

# 8-002.06 UPPER SANTA ANA VALLEY - BUNKER HILL

## Basin Boundaries

### Summary

The Bunker Hill groundwater subbasin consists of alluvial materials that underlie the San Bernardino Valley in southwestern San Bernardino County. This subbasin is bound on the north and northeast by consolidated rocks of the San Bernardino Mountains and generally follows the San Andreas fault zone. The subbasin is bound on the south by surface drainage divides and the Crafton Hills and on the west by the San Jacinto fault zone. Plutonic and metamorphic rocks of the San Gabriel Mountains bound the northwest side of the basin. The majority of the northeastern and southeastern boundaries coincide with the Western San Bernardino (1969) groundwater adjudication boundary. The Santa Ana River, Mill Creek, and Lytle Creek are the main tributary streams in the subbasin (SBVWCD, 2000). Average annual precipitation ranges from 13 to 31 inches. The subbasin boundary is defined by the twenty-four (24) segments detailed in the description below.

### Segment Descriptions

<u>Segment Label</u>	<u>Segment Type</u>	<u>Description</u>	<u>Ref</u>
1-2	<sup>E</sup> Alluvial	Begins from point (1) and generally follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and Precambrian to Mesozoic metasedimentary rocks to point (2).	{a}
2-3	<sup>E</sup> Management Area	Continues from point (2) and follows the Western San Bernardino (1969) judgment boundary to point (3).	{b}
3-4	<sup>E</sup> Fault	Continues from point (3) and approximately follows the San Andreas fault to point (4).	{c}
4-5	<sup>I</sup> Watershed	Continues from point (4) and follows the Crafton hydrologic subarea boundary to point (5).	{d}
5-6	<sup>E</sup> Alluvial	Continues from point (5) and generally follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and Precambrian to Mesozoic gneissic rocks of the Crafton Hills to point (6).	{a}
6-7	<sup>I</sup> Watershed	Continues from point (6) and generally follows Yucaipa watershed boundary to point (7).	{d}
7-8	<sup>I</sup> Watershed	Continues from point (7) and generally follows Beaumont watershed boundary to point (8).	{d}
8-9	<sup>I</sup> Fault	Continues from point (8) and follows the San Jacinto fault to point (9).	{e}
9-10	<sup>I</sup> Fault	Continues from point (9) and follows a concealed portion of the San Jacinto fault to point (10).	{e}
10-11	<sup>E</sup> Alluvial	Continues from point (10) and generally follows the contact of Quaternary alluvium with Oligocene granodiorite, Mesozoic Pelona Schist and various plutonic rocks, Paleozoic metasedimentary rocks, and Precambrian to	{e}

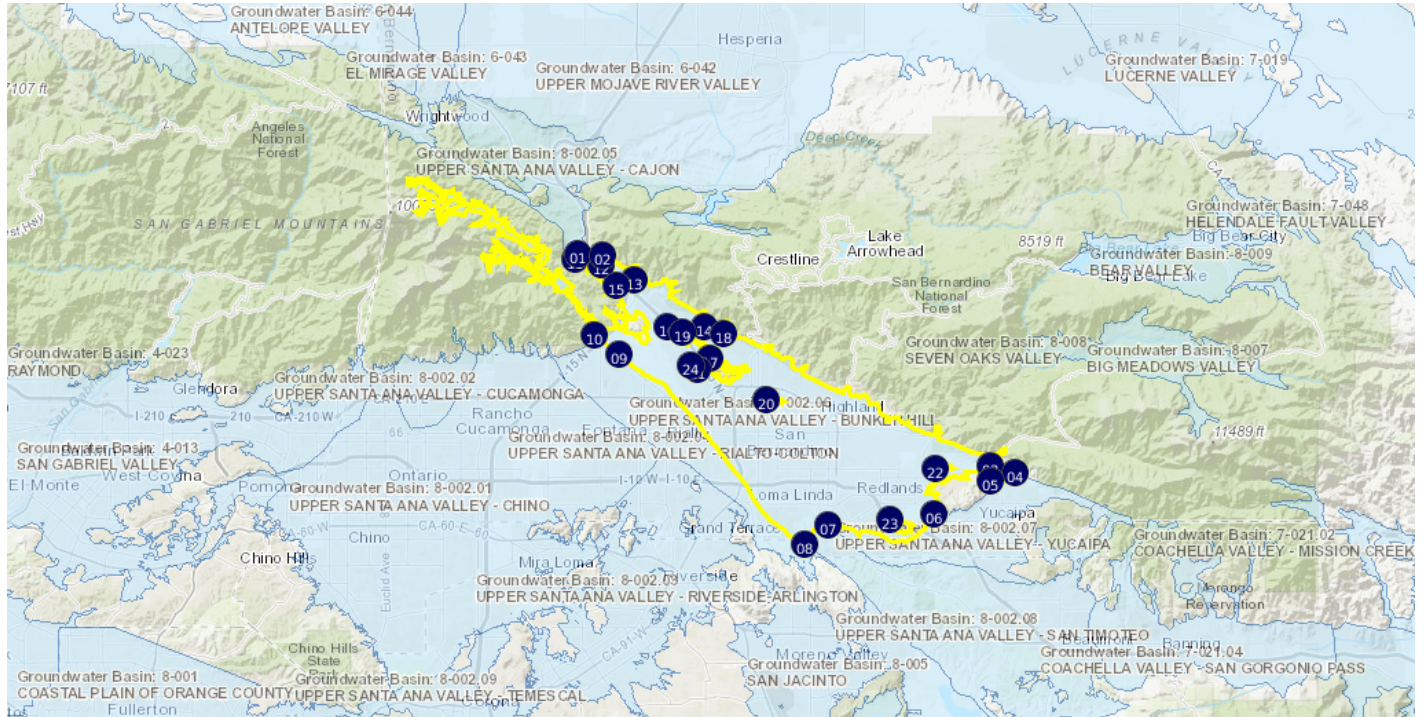
		Mesozoic gneissic rocks to point (11).	
11-1	<sup>I</sup> Management Area	Continues from point (11) and follows the Western San Bernardino (1969) judgment boundary, then crosses the alluvium at Cajon Wash and ends at point (1).	{b}
12-12	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (12) and generally follows the contact of Quaternary alluvium with the Mesozoic Pelona Schist and Pleistocene Older Dissected Surficial Sediments and ends at point (12).	{a}
13-13	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (13) and follows the contact of Quaternary alluvium with the Mesozoic Pelona Schist and Pleistocene Older Dissected Surficial Sediments, south of the fault, and ends at point (13).	{a}
14-14	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (14) and follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and ends at point (14).	{a}
15-15	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (15) and follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and ends at point (15).	{a}
16-16	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (16) and generally follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and ends at point (16).	{a}
17-17	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (17) and generally follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and ends at point (17).	{a}
18-18	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (18) and generally follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and ends at point (18).	{a}
19-19	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (19) and generally follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and ends at point (19).	{a}
20-20	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (20) and generally follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and ends at point (20).	{a}
21-21	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (21) and generally follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and ends at point (21).	{a}
22-22	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (22) and generally follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and Tertiary granodiorite and ends at point (22).	{a}
23-23	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (23) and generally follows the contact of Quaternary alluvium with Precambrian to Mesozoic gneiss and ends at point (23).	{a}
24-24	<sup>E</sup> Alluvial	Island within the basin boundary: begins from point (24) and generally follows the contact of Quaternary alluvium with Mesozoic Pelona Schist and ends at point (24).	{a}

***Significant Coordinates***

<b><u>Point</u></b>	<b><u>Latitude</u></b>	<b><u>Longitude</u></b>
1	34.25417871	-117.457891438
2	34.25382487	-117.433913838
3	34.080177198	-117.046086326
4	34.07353448	-117.020892432
4	34.07353448	-117.020892432
5	34.066930937	-117.045619753
6	34.039592718	-117.102501622
7	34.031208289	-117.208672574
8	34.014576712	-117.231981914
9	34.171430352	-117.416740615
10	34.187705401	-117.442273144
11	34.250281533	-117.461060333
12	34.245546806	-117.434719434
13	34.233606871	-117.402238609
14	34.194416489	-117.33220849
15	34.229041086	-117.41993181
16	34.193997148	-117.369507048
17	34.16823057	-117.325932137
18	34.188846738	-117.313088197
19	34.19008145	-117.354364908
20	34.134603401	-117.26966635
21	34.159599276	-117.339211856
22	34.077068957	-117.101473888
23	34.034818427	-117.146852837
24	34.162724818	-117.346087347

Map

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<https://sgma.water.ca.gov/webgis/?appid=160718113212&subbasinid=8-002.06>

References

<u>Ref</u>	<u>Citation</u>	<u>Pub Date</u>	<u>Global ID</u>
{a}	California Geological Survey (CGS), Geologic Compilation of Quaternary Surficial Deposits in Southern California, T.L. Bedrossian, P. Roffers, C.A. Hayhurst, J.T. Lancaster, and W.R. Short.URL: <a href="http://www.conservation.ca.gov/cgs/fwgp/Pages/sr217.aspx">http://www.conservation.ca.gov/cgs/fwgp/Pages/sr217.aspx</a>	2012	50
{b}	California Department of Water Resources (DWR), Adjudicated Basins GIS layer, .URL: <a href="https://gis.water.ca.gov/app/bbat/">https://gis.water.ca.gov/app/bbat/</a>	2016	44
{c}	California Geological Survey (CGS), Geologic Atlas of California Map No. 008, Los Angeles Sheet, , 1:250,000, Charles W. Jennings and Rudolph G. Strand.URL: <a href="http://www.quake.ca.gov/gmaps/GAM/losangeles/losangeles.html">http://www.quake.ca.gov/gmaps/GAM/losangeles/losangeles.html</a>	1969	33
{d}	United States Geological Survey (USGS), National Hydrography Dataset, Watershed Boundary Dataset for California, note: Coordinated effort among the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS), the United States Geological Survey (USGS), and the Environmental Protection Agency (EPA).URL: <a href="http://datagateway.nrcs.usda.gov">http://datagateway.nrcs.usda.gov</a>	2016	49
{e}	California Geological Survey (CGS), Regional Geologic Map No. 3A, San Bernardino Quadrangle, 1:250,000, E.J. Bortungno and T.E. Spittler.URL: <a href="http://www.quake.ca.gov/gmaps/RGM/sanbernardino/sanbernardino.html">http://www.quake.ca.gov/gmaps/RGM/sanbernardino/sanbernardino.html</a>	1986	6

Footnotes

- I: Internal
- E: External