use permit areas. This includes, but is not limited to, barricades for open trenches, and flagmen/women with communication systems for public safety.

L. MITIGATION OF IMPACTS TO UTILITY AND SERVICE SYSTEMS

1. ***Crude Oil and Natural Gas Pipelines*** - The water conveyance facilities shall be constructed underneath existing crude oil and natural gas pipelines. All construction activities shall be closely coordinated with the operators of the affected oil and gas pipelines.
2. ***Utilities*** - Utilities that the conveyance facilities cross underneath shall be supported in place during pipeline construction.
3. ***Utility Damage Procedures*** - Should a utility line be damaged during Cadiz Project construction activities, the utility service providers shall be immediately contacted to determine appropriate repair actions.

M. MITIGATION OF IMPACTS TO VISUAL RESOURCES

1. ***Use of Natural Colors*** - All above-ground structures on public lands not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape as directed by the BLM Authorized Officer.
2. ***Shielding, Design, and Location of Outdoor Lighting and Fixtures*** - The holder shall ensure that all outdoor lighting and fixtures are shielded or designed and located so that direct light is contained within the project site and so that adjacent properties, including BLM lands, are protected from spillover light.
3. ***Switch and Motion Sensors*** - All project night-lighting during the operational phase of the project shall be controlled by a switch or motion sensor so that fixtures do not remain lit continuously during the evening and night hours.
4. ***Signage Restrictions*** - No signs shall be placed on public lands, except those approved by the BLM Authorized Officer.

N. MITIGATION OF IMPACTS TO CULTURAL RESOURCES

1. ***Discovery Plan*** - During final design, a Discovery Plan, also referred to as a Buried Site Testing Plan, shall be prepared. This plan shall address areas along the alignment with high potential for containing buried archeological deposits and appropriate treatments, such as pre-construction testing along the alignment, controlled recovery, monitoring during construction and other measures as appropriate. The Discovery Plan shall be implemented prior to and during construction, as appropriate.
2. ***Chubbuck and Patton Camp Monitoring*** - Full-time monitoring shall be conducted by the project archeologist during all site preparation, grading, and construction in the vicinity of Chubbuck (CA-SBR-3283H) and the Patton Camp (AE-CAD-13H). In the event significant archeological resources are encountered, the Project archaeologist shall immediately order the temporary cessation of construction in that area and notify the BLM Authorized Officer, who will take appropriate action.
3. ***Final Cultural Resources Report*** - At the completion of construction of the selected Cadiz Project alternative, the project archeologist shall prepare a written report describing the cultural resources documentation, data recovery and protection activities that occurred throughout the construction period. This report shall be provided to the BLM Authorized Officer, the holder, the State Historic Preservation Officer, the San Bernardino Archaeological Information Center, and other parties as appropriate.

4. ***Chubbuck Station Environmental Restricted Area (ERA)*** - The Chubbuck Station archeological site (CA-SBR-3283H) shall be identified in the Plan of Development and related maps as an ERA in consultation with the Project archeologist. The construction corridor shall be narrowed to a maximum of 40 feet for approximately 1.25 miles adjacent to this site, in consultation with the project archeologist.
5. ***Patton Camp ERA*** - The Patton Camp archaeological site (CA-SBR-9858H) shall be identified in the Plan of Development and related maps as an ERA in consultation with the project archeologist.
6. ***Rock Alignment Feature ERA*** - The rock alignment feature (CA-SBR-9855H) archaeological site shall be identified in the Plan of Development and related maps as an ERA, in consultation with the project archeologist. The ERA shall be flagged prior to any construction activity within 1,000 feet of this site. No construction shall be allowed within this ERA.
7. ***Cadiz Pumping Plant*** - The Cadiz Pumping Plant shall be constructed at a maximum distance from historic structures of the Iron Mountain complex. In addition, the Cadiz Pumping Plant shall be designed and constructed in a style compatible with the existing Iron Mountain Pumping Plant and consistent with the Secretary of the Interior's "Standards and Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings" (1995), in consultation with the project archeologist. The design shall be compatible with, but distinctive from, the existing historic buildings. The new design shall be contemporary and reference design motifs from the historic buildings. It shall be compatible in terms of mass (dimensions and scale), material (building composition), relationships of solids to voids (roof lines and window placement), and overall color. The predominant building composition at the Iron Mountain Pumping Plant structures includes poured and formed concrete walls (some with stucco exteriors) and low, gable-hipped roofs, finished in red-colored tile.

O. MITIGATION OF IMPACTS TO PALEONTOLOGICAL RESOURCES

1. ***Fossil Localities*** - Prior to initiation of Cadiz Project construction, a paleontologist shall identify the fossil localities that are within the Cadiz Project right-of-way and temporary use permit areas to evaluate the recorded sites and determine the need for further data collection including excavation.
2. ***Paleontological Monitor*** - A paleontological monitor shall be present during construction trenching and grading operations within areas with a high potential to uncover fossils. If subsequent information indicates that alluvial layers overlying fossil-bearing strata are of sufficient thickness to avoid interception of those fossil-bearing areas, no paleontological monitor need be present during ground disturbing activities in those areas.
3. ***Salvage of Whole Fossils or Complete Elements*** - The paleontological monitor shall work with the construction manager to salvage whole fossils or complete elements such as whole skeletons or sections of skeletons. Fossils may be salvaged from the trench spoil to the degree possible, and may be salvaged from within the trenches particularly to recover whole skeletons or sections of skeletons with the concurrence of the construction manager.
4. ***Collection of Soil Samples*** - The paleontological monitor shall collect soil samples from random locations along the water conveyance facility trench where fossil-bearing strata are intercepted to obtain a representative sample of fossils and associated data in the Cadiz Project construction area. The paleontologist shall prepare a sampling program to be approved by BLM and the holder.

5. ***Salvage and Sediment Sample Reports*** - The salvaged fossils and sediment samples shall be processed, analyzed and curated in accordance with BLM Manual H-8270-1, General Procedural Guidance for Paleontological Resource Management. A report shall be promptly prepared to document methods, findings, results and conclusions and shall include an itemized inventory of specimens. The report shall be submitted to BLM, the holder, and the County of San Bernardino.

P. MITIGATION OF IMPACTS TO RECREATION

1. ***Scheduling Coordination and Construction Restrictions for Competitive Events*** - Pipeline construction scheduling in the vicinity of the Johnson Valley to Parker Race corridor shall be coordinated with the BLM. Pipeline construction shall be prohibited within 500 feet of the Johnson Valley to Parker Race route for 10 days prior to, during, and for 10 days following a scheduled and permitted race date. Any construction within the race route must be completed at least 10 days prior to the race. This includes excavation, laying of pipe, backfilling, and topsoil replacement.

APPENDIX B

U.S. FISH AND WILDLIFE SERVICE

BIOLOGICAL OPINION

ON

CADIZ GROUNDWATER STORAGE

AND

DRY YEAR SUPPLY PROGRAM

APPENDIX C

FINAL

CLEAN AIR ACT

CONFORMITY ANALYSIS AND DETERMINATION

FOR

CADIZ GROUNDWATER STORAGE

AND

DRY-YEAR SUPPLY PROGRAM

APPENDIX D

FINDINGS AND DETERMINATIONS

FOR

HISTORIC PROPERTIES

FOR THE

CADIZ GROUNDWATER STORAGE

AND

DRY- YEAR SUPPLY PROGRAM

APPENDIX E

RESPONSE TO

PUBLIC COMMENTS

ON

FINAL ENVIRONMENTAL IMPACT STATEMENT

FOR

CADIZ GROUNDWATER STORAGE

AND

DRY-YEAR SUPPLY PROGRAM

RESPONSES TO COMMENTS ON THE FINAL EIS

BLM received approximately 300 unsolicited comments since the FEIS/EIR was made available on October 5, 2001. Most of these comments (about 280) were identical faxes stating general opposition to the project. The other 20 comments included letters of support from several elected California officials, agencies, and local groups, as well as letters objecting to the project on general and specific terms. Finally, two affected agencies, the County of San Bernardino and the Southern California Association of Governments, indicated that their comments provided on the DEIS/EIR or SEIS had been adequately considered.

While no official response to these unsolicited comments received after the close of the official comment periods is required by law or policy, as a courtesy to those commenting, the substantive issues raised have been summarized below and a short response provided.

Issue Raised: The groundwater extraction aspect of the Cadiz Project would result in Cadiz Inc. selling as much as 60,000 acre-feet of indigenous groundwater a year to Metropolitan.

Response: The amount of water exported through the pipeline authorized by BLM is governed by the Groundwater Monitoring and Management Plan. The Plan will ensure there will be no adverse impacts to critical resources.

Issue Raised: The estimates of the aquifer's recharge rates ... have been criticized as over-inflated and a reliable estimate of the recharge rate must be provided to evaluate the feasibility of the project.

Response: BLM acknowledges the disagreement among experts as to the average rate of natural groundwater recharge to the aquifers in the Cadiz Project area. However, the Groundwater Monitoring and Management Plan, developed by BLM in cooperation with NPS, USGS, Metropolitan and the County of San Bernardino, will govern the proposed groundwater operations in a manner that will protect critical resources despite the lack of agreement regarding the estimate of natural average annual recharge.

Issue Raised: The Management Plan is inadequate: pre-operational monitoring may not sufficiently stress the system to predict impacts, interpretation of groundwater data will be difficult, and threshold levels will not immediately trigger specified mitigation actions.

Response: The Groundwater Monitoring and 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.

Issue Raised: Effective monitoring and continual refinement of the groundwater models will be essential to ensure the proposed project does not cause long-term adverse effects. It will also be important to regularly assess the need for adjustment to the monitoring criteria and action levels, consistent with the goals of adaptive management.

Response: BLM concurs with the concern that the Management Plan be implemented in a manner that provides for continual monitoring and refinement of predictive groundwater models. The Management Plan as presented in the FEIS/EIR provides for review of and appropriate refinement to the groundwater models annually and on a five year basis. The Management Plan also provides for the submittal of recommendations for such refinements by Metropolitan and the Technical Review Panel, as well as providing for extensive monitoring in the drawdown/mounding area to include monitoring wells and survey benchmarks to monitor for subsidence and, if warranted, installation of extensometer and microgravity stations. The Management Plan also provides procedures for appropriate adjustments to the action criteria.

Issue Raised: The goal of the Closure Plan, a portion of the Management Plan, should be to strive to restore pre-operational static groundwater levels. Comment raises concerns with the stated

criterion that static groundwater levels will not be depressed by more than 100 feet at the end of the project operational phase.

Response: The Management Plan states that a Closure Plan will be prepared to ensure that no residual effects of project operations will result in adverse impacts to critical resources as a result of the project. The Closure Plan will be prepared when static groundwater levels have declined by only 10 feet from pre-operational levels and no later than at year 25 of project operation. Through the use of predictive modeling, the Closure Plan will limit drawdown of the groundwater basin to a level that will not impact critical resources at any time during or after the term of the project, while allowing groundwater levels in the project area to fluctuate.

Issue Raised: The decision-making process outlined in the Management Plan should provide for additional, completely independent technical review and input to BLM. Technical review and input to BLM should also address Metropolitan's assessments of project-induced impacts.

Response: The Technical Review Panel provided for in the Management Plan will provide sufficient independent review and input to BLM to appropriately administer its decision-making responsibilities. The responsibilities of the Technical Review Panel specified in the Management Plan extend to a full review of the Management Plan activities including any assessments submitted by Metropolitan.

Issue Raised : All groundwater management information should be available to the public pursuant to the Freedom of Information Act.

Response: The Management Plan specifies that all annual and five-year reports will include electronic data files and model input and output files and that the reports will be available to agencies, organizations, interest groups and the general public.

Issue Raised: The Management Plan in its present form will minimize the potential adverse effects on the groundwater aquifer and satisfactorily address the County's prior expressed objections so long as the Memorandum of Understanding between the County, Metropolitan and Cadiz Inc. is executed as planned to ensure implementation of the Management Plan.

Response: Metropolitan, the County of San Bernardino and Cadiz Inc. have developed a draft memorandum for approval by the governing boards of the parties to assure that implementation of the project meets the needs of the parties.

Issue Raised: A formal request for review of the cultural resources report prepared for the project was not received by Ahamakav Cultural Society of the Fort Mojave Indian Tribe.

Response: Consultation was initiated with the Fort Mojave Indian Tribe in February 1999 with the issuance of the Notice of Intent to Prepare an EIS and Notice of Preparation of an EIR pursuant to NEPA and CEQA, respectively. A meeting to discuss the project with the Tribal Council was held in June 1999, and a letter expressing tribal council concerns with the project was also received in June 1999. Copies of the DEIR/EIS and the SEIR/EIS were sent to Tribal Council members in December 1999 and October 2000, respectively. The cultural resources technical report was provided to the Ahamakav Cultural Society of the Fort Mojave Indian Tribe in March 2001. BLM made numerous requests to the Tribal Chair for further consultation, and the requests were not answered. Tribal representatives of the Fort Mojave Indian Tribe, as well as others, attended a field trip to the Cadiz Project area held in October 2001.

Issue Raised: The level of ethnographic study for the project is inadequate and many of the references are incorrect as relates to the Mojave.

Response: Statutes and guidelines of NEPA and the National Historic Preservation Act require sufficient cultural background to evaluate the significance and impacts of the Project on archaeological and Native American resources. Neither a comprehensive ethnographic review nor contemporary ethnographic research are mandated. A number of existing comprehensive ethnographic studies were consulted and provide adequate ethnographic information for establishing that no significant archaeological evidence in the Area of Potential Effect can be directly associated with existing tribal groups (Mojave, Chemehuevi, or other tribe). Likewise, consultation with the

Tribes did not result in identification of cultural resources within the project area that will be adversely impacted.

Issue Raised: If it were not for an improper declaration of interim surplus water and the Quantification Settlement Agreement on the Colorado River, there would be no need for this project with its corresponding impacts to cultural resources.

Response: Decisions on the Colorado River Interim Surplus and Quantification Settlement Agreement are beyond the scope of the proposed Cadiz Project.

Issue Raised: Trail systems exist in the project area that would be uncovered in an ethnographic study.

Response: Trail systems are known to have crossed the desert. Some well-established trails have been documented and mapped; other irregularly used trails no doubt existed but are neither documented nor are there any extant traces. An intensive archaeological survey did not identify any trails in the area of potential effect. Furthermore, field consultation with Tribal members at an October 2001 field trip also failed to identify any trails in the project area.

Issue Raised: BLM should have contacted the Tribes prior to issuing a permit for cultural resources work.

Response: The BLM Needles Field Office and the Tribal Council of the Fort Mojave Indian Tribe have agreed to work together to develop a protocol to enhance regular communications between the BLM and the tribes. We anticipate that this protocol will allow BLM to avoid these types of concerns in the future.

Issue Raised: Disagreement exists with interpretations contained within the cultural resources report as to the historical relationships between tribes in the project area.

Response: Archaeological and ethnographic studies frequently reach conclusions that are not shared universally. Interpretations about issues relating to cultural affiliation and land use are most frequently contested, in part because boundaries of the traditional areas of Native American groups cannot be drawn with precision; they varied over time, and there was overlapping and joint use of many areas by various groups.

Issue Raised: The mitigation measures specify different requirements for handling of desert tortoise during construction and operation and maintenance phases.

Response: The FEIS/EIR outlines extensive protection measures for desert tortoise during both construction and operational phases. The mitigation measures were developed in consultation with state and Federal wildlife agencies. The mitigation measures allow for only authorized biologists to handle tortoises during construction in order to provide protection during periods of high activity in the region, when encountering tortoises is more likely. During the operational phase, maintenance workers will be allowed to handle tortoise under limited conditions since providing biologists at all times is not practical. The maintenance workers will undergo training in tortoise handling. The tortoise handling protocol is further developed within the Biological Opinion prepared by the FWS and attached as a condition of approval of this Record of Decision.

Issue Raised: Metropolitan lacks the power to create, develop or enter into the project.

Response: Metropolitan is a State-chartered agency and its enabling legislation provides it the authority for this project. Section 130 of the California Metropolitan Water District Act provides that the district may: “(a) Acquire water and water rights within or without the state. (b) Develop, store, and transport water ... (e) Acquire, construct, operate, and maintain any and all works, facilities, improvements, and property necessary or convenient to the exercise of the powers granted by this section.”

Issue Raised: The FEIS/EIR incorrectly states that the project is not growth inducing, and it must analyze the impacts of the increased water supply throughout the State.

Response: Based on the analysis in the FEIS/EIR, BLM has concluded that the project is not growth inducing and does not eliminate a constraint that has been shown to limit growth. Population growth

has continued for decades within Metropolitan's service area despite periodic extended drought conditions and restrictions on water use. Factors contributing to population growth include socioeconomic factors (employment and industry, housing availability, cost of living) as well as intangible factors (weather or aesthetics). Regional planning agencies such as the Southern California Association of Governments project that population growth will continue in Southern California through 2020. Further, the Cadiz Project would not provide additional supplies to Metropolitan's service area, but would replace use of Colorado River supplies apportioned to Arizona and Nevada.