

## Mohawk Valley Groundwater Basin

- Groundwater Basin Number: 5-11
- Counties: Plumas, Sierra
- Surface Area: 19,000 acres (30 square miles)

### Basin Boundaries and Hydrology

The Mohawk Valley Groundwater Basin lies within an elongated valley occupying a portion of a long, narrow graben. The graben is bounded on the southwest side by the Mohawk Valley fault. The east side of the valley is bounded by a group of northwest trending faults that branch from the Mohawk Valley fault near Gattley. The floor of the valley consists of a narrow strip of nearly flat alluvial material overlying lake sediments. Lake sediments also underlie the upland areas of the valley. Depth to bedrock is estimated to range between 1,500- to 3,000-feet. The basin is bounded to the northeast by Pliocene volcanic rocks of Penman Peak, to the east by Miocene volcanic rocks of Beckwourth Peak, and to the west and southwest by Paleozoic metavolcanic rocks and Mesozoic granitic rocks of the Sierra Nevada mountains. Sulphur Creek drains the southern half of the valley and enters Middle Fork Feather River near the midpoint of the valley and flows northwesterly (DWR 1963). Precipitation ranges from 27- to 39-inches in the valley and ranges to 51 inches in the upland areas.

### Hydrogeologic Information

#### ***Water-Bearing Formations***

The primary water-bearing formations in the basin are Holocene sedimentary deposits and Pleistocene lake and near-shore deposits. The following summary of water-bearing formations is from DWR (1963).

**Holocene Sedimentary Deposits.** Holocene sedimentary deposits include alluvial fans and intermediate alluvium. Alluvial fans consist of unconsolidated gravel, sand, and silt with minor clay lenses. Thickness of the deposits ranges to 200 feet. The fan deposits coalesce or interfinger with lake and alluvial deposits. Specific yield ranges from 8- to 17-percent. Intermediate alluvium consists of unconsolidated silt and sand with lenses of clay and gravel. Specific yield is estimated to range between 5- to 25-percent. This unit is limited in extent. The deposits are up to 50 feet in thickness and yield moderate amounts of groundwater.

**Pleistocene Lake and Near-Shore Deposits.** Lake and near-shore deposits underlie the majority of the valley and range in thickness to over 2000 feet. These deposits consist of slightly consolidated, bedded sand, silt, and diatomaceous clay. The sand beds usually yield large quantities of confined groundwater. The near-shore deposits are composed of moderately permeable sand and gravel and, where saturated, yield moderate amounts of groundwater. Specific yield ranges from 1- to 25-percent.

#### ***Groundwater Level Trends***

Analysis incomplete.

### **Groundwater Storage**

**Groundwater Storage Capacity.** Storage capacity for the basin is estimated to be 90,000 acre-feet based on a specific yield of 5 percent for a depth interval of zero to 200 feet (DWR 1963).

### **Groundwater Budget (Type B)**

The estimate of groundwater extraction is based on a 1997 survey conducted by the California Department of Water Resources. The survey included landuse and sources of water. Groundwater extraction for municipal and industrial uses is estimated to be 130 acre-feet. Deep percolation of applied water is estimated to be 330 acre-feet.

### **Groundwater Quality**

**Characterization.** Calcium-magnesium bicarbonate and sodium bicarbonate are the predominant groundwater types in the basin. Total dissolved solids concentrations range from 210- to 285-mg/L, averaging 248 mg/L (DWR unpublished data).

**Impairments.** Groundwater in the basin has locally high iron, manganese, ammonia, phosphorus, ASAR and boron levels.

### **Water Quality in Public Supply Wells**

Constituent Group <sup>1</sup>	Number of wells sampled <sup>2</sup>	Number of wells with a concentration above an MCL <sup>3</sup>
Inorganics – Primary	11	0
Radiological	3	0
Nitrates	15	0
Pesticides	4	0
VOCs and SVOCs	4	0
Inorganics – Secondary	11	5

<sup>1</sup> 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).

<sup>2</sup> Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.

<sup>3</sup> 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

Well yields (gal/min)		
Municipal/Irrigation	500 (1 Well Completion Report)	
Total depths (ft)		
Domestic	Range: 38 – 466	Average: 133 (168 Well Completion Reports)
Municipal/Irrigation	Range: 234 – 264	Average: 249 (2 Well Completion Reports)

## Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR	Groundwater levels	1 well semi-annually
DWR	Miscellaneous water quality	2 wells biennially
Department of Health Services	Miscellaneous water quality	15

## Basin Management

Groundwater management:	No known groundwater management plans, groundwater ordinances, or basin adjudications
Water agencies	
Public	Plumas Eureka CSD, CLIO PUD
Private	

## Selected References

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## Errata

Changes made to the basin description will be noted here.