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SEASIDE BASIN WATERMASTER MEMORANDUM 2010-01

Date: **July 28, 2010**
To: **Seaside Basin Watermaster**
From: **Jonathan Lear, PG, CHg, Senior Hydrogeologist**
Joe Oliver, PG, CHg, Water Resources Division Manager
Tom Lindberg, Associate Hydrologist

Subject: **Report of First and Second Quarter Water Year 2010, Groundwater-Quality and Groundwater-Level Data Collected for the Seaside Groundwater Basin Watermaster**

SUMMARY

This memorandum transmits and summarizes groundwater-quality and groundwater-level data collected for the Seaside Groundwater Basin Watermaster Board (Watermaster) during the first and second quarters of Water Year (WY) [1] 2010. This report incorporates the data that were collected and reported during the period from October 1, 2009 through March 31, 2010. This information is being provided to the Watermaster for information purposes, and is in compliance with the monitoring protocols described in the Watermaster's *Seaside Basin Monitoring and Management Program* (SBMMP, revision date September 5, 2006), which was prepared in response to the court decision filed March 27, 2006 (as amended by February 9, 2007 filing) in the Seaside Basin adjudication case. This document has been prepared by the Monterey Peninsula Water Management District (MPWMD) on behalf of the Watermaster.

This document is organized into the following three categories of data:

- Precipitation to date,
- Water-quality data collected from MPWMD Quarterly wells, and
- Static water levels collected from MPWMD and other Watermaster basin wells.

[1] The WY begins on October 1, and ends September 30 of the indicated year. The first quarter represents 10/1/09 through 12/30/09 and the second quarter represents 1/1/10 through 3/31/10.

PRECIPITATION

A continuous precipitation gage is located at the south eastern corner of the Southern Coastal Sub-Area of the Seaside Groundwater Basin. Data from the precipitation gage are posted to the www.weatherunderground.com website and are available real time as well as archival data sets. **Figure 1** shows the location of the weather station and the average annual rainfall totals for the Seaside Groundwater Basin. **Figure 2** shows daily and cumulative rainfall recorded by the weather station for the first and second quarter of the 2010 water year. Average annual rainfall for the location of the weather station is 17 inches. As **Figure 2** illustrates, at the close of the second quarter of the WY 2010, the weather station had already logged over 17 inches, which makes this an above average rainfall year for the Seaside Basin.

WATER-QUALITY DATA: MPWMD AND OTHER BASIN WELLS

MPWMD Coastal Monitor-Well Network

Under the current monitoring program conducted for the Watermaster, the MPWMD collects *quarterly* samples from six monitor wells at three locations that are closest to the coastline, and *annually* from six additional wells at three locations that are farther from the coastline. The well numbers, names and sampling schedule for the MPWMD coastal monitor wells currently being sampled for the Watermaster are listed below.

MPWMD Coastal Monitor Wells

Well Number	Well Name	Sample Interval
15S01E15N3	MSC-Shallow	quarterly
15S01E15N2	MSC-Deep	quarterly
15S01E15F1	PCA-W-Shallow	quarterly
15S01E15F2	PCA-W-Deep	quarterly
15S01E11Pa	FO-09-Shallow	quarterly
15S01E11Pb	FO-09-Deep	quarterly
15S01E15K5	PCA-E-Shallow	annually
15S01E15K4	PCA-E-Deep	annually
15S01E23Ca	Ord Terrace-Shallow	annually
15S01E23Cb	Ord Terrace-Deep	annually
15S01E12Fa	FO-10-Shallow	annually
15S01E12Fc	FO-10-Deep	annually

These sites are shown on **Figure 3** and completion data for these wells are shown in **Table 1.** At each site, a “shallow” and “deep” monitor well have been installed (either in separate boreholes or as multiple completions in a single borehole), generally corresponding to well completions within

the two principal aquifer units that have been historically recognized in the Seaside Basin, the Paso Robles Formation (QTp and QTc for undifferentiated Continental Deposits) and Santa Margarita Sandstone (Tsm), respectively. More recently, it has been recognized that the Tsm deposits transition to the Purisima Formation (Tp) in the northern coastal subarea of the Basin. The monitor wells are constructed of 2-inch PVC casing, with screens adjacent to the more permeable (i.e., based on lithologic and geophysical logging analyses) sand "packages" within each aquifer unit. The aquifer units are separated from each other in the wells by cement strata-isolation seals.

MPWMD Coastal Monitor Wells Water-Sample Collection

Water-sample collection from the MPWMD coastal monitor wells for quarters 1 and 2 of WY 2010 water year were accomplished by the Low-Flow Method. As a means to investigate alternative water-quality sampling technologies, MPWMD staff completed a test of different "low-flow" sampling methodologies at Watermaster database Well No. 258 (MW-B-23-180) on June, 4, 2009. Results from the methodology comparison along with cost estimates for implementation of each methodology were presented to the Watermaster Technical Advisory Committee (TAC) at the June 10, 2009 meeting. Following the recommendation of the TAC, MPWMD staff purchased a Micro Purge well sampling pump and pump controller from QED Environmental Systems, Inc. Motivation behind changing the sampling method included a desire to: (a) switch to a less invasive sampling method to prolong the life of the monitoring wells and (b) implement a less labor-intensive method that will be more cost effective to the Watermaster in the long run. Details of this sampling methodology are discussed below. This methodology will be used to sample MPWMD monitor wells for all quarters of WY 2010.

- **Low-Flow Sampling Method**

Low-flow/low-volume purging method is sample collection using a pumping mechanism that produces low-flow rates [less than 1 liter per minute (lpm) or less than 0.26 gallon per minute (gpm)] that cause minimal drawdown of the static water table and usually employs a flow cell in which geochemical parameters are continuously monitored. These parameters may include dissolved oxygen content, oxidation-reduction potential (redox), conductivity, turbidity, and/or pH. The intent of this sampling protocol is to collect a representative sample from the monitored groundwater zone. A representative sample may be obtained when all the monitored chemical parameters have stabilized, thus quantitatively demonstrating that the sample being collected is in equilibrium with the groundwater system. The low-flow/low volume purging method (purging to parameter stability) tends to isolate the interval being sampled, which provides more accurate water-quality measurements and reduces the volume of purge water generated. This method has an advantage in that it can limit vertical mixing and volatilization of any volatile organic compounds (VOCs) in solution within the well casing or borehole, as compared to high-flow purging and sampling (e.g., air-lift sampling method).

Figure 4 illustrates the QED Environmental Systems, Inc. low-flow sampling equipment. The bladder pump is placed in the monitor well and powered by a fuel source of compressed gas. The peristaltic action of the pump lifts water from the well and initiates flow through the well screen at the location where the drop tube and intake assembly have been placed. An electric wire sounder

is used to measure drawdown to insure minimal drawdown is caused by pumping the well. Water-quality parameters are monitored at the flow cell as the well is purged.

The low-flow/low-volume purging method of sample collection has been described in groundwater monitoring literature since the mid-1980s with a defined methodology being accepted by the U.S. EPA in 1995. These protocols are summarized below as adopted by MPWMD staff:

1. **Flow rate**

The flow rate used during purging must be low enough to avoid increasing the water turbidity. The following measures should be taken to determine the appropriate flow rate: (a) The flow rate shall be determined for each well, based on the hydraulic performance of the well; (b) The flow must be adjusted to obtain stabilization of the water level in the well as quickly as possible; (c) The maximum flow rate used should not exceed 1 liter per minute (0.26 gpm); (d) Once established, this rate should be reproduced with each subsequent sampling event; (e) If a significant change in initial water level occurs between events, it may be necessary to re-establish the optimum flow rate at each sampling event.

2. **Measurement of water level and drawdown**

Measurement of the water level in the well during purging is important when establishing the optimum flow rate for purging. The goal is to achieve a stabilized pumping water level as quickly as possible with minimal drawdown, to avoid stressing the formation and mobilizing solids, and to obtain stabilized indicator parameters in the shortest time possible.

3. **Measurement of indicator parameters**

Continuous monitoring of water-quality indicator parameters is used to determine when purging is completed and sampling should begin. Measurement of indicator parameters (dissolved oxygen content, redox potential, specific conductance, temperature and pH) is required. This is most easily performed using an in-line flow cell (closed) system attached directly to the pump discharge tubing. For turbidity measurement, a separate field nephalometer should be used.

If portable systems are used, they must be placed carefully into the well and lowered into the screen zone as slowly as possible. Placement of the portable pump can disturb the groundwater flow conditions resulting in non-equilibrium conditions. As a result, longer purge times and greater purge volumes may be necessary to achieve indicator parameter stabilization. In general, this may require that after installation, the portable pump should remain in place for a minimum of 1-2 hours to allow settling of solids and re-establishment of horizontal flow through the screen zone. If initial turbidity readings are excessive (>50 NTU), pumping should cease and the well should rest for another 1-2 hours before initiating pumping again. In wells set in very fine-grained formations, longer waiting periods may be required. Continuous water-level measurement devices

are preferred, such as down-hole pressure transducers, but electronic water-level tapes can be used. The devices used must be capable of measuring to 0.01-foot precision.

4. Sample Collection

Water samples for laboratory analyses must be collected before water has passed through the flow-through cell (use a by-pass assembly or disconnect cell to obtain sample). VOC samples should be collected first and directly into pre-preserved sample containers. All sample containers are filled by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence. During purging and sampling, the tubing should remain filled with water so as to minimize possible changes in water chemistry upon contact with the atmosphere.

MPWMD Coastal Monitor Wells Water-Quality Results

Water chemistry analytical results for the samples collected during the first two quarters of WY 2010 are provided in the table in **Appendix 1**. This table and other water-level data tables in this document were prepared utilizing the "report" feature of the groundwater resources database that was created for the Watermaster in 2007.

In general, the chemical data from WY 2010 first and second quarter samplings of these monitor wells do not show significant changes relative to the results provided in WY 2009, and are not indicative of seawater intrusion into the basin at the locations and depths of these monitor well completions. This is consistent with the conclusions drawn in the Water Year 2009 Seawater Intrusion Analysis Report (SIAR WY2009) prepared by Hydrometrics, LLC.

WATER-LEVEL DATA: BASIN MONITOR AND PRODUCER WELLS

Basin monitor wells and basin producer active and inactive wells with water-level data collected during the first two quarters of WY 2010 are provided in **Appendix 2**. The general locations of these wells are shown on **Figure 5**. The Watermaster has requested that producers collect and report "static", i.e., non-pumping, water-level measurements. The purpose for this is so these measurements will more closely approximate ambient groundwater-level conditions, and facilitate the plotting of well water-level hydrographs. Occasionally, water-level measurements have been collected and reported while the well was in operation. In some cases, this may be due to the fact that the well can not be taken offline to collect a static water-level measurement because of pumping demand requirements. These occurrences have been recorded in the comments section of **Appendix 2**. These water-level data were collected primarily with manual water-level sounding devices by producers or by the MPWMD on behalf of the Watermaster.

These water-level data have been entered into the Watermaster database. The table in **Appendix 2** was generated by obtaining a data dump from the Watermaster database and using the report feature in MS Access. The new table format for this WY 2010 report includes additional information relative to each well and its monitoring schedule. This format will be used as a

template to improve the web-based reporting feature of the database. Because this feature is still under development, future water-level tables may differ slightly from the one included in this report.

It should be noted that the table in **Appendix 2** includes the "reference-point elevations" that were recently surveyed for each well, as part of work conducted for the Watermaster. The reference point elevations were established at the water-level data collection point at each wellhead. The reference point elevations are tied to the North American Vertical Datum of 1988 (NAVD88). The measurements in NAVD88 datum have been adjusted for the Watermaster's use by subtracting 2.97 feet to conform to local Mean Sea Level (MSL) reference, based on data provided by the surveyor. The "depth to water" measurement at each well is subtracted from the reference-point elevation to obtain the "water elevation" relative to MSL, as shown in the column to the right of the "depth to water" column of the table.

Water-level hydrographs for the MPWMD monitor wells located in the Northern Coastal Sub Area and the Watermaster Sentinel wells are included in **Appendix 3** . The long-term hydrograph figures for the MPWMD monitor wells were generated to provide historical static water-level data for the wells with longer data records in the Seaside Groundwater Basin. The Sentinel well hydrographs were included to comply with monthly water-level reporting requirements.

Appendix 4 contains graphs of the continuous water level records collected from the Sentinel Wells for the first and second quarters of WY 2010. It should be noted the instrument in Sentinel Well #4 malfunctioned during the second quarter which resulted in data corruption for the device. Therefore, data from this well is not included in this appendix. The device has been sent back to the manufacturer for repair.

CONCLUSIONS

- Due to actions by the Watermaster in WY 2009 to notify and remind basin producers of their obligations to collect required groundwater level and groundwater quality data from their wells, the availability of these data to assist in analysis of the basin's groundwater resources has greatly improved compared to prior years.
- The chemical data from the first and second quarters of WY 2010 for the MPWMD dedicated coastal monitor wells do not show significant changes relative to previous samplings, and are not indicative of seawater intrusion into the basin at the locations and depths of these monitor wells. This conclusion continues to be supported by work completed last year for the Watermaster as documented in the WY 2009 Seawater Intrusion Analysis Report prepared by HydroMetrics, LLC.
- Based on the water-level data collected during first and second quarter of WY 2010, water-level elevations varied from -50.86 feet mean sea level (MSLl) (Well No. 107) to +55.48 feet MSL (Well No. 177) in the coastal subareas of the basin, and from -18.49 feet MSL (Well No. 119) to +249.70 feet MSL (Well No. 139) in the inland subareas of the basin.
- Based on the long-term water-level hydrographs for coastal monitor wells presented in **Appendix 3**, the trend of declining groundwater levels is continuing in the deeper Santa

Margarita aquifer monitor wells, whereas groundwater levels have generally stabilized, and in a few cases displayed an overall increase in the shallower Paso Robles aquifer.

RECOMMENDATIONS

- The newly-initiated water-quality sampling methodology (i.e., the low-flow sampling method) should continue to be employed during the upcoming year. Based on the experience and water-quality record generated by this collection method during the next year, consideration should be given to altering (i.e, reducing) the sampling frequency of selected quarterly monitor wells that continue to exhibit stable water-quality results. Where feasible, water quality at selected locations may be supplemented with continuous water-quality dataloggers to offset the reduction in sample collection frequency.
- Deploying dedicated low-flow sampling equipment in the quarterly water-quality monitoring wells should be continued. Dedicated sampling equipment left in the monitoring wells greatly reduces staff resources required to obtain quarterly water-quality samples and results in an overall cost reduction in the long run.
- Given that the geophysical and water-quality data that have been collected since the installation of the Watermaster's coastal Sentinel Wells in 2007 have not shown any emerging trends or significant variations since this monitoring began, it is recommended that the frequency of induction logging at these sites continue to be collected semi-annually; this reduction in frequency from former quarterly monitoring will not unduly compromise the utility of the monitoring program.
- Groundwater quality samples should be obtained from the Camp Huffman well during the fourth quarter of WY 2010 for comparison to the samples collected immediately following well construction. Equipment required for sampling should be obtained during the third quarter of WY 2010.

Table 1. Summary of Well Completions, MPWMD Coastal Seaside Basin Watermaster Well.

SUMMARY OF MPWMD COASTAL SEASIDE BASIN GROUNDWATER QUALITY MONITOR WELLS

Site	Well Name	Location Description	Well Number	Date Drilled	DWR Drillers Log	Hole Depth (feet)	Well Depth (feet)	Screened Interval (feet)	Strata Seal (feet)	Casing Type	Geologic Unit	E-Log	Elevation (feet AMSL)
MSC		former MSC mine north of Playa Ave. and west of Hwy. 1											
	MSC-Shallow	approx. 10' S of north property line	15S/1E-15N3	5/25/1990	338413	720	695	490 - - 680	95 - 275	2" pvc	QTp	- - -	80.1
	MSC-Deep	approx. 7' E of MSC-Shallow	15S/1E-15N2	5/25/1990	338425	920	865	810 - 850	725 - 775	2" pvc	Tsm	yes	80.29
PCA WEST		former PCA mine W of Hwy. 1											
	PCA-W Shallow	approx. 200' SE of ocean bluff	15S/1E-15F1	3/28/1990	338400	600	585	525 - 575	120 - 150	2"pvc	QTp	- - -	64.22
	PCA-W Deep	approx. 50' E of PCA-W Shallow	15S/1E-15F2	3/90	338401	900	885	825 - 875	760 - 790	2" pvc	Tsm	yes	65.18
PCA EAST		vacant lot NE of Seaside High baseball field											
	PCA-E Shallow	approx. 300' E Monterey Rd, 50" N fence	15S/1E-15K5	4/16/1990	338402	863	410	350 - 400	110 - 150	2" pvc	QTp	- - -	68.51
	PCA-E Deep	(same borehole as shallow well)	15S/1E-15K4	4/16/1990	338402	863	710	650 - 700	580 - 620	2" pvc	Tsm	yes	68.54
ORD TERRACE		Ord Terrace School property south of Ord Grove Ave.											
	OT-Shallow	1700 block Ord Grove Ave.	15S/1E-23Ca	8/5/1999	- - -	530	340	280 - 330	0 - 260	2" pvc	upper Tsm	- - -	228.65
	OT-Deep	(same borehole as shallow well)	15S/1E-23Cb	8/5/1999	- - -	530	450	390 - 440	350 - 377	2" pvc	lower Tsm	yes	228.63
MPWMD #FO-09		E of Hwy.1, SE of Okinawa Rd.											
	#9-Shallow	50' east of utility service rd.	15S/1E-11Pa	8/16/1994	- - -	1,110	660	610 - 650	500 - 540	2" pvc	QTp (?)	- - -	118.89
	#9-Deep	(same borehole as shallow well)	15S/1E-11Pb	8/16/1994	- - -	1,110	840	790 - 830	700 - 765	2" pvc	Tsm (?)	yes	118.85
MPWMD #FO-10		south of Light Fighter Drive, behind Barker Theater Building											
	#10-Shallow	20' north of access road curb	15S/1E-12Fa	9/3/1996	- - -	1,500	650	620 - 640	480 - 500	2" pvc	QTp	- - -	200.85
	#10-Deep	(same borehole as shallow well)	15S/1E-12Fc	9/3/1996	- - -	1,500	1,420	1380 - 1410	1280 - 1300	2" pvc	Tsm (?)	yes	201.03

NOTES:
1. Official State well numbers end with a numeral; unofficial MPWMD well numbers end with a small case letter.
2. Geologic Unit refers to the unit adjacent to the screened interval: QTp = Paso Robles Formation; Tsm = Santa Margarita Sandstone.
3. Elevation refers to the water level reference point elevation surveyed by Central Coast Surveyors. For additional information, see "Documentation of 2008 Well Elevation Surveys", MPWMD Seaside Basin Watermaster Memorandum 2008-05.
4. Well completion data at site MSC are documented in "Installation of Monitoring Well Cluster, Monterey Sand Company", Staal, Gardner & Dunne, Inc. (SGD), July 1990.
5. Well completion data at sites PCA West and PCA East are documented in "Hydrogeologic Investigation, PCA Well Aquifer Test", SGD, July 1990.
6. Well completion data at site MPWMD FO-09 are documented in "Summary of 1994 Fort Ord Monitor Well Installations", MPWMD Technical Memorandum 94-07.
7. Well completion data at site MPWMD FO-10 are documented in "Summary of 1996 Seaside Basin Monitor Well Installations", MPWMD Technical Memorandum 97-04.
8. Two dashes (i.e., "- -") indicate multiple screened intervals.
9. Three dashes (i.e., "- - -") indicate not applicable or not available.

Monterey Peninsula Water Management District

Legend

Annual Rainfall (inches)

- 15
- 17
- 19
- Seaside Groundwater Basin

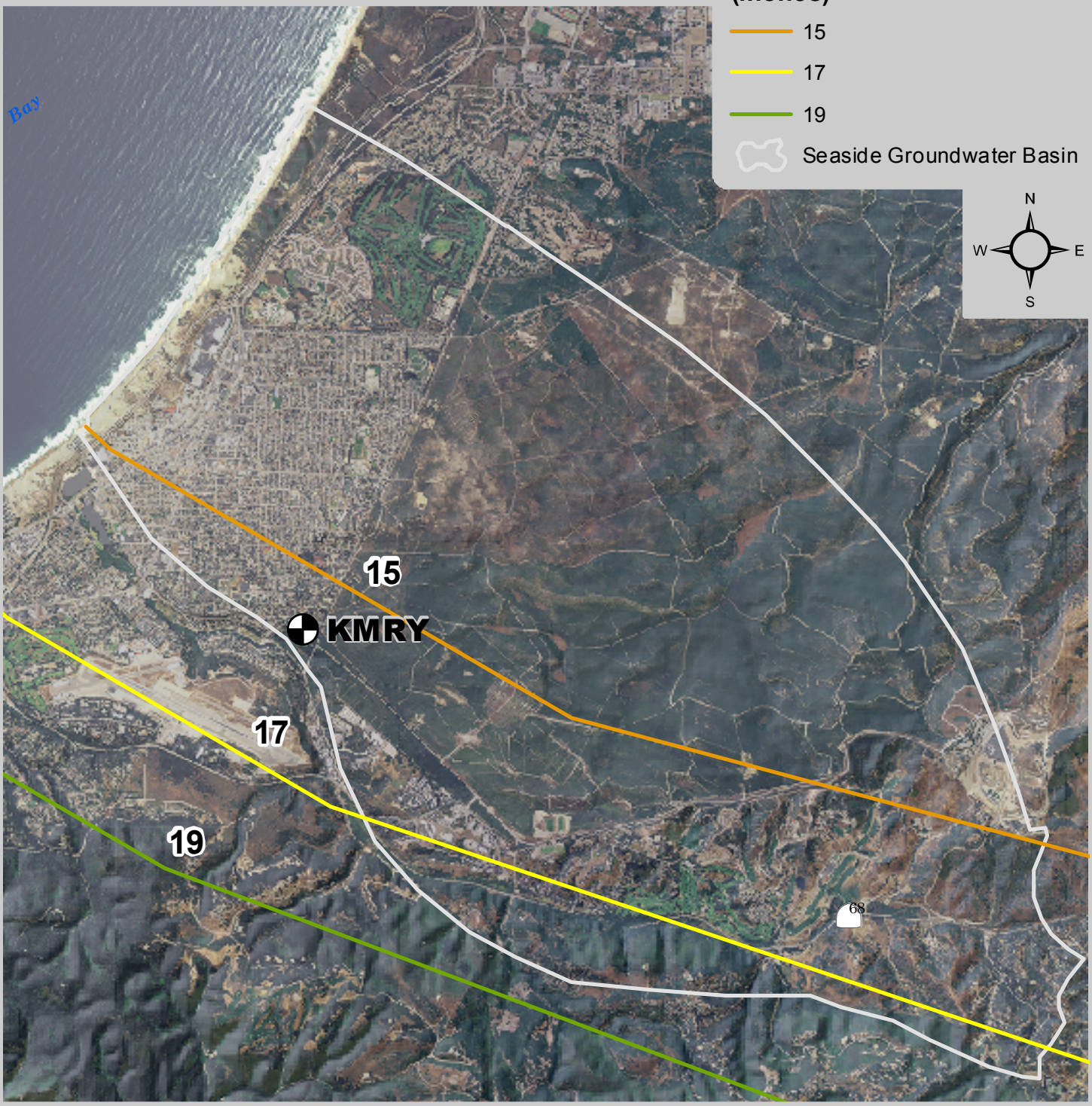

Figure 1. Location of Weather Station KMRY and Average Annual Rainfall for the Seaside Groundwater Basin, Seaside, CA

0 0.5 1 2 Miles

Datasources: Rainfall Totals - Monterey County
Photobase - AMBAG 2005

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Locations are approximate based on MPWMD files.

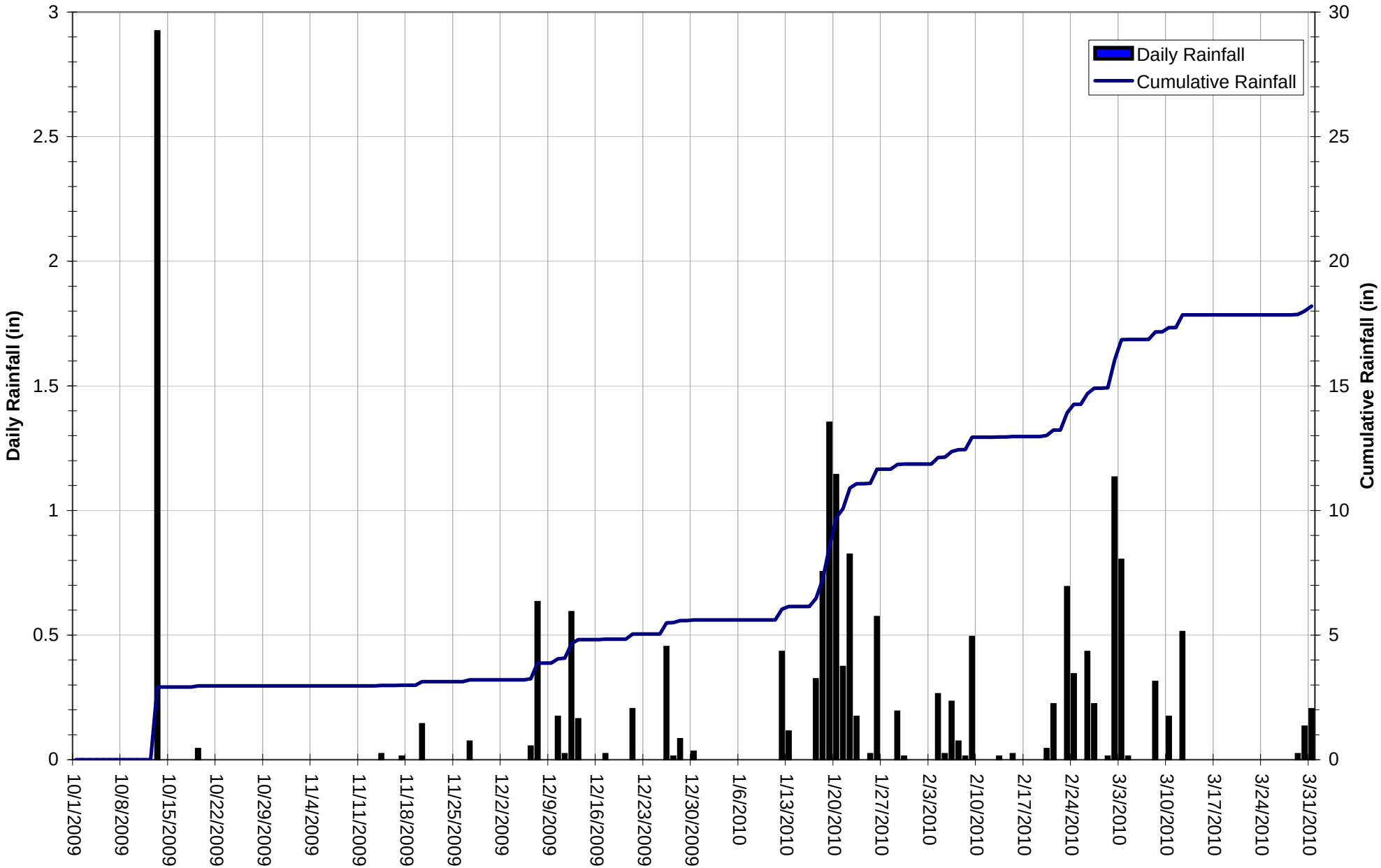

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Figure 2. Daily and Cumulative Rainfall recorded at Weather Underground Weather Station KMRY for First and Second Quarters of the 2010 Water Year, Seaside, California

Data from www.weatherunderground.com
Station Coordinates 36.59, -121.84

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Monterey Peninsula Water Management District

Legend

Monitor Well

Data Type and Frequency

- Water Level - Monthly
- Water Level - Monthly, Water Quality - Annual
- Water Level - Monthly, Water Quality - Quarterly
- Water Level - Quarterly
- Seaside Groundwater Basin

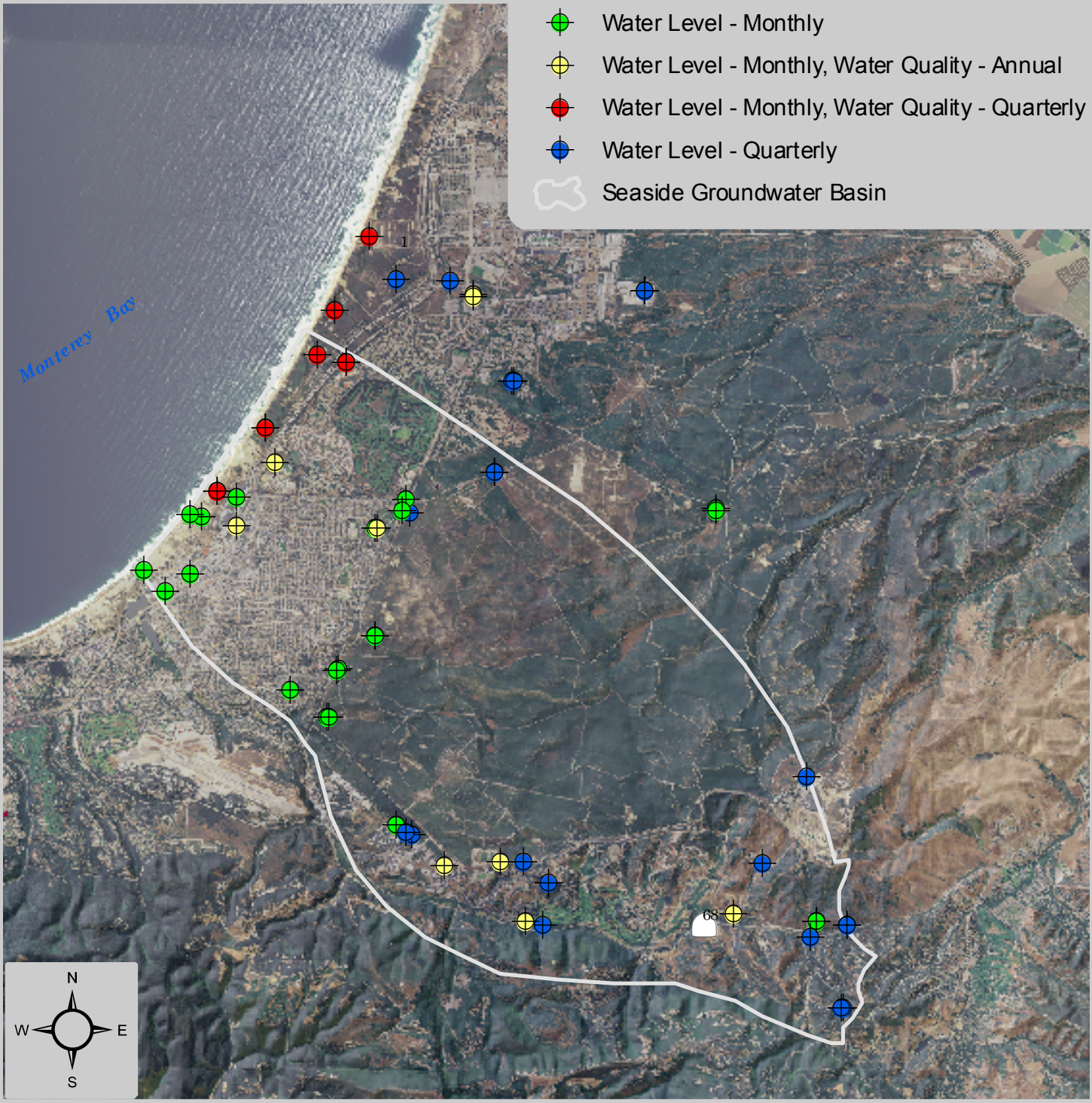

Figure 3. Seaside Groundwater Basin Watermaster Monitoring Well Network, Seaside, CA

0 0.5 1 2 Miles

Datasources: Rainfall Totals - Monterey County
Photobase - AMBAG 2005

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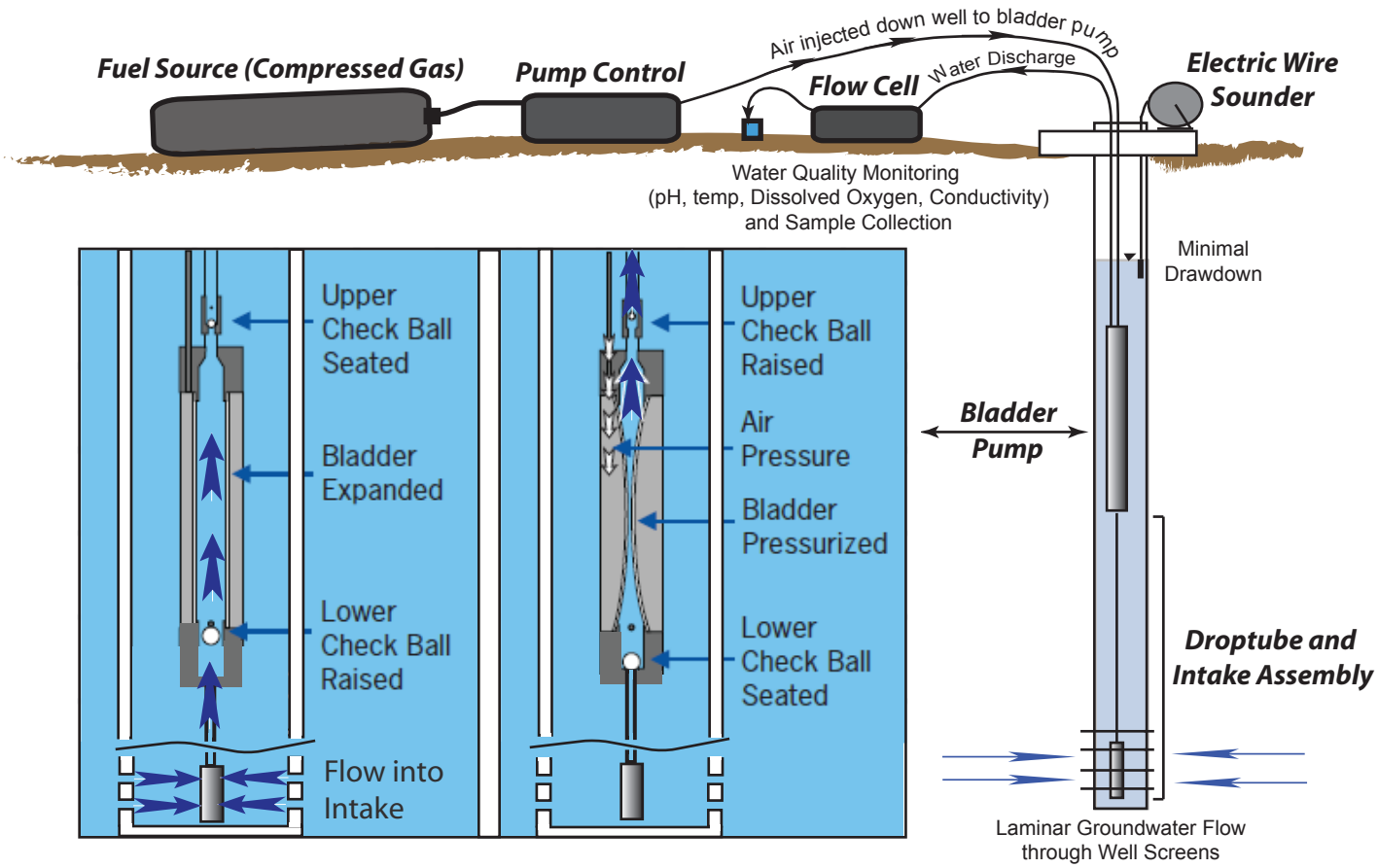
Locations are approximate based on MPWMD files.



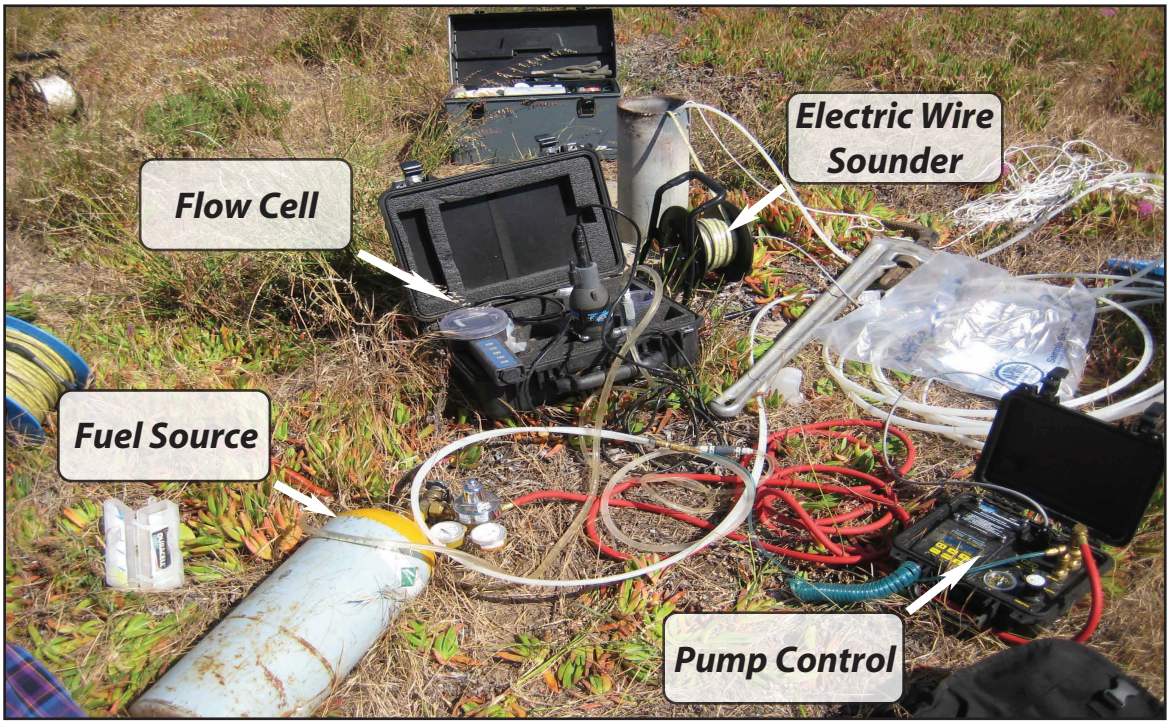


Figure 4. Low Flow Groundwater Sampling System Presented in Cartoon and Photograph

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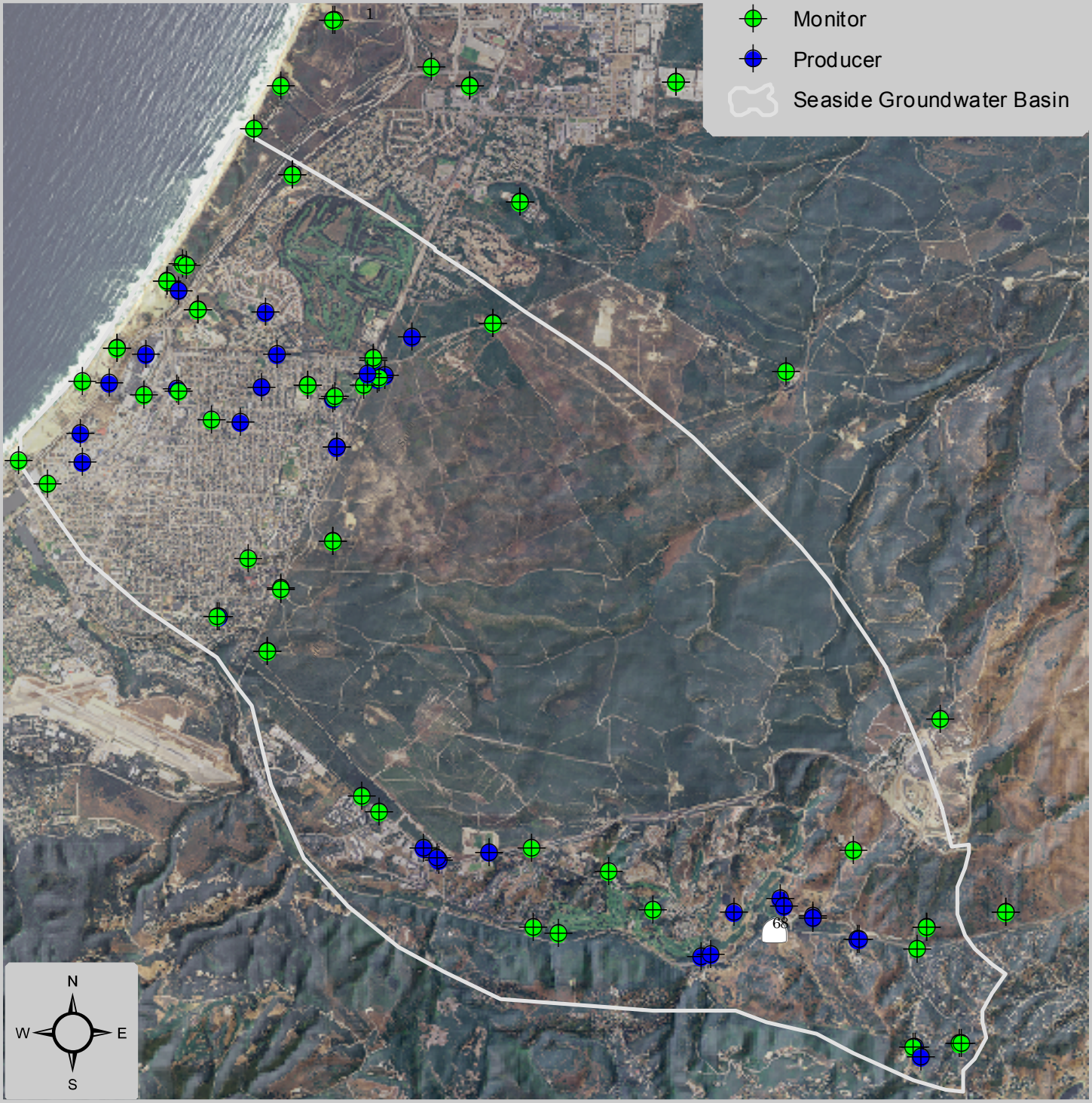

Figure 5. Seaside Groundwater Basin Watermaster Wells by Category, Seaside, CA

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Locations are approximate based on MPWMD files.

Appendix 1

Seaside Basin Groundwater Quality Monitoring Results

First and Second Quarters of WY 2010

GROUND WATER QUALITY MONITORING RESULTS

First and Second Quarters WY 2010

Date Of Sample	Specific Conductance (mμ/cm)	Total Alkalinity (as CACO3)	pH (units)	Chloride	Sulfate	Ammonia Nitrogen (as NH_3)	Nitrate Nitrogen (as NO_3)	Total Organic Carbon	Calcium	Sodium	Magnesium	Potassium	Iron	Manganese	Orthophosphate	Total Dissolved Solids	Hardness (as $CaCO_3$)	Boron	Bromide	Fluoride
Well Number: 101 Name: MSC-Shallow																				
2/23/2010	305	74	7.8	34	16	<0.05	<1	0.45	18	33	5	2.9	<0.050	0.030	<0.1	205	66	0.04	<0.2	0.15
11/18/2009	313	74	7.4	44	18	0.19	2	1.2	18	40	5	3.3	0.078	<0.020	<0.1	198	66	0.06	<0.2	0.11
Well Number: 102 Name: MSC-Deep																				
2/23/2010	1030	272	7.1	110	34	0.11	<1	0.65	78	107	15	4.8	0.077	0.108	<0.1	605	257	0.11	<0.2	0.24
11/18/2009	1020	247	7.3	145	39	0.12	<1	0.86	73	108	16	5.1	0.307	0.064	0.4	620	248	0.18	0.5	0.25
Well Number: 103 Name: PCA-W Shallow																				
3/1/2010	311	70	7.5	40	11	<0.05	4	0.47	18	34	5	2.3	<0.050	<0.020	<0.1	210	66	0.03	<0.2	0.16
11/20/2009	313	70	7.5	46	11	0.18	4	0.27	19	37	5	2.6	0.063	<0.020	<0.1	214	68	0.00	<0.2	0.11
Well Number: 104 Name: PCA-W Deep																				
3/1/2010	1042	260	7.3	148	40	<0.05	<1	0.65	81	110	18	5.0	<0.050	0.155	<0.1	590	276	0.12	<0.2	0.32
11/20/2009	1028	261	7.2	154	42	0.13	1	0.54	79	116	17	5.3	0.364	0.108	<0.1	625	267	0.13	0.5	0.23
Well Number: 111 Name: MPWMD #FO-09-Shallow																				
2/22/2010	340	75	7.9	42	20	<0.05	<1	0.44	22	40	4	3.3	<0.050	<0.020	<0.1	225	71	0.06	<0.2	0.21
11/17/2009	354	78	7.8	46	25	0.27	<1	0.74	26	45	3	3.8	0.055	<0.02	<0.1	203	77	0.1	<0.2	<0.10
Well Number: 112 Name: MPWMD #FO-09-Deep																				
2/22/2010	438	104	7.3	56	16	<0.05	<1	0.45	26	54	4	3.4	<0.637	<0.020	<0.1	263	81	0.07	<0.2	0.16
11/18/2009	420	96	6.5	58	16	0.05	<1	0.25	26	52	4	3.5	<0.050	0.020	<0.1	285	81	0.09	0.2	<0.10

Appendix 2

Seaside Basin Groundwater Level Monitoring Results

First and Second Quarters of WY 2010

Groundwater Level Monitoring Data

for the Seaside Groundwater Basin

Water Year 2010 First and Second Quarter

Assembled by MPWMD for the Seaside Watermaster

Well Category: **Producer** ***Sub Area:*** **Northern Coastal**

Watermaster Well 151 CAW - Military

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc

State Well No. 15S01E14N50 **Owner:** California American Water

Northern Coastal Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	135.8	166	-30.20	
10/29/2009	135.8	172	-36.20	
11/25/2009	135.8	171	-35.20	
12/31/2009	135.8	173	-37.20	
1/28/2010	135.8	171	-35.20	
2/25/2010	135.8	170	-34.20	
3/25/2010	135.8	167	-31.20	

Watermaster Well 152 Target Well

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc/Tsm

State Well No. 15S01E22C50 **Owner:** DBO Development

Northern Coastal Producer **Screen:** 360 - 390

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	44.42	57.5	-13.08	
10/29/2009	44.42	59.96	-15.54	
12/1/2009	44.42	59.69	-15.27	
1/7/2010	44.42	59.72	-15.30	
1/28/2010	44.42	59.67	-15.25	
2/23/2010	44.42	59.59	-15.17	

Watermaster Well 153 CAW - Ord Grove #2

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc/Tsm

State Well No. 15S01E23B02 **Owner:** California American Water

Northern Coastal Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	292.39			Well Running
10/29/2009	292.39	324	-31.61	
11/25/2009	292.39			Well Running
12/31/2009	292.39			Well Running
1/28/2010	292.39	319	-26.61	
2/25/2010	292.39	312	-19.61	
3/25/2010	292.39	310	-17.61	

Watermaster Well 159 CAW - New Luzern

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc/Tsm

State Well No. 15S01E23De **Owner:** California American Water

Northern Coastal Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	156.99			Well Running
10/29/2009	156.99	182.0	-25.01	
11/25/2009	156.99	183.0	-26.01	
12/31/2009	156.99	183.0	-26.01	
1/28/2010	156.99	179.0	-22.01	
2/25/2010	156.99	175	-18.01	
3/25/2010	156.99	172.5	-15.51	

Watermaster Well 162 CAW-Playa #3

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc

State Well No. 15S01E22B50 **Owner:** California American Water

Northern Coastal Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	53.02			Well Running
10/29/2009	53.02			Well Running
11/25/2009	53.02	56	-2.98	
12/31/2009	53.02	54	-0.98	

1/28/2010	53.02	52	1.02
2/25/2010	53.02	52	1.02
3/25/2010	53.02	51	2.02

Watermaster Well 169 CAW - Paralta

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc/Tsm

State Well No. 15S01E14R50 **Owner:** California American Water

Northern Coastal Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	324.49			Well Running
10/29/2009	324.49	346	-21.51	
11/25/2009	324.49			Well Running
12/31/2009	324.49			Well Running
1/28/2010	324.49	324	0.49	
2/25/2010	324.49	326	-1.51	
3/25/2010	324.49	325	-0.51	

Watermaster Well 186 CAW - Darwin

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc

State Well No. 15S01E22H01 **Owner:** California American Water

Northern Coastal Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	134.05	116	18.05	
10/29/2009	134.05	123.0	11.05	
11/25/2009	134.05	120.0	14.05	
12/31/2009	134.05	118.6	15.45	
1/28/2010	134.05	115	19.05	
2/25/2010	134.05	113	21.05	
3/25/2010	134.05	111	23.05	

Well Category: **Producer** ***Sub Area:*** **Southern Coastal**

Watermaster Well 150 Cypress Pacific

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc

State Well No. 15S01E22Dd **Owner:** King Venture

Southern Coastal Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	50.23	47.04	3.19	
10/29/2009	50.23	46.82	3.41	
12/1/2009	50.23	46.51	3.72	
1/7/2010	50.23	46.55	3.68	
1/28/2010	50.23	46.51	3.72	
2/23/2010	50.23	45.97	4.26	

Watermaster Well 165 Public Works Corp. Yard

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Qod/Qar/QTc

State Well No. 15S01E22T59 **Owner:** City of Sand City

Southern Coastal Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	47.25	42.13	5.12	
10/29/2009	47.25	41.78	5.47	
12/1/2009	47.25	41.44	5.81	
1/7/2010	47.25	41.73	5.52	
1/26/2010	47.25	41.42	5.83	
2/25/2010	47.25	41.40	5.85	

Watermaster Well 167 Robinette -Design Ctr.

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Qod/Qar/QTc

State Well No. 15S01E22Mc **Owner:** City of Sand City

Southern Coastal Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
10/29/2009	21.31	13.42	7.89	
12/1/2009	21.31	13.61	7.70	
1/7/2010	21.31	13.62	7.69	
1/26/2010	21.31	13.30	8.01	
2/25/2010	21.31	13.37	7.94	

Watermaster Well 177 CAW - Plumas #4

Monitored: Monthly
Monitored by: CAW
Aquifer: Tsm

State Well No. 15S01E27Jg **Owner:** California American Water

Southern Coastal Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	161.48			Well Running
10/29/2009	161.48			Well Running
11/25/2009	161.48	171	-9.52	
12/31/2009	161.48	113	48.48	
1/28/2010	161.48	109	52.48	
2/25/2010	161.48	107	54.48	
3/25/2010	161.48	106	55.48	

Well Category: Producer ***Sub Area:*** Southern Inland

Watermaster Well 196 MCPD #2

Monitored: Monthly
Monitored by: MCPD
Aquifer: QTc

State Well No. 16S02E05Gf **Owner:** Monterey County Parks Department

Southern Inland Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/4/2009	391.04	193	198.04	
11/9/2009	391.04	186	205.04	
12/9/2009	391.04	175	216.04	
2/5/2010	391.04	173	218.04	
3/10/2010	391.04	173	218.04	

Watermaster Well 197 MCPD #1

Monitored: Monthly
Monitored by: MCPD
Aquifer: QTc

State Well No. 16S02E05Ge **Owner:** Monterey County Parks Department

Southern Inland Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/4/2009	392.86	208	184.86	
11/9/2009	392.86	193	199.86	
12/9/2009	392.86	190	202.86	
2/5/2010	392.86	188	204.86	

3/10/2010	392.86	186	206.86	

Watermaster Well 204 New Paddock

Monitored: Monthly
Monitored by: Pasadera
Aquifer: QTc/Tsm

State Well No. 16S02E05Mf **Owner:** Pasadera Country Club, LLC

Southern Inland Producer **Screen:** 306 - 498

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/30/2009	352.69	229.59	123.10	
11/30/2009	352.69	221.98	130.71	
12/31/2009	352.69	217.89	134.80	
2/1/2010	352.69	214.08	138.61	
3/1/2010	359.69	214.68	145.01	

Watermaster Well 208 Main Gate

Monitored: Monthly
Monitored by: Pasadera
Aquifer: Tsm

State Well No. 16S02E05Mg **Owner:** Pasadera Country Club, LLC

Southern Inland Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/30/2009	345.42	229.49	115.93	
11/30/2009	345.42	222.13	123.29	
12/31/2009	345.42	222.79	122.63	
2/1/2010	345.42	222.74	122.68	
3/1/2010	345.42	222.86	122.56	

Watermaster Well 209 Bishop #1 (west)

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc/Tsm

State Well No. 16S02E05Ea **Owner:** California American Water

Southern Inland Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	398.81			Well Running
10/29/2009	398.81			Well Running
11/25/2009	398.81	264	134.81	
12/31/2009	398.81			Well Running
1/28/2010	398.81	250	148.81	
2/25/2010	398.81			Well Running
3/25/2010	398.81	248	150.81	

Watermaster Well 210 Bishop #2 (east)

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc/Tsm

State Well No. 16S02E05Fb **Owner:** California American Water

Southern Inland Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	418.34			Not Visited
10/28/2009				Not Visited
11/25/2009				Not Visited
12/31/2009				Not Visited
1/18/2010				Not Visited
2/25/2010	418.34	248	170.34	
3/25/2010	418.34	248	170.34	

Watermaster Well 212 York School 01-349

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc/Tsm

State Well No. 15S01E36Qa **Owner:** York School

Southern Inland Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/25/2009	384.3	223.7	160.60	
10/28/2009	384.3	231.03	153.27	
12/2/2009	384.3	224.05	160.25	
1/7/2010	384.3	278.22	106.08	Well Running
1/26/2010	384.3	220.08	164.22	
2/25/2010	384.3	221.12	163.18	
3/22/2010	384.3	231.36	152.94	

Watermaster Well 213 Ryan Ranch #7

Monitored: Monthly
Monitored by: CAW
Aquifer: Tsm

State Well No. 16S01E01E50 **Owner:** California American Water

Southern Inland Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	294			Well Running
10/29/2009	294	248	46.00	
11/25/2009	294	225.6	68.40	
12/31/2009	294	210	84.00	

1/28/2010	294	198	96.00
2/25/2010	294	206.6	87.40
3/25/2010	294	203	91.00

Watermaster Well 215 Ryan Ranch #11

Monitored: Monthly
Monitored by: CAW
Aquifer: Tsm

State Well No. 16S01E01Cd **Owner:** California American Water

Southern Inland Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	307.59			Well Running
10/29/2009	307.59	204	103.59	
11/25/2009	307.59	196.9	110.69	
12/31/2009	307.59	210	97.59	
1/28/2010	307.59	199	108.59	
2/25/2010	307.59	209	98.59	
3/25/2010	307.59	202	105.59	

Watermaster Well 216 Ryan Ranch #8

Monitored: Monthly
Monitored by: CAW
Aquifer: Tsm

State Well No. 16S01E01T54 **Owner:** California American Water

Southern Inland Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	306.86	234	72.86	
10/29/2009	306.86	200.9	105.96	
11/25/2009	306.86	203.7	103.16	
12/31/2009	306.86	210	96.86	
1/28/2010	306.86	198.6	108.26	
2/25/2010	306.86	208	98.86	
3/25/2010	306.86	203	103.86	

Watermaster Well 226 Bay Ridge

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc/Tsm

State Well No. 16S02E09Cd **Owner:** California American Water

Southern Inland Producer **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	545.92			Well Running

10/29/2009	545.92	375	170.92	
11/25/2009	545.92	376	169.92	
12/31/2009				Well Running
2/25/2010	545.92	365	180.92	
3/25/2010	545.92	368.6	177.32	

Well Category: **Monitor** ***Sub Area:*** **Northern Coastal**

Watermaster Well 101 MSC-Shallow

State Well No. 15S01E15N3 **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 490 - 680

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	80.1	77.28	2.82	
10/29/2009	80.1	77.29	2.81	
11/18/2009	80.1	76.67	3.43	
12/2/2009	80.1	76.15	3.95	
1/7/2010	80.1	77.20	2.90	
1/26/2010	80.1	77.47	2.63	
2/22/2010	80.1	76.72	3.38	

Watermaster Well 102 MSC-Deep

State Well No. 15S01E15N2 **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 810 - 850

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	80.29	96.98	-16.69	
10/29/2009	80.29	96.33	-16.04	
11/18/2009	80.29	96.88	-16.59	
12/2/2009	80.29	97.30	-17.01	
1/7/2010	80.29	97.23	-16.94	
1/26/2010	80.29	95.21	-14.92	

2/22/2010	80.29	91.42	-11.13	

Watermaster Well 103 PCA-W Shallow

State Well No. 15S01E15F1 **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 525 - 575

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
11/20/2009	64.22	60.42	3.80	
3/1/2010	64.22	59.48	4.74	

Watermaster Well 104 PCA-W Deep

State Well No. 15S01E15F2 **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 825 - 875

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
11/20/2009	65.18	84.68	-19.50	
3/1/2010	65.18	74.47	-9.29	

Watermaster Well 105 PCA-E (Multiple) Shallow

State Well No. 15S01E15K5 **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 350 - 400

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	68.51	66.41	2.10	
10/28/2009	68.51	65.98	2.53	
12/1/2009	68.51	65.42	3.09	
1/7/2010	68.51	64.91	3.60	
1/28/2010	68.51	64.69	3.82	
2/1/2010	68.51	64.48	4.03	
2/25/2010	68.51	64.13	4.38	

Watermaster Well 106 PCA-E (Multiple) Deep

State Well No. 15S01E15K4 **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 650 - 700

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	68.54	89.78	-21.24	
10/28/2009	68.54	87.31	-18.77	
12/1/2009	68.54	89.86	-21.32	
1/7/2010	68.54	87.23	-18.69	

1/28/2010	68.54	82.80	-14.26	
2/1/2010	68.54	81.42	-12.88	
2/25/2010	68.54	78.78	-10.24	

Watermaster Well 107 Ord Grove Test

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc/Tsm

State Well No. 15S01E23B1 **Owner:** California American Water

Northern Coastal Monitor **Screen:** 355 - 480

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	294.14	345	-50.86	
9/29/2009	294.14	344.28	-50.14	
10/22/2009	294.14	325.83	-31.69	
12/1/2009	294.14	343.30	-49.16	
1/7/2010	294.14	324.64	-30.50	
1/28/2010	294.14			innaccessible
2/25/2010	294.14	315.09	-20.95	

Watermaster Well 108 Paralta Test

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc/Tsm

State Well No. 15S01E14Ra **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 430 - 800

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	330.72	345	-14.28	
9/29/2009	330.72	352.1	-21.38	
10/21/2009	330.72	339.89	-9.17	
12/1/2009	330.72	348.20	-17.48	
1/7/2010	330.72	339.34	-8.62	
1/28/2010	330.72	323.0	7.72	
2/25/2010	330.72	327.62	3.10	
3/29/2010	330.72	331.78	-1.06	

Watermaster Well 109 Ord Terrace-Shallow

Monitored: Annually
Monitored by: MPWMD
Aquifer: Tsm (upper)

State Well No. 15S01E23Ca **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 280 - 330

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments

10/21/2009	228.65	260.02	-31.37
12/1/2009	228.65	264.14	-35.49
1/7/2010	228.65	257.85	-29.20
1/28/2010	228.65	253.36	-24.71
2/1/2010	228.65	252.39	-23.74
2/25/2010	228.65	248.95	-20.30

Watermaster Well 110 Ord Terrace-Deep

State Well No. 15S01E23Cb **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 390 - 440

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Tsm (lower)

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	228.63	264.25	-35.62	

Watermaster Well 111 MPWMD #FO-09-Shallow

State Well No. 15S01E11Pa **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 610 - 650

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc/Tp

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	118.89	116.16	2.73	
10/28/2009	118.89	115.81	3.08	
11/17/2009	118.89	115.38	3.51	
12/2/2009	118.89	115.22	3.67	
1/7/2010	118.89	115.03	3.86	
1/28/2010	118.89	114.39	4.50	
2/22/2010	118.89	114.43	4.46	

Watermaster Well 112 MPWMD #FO-09-Deep

State Well No. 15S01E11Pb **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 790 - 830

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	118.85	139.95	-21.10	
10/28/2009	118.85	137.37	-18.52	
11/17/2009	118.85	139.77	-20.92	
12/2/2009	118.85	140.19	-21.34	

1/7/2010	118.85	137.43	-18.58
1/28/2010	118.85	132.59	-13.74
2/1/2010	118.85	131.42	-12.57
2/22/2010	118.85	129.44	-10.59

Watermaster Well 113 MPWMD #FO-10-Shallow

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc

State Well No. 15S01E12Fa **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 620 - 640

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	200.85	204.81	-3.96	
10/29/2009	200.85	204.42	-3.57	
12/2/2009	200.85	204.46	-3.61	
1/7/2010	200.85	203.91	-3.06	
1/26/2010	200.85	202.54	-1.69	
2/25/2010	200.85	202.63	-1.78	

Watermaster Well 114 MPWMD #FO-10-Deep

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Tp

State Well No. 15S01E12Fc **Owner:** MPWMD

Northern Coastal Monitor **Screen:** 1380 - 1410

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	201.03	205.92	-4.89	
10/29/2009	201.03	205.39	-4.36	
12/2/2009	201.03	205.61	-4.58	
1/7/2010	201.03	204.51	-3.48	
1/26/2010	201.03	204.40	-3.37	
2/25/2010	201.03	202.97	-1.94	

Watermaster Well 154 Mission Memorial Monitor

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc

State Well No. 15S01E23Aa **Owner:** Mission Memorial Park

Northern Coastal Monitor **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	315.42	343.91	-28.49	
10/28/2009	315.42	339.93	-24.51	

12/1/2009	315.42	344.38	-28.96
1/7/2010	315.42	339.90	-24.48
1/28/2010	315.42	329.39	-13.97
2/25/2010	315.42	320.68	-5.26

Watermaster Well 163 CAW - Playa #4

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc/Tsm

State Well No. 15S01E22B51 **Owner:** California American Water

Northern Coastal Monitor **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	52.53	62	-9.47	
10/29/2009	52.53	62	-9.47	
11/25/2009	52.53	60	-7.47	
12/31/2009	52.53	60	-7.47	
1/28/2010	52.53	61	-8.47	
2/25/2010	52.53	60	-7.47	
3/25/2010	52.53	58.5	-5.97	

Watermaster Well 231 Del Monte Test

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc

State Well No. 15S01E22Cd **Owner:** California American Water

Northern Coastal Monitor **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	32.62	30	2.62	
10/29/2009	32.62	30	2.62	
11/25/2009	32.62	30	2.62	
12/31/2009	32.62	30	2.62	
1/28/2010	32.62	30	2.62	
2/25/2010	32.62	30	2.62	
3/25/2010	32.62	30	2.62	

Watermaster Well 243 Luxton

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc

State Well No. 15S01E22Ha **Owner:** California American Water

Northern Coastal Monitor **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments

9/24/2009	89.12	93.1	-3.98
10/29/2009	89.12	94.0	-4.88
11/25/2009	89.12	97.0	-7.88
12/31/2009	89.12		
1/28/2010	89.12	94.0	-4.88
2/25/2010	89.12	92.0	-2.88
3/25/2010	89.12	92.0	-2.88

Watermaster Well 251 CDM MW-1

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Qod/Qar

State Well No. 15S01E02Pa **Owner:** MPWMD

Northern Coastal Monitor **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
10/28/2009	93.53	89.62	3.91	
12/1/2009	93.53	89.32	4.21	
1/7/2010	93.53	89.35	4.18	
1/20/2010	93.53	89.1	4.43	
2/26/2010	93.53	88.65	4.88	
3/29/2010	93.53	89.18	4.35	

Watermaster Well 252 CDM MW-2

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Qod/Qar

State Well No. 15S01E15Ga **Owner:** MPWMD

Northern Coastal Monitor **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
10/28/2009	63.83	59.37	4.46	
12/1/2009	63.83	58.49	5.34	
1/7/2010	63.83	59.43	4.40	
1/20/2010	63.83	58.5	5.33	
2/26/2010	63.83	58.32	5.51	
3/29/2010	63.83	59.59	4.24	

Watermaster Well 254 MW-B-22-180

State Well No. 15S01E12Da **Owner:** U.S.A. Fort Ord

Northern Coastal Monitor **Screen:** -

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Qod/Qar

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/25/2009	168.1	157.23	10.87	
10/28/2009	168.1	157.25	10.85	
12/1/2009	168.1	157.28	10.82	
1/7/2010	168.1	157.26	10.84	
1/26/2010	168.1	157.27	10.83	
2/26/2010	168.1	157.31	10.79	
3/29/2010	168.1	157.23	10.87	

Watermaster Well 258 MW-B-23-180

State Well No. 15S01E11Ba **Owner:** U.S.A. Fort Ord

Northern Coastal Monitor **Screen:** -

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Qod/Qar

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
10/28/2009	113.81	110.05	3.76	
12/1/2009	113.81	109.81	4.00	
1/7/2010	113.81	109.47	4.34	
1/20/2010	113.81	109.6	4.21	
2/26/2010	113.81	109.00	4.81	
3/29/2010	113.81	109.15	4.66	

Well Category: Monitor ***Sub Area:*** Northern Inland

Watermaster Well 115 MPWMD #FO-01-Shallow

State Well No. 15S01E26Ba **Owner:** MPWMD

Northern Inland Monitor **Screen:** 310 - 320

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	362.61	200.9	161.71	
3/22/2010	362.61	201.88	160.73	

Watermaster Well 116 MPWMD #FO-01-Deep

State Well No. 15S01E26Bb **Owner:** MPWMD

Northern Inland | Monitor | **Screen:** 450 - 460

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	362.57	338.58	23.99	
3/22/2010	362.57	338.12	24.45	

Watermaster Well 118 MPWMD #FO-07-Shallow

State Well No. 15S01E13La **Owner:** MPWMD

Northern Inland | Monitor | **Screen:** 600 - 640

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	473.44	460.16	13.28	
10/21/2009	473.44	456.67	16.77	
12/1/2009	473.44	456.69	16.75	
1/6/2010	473.44	456.17	17.27	
1/28/2010	473.44	455.73	17.71	
2/1/2010	473.44	455.63	17.81	
3/5/2010	473.44	455.28	18.16	

Watermaster Well 119 MPWMD #FO-07-Deep

State Well No. 15S01E13Lb **Owner:** MPWMD

Northern Inland | Monitor | **Screen:** 800 - 840

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	473.44	494.78	-21.34	
10/21/2009	473.44	489.93	-16.49	
12/1/2009	473.44	491.93	-18.49	
1/6/2010	473.44	489.06	-15.62	
1/28/2010	473.44	483.88	-10.44	
2/1/2010	473.44	482.80	-9.36	
3/5/2010	473.44	479.08	-5.64	

Watermaster Well 120 MPWMD #FO-08-Shallow

State Well No. 15S01E12Qa **Owner:** MPWMD

Northern Inland | Monitor | **Screen:** 740 - 780

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments

9/29/2009	378.04	376.73	1.31
10/21/2009	378.04	376.50	1.54
12/2/2009	378.04	376.53	1.51
1/6/2010	378.04	376.30	1.74
1/28/2010	378.04	373.83	4.21
2/26/2010	378.04	374.10	3.94

Watermaster Well 121 MPWMD #FO-08-Deep

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Tsm

State Well No. 15S01E12Qb **Owner:** MPWMD

Northern Inland Monitor **Screen:** 900 - 940

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	378.1	398.23	-20.13	
10/21/2009	378.1	389.18	-11.08	
12/2/2009	378.1	398.82	-20.72	
1/6/2010	378.1	396.43	-18.33	
1/28/2010	378.1	392.02	-13.92	
2/1/2010	378.1	390.91	-12.81	
2/25/2010	378.1	388.54	-10.44	

Watermaster Well 122 MPWMD #FO-11-Shallow

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc

State Well No. 15S02E7Ba **Owner:** MPWMD

Northern Inland Monitor **Screen:** 700 - 730

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	332.93	343.75	-10.82	
10/29/2009	332.93	343.51	-10.58	
12/2/2009	332.93	343.54	-10.61	
1/7/2010	332.93	343.33	-10.40	
1/26/2010	332.93	342.13	-9.20	
2/25/2010	332.93	342.40	-9.47	

Watermaster Well 123 MPWMD #FO-11-Deep

State Well No. 15S02E7Bb **Owner:** MPWMD

Northern Inland | Monitor | **Screen:** 1090 - 1120

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Tp

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	332.96	331.83	1.13	
10/29/2009	332.96	331.73	1.23	
12/2/2009	332.96	332.02	0.94	
1/7/2010	332.96	331.55	1.41	
1/26/2010	332.96	330.75	2.21	
2/25/2010	332.96	330.60	2.36	

Watermaster Well 188 ASR - 1

State Well No. 15S01E23Ad **Owner:** MPWMD

Northern Inland | Monitor | **Screen:** -

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	337.23	367.78	-30.55	

Watermaster Well 256 ASR - 2

State Well No. 15S01E23Af **Owner:** MPWMD

Northern Inland | Monitor | **Screen:** -

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	356	385.36	-29.36	

Well Category: Monitor ***Sub Area:*** Southern Coastal

Watermaster Well 124 Plumas '90 Test

State Well No. 15S01E27J6 **Owner:** MPWMD

Southern Coastal | Monitor | **Screen:** 430 - 470

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	157.83	106.22	51.61	
10/28/2009	157.83	106.53	51.30	production well on
12/1/2009	157.83	106.22	51.61	
1/7/2010	157.83	105.53	52.30	
1/26/2010	157.83	105.12	52.71	

2/25/2010	157.83	104.57	53.26

Watermaster Well 238 CDM MW-4

State Well No. 15S01E21Ka **Owner:** MPWMD

Southern Coastal Monitor **Screen:** -

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Qod

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	18.69	15.14	3.55	
10/29/2009	18.69	14.73	3.96	
11/30/2009	18.69	14.02	4.67	
1/7/2010	18.69	14.59	4.10	
1/28/2010	18.69	14.62	4.07	
2/25/2010	18.69	14.58	4.11	

Watermaster Well 239 CDM MW-3

State Well No. 15S01E22De **Owner:** MPWMD

Southern Coastal Monitor **Screen:** -

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Qod

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	33.81	32.06	1.75	
10/29/2009	33.81	31.66	2.15	
12/1/2009	33.81	29.60	4.21	
1/7/2010	33.81	31.53	2.28	
1/28/2010	33.81	31.49	2.32	
2/23/2010	33.81	30.39	3.42	

Watermaster Well 240 MW-BW-08-A

State Well No. 15S01E26Fb **Owner:** U.S.A. Fort Ord

Southern Coastal Monitor **Screen:** -

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Qod/Qar

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/30/2009	205.18	59.17	146.01	
10/28/2009	205.18	59.76	145.42	
12/1/2009	205.18	59.05	146.13	
1/7/2010	205.18	59.10	146.08	
1/26/2010	205.18	59.8	145.38	

2/25/2010	205.18	59.12	146.06

Watermaster Well 241 MW-BW-09-180

Monitored: Monthly
Monitored by: MPWMD
Aquifer: QTc

State Well No. 15S01E26Fa **Owner:** U.S.A. Fort Ord

Southern Coastal Monitor **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/30/2009	206.22	205.57	0.65	
10/28/2009	206.22	205.52	0.70	
12/1/2009	206.22	205.90	0.32	
1/7/2010	206.22	205.49	0.73	
1/26/2010	206.22	205.59	0.63	
2/25/2010	206.22	205.95	0.27	

Watermaster Well 244 Hilby MGT

Monitored: Monthly
Monitored by: CAW
Aquifer: QTc

State Well No. 15S01E26Da **Owner:** California American Water

Southern Coastal Monitor **Screen:** -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	248.04	244	4.04	
10/29/2009	248.04	245	3.04	
11/25/2009	248.04	245	3.04	
12/31/2009	248.04	245	3.04	
1/28/2010	248.04	244	4.04	
2/25/2010	248.04	245	3.04	
3/25/2010	248.04	245	3.04	

Well Category: Monitor ***Sub Area:*** Southern Inland

Watermaster Well 127 MPWMD #FO-03-Deep

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

State Well No. 15S02E33Ca **Owner:** MPWMD

Southern Inland Monitor **Screen:** 630 - 640

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	774.74	636.25	138.49	
3/22/2010	774.74	636.02	138.72	

Watermaster Well 129 MPWMD #FO-04-Shallow (E)

State Well No. 15S01E26Na **Owner:** MPWMD

Southern Inland | Monitor | **Screen:** 260 - 300

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	168.23	111.91	56.32	
3/22/2010	168.23	109.38	58.85	

Watermaster Well 130 MPWMD #FO-04-Deep (W)

State Well No. 15S01E26Nb **Owner:** MPWMD

Southern Inland | Monitor | **Screen:** 500 - 560

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	167.44	111.7	55.74	
3/22/2010	167.44	110.57	56.87	

Watermaster Well 131 MPWMD #FO-05-Shallow

State Well No. 16S02E04Ha **Owner:** MPWMD

Southern Inland | Monitor | **Screen:** 690 - 730

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/16/2009	478.97	245.64	233.33	
3/22/2010	478.97	242.00	236.97	

Watermaster Well 132 MPWMD #FO-05-Deep

State Well No. 16S02E04Hb **Owner:** MPWMD

Southern Inland | Monitor | **Screen:** 1147 - 1187

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/16/2009	479.29	311	168.29	
3/22/2010	479.29	306.18	173.11	

Watermaster Well 133 MPWMD #FO-06-Shallow

State Well No. 16S02E04Fa **Owner:** MPWMD

Southern Inland | Monitor | **Screen:** 650 - 690

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/16/2009	470.13	232.77	237.36	
3/22/2010	470.13	230.82	239.31	

Watermaster Well 134 MPWMD #FO-06-Deep

State Well No. 16S02E04Fb **Owner:** MPWMD

Southern Inland | Monitor | **Screen:** 1050 - 1090

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments

9/16/2009	470.63	231.93	238.70	
3/22/2010	470.63	226.62	244.01	

Watermaster Well 135 Justin Court (RR M2S)

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: QTc

State Well No. 15S01E35Jb **Owner:** California American Water

Southern Inland Monitor **Screen:** 135 - 155

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	240.28	142.66	97.62	
3/23/2010	240.28	142.57	97.71	

Watermaster Well 136 LS Pistol Range (Mo Co TH-1)

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

State Well No. 15S02E32Ra **Owner:** County of Monterey

Southern Inland Monitor **Screen:** 430 - 470

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	514.39	285.47	228.92	
3/22/2010	514.39	284.32	230.07	

Watermaster Well 137 York Rd-West (Mo Co MW-1 D)

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

State Well No. 15S01E36Rb **Owner:** County of Monterey

Southern Inland Monitor **Screen:** 560 - 600

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	490.28	313.27	177.01	
3/22/2010	490.28	311.27	179.01	

Watermaster Well 138 Seca Place (Mo Co MW-2)

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

State Well No. 16S02E04Lc **Owner:** County of Monterey

Southern Inland Monitor **Screen:** 930 - 980

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/16/2009	427.58	260.41	167.17	
3/22/2010	427.58	251.74	175.84	

Watermaster Well 139 Robley Shallow (North) (Mo Co MW-3S

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: QTc

State Well No. 16S02E09Bb **Owner:** County of Monterey

Southern Inland Monitor **Screen:** 380 - 420

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	566.54	316.84	249.70	
3/22/2010	566.54	318.55	247.99	

Watermaster Well 140 Robley Deep (South) (Mo Co MW-3D)

State Well No. 16S02E09Bc **Owner:** County of Monterey

Southern Inland Monitor **Screen:** 750 - 800

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	566.44	386.13	180.31	
3/22/2010	566.44	378.94	187.50	

Watermaster Well 141 LS Driving Range (SCS Deep)

State Well No. 16S02E06C2 **Owner:** County of Monterey

Southern Inland Monitor **Screen:** -

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	491	333.39	157.61	
10/28/2009	491	329.49	161.51	
3/22/2010	491	332.72	158.28	

Watermaster Well 142 LS No. 1 Subdivision

State Well No. 16S02E06M1 **Owner:** Laguna Seca Resorts

Southern Inland Monitor **Screen:** -

Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	277.13	123.83	153.30	
3/23/2010	277.13	125.27	151.86	

Watermaster Well 143 Blue Larkspur-East End

State Well No. 16S01E01Hx **Owner:** Laguna Seca Resorts

Southern Inland Monitor **Screen:** -

Monitored: Quarterly
Monitored by: MPWMD
Aquifer:

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	253.29	101.9	151.39	
3/23/2010	253.29	102.05	151.24	

Watermaster Well 242 CAW-Granite Construction

State Well No. 15S01E35Jc **Owner:** California American Water

Southern Inland Monitor **Screen:** -

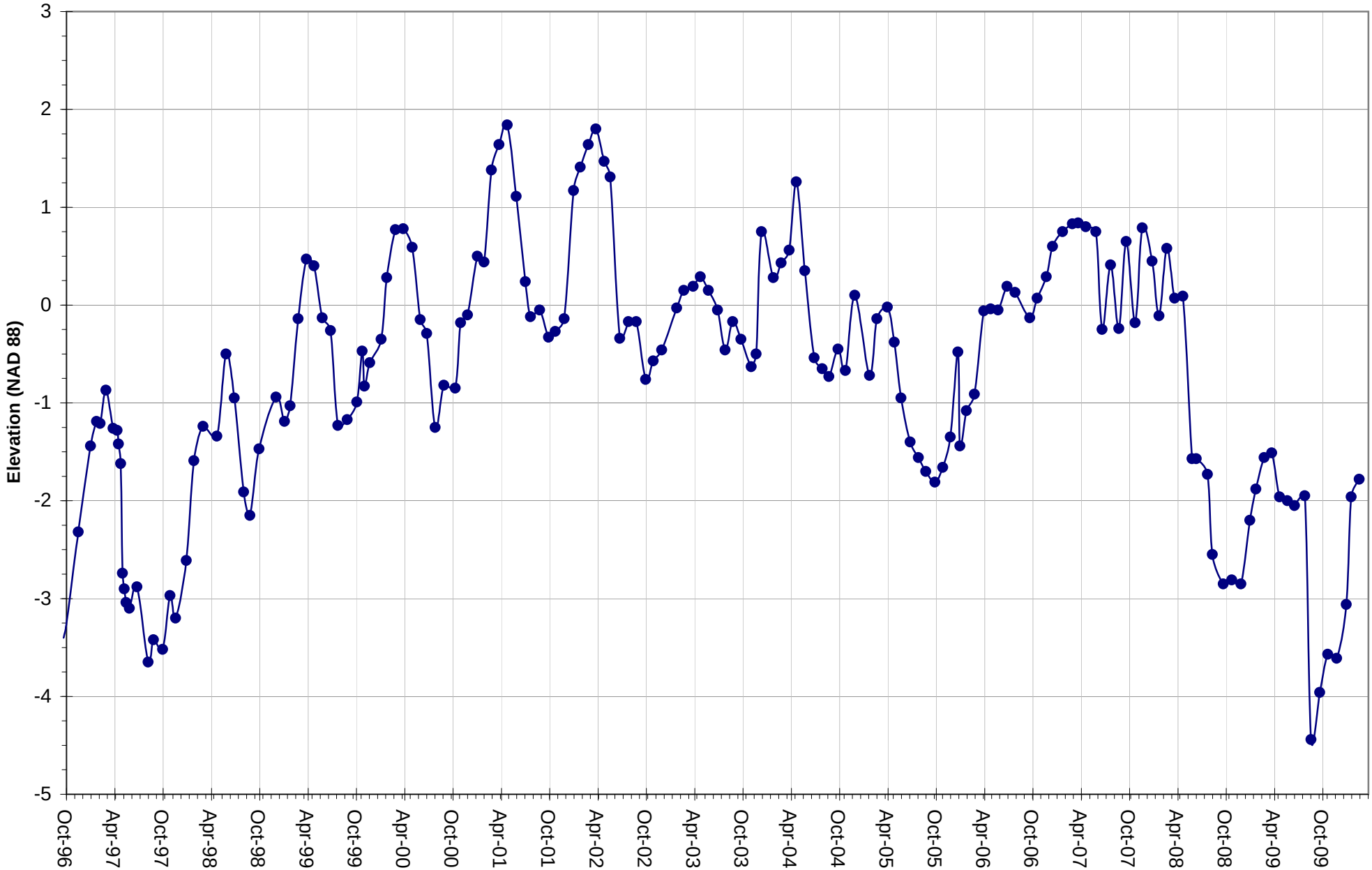
Monitored: Quarterly
Monitored by: MPWMD
Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	226.43	134.28	92.15	
3/23/2010	226.43	134.28	92.15	

Appendix 3

Selected Hydrographs

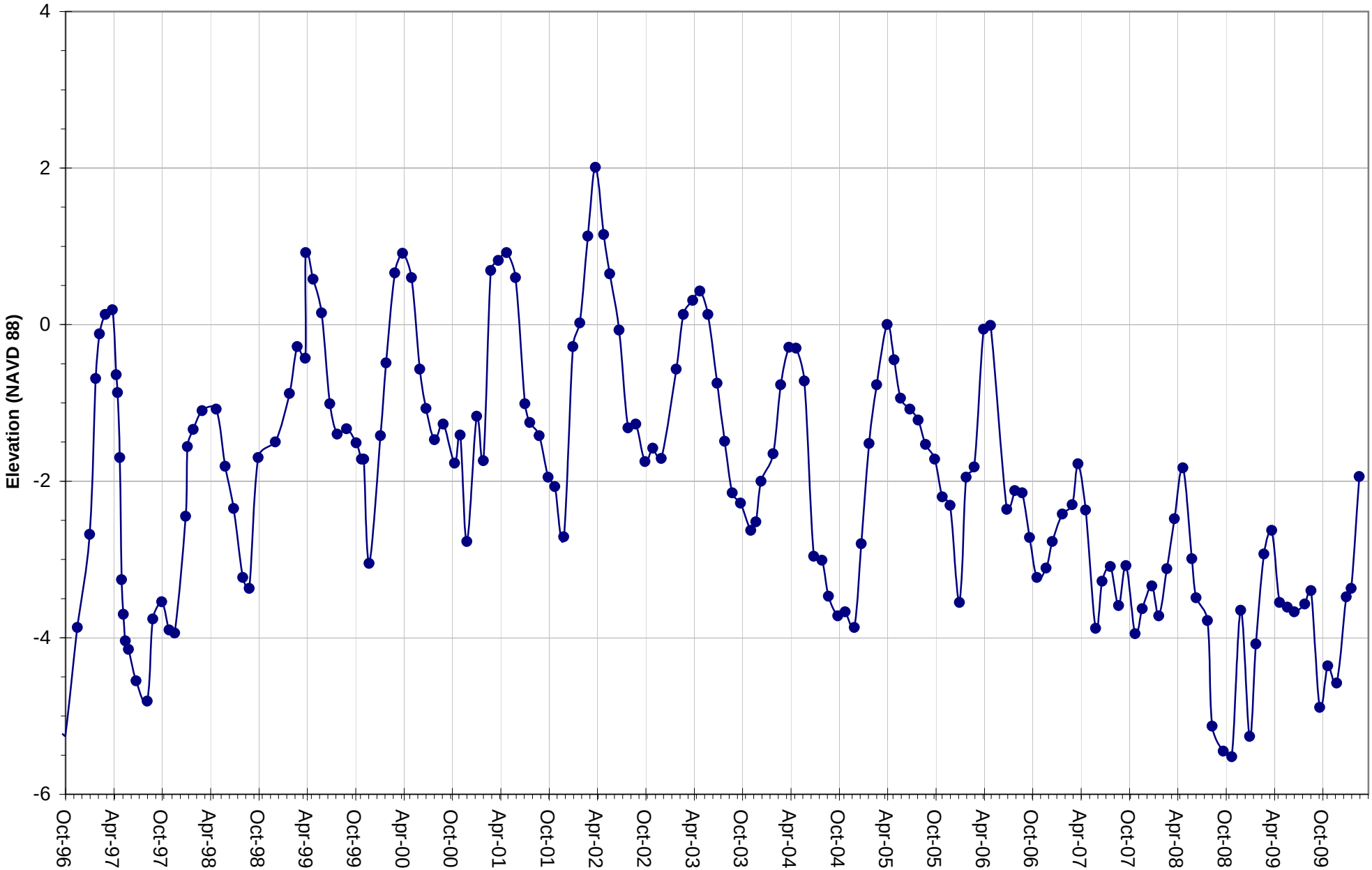
Water Year 2010



Monterey Peninsula
Water Management District

Watermaster Well No. 113 - MPWMD FO-10 (Shallow) (15S/1E-11Fa)

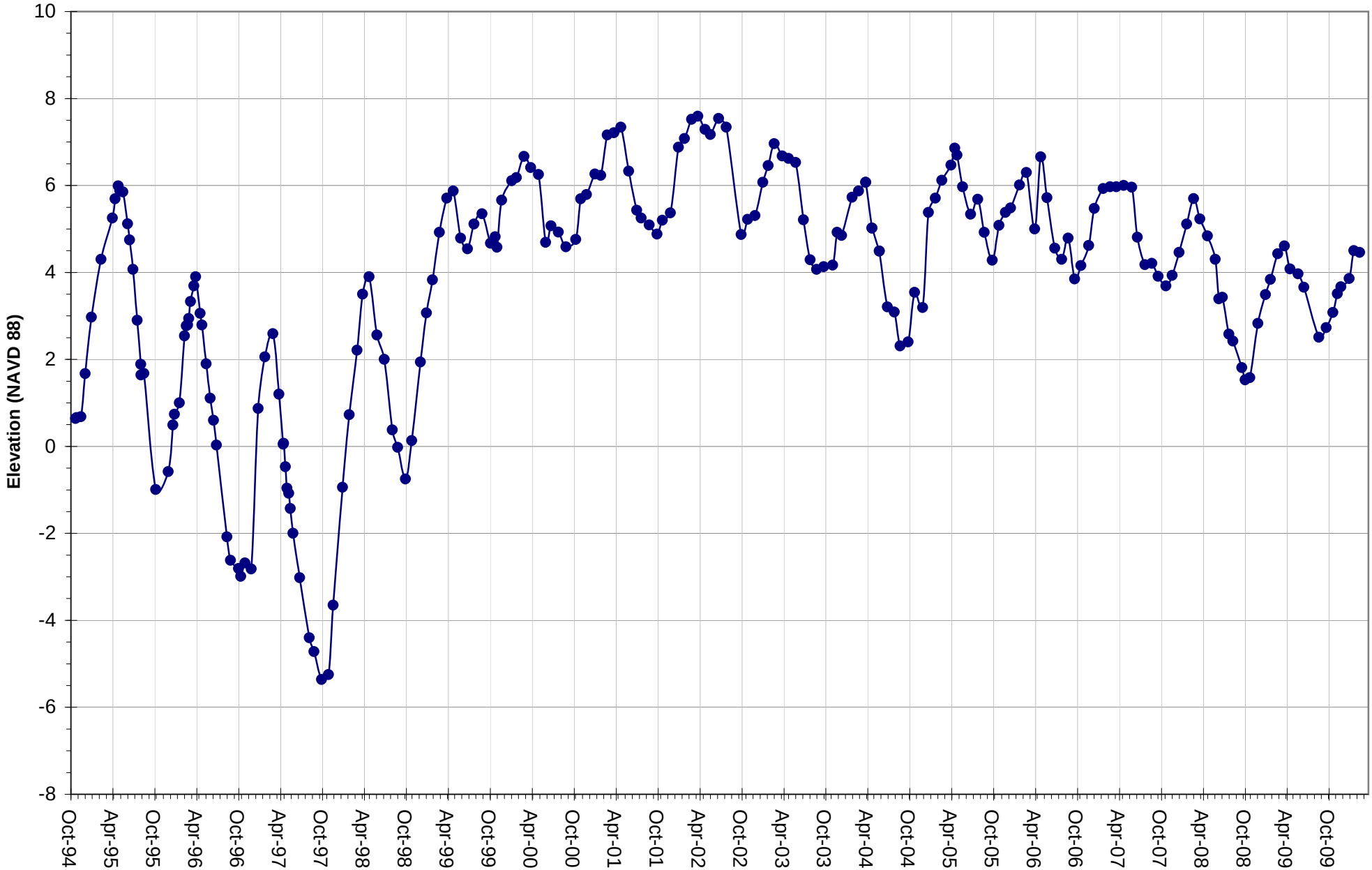
Screened from 480-500 in the Paso Robles (QTp)
Wellhead Elevation 200.85 MSL
DWR Driller Log No. N/A
Datasource: MPWMD



Monterey Peninsula
Water Management District

Watermaster Well No. 114 - MPWMD FO-10 (Deep) (15S/1E-15Fc)

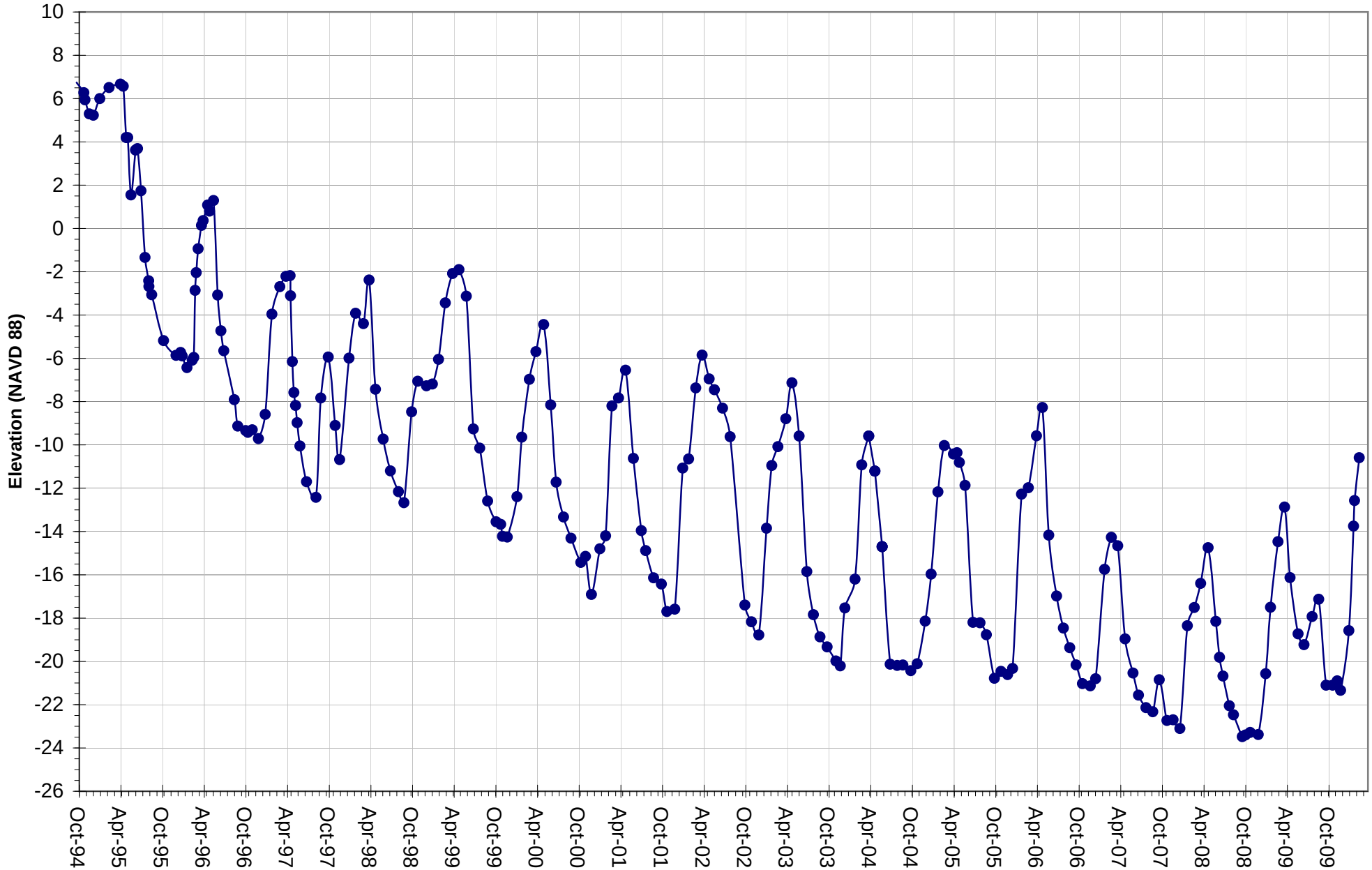
Screened from 790-830 in the Santa Margarita Formation (Tsm)
Wellhead Elevation 201.03 MSL
DWR Driller Log No. N/A
Datasource: MPWMD



Monterey Peninsula
Water Management District

Watermaster Well No. 111 - MPWMD FO-09 (shallow) (15S/1E-11Pa)

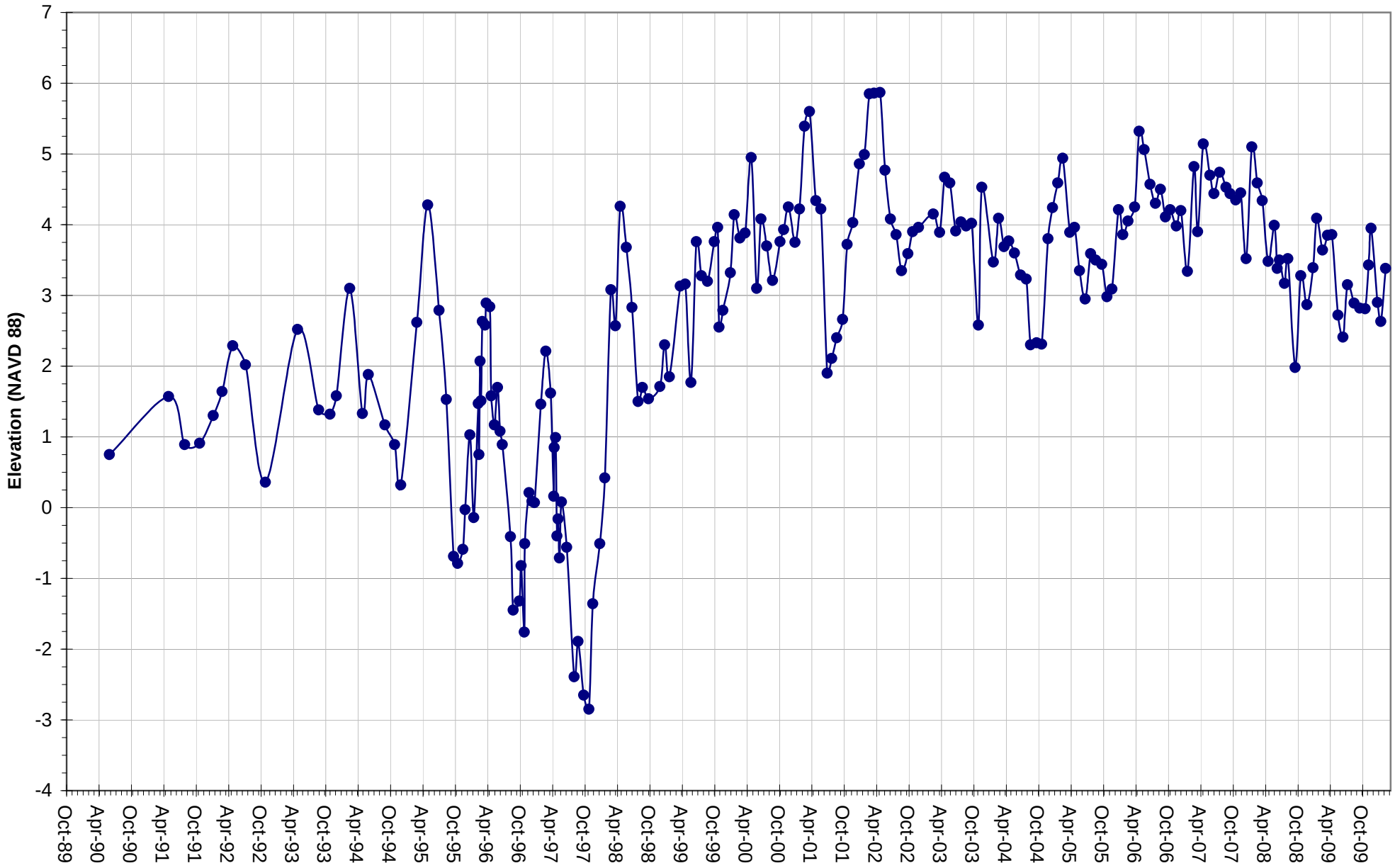
Screened from 610-650 in the Paso Robles (QTp)
Wellhead Elevation 118.89 MSL
DWR Driller Log No. N/A
Datasource: MPWMD



Monterey Peninsula
Water Management District

Watermaster Well No. 112 - MPWMD FO-09 (Deep) (15S/1E-15Pb)

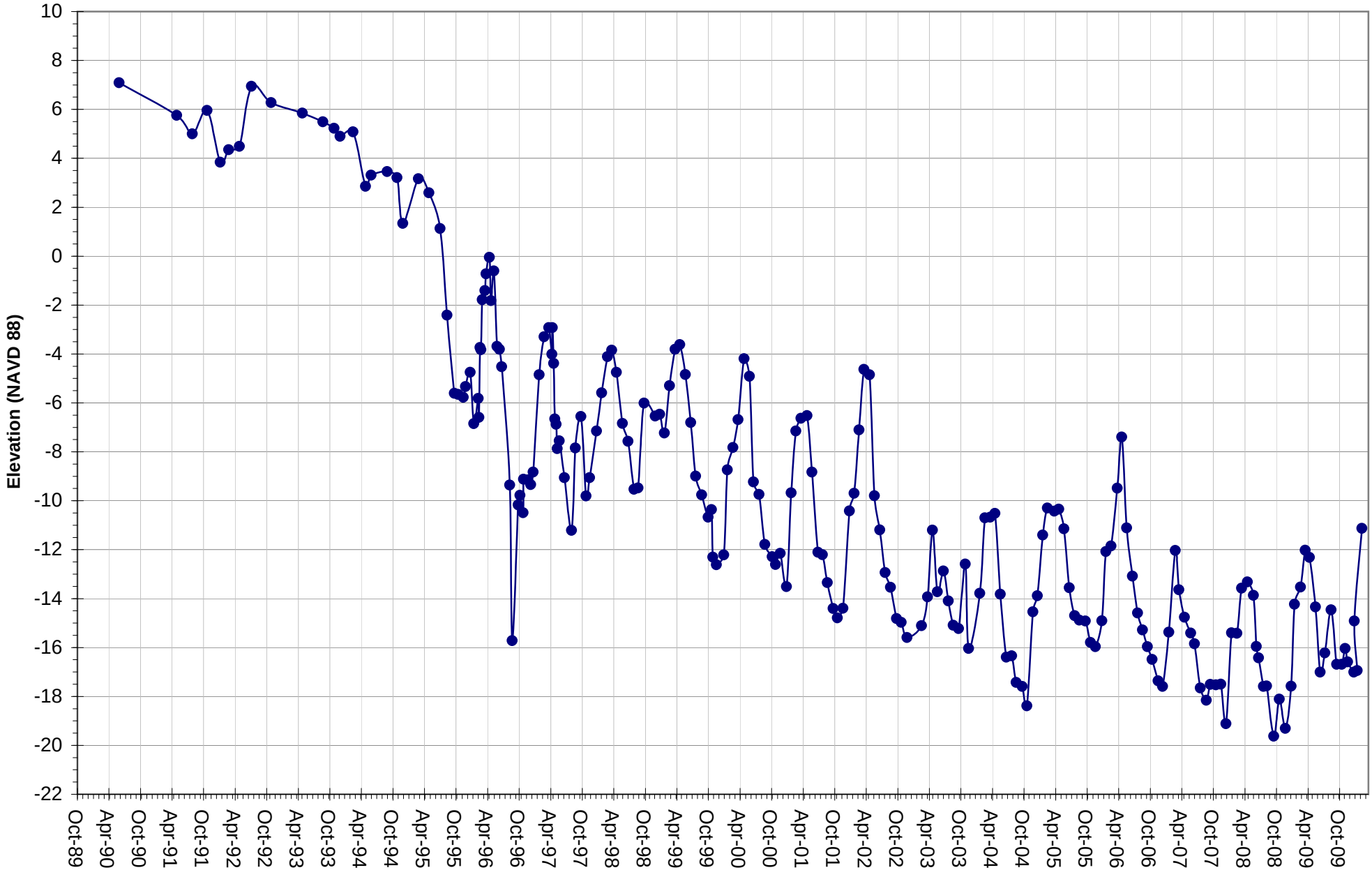
Screened from 790-830 in the Santa Margarita Formation (Tsm)
Wellhead Elevation 188.85 MSL
DWR Driller Log No. N/A
Datasource: MPWMD



Monterey Peninsula
Water Management District

Watermaster Well Number 101 - MSC-Shallow (15S/1E-15N3)

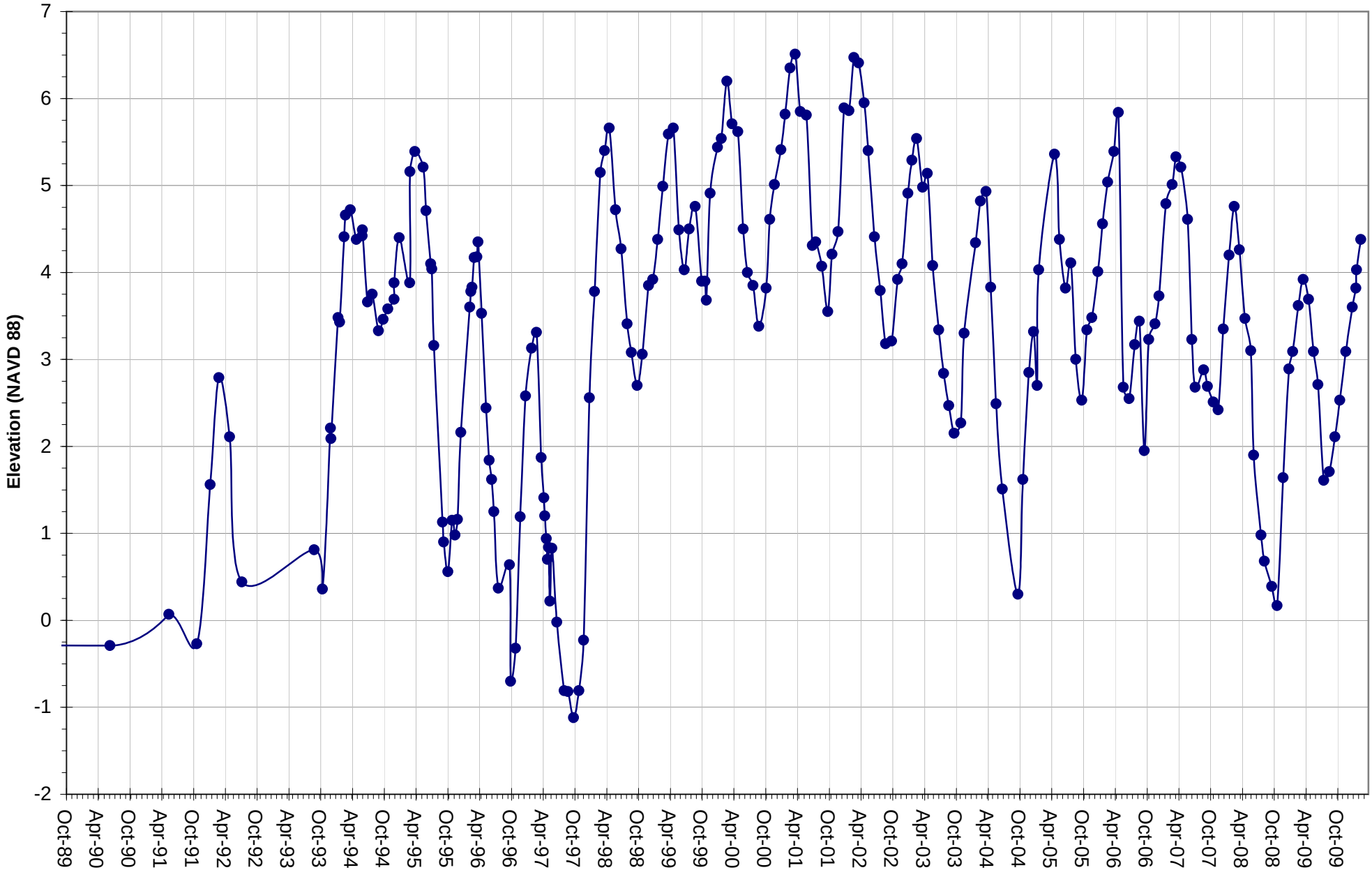
Screened from 490-680 in the Paso Robles Formation (QTp)
Wellhead Elevation 80.1 MSL
DWR Driller Log No. 338413



Monterey Peninsula
Water Management District

Watermaster Well Number 102 - MSC-Deep (15S/1E-15N2)

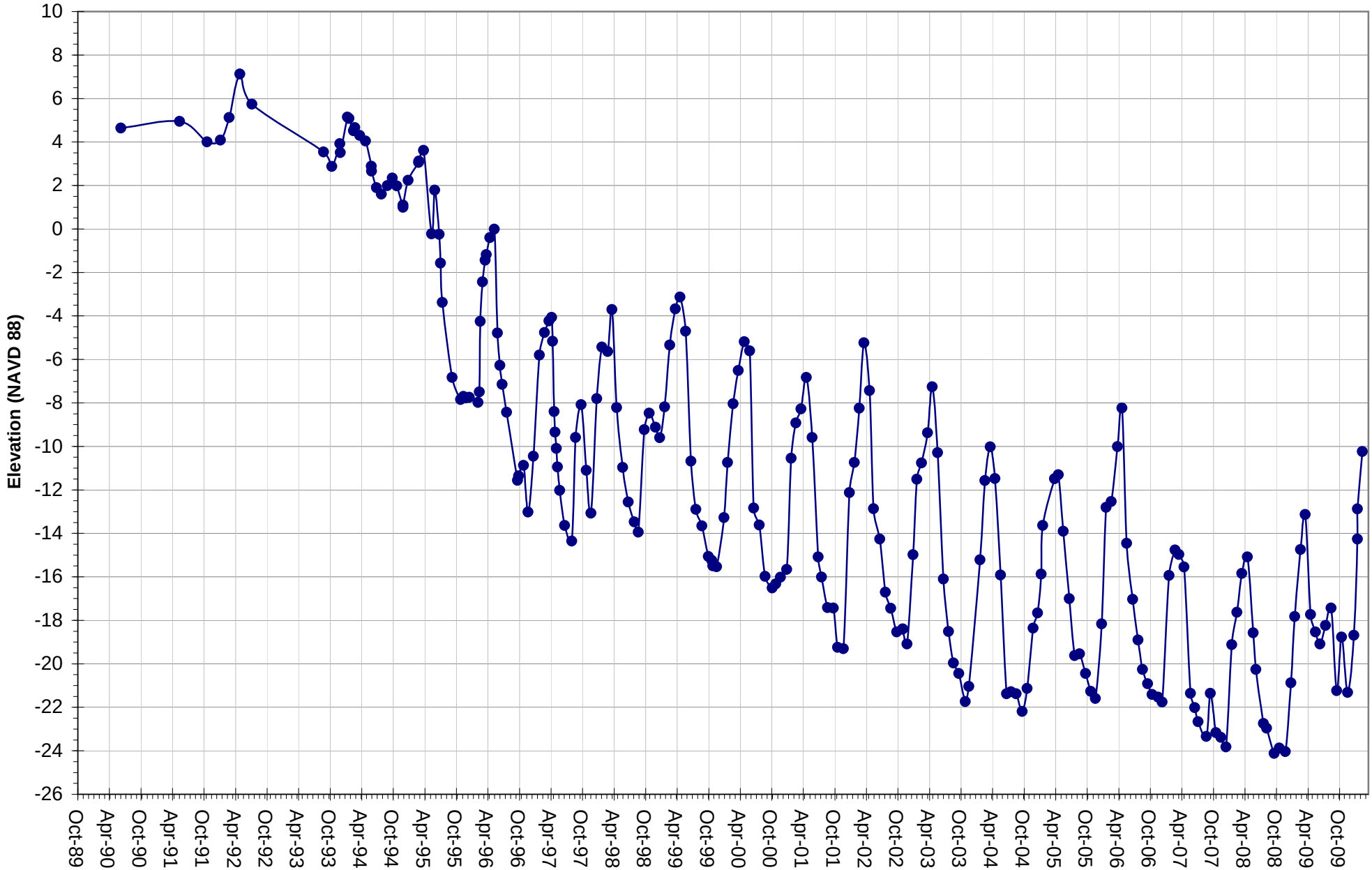
Screened from 810-850 in the Santa Margarita Formation (Tsm)
Wellhead Elevation 80.29 MSL
DWR Driller Log No. 338425
Datasource: MPWMD



Monterey Peninsula
Water Management District

Watermaster Well No. 105 - PCA East (Shallow) (15S/1E-15K5)

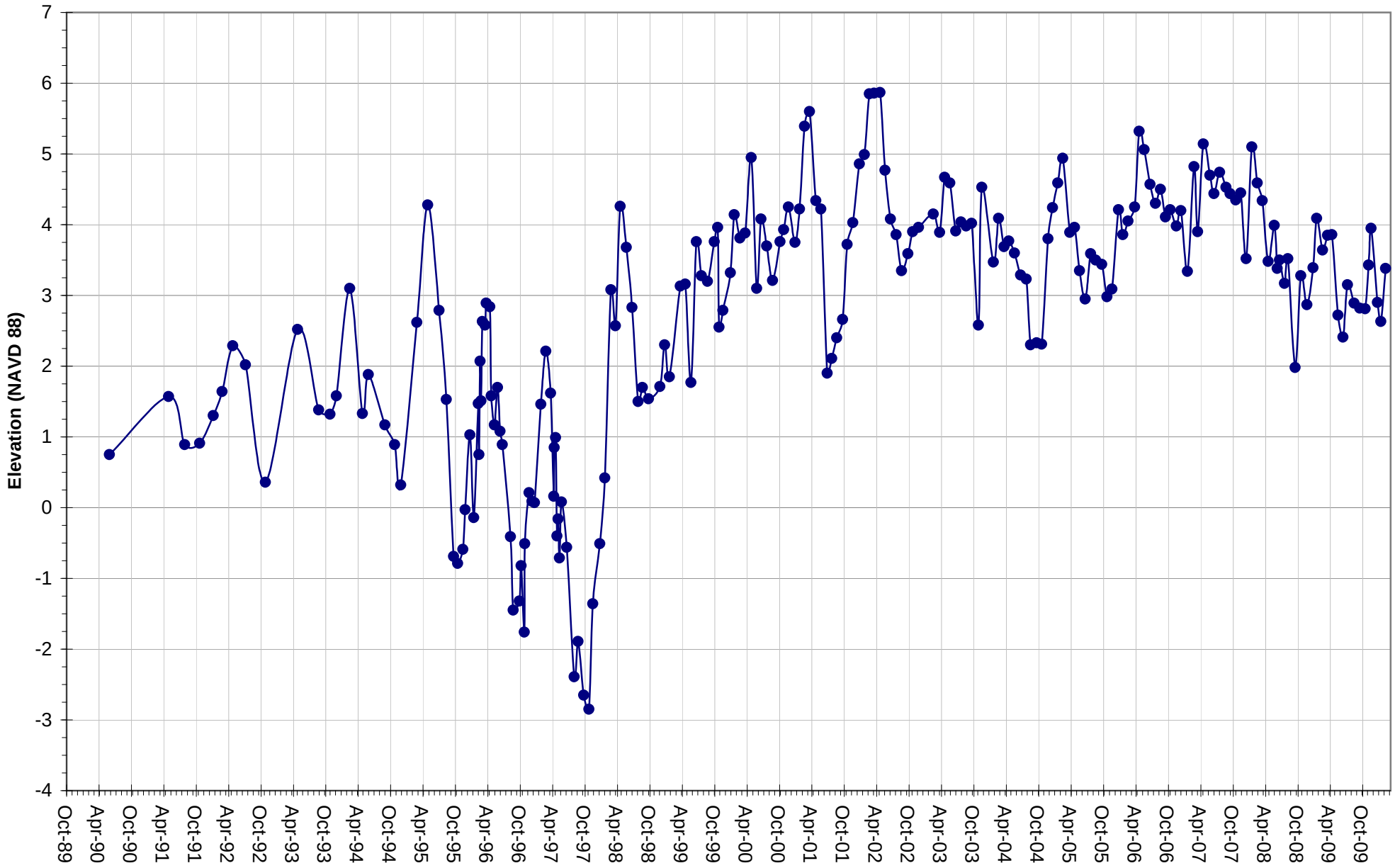
Screened from 350-400 in the Paso Robles Formation (QTp)
Wellhead Elevation 68.51 MSL
DWR Driller Log No. 338402
Datasource: MPWMD



Monterey Peninsula
Water Management District

Watermaster Well No. 106 - PCA East (Deep) (15S/1E-15K4)

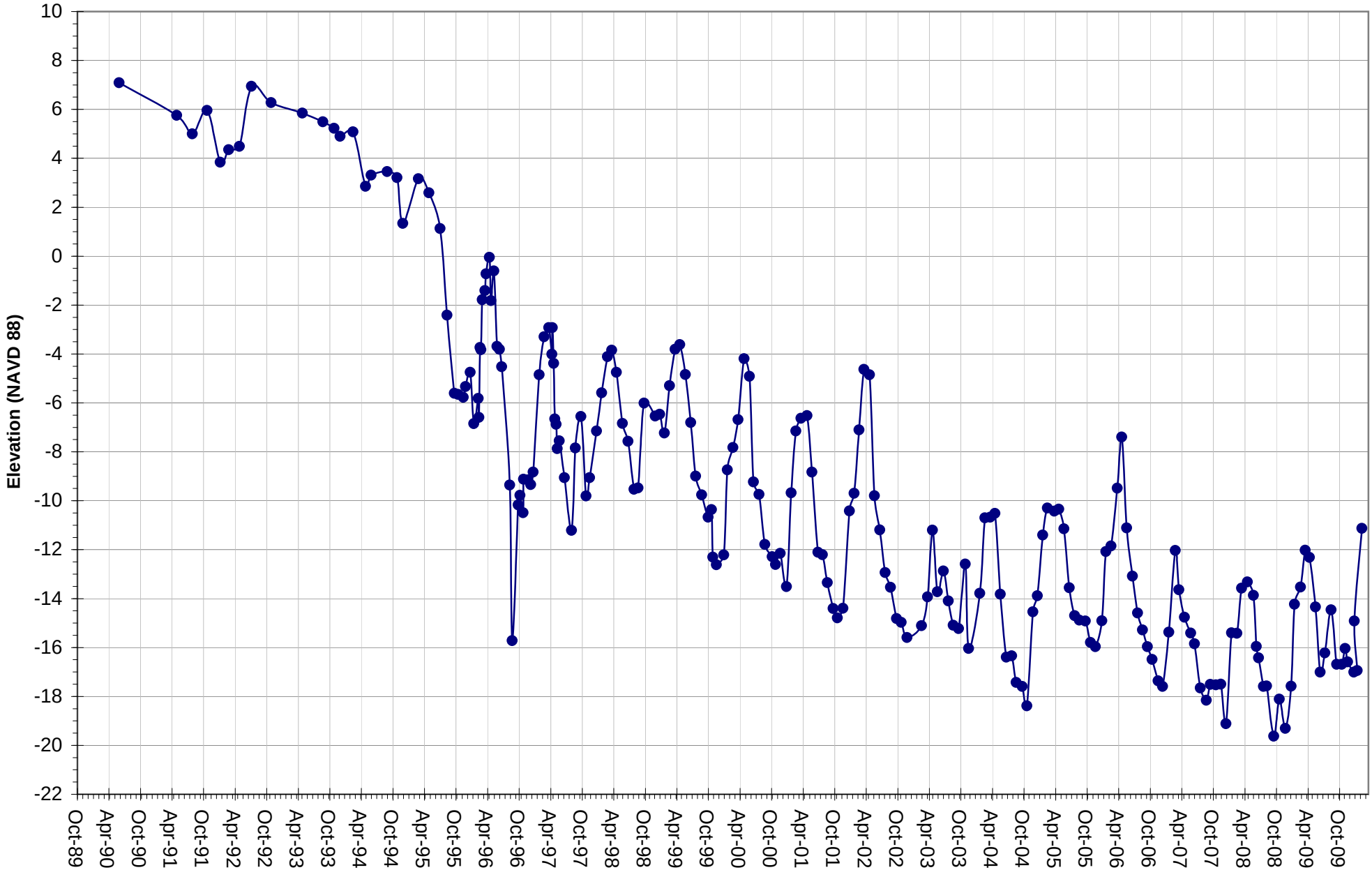
Screened from 650-700 in the Santa Margarita Formation (Tsm)
Wellhead Elevation 68.54 MSL
DWR Driller Log No. 338402
Datasource: MPWMD



Monterey Peninsula
Water Management District

Watermaster Well Number 101 - MSC-Shallow (15S/1E-15N3)

Screened from 490-680 in the Paso Robles Formation (QTp)
Wellhead Elevation 80.1 MSL
DWR Driller Log No. 338413



Monterey Peninsula
Water Management District

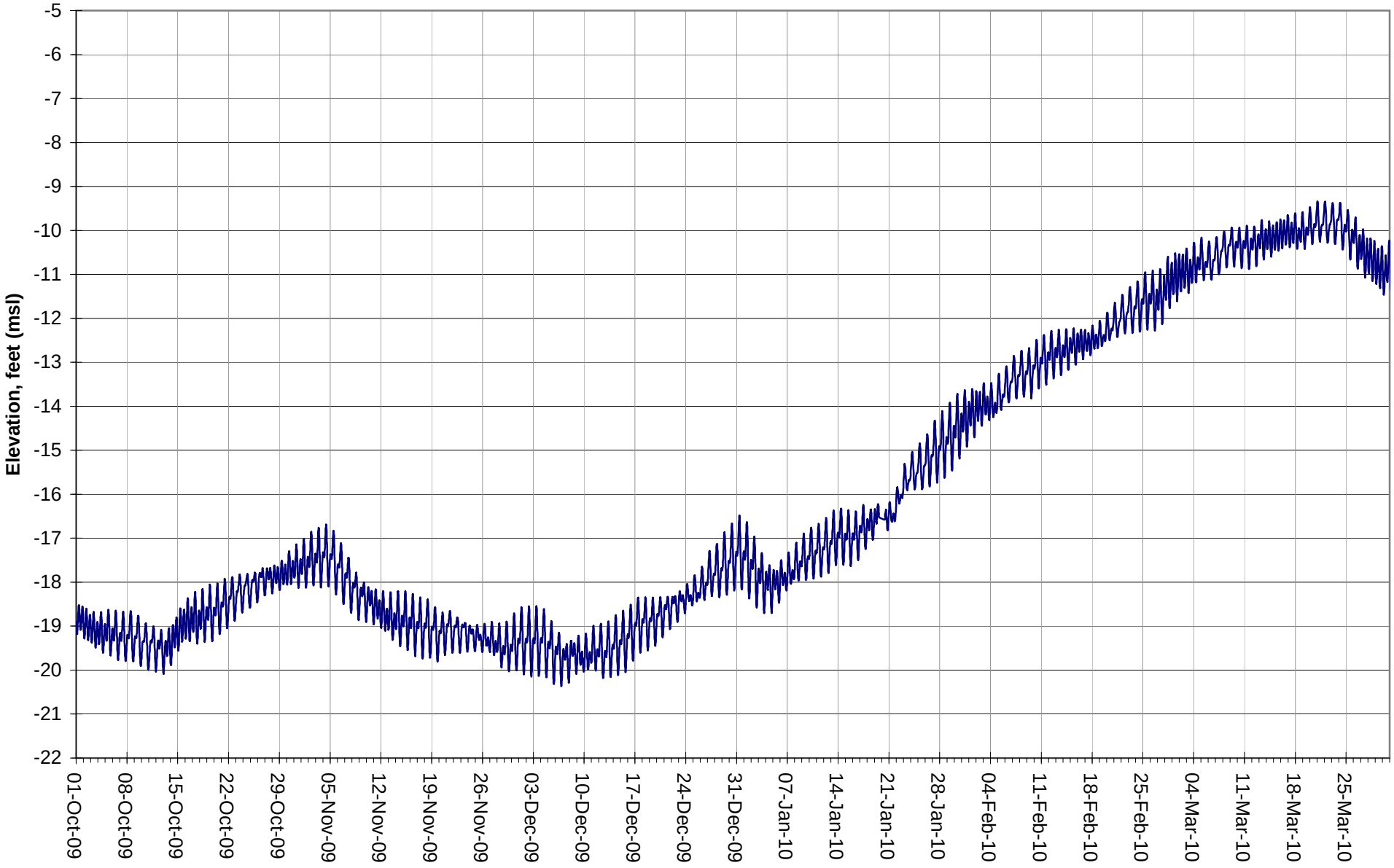
Watermaster Well Number 102 - MSC-Deep (15S/1E-15N2)

Screened from 810-850 in the Santa Margarita Formation (Tsm)
Wellhead Elevation 80.29 MSL
DWR Driller Log No. 338425
Datasource: MPWMD

Appendix 4

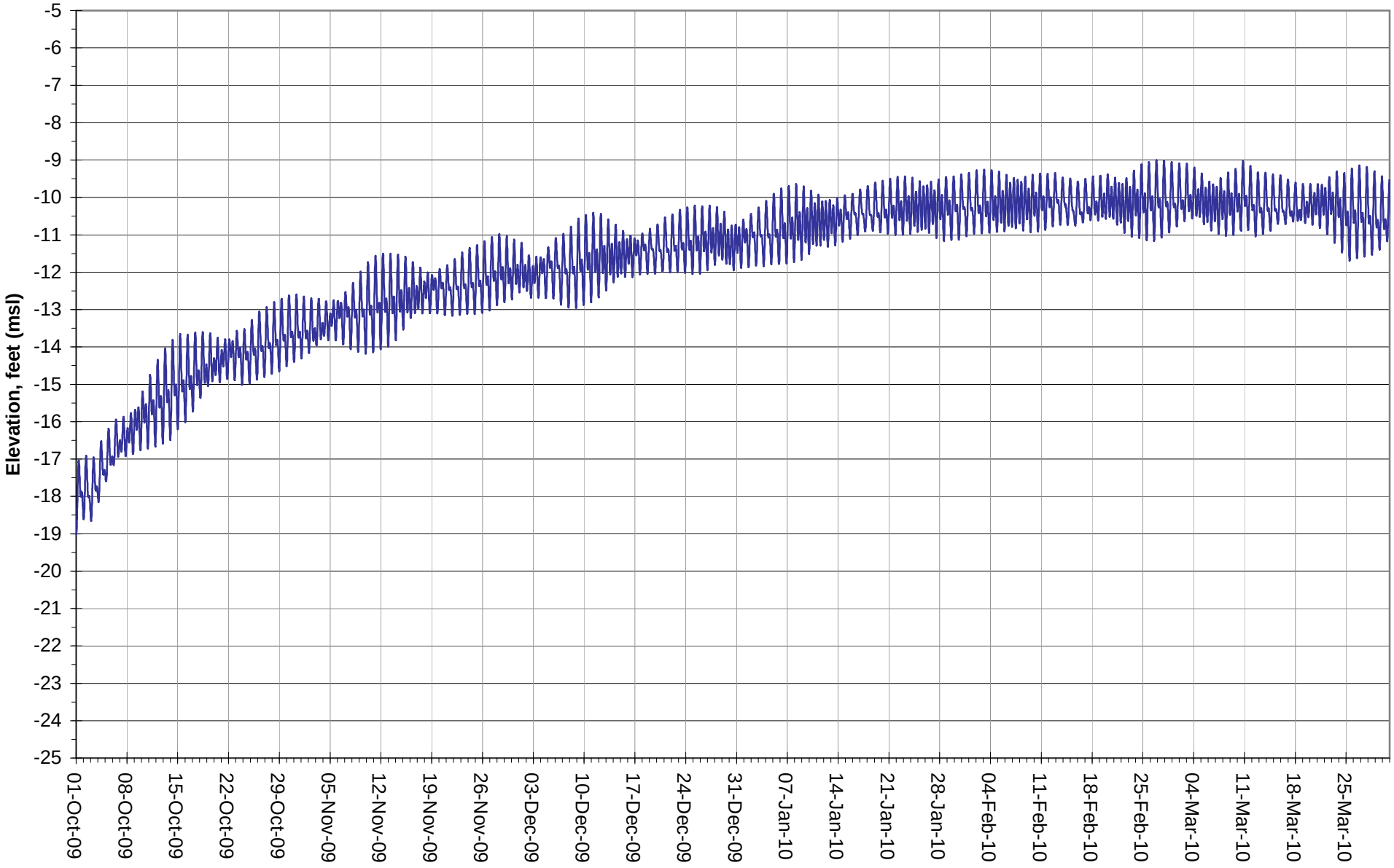
Watermaster Sentinel Well Hydrographs

Water Year 2010



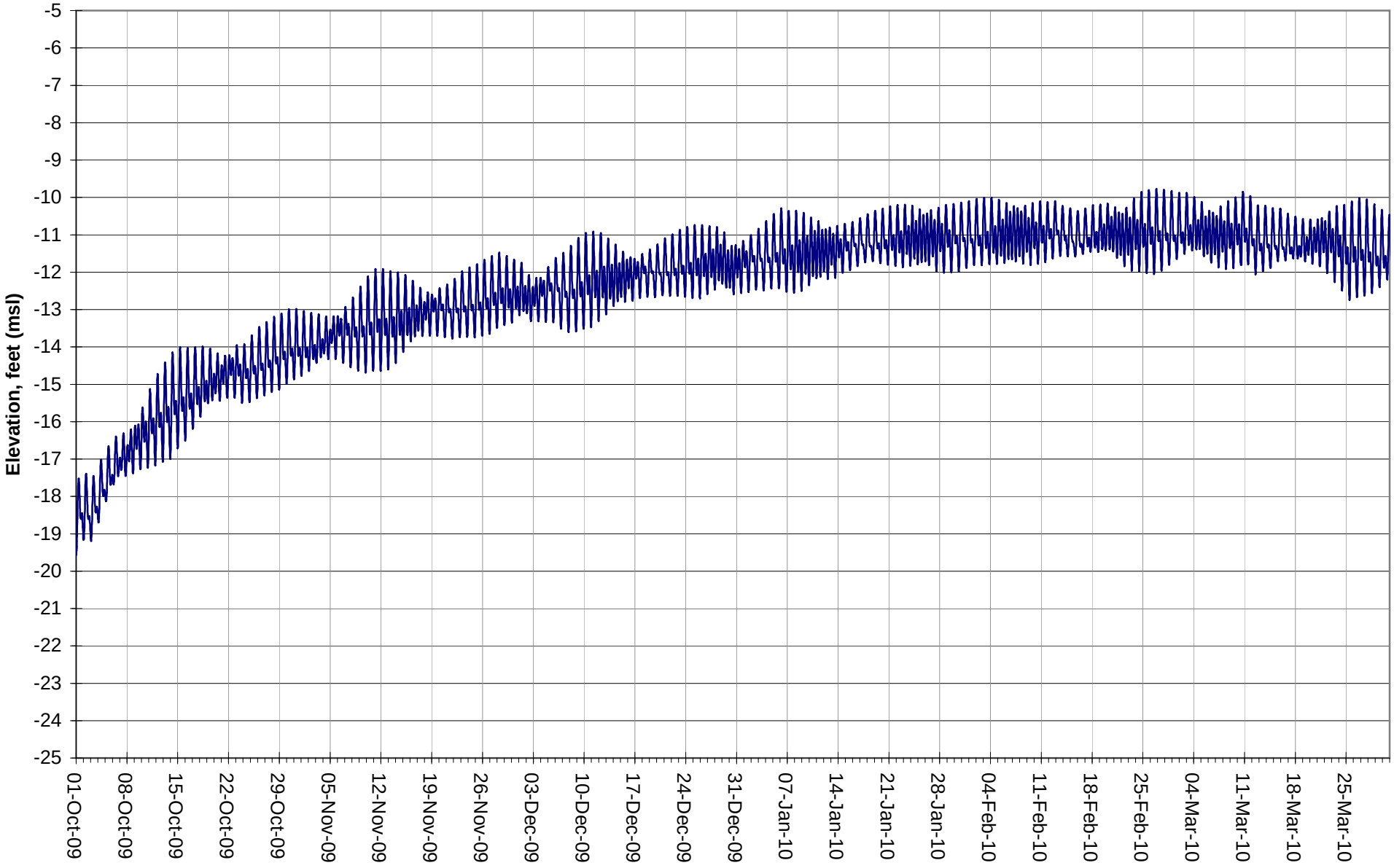
Monterey Peninsula
Water Management District

Water Level Elevation for Seaside Groundwater Basin Watermaster Sentinel Well 1 for the 1st and 2nd Quarters of WY 2010, Seaside, CA



Monterey Peninsula
Water Management District

Water Level Elevation for Seaside Groundwater Basin Watermaster Sentinel Well 2 for the 1st and 2nd Quarters of WY 2010, Seaside, CA



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Water Level Elevation for Seaside Groundwater Basin Watermaster Sentinel Well 3 for the 1st and 2nd Quarters of WY 2010, Seaside, CA