

Coachella Valley Water District

Water Supply Reliability Certification and Data Submission Supplemental

The source of supply for potable water for the Coachella Valley Water District (CVWD) is local groundwater, which is replenished through imported supplies from the State Water Project and Colorado River. CVWD uses recycled and/or canal to meet the irrigation demands of agriculture, golf, home owners associations and other non-potable customers.

Below, the responses to each question with worksheets are explained.

Groundwater Questions (Worksheet 1)

Question 1:

In 1964, the Department of Water Resources estimated the subbasins in the Coachella Valley groundwater basin contained approximately 39,200,000 acre feet of water in the first 1,000 feet below the surface (Page III-12, <http://www.cvwd.org/ArchiveCenter/ViewFile/Item/505>). The Coachella Valley Water Management Plan (CVWMP) estimates approximately 28.8 million acre feet of water within the Whitewater River (Indio) River (Indio) Subbasin and the Mission Creek Garnet Hill Management Plan estimates 1.4 million acre feet within the Mission Creek Subbasin (Page 6-6, <http://www.cvwd.org/ArchiveCenter/ViewFile/Item/516>).

There are six water agencies that utilize the groundwater basin to supply potable water to retail customers: Coachella Water Authority, CVWD, Desert Water Agency, Indio Water Authority, Mission Springs Water District and Myoma Dunes Water Company. In addition, many private pumpers utilize the groundwater basin. Both agency and private pumping is reported annually in Engineer's Reports on Water Supply and Replenishment Assessment prepared by CVWD and DWA for five separate areas of benefit. For purposes of this certification, the agencies have agreed to report their supply based on their percentage of total reported pumping in the groundwater basin to ensure no water is double-counted in the Water Supply Reliability Certification and Data Submission Form. The agencies agreed to do so based on a total water basin supply of 30.2 MAF as described in the CVWD Urban Water Management Plan which estimates the Indio subbasin supply at 28.8 MAF and the Mission Creek Replenishment Report which estimates the Mission Creek Subbasin supply at 1.4 MAF (Page III-6, <http://www.cvwd.org/ArchiveCenter/ViewFile/Item/505>). The assumptions are summarized in the table below:

	Total Pumped	% of total Pumping	GW Supply available
Coachella Water Authority	6,486	0.02	715,311
Coachella Valley Water District	94,611	0.35	10,434,211
Desert Water Agency	29,731	0.11	3,278,895
Indio Water Authority	18,233	0.07	2,010,834
Mission Springs Water	7,106	0.03	

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District			783,688
Myoma Dunes	3,386	0.01	373,404
Other Pumpers	114,282	0.42	12,603,657
Total Pumped	273,835	1.00	30,200,000
Total GW Basin Size	30,200,000		

Questions 2 & 3:

Groundwater levels in a network of monitoring wells are monitored on a trimester basis. CVWD has 100 production wells. In order to comply with the intent of the groundwater worksheet, we used the well with the highest production in 2015. CVWD's highest producing well in 2015 is State Well Number 04S05E27K01S. Its average depth to water in 2013 was 198.8 feet. Its average depth to water in 2015 was 193.4 feet. In 2016, we have taken one reading (1/20/2016) and its depth to water is 193.8 feet. CVWD's network of water level monitoring wells includes CVWD's 100 production wells and about 200 private wells, giving us a total of about 300 water level monitoring wells. The changes associated with depth to water in each basin are described below:

Mission Creek

The average change observed in the six wells monitored from 2014 to 2015 within CVWD's Mission Creek Subbasin AOB was an increase of 2.8 feet. The average change observed in the 17 wells monitored from 2014 to 2015 within the overall Mission Creek Subbasin Management Area was a decline of 1.4 feet. One monitoring well and one production well are located near the Mission Creek Groundwater replenishment Facility, and experience dramatic fluctuations in water levels throughout the year in response to water deliveries. In 2015, water levels in these wells declined approximately 19 to 20 feet due to such fluctuations. (Page 63 or V-10, <http://www.cvwd.org/ArchiveCenter/ViewFile/Item/505>)

West Whitewater River (Indio) Subbasin

... The average annual change in water levels observed in the monitored wells from 2014 to 2015 within the AOB was a decline of 1.9 feet. The average change observed in the 140 wells monitored from 2014 to 2015 within the overall West Whitewater River (Indio) Subbasin Management Area and Garnet Hill Subbasin was a decline of 3.2 feet. Figure VI-1 includes eight monitoring wells located at the Whitewater Groundwater Replenishment Facility, which experienced dramatic fluctuations in water levels throughout the year in response to water deliveries. In 2015, water levels in those eight monitoring wells declined approximately 45 feet due to reduced replenishment deliveries, which thereby skewed water level changes observed in the remaining 103 wells that are representative of CVWD's West Whitewater River (Indio)

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Subbasin AOB. Excluding those eight monitoring wells, the average change in groundwater levels from 2014 to 2015 within CVWD's West Whitewater River (Indio) Subbasin AOB was an increase of 1.4 feet. Figure VII-6 depicts the same information for the West and East Whitewater River (Indio) Subbasin Management Areas combined. (Page 84-85 or VI-12, <http://www.cvwd.org/ArchiveCenter/ViewFile/Item/505>)

East Whitewater River (Indio)

The annual average change in groundwater levels from 2005 to 2015, excluding the monitoring wells near the TEL Replenishment Facility, was an increase of 19.7 feet. The analysis of the groundwater levels observed at the monitoring wells emphasizes the benefit and effectiveness of the replenishment program in sustaining the water supplies. Without replenishment, water levels and supplies would likely decline, but with sufficient replenishment and other water management programs, water levels will stabilize. (Page 105 or VII-11, <http://www.cvwd.org/ArchiveCenter/ViewFile/Item/505>)

Question 4:

In order to determine how many feet can be withdrawn without substantially affecting our ability to pump water, we evaluated the depth of water to the depth of our pumps. As described above, our water level at well number 04S05E27K01S is 193.4 feet below ground surface. The pump for this well is located at 310 feet. Therefore, we would have to withdraw 116.6 feet before impacting our ability to pump water.

Question 5:

As described above, the five water agencies collaboratively distributed the volume of the groundwater basin for purposes of this assessment. No other water will be distributed to another supplier.

Worksheet 1: Total Available Water Supply for Individual Water Supplier

Wholesaler Supplied:

CVWD does not provide wholesale water supply, therefore the top portion of the table has been left blank.

Self-Supplied:

CVWD receives water for replenishment from the Colorado River and the State Water Project. Because the infrastructure of the State Water Project does not extend to the Coachella Valley, CVWD and Desert Water Agency entered into a management agreement with Metropolitan Water District of Southern California to exchange their allotment of State Water Project Water for Colorado River Water. This agreement also includes advanced deliveries. As such, the data reported below includes ONLY actual water deliveries received during these water years.

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Below is a summary of Colorado River Exchange Water for replenishment in each basin from 2013 to 2015. This table includes all replenishment in the Coachella Valley. (Pages V-6, VI-6 and VII_5, <http://www.cvwd.org/ArchiveCenter/ViewFile/Item/505>.)

	2013	2014	2015
Mission Creek	2,379 AF	4,325 AF	171 AF
West Whitewater River (Indio)	26,620 AF	3,533 AF	865 AF
East Whitewater River (Indio)	35,192 AF	36,030 AF	37,262 AF
Total	64,191 AF	43,888 AF	38,298 AF

Because DWA and CVWD jointly replenish the basin, and both have rights to SWP water, it is necessary to extract CVWD's replenishment water for each system as described in the table below.

	CR Water Supply Received	SWP Water Supply Received (Exchanged with MWD for CR Water)
WY 2013	32,715 AF	28,188 AF
WY 2014	36,757 AF	11,159 AF
WY 2015	36,473 AF	1,590 AF

As directed in the instructions, 2017 mirrors 2013, 2017 mirrors 2014, and 2018 mirrors 2015 within our worksheet.

The amount entered for groundwater is the volume of water described above (10,434,147.24 acre feet) less CVWD pumping (Page 6-10, Table 6-1, <http://www.cvwd.org/ArchiveCenter/ViewFile/Item/516>) in 2013, 2014 and 2015 since 2017 mirrors 2013, 2017 mirrors 2014, and 2018 mirrors 2015.

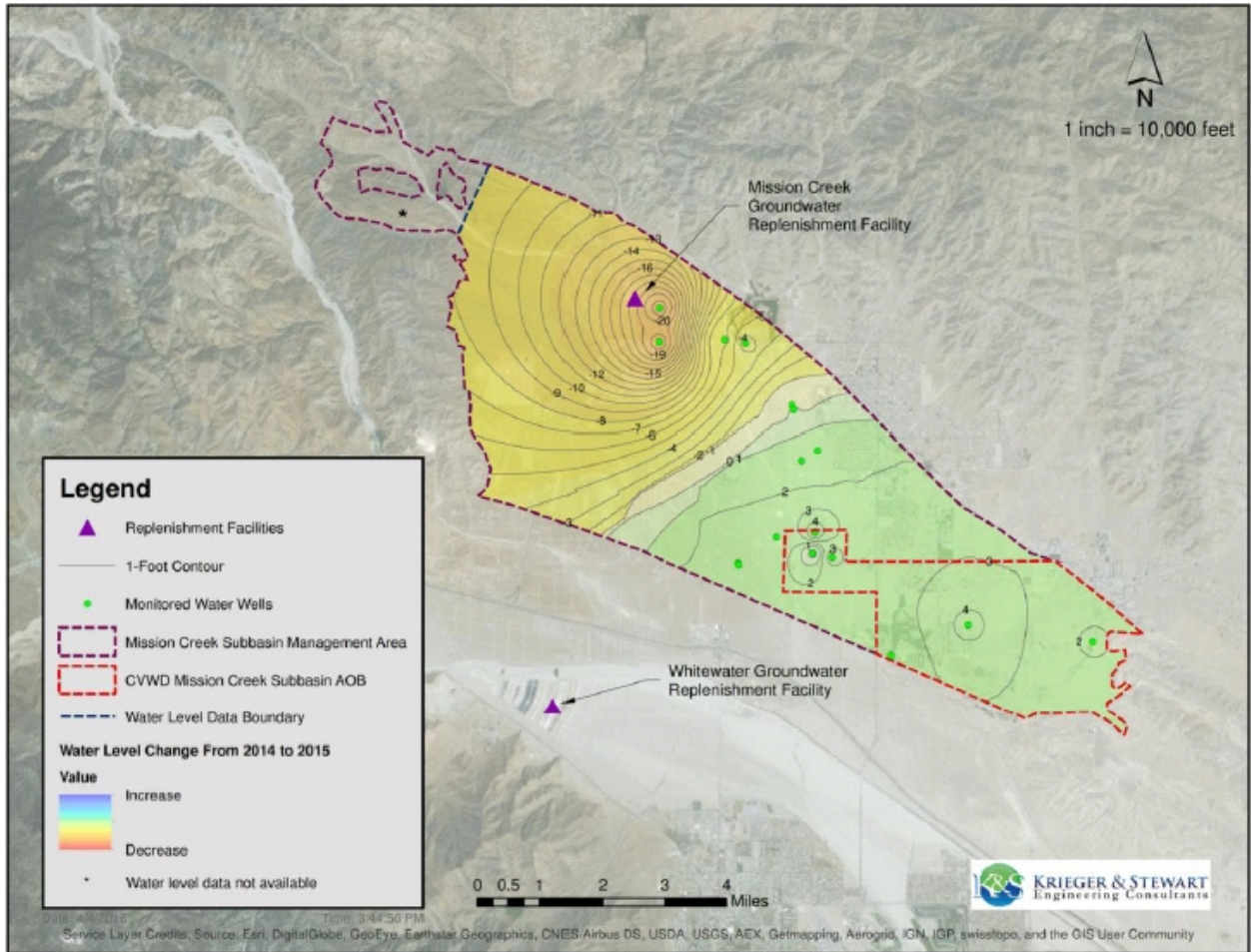
	Volume	CVWD Retail Service Pumping	Supply
2013	10,434,147	114,859	10,319,288
2014	10,319,288	111,909	10,207,379
2015	10,207,379	92,974	10,114,405

Water Supplies Committed to Other Uses:

None of CVWD's potable water supplies are committed to other uses since all potable uses are included in our production estimates.

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Figure V-1
Groundwater Level Changes in Mission Creek Subbasin Management Area: 2014 to 2015



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**Figure VII-6
Groundwater Level Changes in Combined East and West Whitewater River Subbasin Management Areas: 2014 to 2015**

