
SECTION 2

CRITICAL RESOURCES AND POTENTIAL ADVERSE IMPACTS IN OR ADJACENT TO THE PROJECT AREA

This Management Plan addresses the following critical resources:

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

Potential adverse impacts to these critical resources as a result of project operations are discussed below.

2.1 POTENTIAL IMPACTS TO SPRINGS WITHIN THE AFFECTED WATERSHEDS INCLUDING SPRINGS WITHIN THE MOJAVE NATIONAL PRESERVE AND BLM- MANAGED LANDS

- Potential for impact to spring flow within the Mojave National Preserve due to change of groundwater elevations as a result of project operations.
- Potential for impact to spring flow within designated BLM wilderness areas due to change of groundwater elevations as a result of project operations.
- Potential for impact to Bonanza Spring and all other springs located on BLM-managed lands within the affected watersheds of Bristol, Cadiz, Fenner and Orange Blossom Wash due to change in groundwater elevations as a result of project operations.

2.2 POTENTIAL IMPACTS OF THE PROJECT TO THE AQUIFER SYSTEM

For purposes of this Management Plan, the aquifer system includes aquifers of the Fenner, Bristol, and Cadiz basins. However, emphasis is placed on the aquifer system in the vicinity of the project area. The “project area” refers to the area encompassing the proposed artificial recharge facilities and extraction wellfield and is in and around the Fenner Gap area and existing Cadiz agricultural wellfield.

- Potential for impact to indigenous groundwater quality due to storage and extraction related to project operations.
- Potential for impacts to wells owned by neighboring landowners due to project operations.
- Potential for land subsidence and loss of groundwater storage capacity due to groundwater withdrawal.
- Potential for increased risk of liquefaction related to project spreading operations.
- Potential for hydrocompaction related to project spreading operations.
- Potential for induced flow of lower quality water from Bristol and Cadiz dry lakes.
- Potential for long-term drawdown of groundwater.

2.3 POTENTIAL IMPACTS TO BRINE RESOURCES ON BRISTOL AND CADIZ DRY LAKES

- Potential for impacts to brine resources on Bristol and Cadiz dry lakes include:
 - Potential change in groundwater elevations impacting evaporation and brine concentrations.
 - Potential dilution of brine concentration from migration of relatively low total dissolved solids (TDS) concentration of stored water.
 - Potential introduction of non-native chemical constituents into brine water from migration of stored water.

2.4 POTENTIAL IMPACTS TO AIR QUALITY

The Cadiz Project is in the Mojave Desert Air Basin (MDAB). The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the Southern California coastal and central California Valley regions by mountains where highest elevation reaches approximately 10,000 feet and whose passes form the main channels for these air masses.

The Mojave Desert is bordered on the southwest by the San Bernardino Mountains, which are separated from the San Gabriel Mountains by the Cajon Pass (4,200 feet). A lesser channel, the Morongo Valley, lies between the San Bernardino Mountains and the Little San Bernardino Mountains.

- Potential impacts to air quality in the Mojave Desert region due to mobilization of dust from changes in groundwater levels underlying Bristol and Cadiz dry lakes as a result of project operations.