Morongo Valley Groundwater Basin

- Groundwater Basin Number: 7-20
- County: San Bernardino
- Surface Area: 7,240 acres (11.3 square miles)

Basin Boundaries and Hydrology
This basin underlies Morongo Valley in the Little San Bernardino Mountains of southern San Bernardino County. The basin is bounded by crystalline rocks of the San Bernardino Mountains on the north and the Little San Bernardino Mountains on the south (DPW 1954; Rogers, 1967). Morongo Valley is drained by Big Morongo and Little Morongo Creeks, and average annual rainfall ranges from 8 to 13 inches.

Hydrogeologic Information

Water Bearing Formations
The principal water-bearing unit in this basin is Quaternary age alluvium which is formed of sand, gravel, silt, and clay (DPW 1954). These alluvial deposits reach at least 140 feet thick (DPW 1954) and may reach 220 feet thick (DWR 1975).

Restrictive Structures
This basin is an alluvium-filled fault-bounded valley. The Pinto Mountain fault follows the northern boundary and the Morongo Valley fault follows the southern boundary of the basin (Rogers 1967). These faults may form the boundaries of the basin in the subsurface. It is unknown whether the Pinto Mountain fault disrupts groundwater flow in the basin, but the Morongo Valley fault is a barrier and produces rising water and a marshy environment along the courses of the Big and Little Morongo Creeks as they exit the valley to the south (DPW 1954). A surface and groundwater divide is found between the drainages of the Big and Little Morongo Creeks, with depths to water greater on the eastern side of the divide (DPW 1954).

Recharge Areas
Recharge is accomplished chiefly by percolation of flow in Big Morongo and Little Morongo Creeks and Smith Canyon through alluvial fans on the northern edge of the basin (DPW 1954).

Groundwater Level Trends
Groundwater flow is generally southward through the basin. Groundwater rises along the southern part of the basin and is discharged into Big and Little Morongo Creeks (DPW 1954).

Groundwater Storage

Groundwater Storage Capacity. Total storage capacity is estimated to be about 100,000 af (DWR 1975).

Groundwater in Storage. Unknown.
Groundwater Budget (Type C)
Information for a complete groundwater budget is not available. The extraction of groundwater prior to 1954 was estimated to be about 230 af/yr (DPW 1954). Natural recharge is estimated at about 800 af/yr (DWR 1975).

Groundwater Quality
Characterization. Groundwater in the northeastern part of the basin ranges from Calcium-sodium bicarbonate to sodium sulfate-bicarbonate in character (DPW 1954). Groundwater in the southwestern part of the basin ranges from calcium-magnesium-sodium bicarbonate-sulfate to sodium sulfate in character (DPW 1954). Groundwater is rated suitable for domestic, municipal, and agricultural purposes (DPW 1954). Analyses of water from four wells sampled in 1952 show an average TDS content of 592 mg/L. Water from 3 public supply wells has an average TDS content of 480 mg/L and ranges from 469 to 496 mg/L.

Impairments.

Water Quality in Public Supply Wells

<table>
<thead>
<tr>
<th>Constituent Group</th>
<th>Number of wells sampled</th>
<th>Number of wells with a concentration above an MCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inorganics – Primary</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Radiological</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Nitrates</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Pesticides</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>VOCs and SVOCs</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Inorganics – Secondary</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

1 A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in California’s Groundwater Bulletin 118 by DWR (2003).
2 Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
3 Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

<table>
<thead>
<tr>
<th>Well yields (gal/min)</th>
<th>Municipal/Irrigation</th>
<th>Average: 90 gal/min (DWR 1975)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total depths (ft)</td>
<td>Domestic</td>
<td>Average:</td>
</tr>
<tr>
<td></td>
<td>Municipal/Irrigation</td>
<td>Average:</td>
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</tbody>
</table>
Active Monitoring Data

<table>
<thead>
<tr>
<th>Agency</th>
<th>Parameter</th>
<th>Number of wells/measurement frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groundwater levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous water quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Department of Health Services and cooperator</td>
<td>Title 22 water quality</td>
<td>5</td>
</tr>
</tbody>
</table>

Basin Management

Groundwater management:

Water agencies

Public

Private Morongo Band of Mission Indians, Morongo Water Consortium

References Cited


Additional References


Errata

Changes made to the basin description will be noted here.