



*Pacific Gas and  
Electric Company*

Yvonne J. Meeks  
Site Remediation - Portfolio Manager  
Environmental Affairs

6588 Ontario Road  
San Luis Obispo, CA 93405

*Mailing Address*  
4325 South Higuera Street  
San Luis Obispo, CA 93401

805.546.5243  
Internal: 664.5243  
Fax: 805.546.5232  
Internet: YJM1@pge.com

February 15, 2005

Norman Shopay  
Project Manager  
California Department of Toxic Substances Control  
Geology and Corrective Action Branch  
700 Heinz Avenue  
Berkeley, California 94710

Subject: Performance Monitoring Report No. 14  
Interim Measure No. 2  
PG&E Topock Compressor Station, Needles, California

Dear Mr. Shopay:

Enclosed is the fourteenth performance monitoring report for Interim Measure No. 2 for the Topock project. This report was prepared in conformance with Final Interim Measures Work Plan No. 2 and DTSC's Requirement for Future Monitoring Reports (letter dated July 21, 2004). This report describes the activities performed and monitoring data collected during the period January 1 through 31, 2005.

Please contact me at (805) 546-5243 if you have any questions or if you need additional information.

Sincerely,

*[Signature]*  
For Yvonne Meeks

Enclosure

cc: CWG Members

**Performance Monitoring Report No. 14,  
PG&E Topock Compressor Station,  
Interim Measures No. 2,  
January 1 through 31, 2005**

Prepared for  
**Pacific Gas and Electric Company**

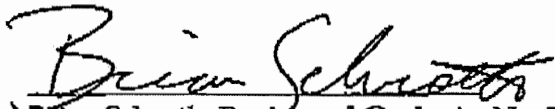
February 15, 2005

**CH2MHILL**

**Performance Monitoring Report No. 14  
PG&E Topock Compressor Station, Interim Measures No. 2  
January 1 through 31, 2005**

Prepared for  
Pacific Gas and Electric Company

This monitoring report was prepared under supervision of a  
California Registered Geologist,

A handwritten signature in black ink, reading "Brian Schroth". The signature is written in a cursive, flowing style with a horizontal line underneath the name.

Brian Schroth, Registered Geologist No. 7423  
Senior Hydrogeologist

# **Performance Monitoring Report No. 14, PG&E Topock Compressor Station, Interim Measures No. 2 January 1 through 31, 2005**

---

Pacific Gas and Electric Company (PG&E) is implementing Interim Measure (IM) No. 2 at the Topock Compressor Station near Needles, California, as described in the *Final Interim Measures Work Plan No. 2* prepared by CH2M HILL on March 2, 2004 and *Addenda to Interim Measures Work Plan No. 2*, prepared by CH2M HILL on March 1, 2004. This performance monitoring report describes operational and monitoring information for IM No. 2 for the period between January 1 and January 31, 2005.

This performance monitoring report has been prepared in compliance with the *Final Interim Measures Work Plan No. 2*, which requires reporting of system operations and performance monitoring data. Future reports will be submitted monthly on the 15<sup>th</sup> of each month, and each report will cover activities of the entire preceding month. The next report will be submitted on March 15<sup>th</sup>.

## **System Operations**

### **Batch Plant Description**

On May 21, 2004, the United States Bureau of Land Management approved the PG&E work plan to modify the existing operations to batch treat the water onsite. The modifications were started on June 9, 2004 and completed on July 15, 2004. Start-up and testing of the batch plant began on July 19, 2004.

Treatment is completed in three steps: (1) chromium reduction by reaction with ferrous chloride to reduce the hexavalent chromium to the less soluble trivalent form, (2) iron oxidation to precipitate out excess iron and reduced chromium, and (3) clarification to remove the precipitated solids from the water. Treated water from the clarifier is transferred to holding tanks for off-site disposal. Precipitated solids are periodically pumped from the clarifier into a container (phase separator) for off-site disposal.

### **System Operations**

Table 1 summarizes the pumping data for the reporting period. The target pumping rate from TW-2D was maintained at approximately 70 gallons per minute (gpm) for the month of January, except for a brief pumping rate reduction on January 22, 2005 to repair a piping break.

A total of 3,070,598 gallons of groundwater were extracted and batch treated during this reporting period. The monthly average pumping rate, including system downtime, was 68.2 gpm. The batch treated water was manifested as a RCRA non-hazardous waste and transported to United States Filter Corporation in Los Angeles, California for additional treatment and disposal. Solids accumulated in the clarifier were disposed as a RCRA hazardous waste at the Waste Management, Kettleman Hills Facility.

**TABLE 1**

Pump Data from TW-2S and TW-2D (January 1 through January 31, 2005)

*Performance Monitoring Report No. 14, Topock Compressor Station, Interim Measure No. 2*

Extraction Well	Reporting Period <sup>2</sup>		Project To Date
	Average Pumping Rate <sup>3</sup> (gpm)	Volume Pumped (gal)	Cumulative Volume Pumped (gal)
TW-2S <sup>1</sup>	0	0	486,358
TW-2D	68.2	3,070,598	16,430,380
<b>Total</b>	68.2	3,070,598	16,916,738
Volume Pumped from MW-20 Cluster:			1,224,325
Total Volume Pumped (gal)			18,141,063
Total Volume Pumped (ac-ft)			55.7

gpm: gallons per minute.

gal: gallons.

ac-ft: acre-feet.

<sup>1</sup>Pumping from TW-2S was temporarily terminated on June 11, 2004.

<sup>2</sup>Pumping results during the reporting period are based on readings collected between December 31, 2004 at 2:15 pm and January 31, 2005 at 8:20 pm (31.3 days)

<sup>3</sup>The "Average Pumping Rate" is the overall average during the reporting period, including system downtime.

Daily inspections include tank inspections, flow measurements, site security, and desert tortoise sitings. Daily logs with documentation of inspections are maintained on site. Significant precipitation events occurred on January 3, 4, 9, 10, 26 and 28, as well as trace precipitation on January 7, 8, 11, and 29, 2005. Total January rainfall for the area measured at the Needles, California airport was approximately 1.8 inches.

## Extracted Water Analytical Results

Four grab samples were collected from TW-2D during this reporting period. Table 2 summarizes analytical results from TW-2S and TW-2D since May 19, 2004.

## Hydraulic Monitoring

### Hydraulic Data

Water levels were recorded at intervals of 30 minutes with pressure transducers in multiple wells and two river monitoring stations (I-3 and RRB). The data are typically continuous with only short interruptions for sampling or maintenance. The wells monitored were:

- **Floodplain Wells:** MW-27, MW-28 cluster (2), MW-29, MW-30 cluster (2), MW-32 cluster (2), MW-33 cluster (2), MW-34 cluster (2), MW-36 cluster (6), and MW-39 cluster (6).
- **Intermediate Wells:** MW-19, MW-20 cluster (3), MW-26, MW-31 cluster (2), MW-35 cluster (2), TW-2S, TW-2D.
- **Basin Wells:** MW-10, MW-25.

Hydrographs for all wells with transducers are provided as Attachment 1; the Colorado River elevation at I-3 is shown on all hydrographs. Reported groundwater elevations (or hydraulic heads) are adjusted for temperature and for salinity differences between wells (i.e., adjusted to a common freshwater equivalent).

The average and the minimum and maximum daily average groundwater/river elevations have been calculated from the transducer data for the January reporting period (January 1 to 31, 2004). These values are shown on Figures 1, 2, and 3.

### Evaluation of Groundwater Gradients From the Reporting Period

Hydraulic data are summarized and groundwater elevations contoured by zone of unconsolidated aquifer (UA) on the following figures:

Figure 1 – Upper Unconsolidated Aquifer Zone (Upper UA)

Figure 2 – Middle Unconsolidated Aquifer Zone (Middle UA)

Figure 3 – Lower Unconsolidated Aquifer Zone (Lower UA)

The groundwater elevations for the middle and lower zones of the UA indicate landward hydraulic gradients along the floodplain. A landward hydraulic gradient was also observed in the upper zone of the UA, although less pronounced than in the middle and lower zones. To the west of the pumping area, the regional hydraulic gradient in the Upper UA is easterly and consistent with regional gradients outside of the river area.

Figure 4 shows the location of a hydrogeologic section B1 that runs east-west through monitoring points between the MW-20 bench and the Colorado River. Figure 5 shows the average groundwater elevations along section B1. Data indicate a strong gradient toward the pumping well between MW-30-50 and the 20-bench. In addition, downward gradients in the MW-36 and MW-34 clusters suggest the increased influence of TW-2D pumping compared to past evaluation periods. The water level inside the pumping well has not been posted or contoured on these figures because drawdown in actively pumping wells can be exaggerated due to well inefficiency.

Attachment 2 includes longer-term groundwater elevation contour maps for each zone of the UA using averaged groundwater elevation data from June 15 through January 31, 2005. Groundwater gradients in the lower and middle zones of the UA are landward based on these averaged data. Groundwater gradients in the upper zone of the UA are flatter, but are landward in the floodplain in the vicinity of TW-2D.

The correlation between Colorado River levels and United States Bureau of Reclamation (USBR) records for Davis Dam discharge has been used to estimate future river levels from of USBR discharge projections. The predicted river levels are input to the groundwater model to help estimate future pumping requirements. Measured Davis Dam discharges do not always agree with USBR projections.

Table 3 summarizes the estimated and actual dam discharges and river elevations since April 2004. The actual Davis Dam January 2005 discharge (monthly average) was significantly less (4,900 cubic feet per second [cfs]) than the USBR projected discharge for the January reporting period (8,800 cfs). Correspondingly, the actual Colorado River elevation at I-3 (monthly average) was significantly lower (1.0 feet) than the predicted elevation for the January reporting period.

## **Groundwater Chemistry from the Reporting Period**

Hexavalent chromium concentrations for monitoring wells in the vicinity of the MW-20 bench are presented in plan view for the three zones of UA and vertically along hydrogeologic section B1. These figures are included as Attachment 3. Analytical results from the most recent sampling event are included for each monitoring well.

Review of the sample and field duplicate data for wells MW-36-100 and MW-39-100 collected on January 12, 2005 indicate that the sampler switched the pre-printed labels for these two locations. On January 27, 2005, these wells were resampled to verify chromium results for these locations. Review of the sample label information, field sampling logs, and resample results verified that the labels were switched. As such, the January 12 laboratory analysis records for these wells have been corrected.

Hexavalent chromium concentration trend graphs for January 2004 through January 2005 are presented in tandem with hydrographs for each monitoring well in the vicinity of the MW-20 bench. These graphs are included as Attachment 4.

## **Future Activities**

Reporting of Interim Measures No. 2 activities will continue as described in the *Final Interim Measures Work Plan No. 2*. The next status report will be submitted on March 15th, 2005 and will cover activities from February 1 to February 28, 2005.

Full-time pumping from TW-2D will continue in February 2005. The USBR projects that Davis Dam releases in February 2005 will be increased relative to January rates. Calculations based on this projected dam release increase indicate a corresponding increase in river level of approximately 0.7 foot over the average river level measured in January 2005. Future adjustments in pump rates from TW-2D will be proposed based on expected river levels,

observed groundwater gradients, system treatment performance at 70 gpm, potential system modifications, and other relevant factors.



## Tables

---

Table 2  
Analytical Results - TW-2 Extraction Wells  
Topock Interim Measures No. 2

Sample Time Relative to TW-2 Pumping Start	TW-2S				TW-2D				TW-2 Combined			
	Sample Date	Total Dissolved Chromium mg/L	Hexavalent Chromium mg/L	Total Dissolved Solids mg/L	Sample Date	Total Dissolved Chromium mg/L	Hexavalent Chromium mg/L	Total Dissolved Solids mg/L	Sample Date	Total Dissolved Chromium mg/L	Hexavalent Chromium mg/L	Total Dissolved Solids mg/L
6 days	19-May-04	6.61	7.36	2,620	19-May-04	7.06	7.77	7,740	19-May-04	6.68	7.58	5,230
13 days	26-May-04	6.68	7.00	2,700	26-May-04	7.15	7.47	7,620	26-May-04	7.29	7.19	5,520
20 days	02-Jun-04	7.93	7.19	2,690	02-Jun-04	7.02	7.33	7,540	02-Jun-04	6.93	7.33	5,350
27 days	09-Jun-04	6.82	7.19	2,740	09-Jun-04	6.98	7.41	7,540	09-Jun-04	6.81	7.50	5,300
34 days	NS				16-Jun-04	7.55	7.11	7,400	NS			
41 days	NS				23-Jun-04	7.11	6.75	7,200	NS			
48 days	NS				30-Jun-04	6.37	6.64	7,060	NS			
56 days	NS				08-Jul-04	7.29	6.29	7,150	NS			
62 days	NS				14-Jul-04	5.92	6.15	7,020	NS			
69 days	NS				21-Jul-04	5.74	6.20	6,830	NS			
76 days	NS				28-Jul-04	5.66	6.01	6,760	NS			
83 days	NS				04-Aug-04	5.95	6.06	7,140	NS			
98 days	NS				19-Aug-04	7.61	6.20	6,700	NS			
105 days	NS				26-Aug-04	5.31	6.03	6,620	NS			
111 days	NS				01-Sep-04	6.26	6.03	6,730	NS			
118 days	NS				08-Sep-04	6.20	6.33	6,960	NS			
119 days	NS				09-Sep-04	6.47	6.17	6,520	NS			
125 days	NS				15-Sep-04	6.31	6.30	6,430	NS			
132 days	NS				22-Sep-04	6.37	6.39	6,650	NS			
147 days	NS				07-Oct-04	5.88	6.72	6,770	NS			
153 days	NS				13-Oct-04	7.02	6.77	6,430	NS			
160 days	NS				20-Oct-04	6.47	6.66	6,270	NS			
173 days	NS				02-Nov-04	6.28	6.72	6,310	NS			
189 days	NS				18-Nov-04	6.38	6.91	6,140	NS			
202 days	NS				01-Dec-04	7.98	6.50	5,980	NS			
209 days	NS				08-Dec-04	6.47	6.28	6,350	NS			
217 days	NS				16-Dec-04	6.19	6.58	6,290	NS			
230 days	NS				29-Dec-04	5.82	6.53	5,890 <sup>3</sup>	NS			
237 days	NS				05-Jan-05	5.58	6.39	5,633 <sup>3</sup>	NS			
244 days	NS				12-Jan-05	5.93	6.20 <sup>4</sup>	5,750	NS			
251 days	NS				19-Jan-05	6.24	6.50	6,120	NS			
259 days	NS				27-Jan-05	5.91	6.11	5,240	NS			

Notes:

1. NS = Not Sampled
2. Sampling of TW-2S and TW-2 combined were halted when pumping from TW-2S was temporarily terminated on June 11, 2004 per DTSC direction.
3. Value is based on re-analysis conducted after 14 day holding time.
4. Value is estimated because sample exceeded 24-hour holding time before analysis.

**Table 3**  
**Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3**  
**PG&E Topock**

Month	Davis Dam Release (cfs)			Colorado River Elevation at I-3 (ft AMSL or ft)		
	Projected	Actual	Difference	Predicted	Actual	Difference
April 2004	17,400	17,354	-46	456.4	456.2	-0.2
May 2004	17,100	16,788	-312	456.3	456.3	-0.1
June 2004	15,800	16,869	1,069	455.8	456.6	0.7
July 2004	14,000	14,951	951	455.2	455.9	0.7
August 2004	12,100	12,000	-100	454.5	454.9	0.4
September 2004	11,200	10,979	-221	454.2	454.6	0.4
October 2004	8,600	7,538	-1,062	453.2	453.5	0.3
November 2004	9,500	8,075	-1,425	453.6	453.4	-0.2
December 2004	6,200	8,090	1,890	452.4	453.3	0.9
January 2005	8,800	4,900	-3,900	453.4	452.4	-1.0
February 2005	8,000	--	--	453.1	--	--
March 2005	15,600	--	--	455.8	--	--

**Notes:**

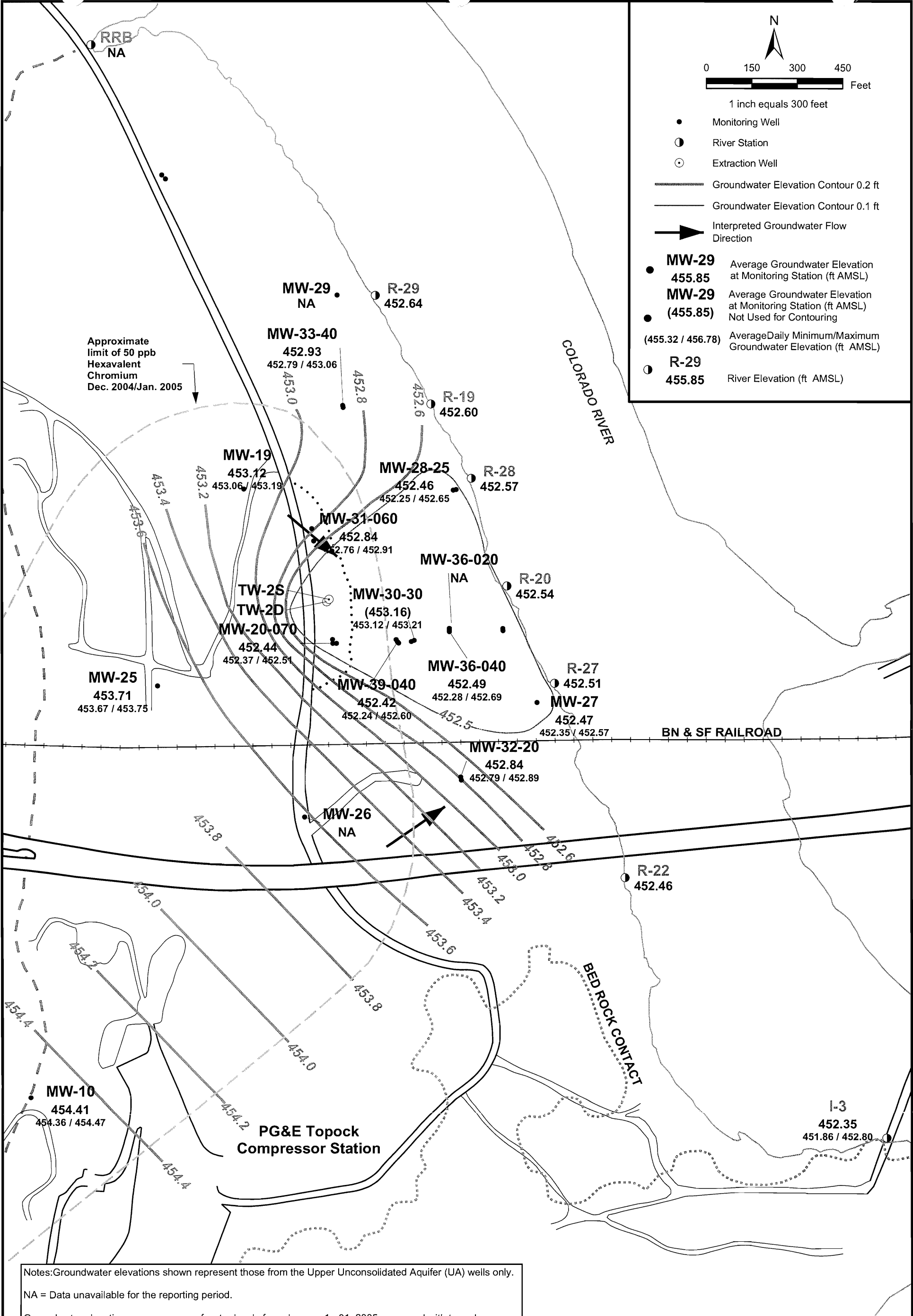
Projected Davis Dam Releases, updated monthly, are reported by the US Department of Interior, Bureau of Reclamation at <http://www.usbr.gov/lc/region/g4000/24mo.pdf>; listed projections for April through July are from April 2004, and the remainder were from the beginning of each respective month

Colorado River levels at I-3 are predicted from a linear regression between historical dam releases and measured river levels at I-3 (updated monthly)

cfs = cubic feet per second; ft AMSL = feet above mean sea level

## Figures

---



**FIGURE 1**  
**AVERAGE GROUNDWATER**  
**(UPPER UA) AND RIVER ELEVATIONS,**  
**JANUARY 1-31, 2005**

Performance Monitoring Report No.  
PG&E Topock Interim Measure No. 2  
Needles, California

**CH2MHILL**

Notes: Groundwater elevations shown represent those from the Upper Unconsolidated Aquifer (UA) wells only.

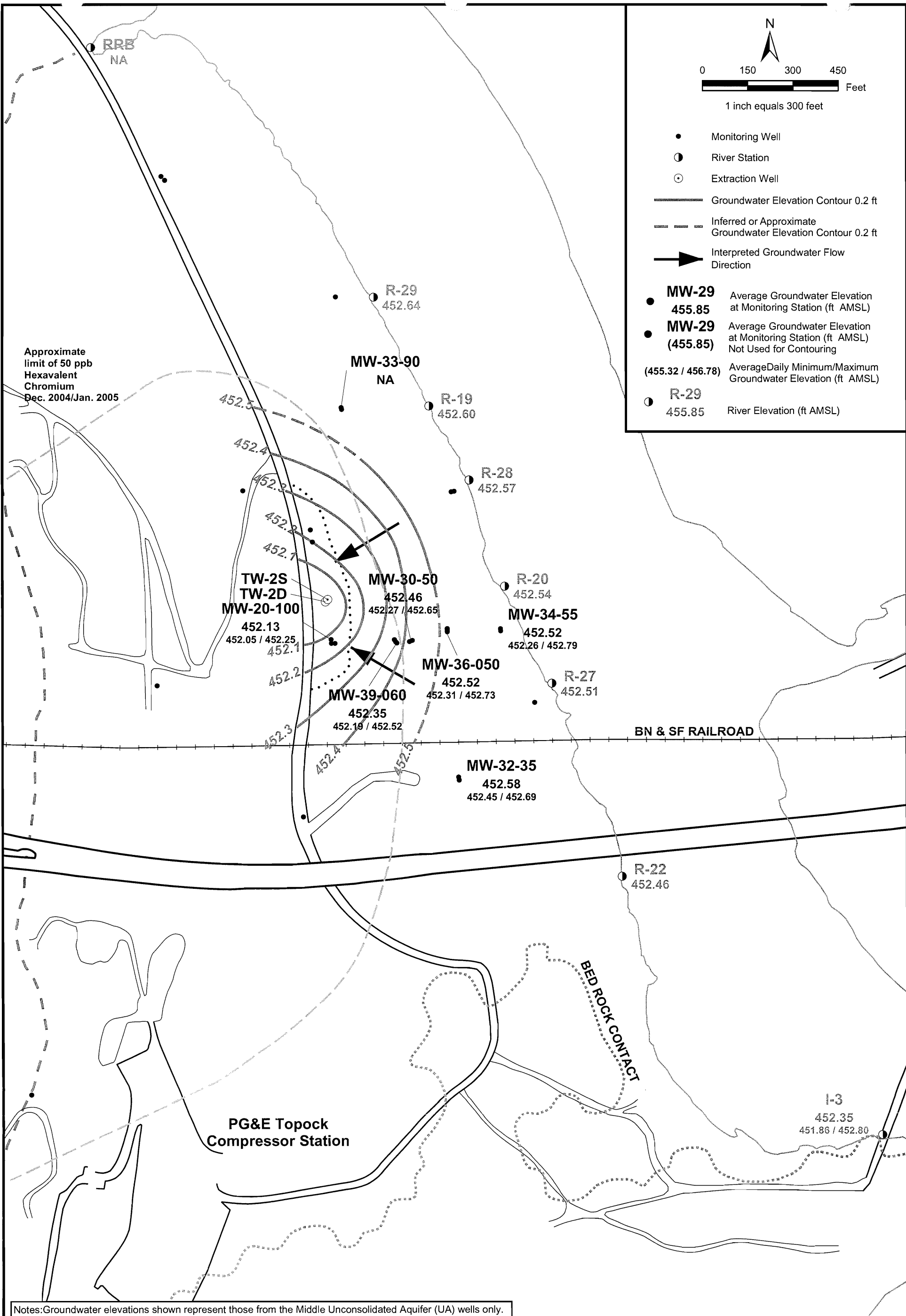
NA = Data unavailable for the reporting period.

Groundwater elevations are averages of water levels from January 1 - 31, 2005 measured with transducers at 30 minute intervals.

Groundwater elevations are salinity and temperature adjusted.

River elevations at R- river stations are interpolated from the average river elevations at I-3 and RRB for the period of October through December 2004, with a resulting river gradient of  $8.7 \times 10^{-5}$  ft/ft. RRB has run dry during low river stages in January, 2005.

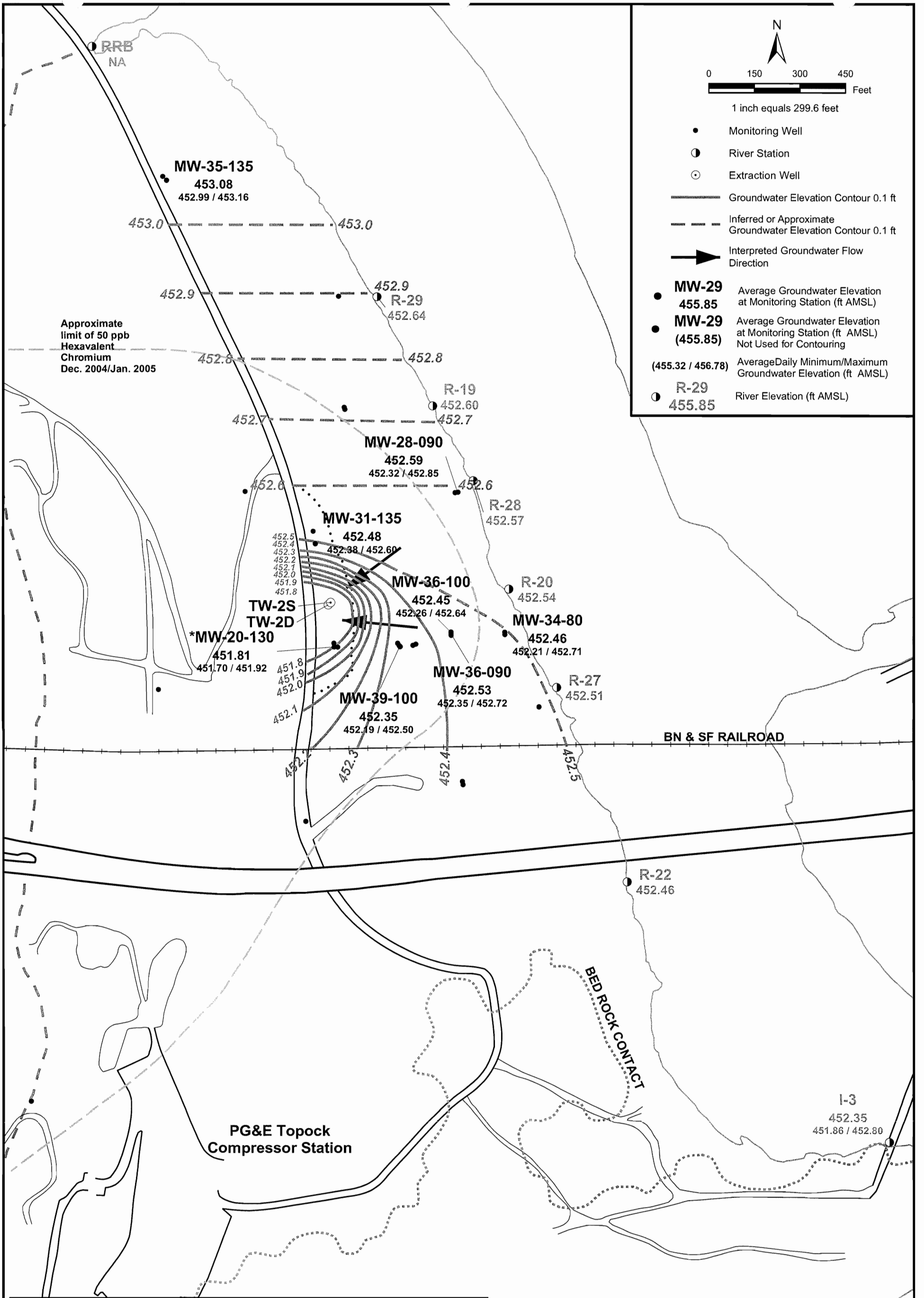
Inferred gradients and flow directions are based upon available data; new wells, additional data, and further calibration may change interpretations.



**FIGURE 2**  
**AVERAGE GROUNDWATER (MIDDLE UA)**  
**AND RIVER ELEVATIONS,**  
**JANUARY 1-31, 2005**

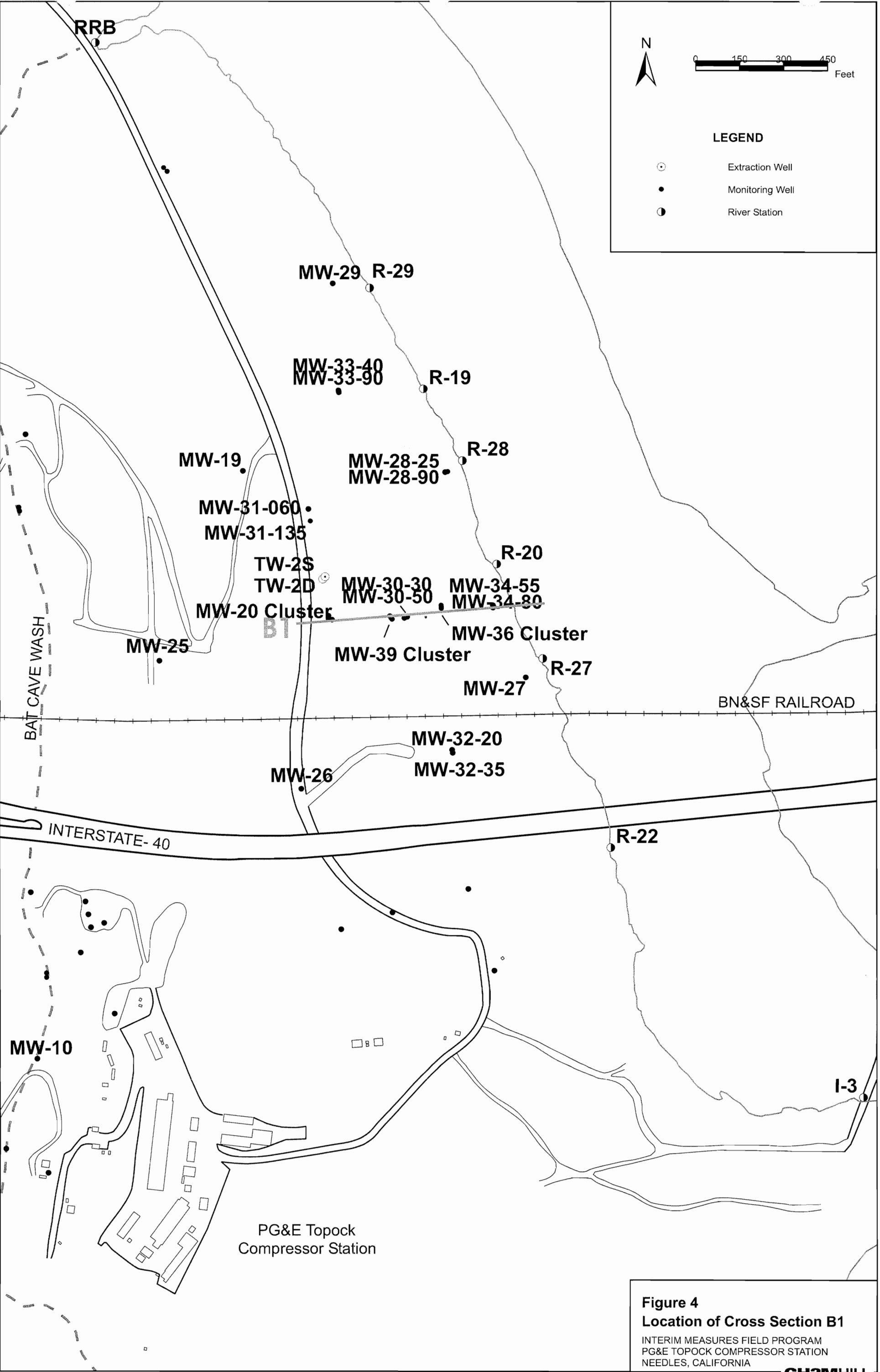
Interim Measures Field Program  
PG&E Topock Compressor Station  
Needles, California

**CH2MHILL**



**FIGURE 3  
AVERAGE GROUNDWATER (LOWER UA)  
AND RIVER ELEVATIONS,  
JANUARY 1-31, 2005**

Interim Measures Field Program  
PG&E Topock Compressor Station  
Needles, California



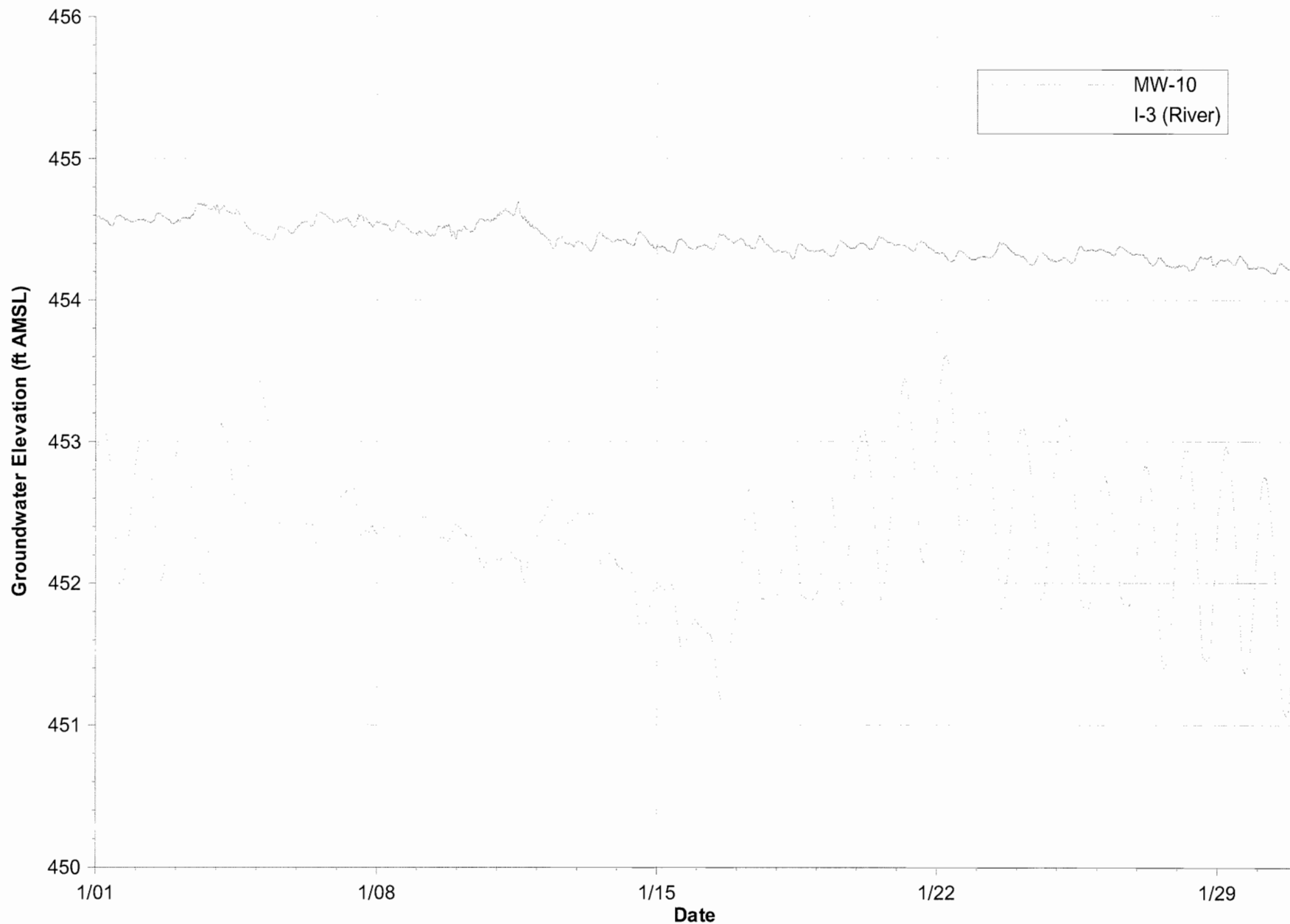




# **Attachment 1**

## **Hydrographs**

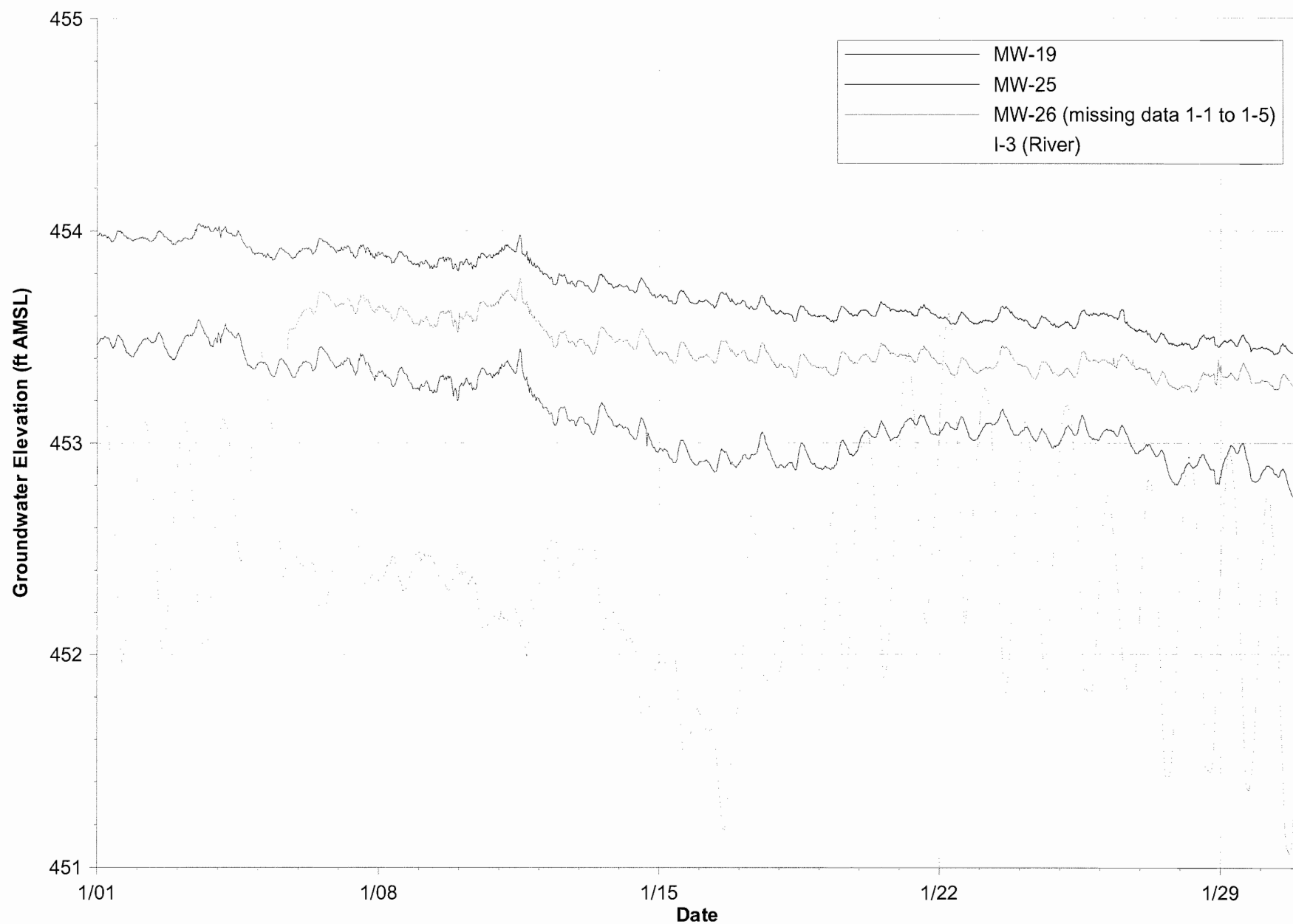
---



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

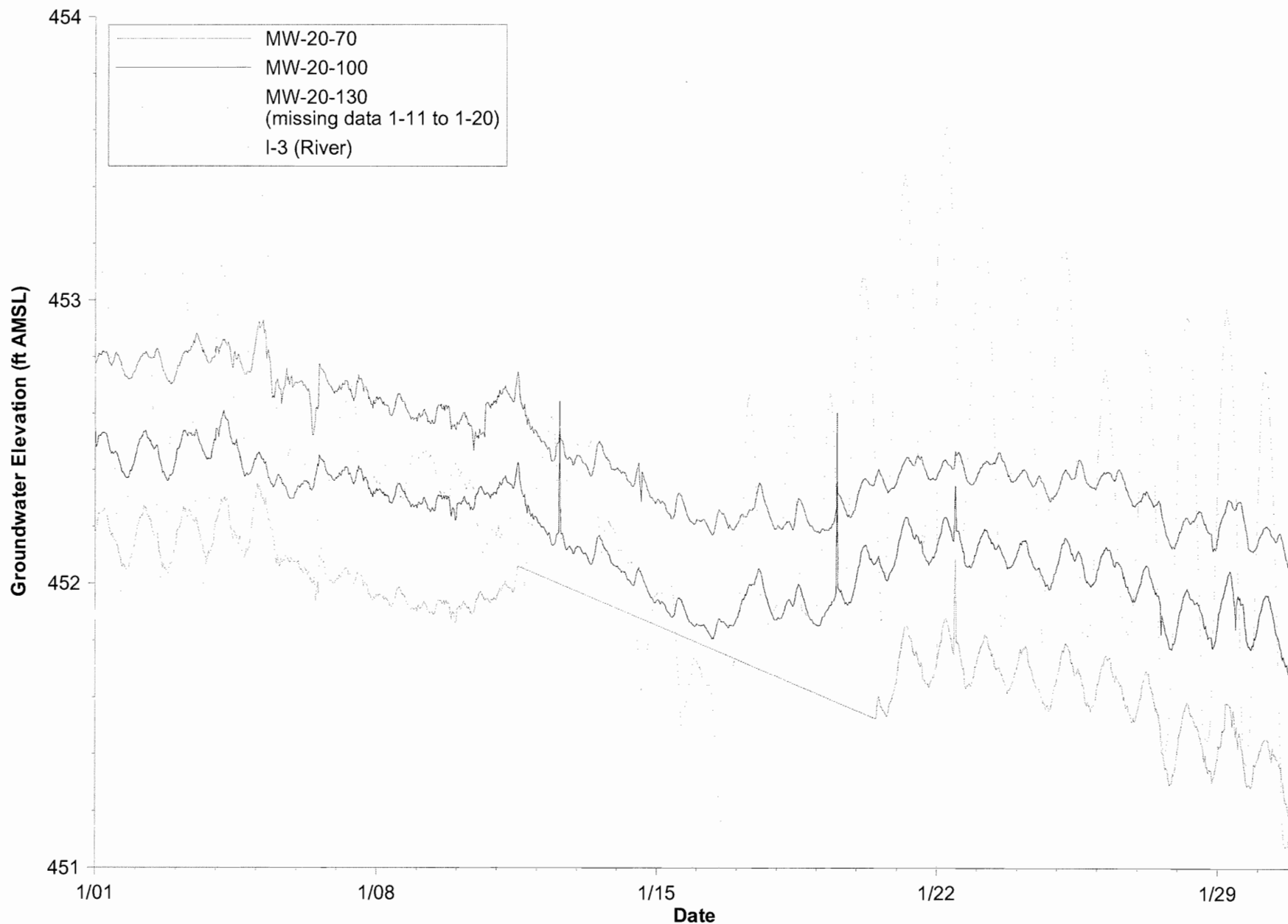
CPHILL



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

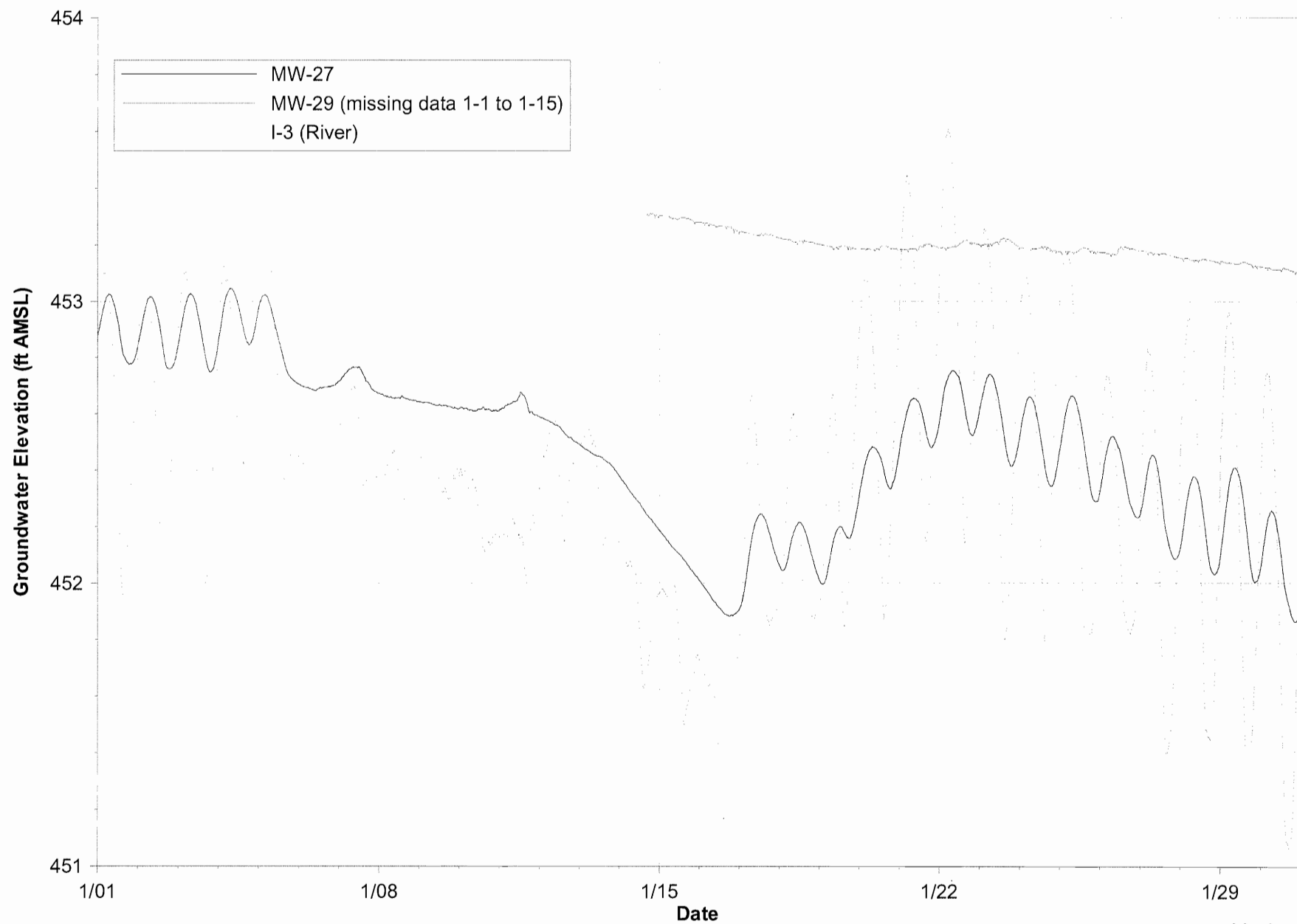
**CH2MHILL**



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

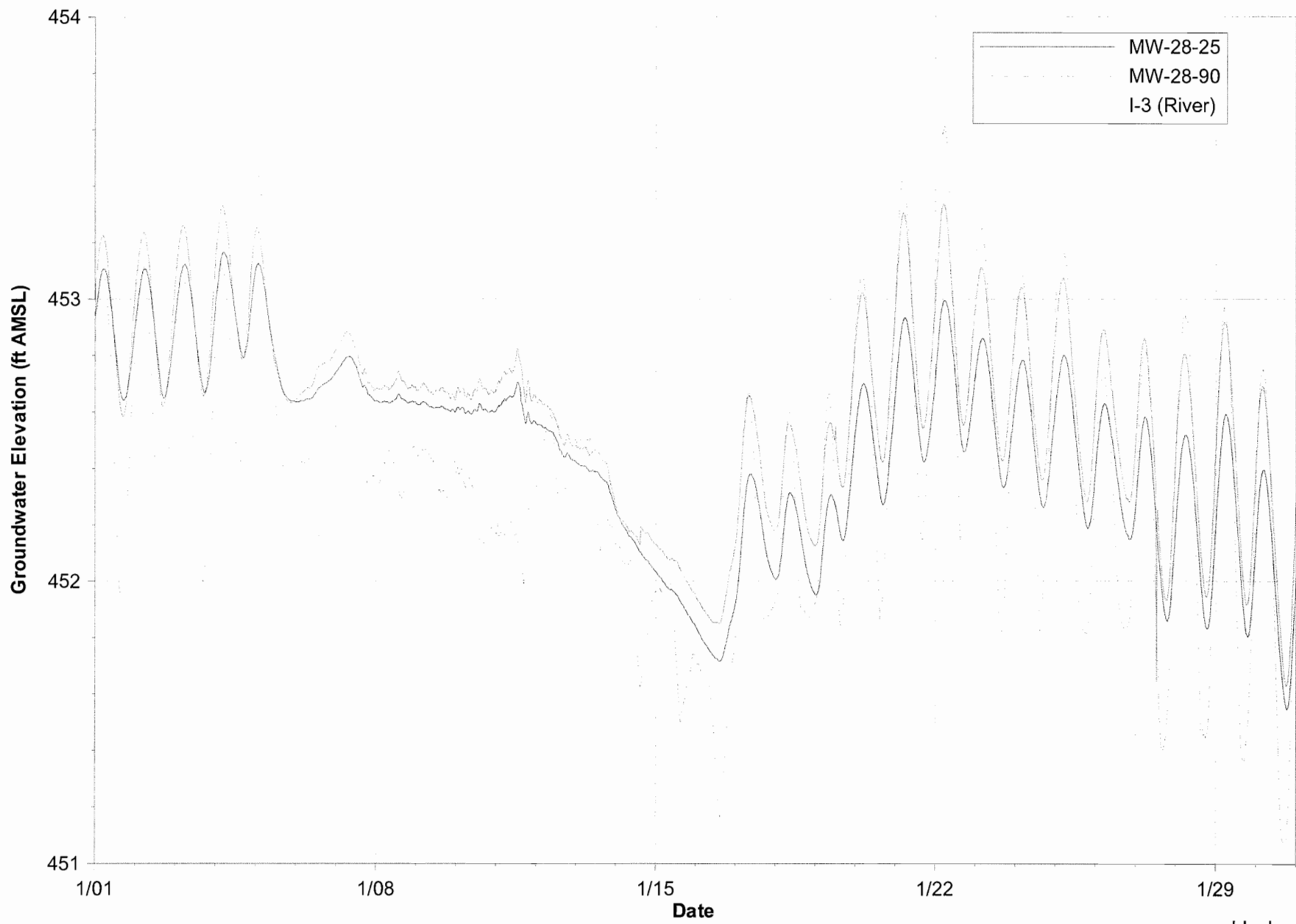
CH2M HILL



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

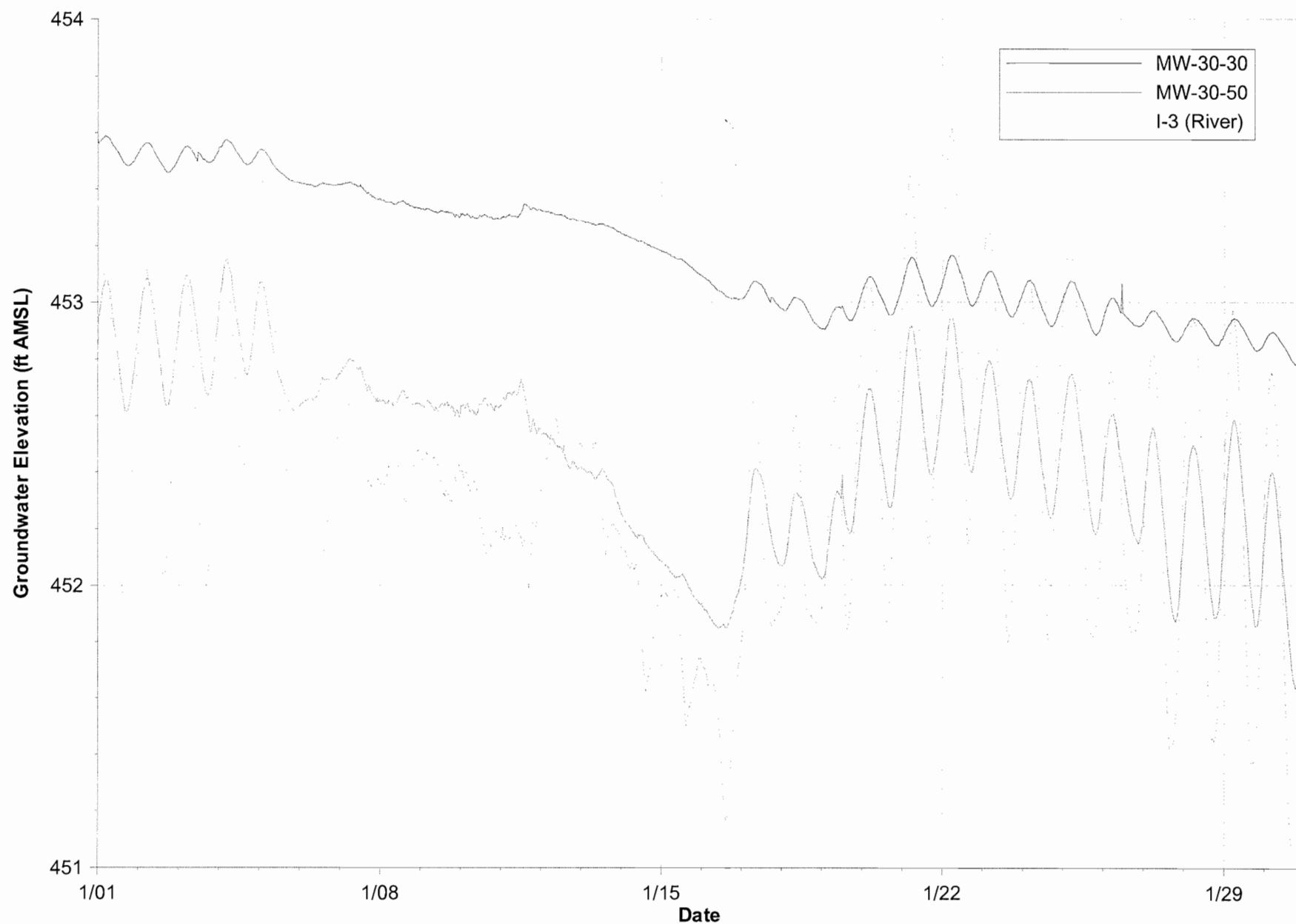
**CH2MHILL**



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

CH2M HILL

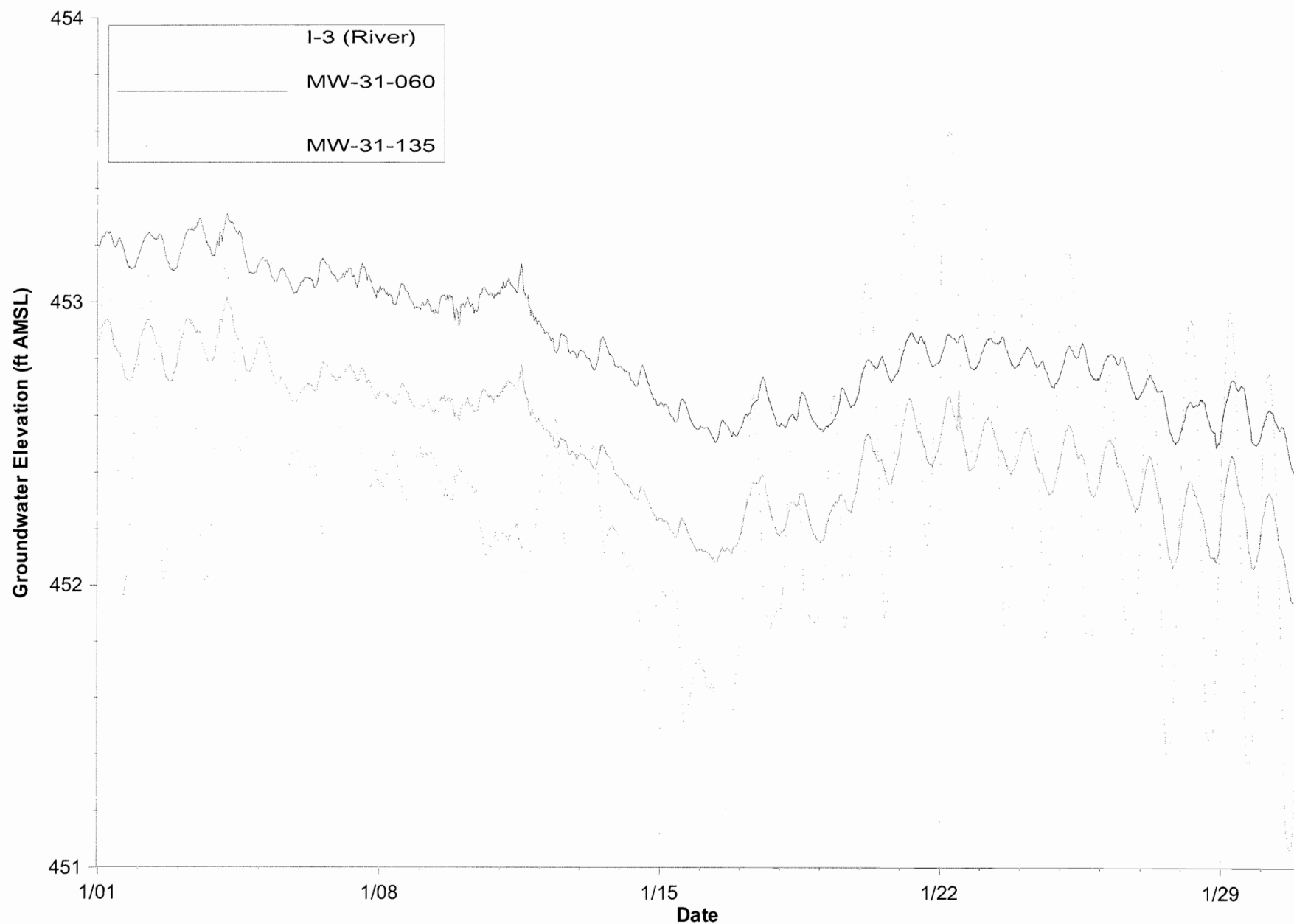


Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

**CH2MHILL**

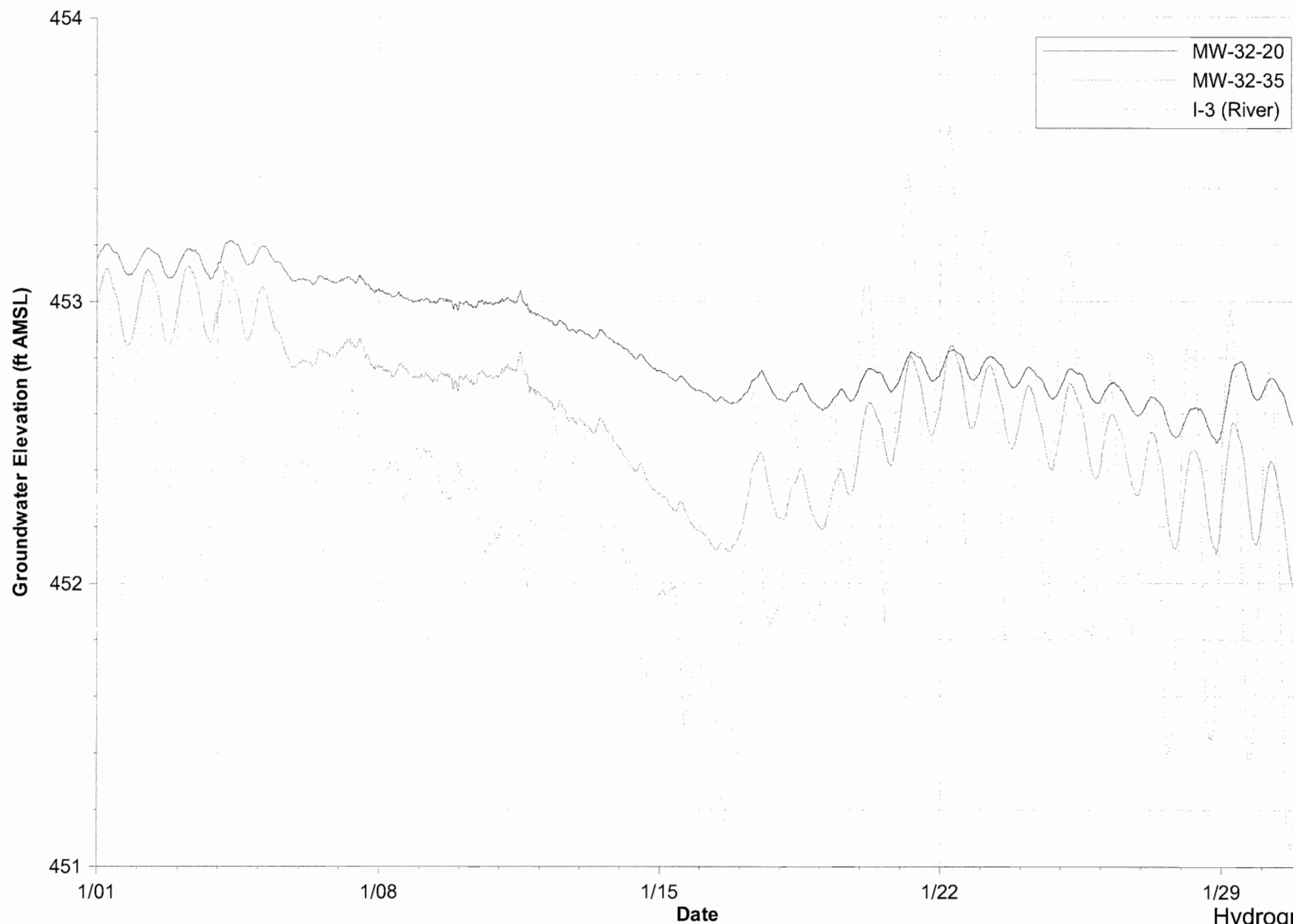




Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

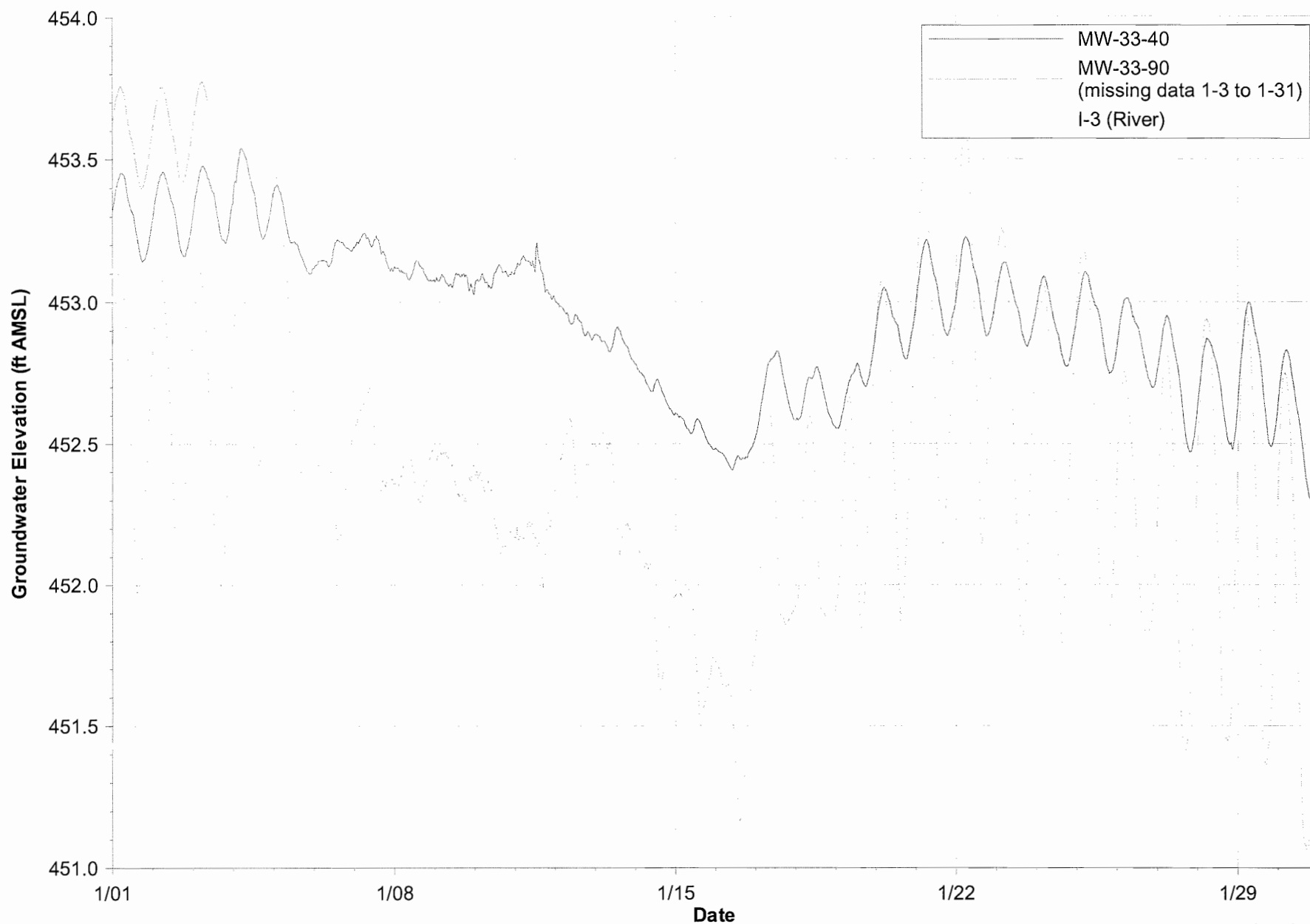
CH2M HILL



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

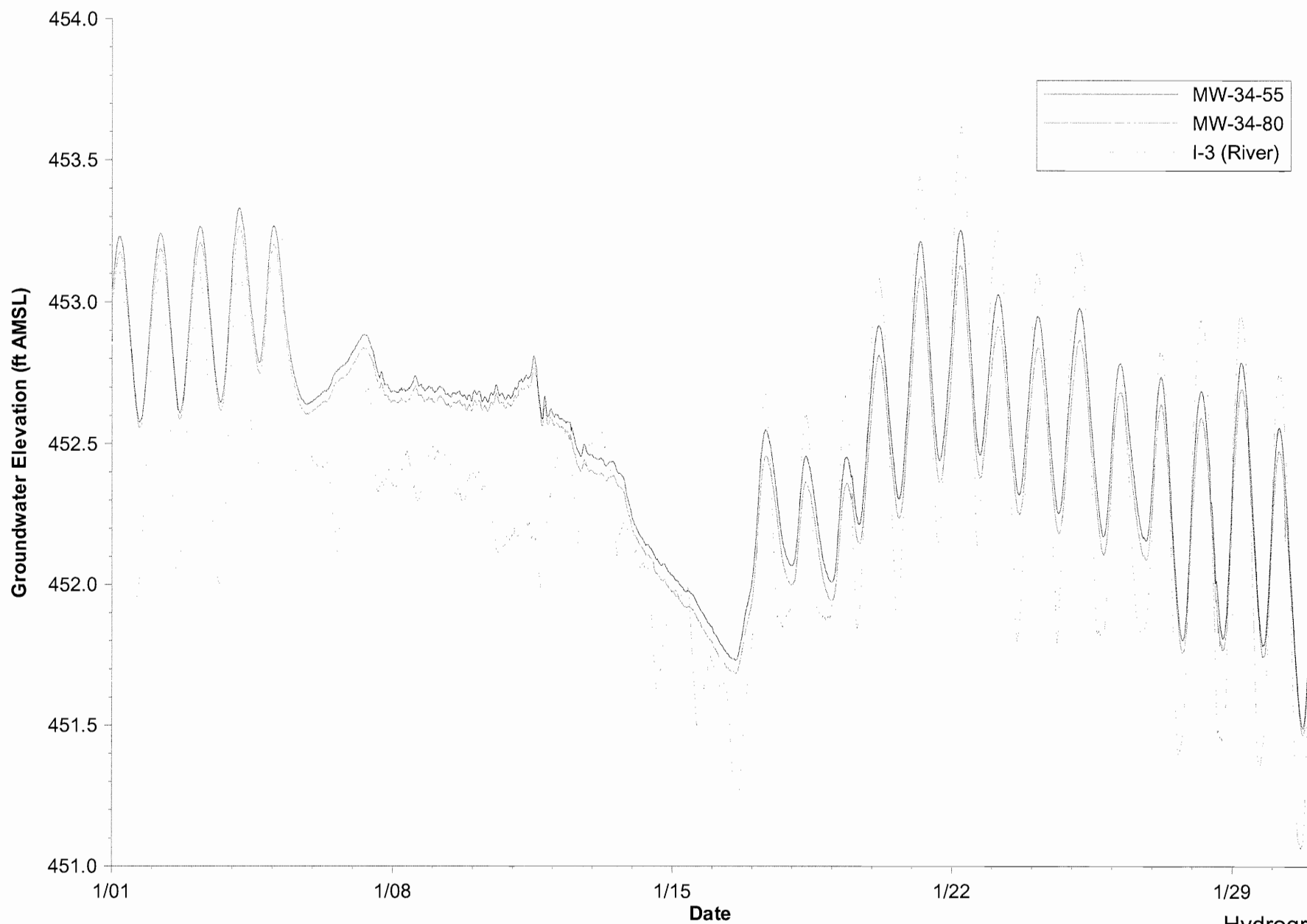
**CH2MHILL**



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

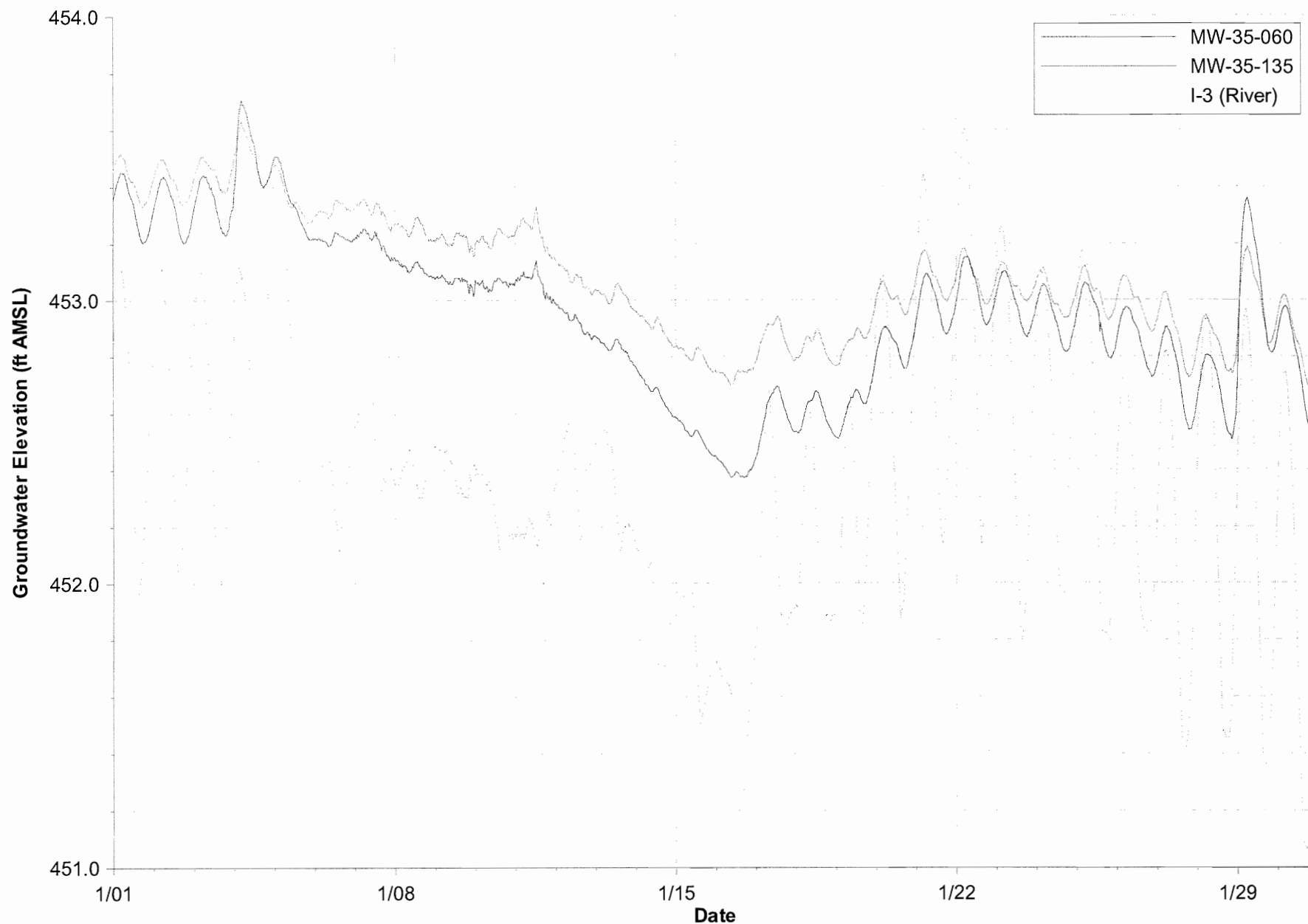
CH2M HILL



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

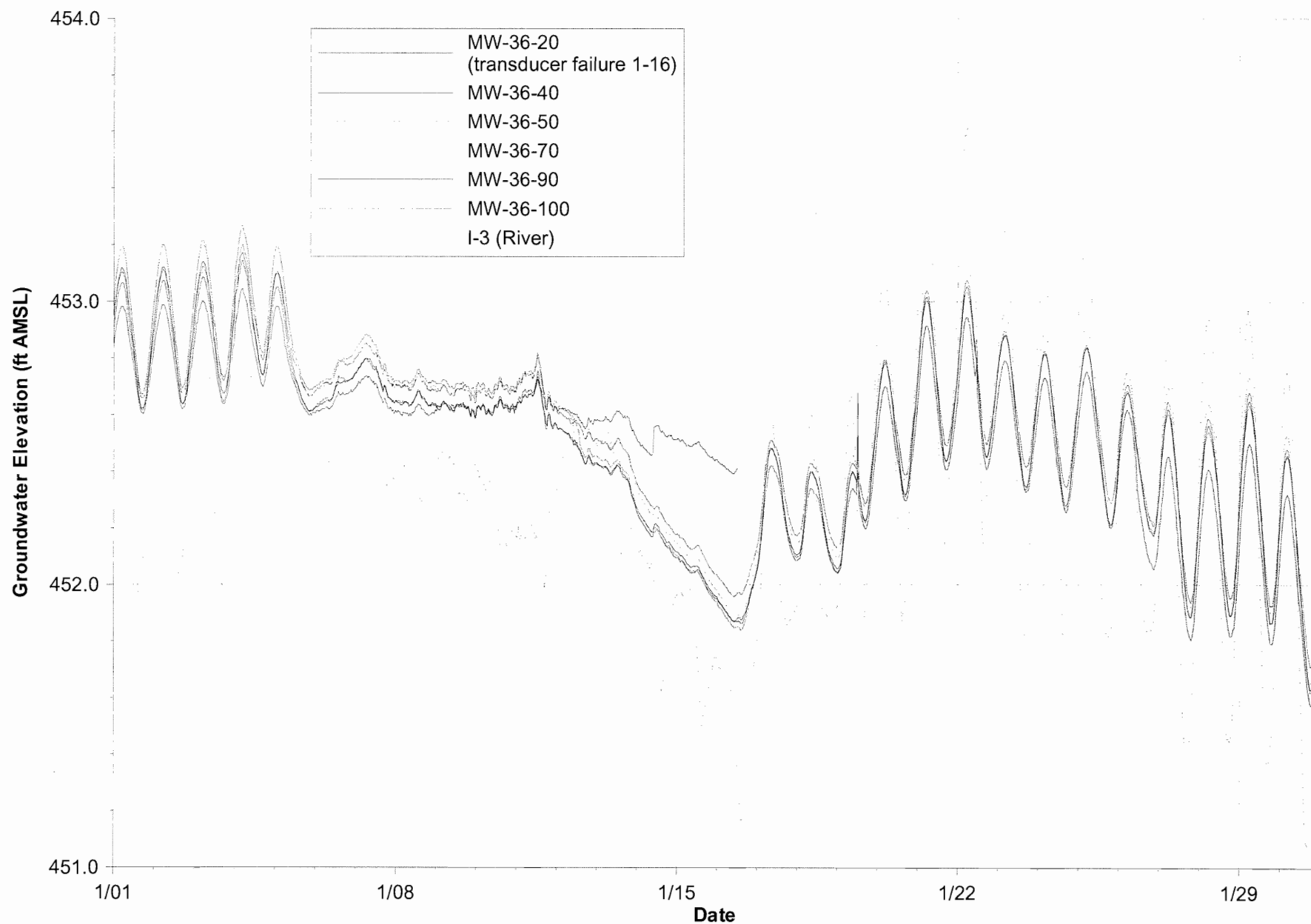
**CH2MHILL**



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

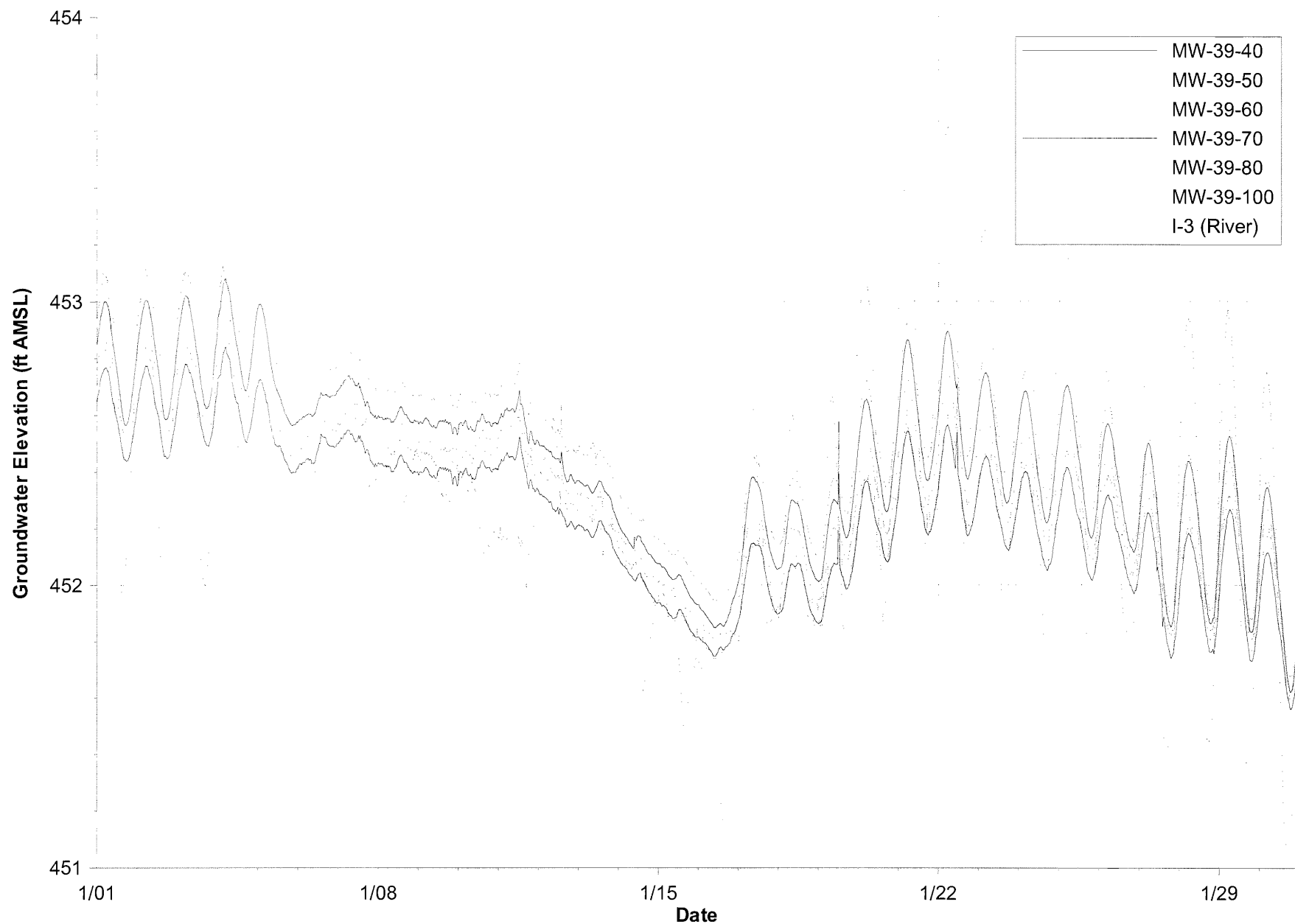
CH2M HILL



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

**CH2MHILL**



Note: Data subject to review.

Hydrograph  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

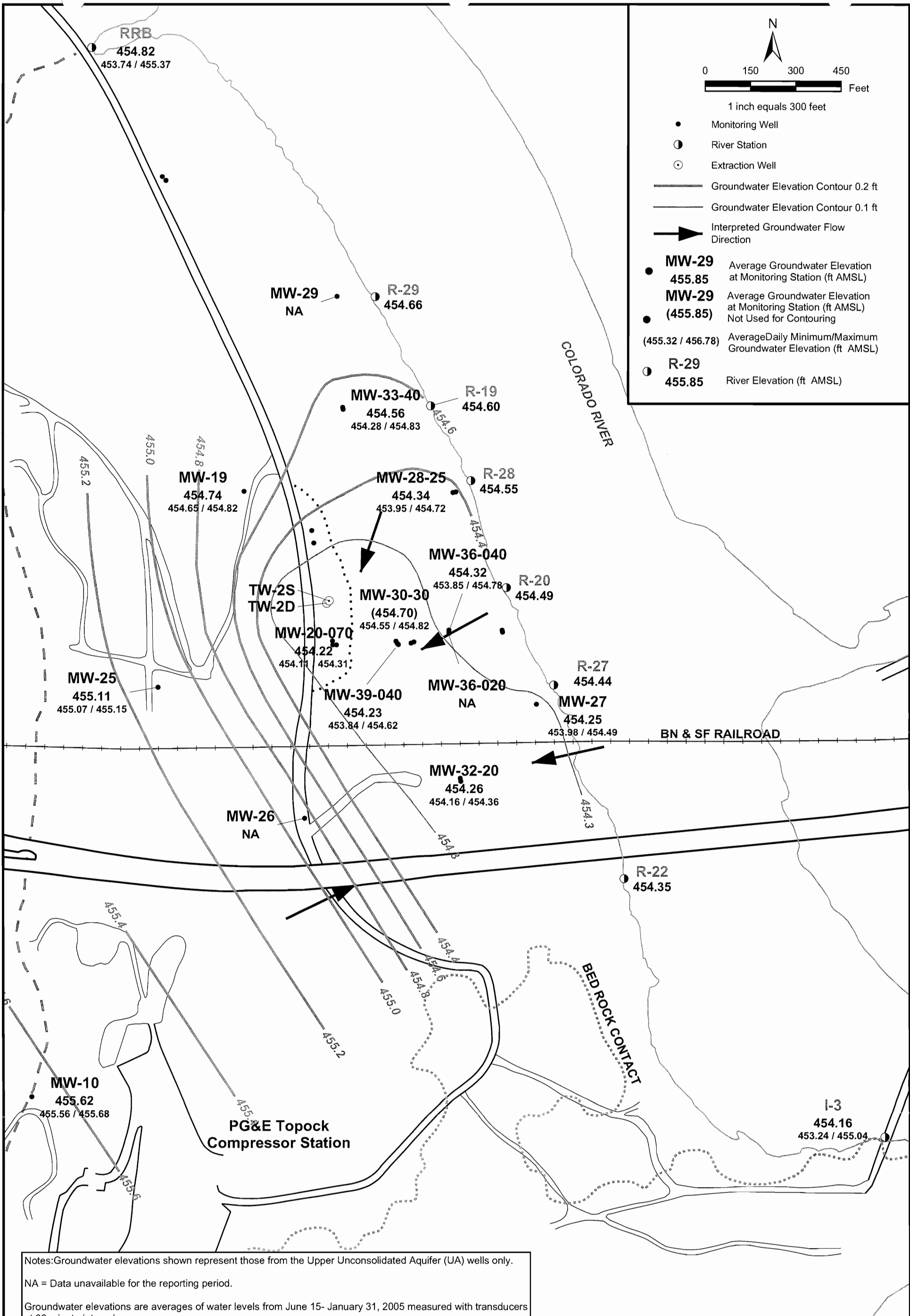
CH2M HILL

## **Attachment 2**

# **Long-term Groundwater Gradients**

---





Notes: Groundwater elevations shown represent those from the Upper Unconsolidated Aquifer (UA) wells only.

NA = Data unavailable for the reporting period.

Groundwater elevations are averages of water levels from June 15- January 31, 2005 measured with transducers at 30 minute intervals.

Groundwater elevations are salinity and temperature adjusted.

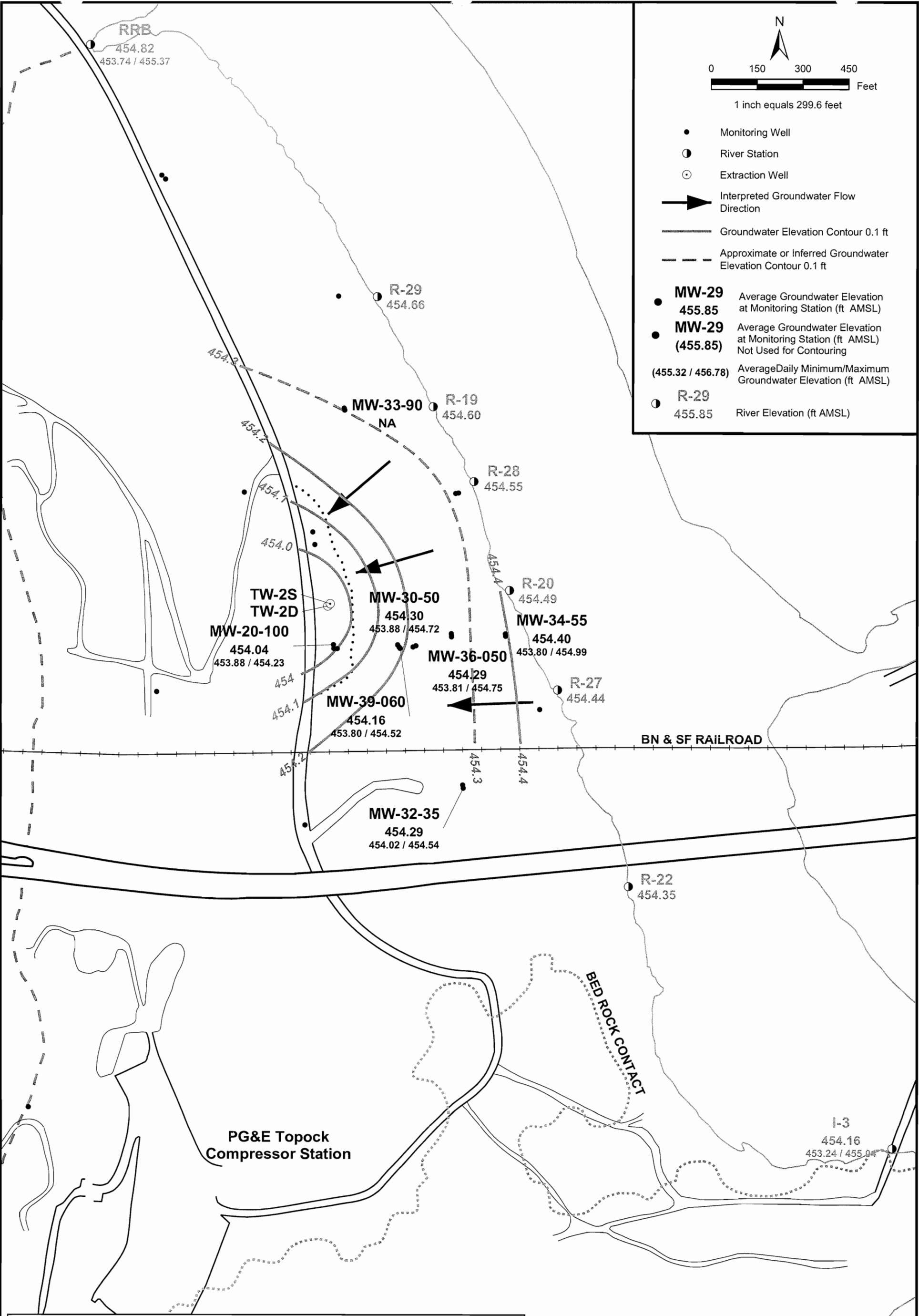
River elevations at R- river stations are interpolated from the average river elevations at I-3 and RRB for the period of June 15 through December 2004, with a resulting river gradient of  $1.5 \times 10^{-4}$  ft/ft. RRB has run dry during low river stages in January, 2005. Data for RRB is the mean of June 15, through December, 2004.

Inferred gradients and flow directions are based upon available data; new wells, additional data, and further calibration may change interpretations.

**FIGURE 1**  
**AVERAGE GROUNDWATER**  
**(UPPER UA) AND RIVER ELEVATIONS,**  
**JUNE 15 - JANUARY 31, 2005**

Interim Measures Field Program  
PG&E Topock Compressor Station  
Needles, California

**CH2MHILL**



Notes: Groundwater elevations shown represent those from the Middle Unconsolidated Aquifer (UA) wells only.

NA = Data unavailable for the reporting period.

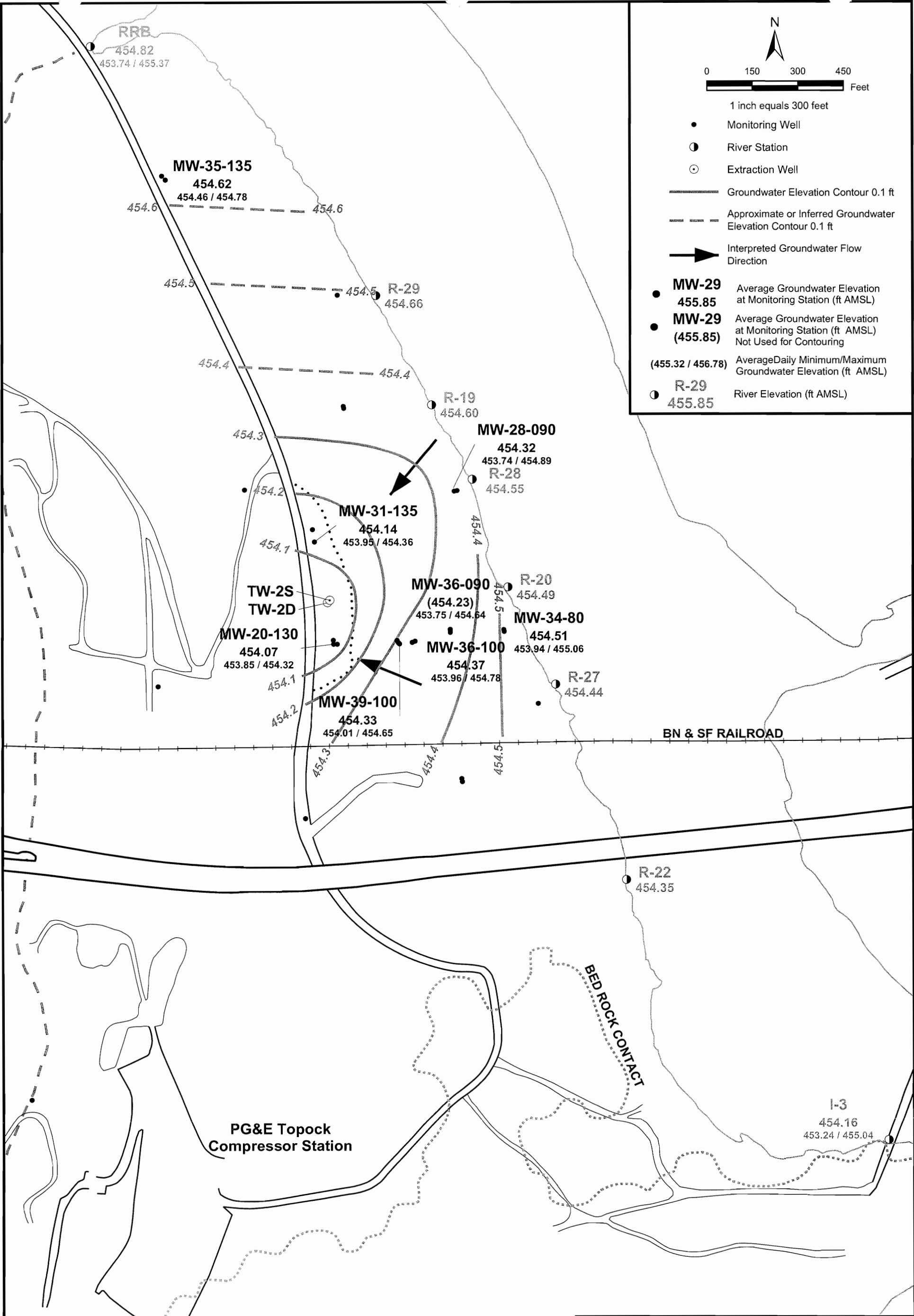
Groundwater elevations are averages of water levels from June 15 - January 31, 2005 measured with transducers at 30 minute intervals.

Groundwater elevations are salinity and temperature adjusted.

Inferred gradients and flow directions are based upon available data; new wells, additional data, and further calibration may change interpretations.

**FIGURE 2**  
**AVERAGE GROUNDWATER (MIDDLE UA)**  
**AND RIVER ELEVATIONS,**  
**JUNE 15 - JANUARY 31, 2005**

Interim Measures Field Program  
PG&E Topock Compressor Station  
Needles, California



Notes: Groundwater elevations shown represent those from the Lower Unconsolidated Aquifer (UA) wells only.

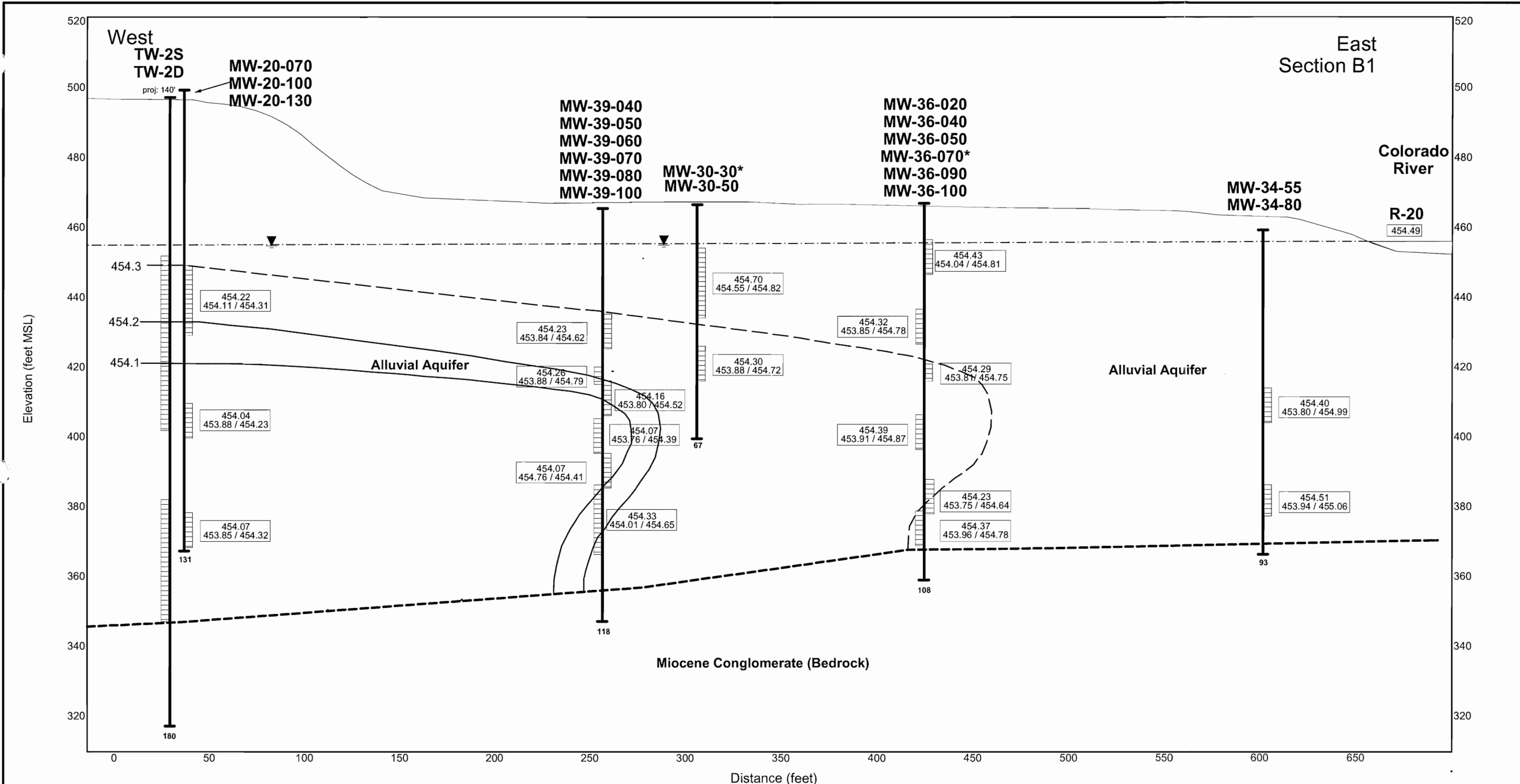
Groundwater elevations are averages of water levels from June 15 - January 31, 2005 measured with transducers at 30 minute intervals.

Groundwater elevations are salinity and temperature adjusted.

Inferred gradients and flow directions are based upon available data; new wells, additional data, and further calibration may change interpretations.

**FIGURE 3**  
**AVERAGE GROUNDWATER (LOWER UA)**  
**AND RIVER ELEVATIONS,**  
**JUNE 15 - JANUARY 31, 2005**

Interim Measures Field Program  
PG&E Topock Compressor Station  
Needles, California



Notes:  
 Results show average ground water elevations for June 15 through January 31, 2005.  
 Ground water elevations adjusted for salinity and temperature.  
 \* Wells MW-30-30, MW-36-070 excluded from contouring.  
 Average river elevation interpolated between I-3 and RRB river station stations using the mean gradient from June 15 through December 2004.  
 RRB ran dry during low river stages in January 2005.  
 Data subject to review.

**Legend:**

water level

well screen

boring depth (feet)

453.66

453.40/453.94

Average ground water elevation

Minimum / Maximum ground water elevation

453.5

Groundwater elevation contour

453.5

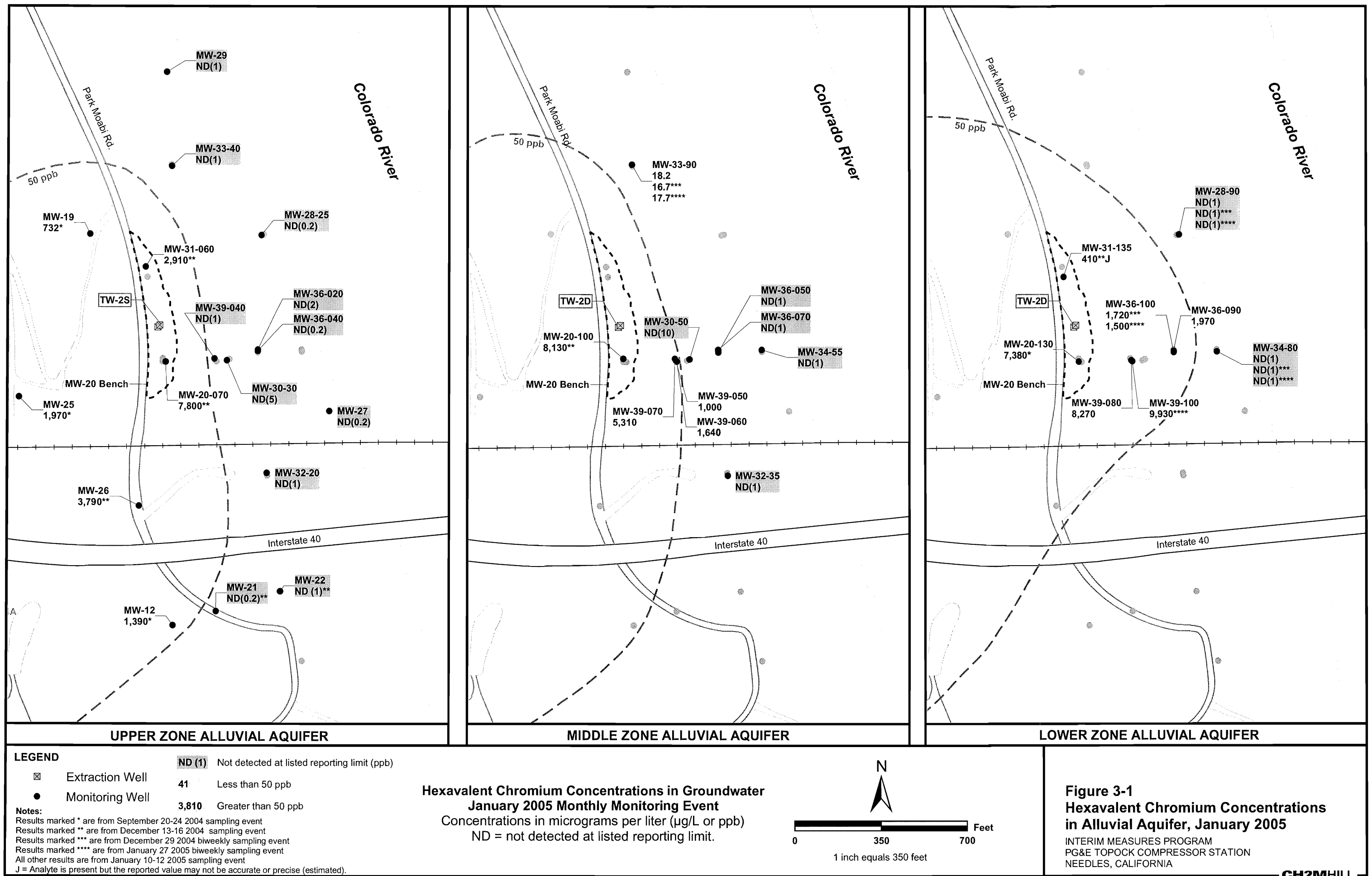
Inferred groundwater elevation contour

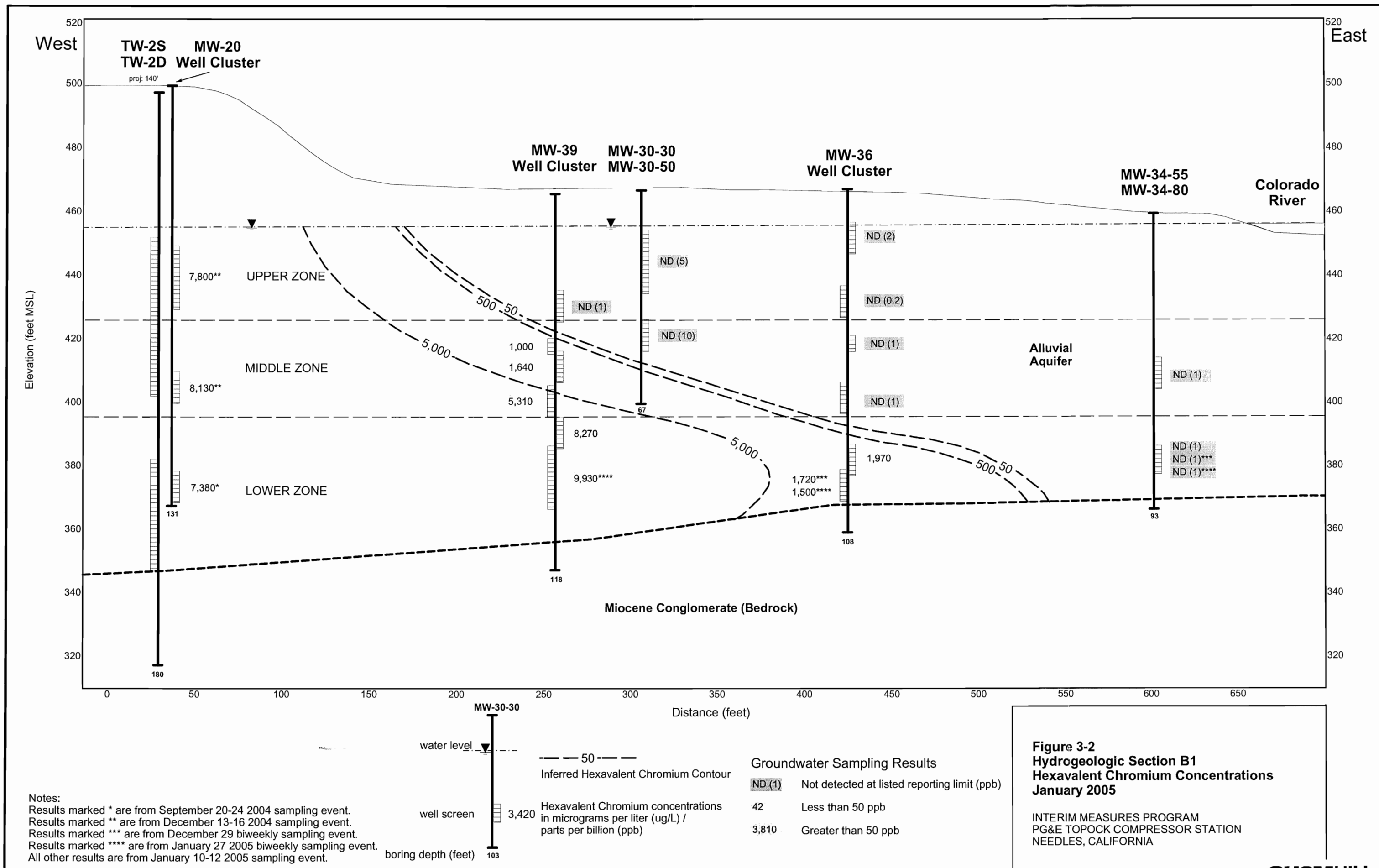
**Figure 4**  
**Hydrogeologic Section B1**  
**Average Groundwater Elevations**  
**June 15 to January 31, 2005**

INTERIM MEASURES PROGRAM  
 PG&E TOPOCK PROJECT  
 NEEDLES, CALIFORNIA

**Attachment 3**  
**Hexavalent Chromium Concentration Maps**

---



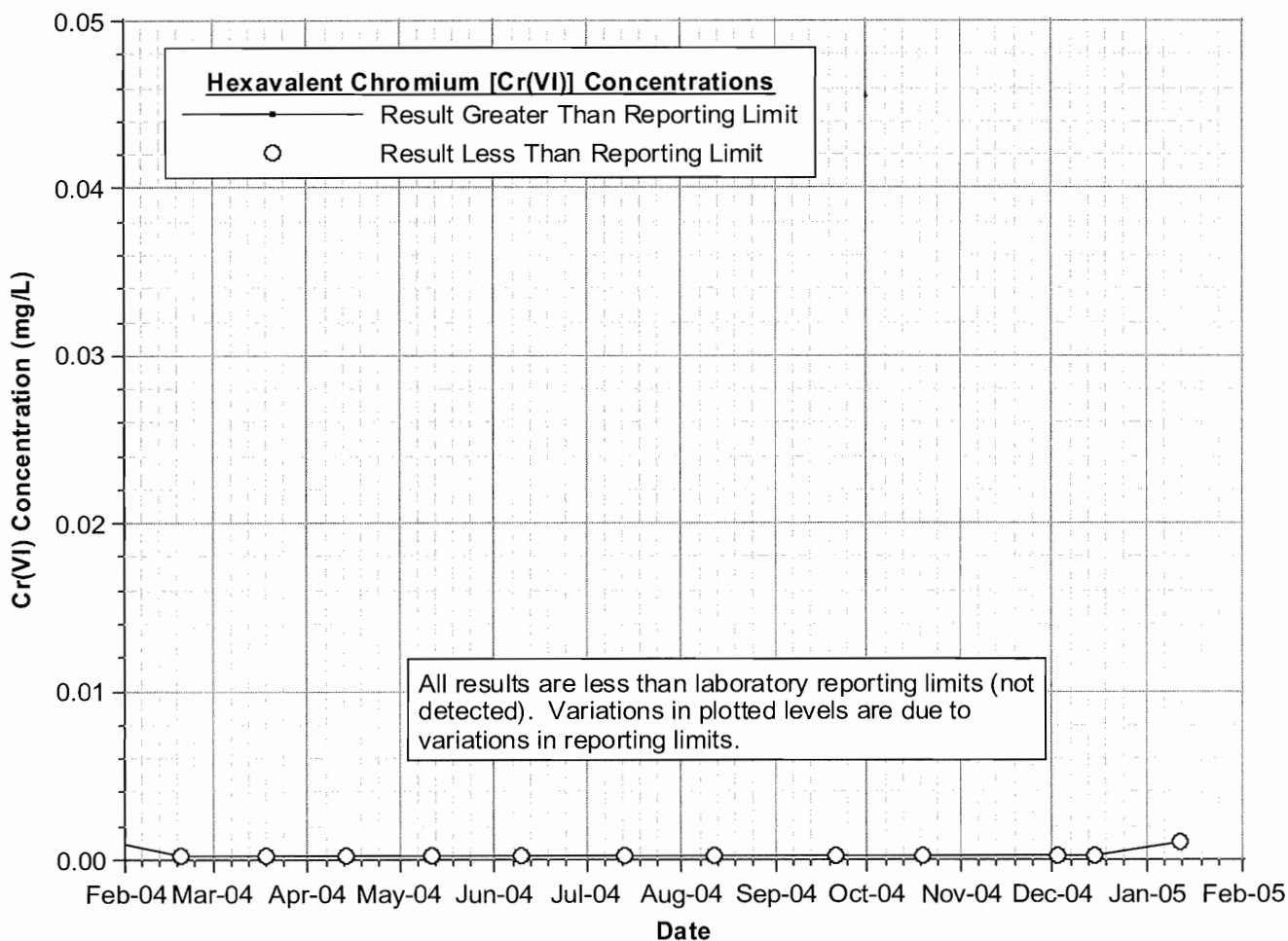
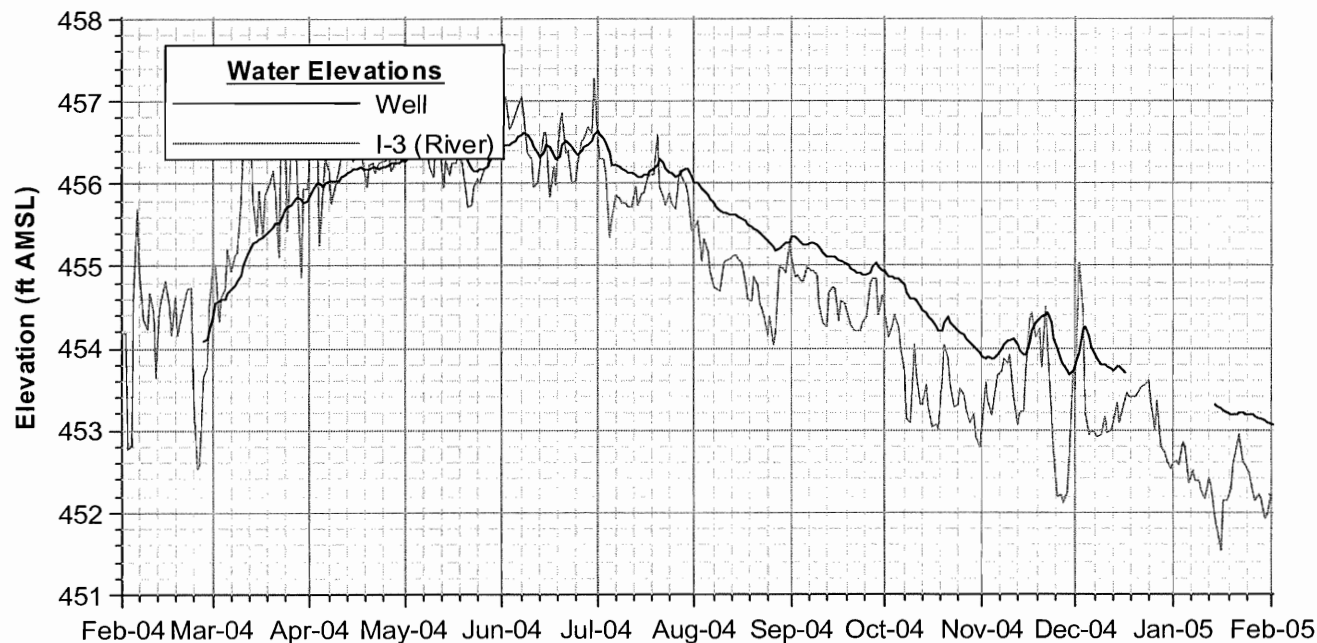


## **Attachment 4**

### **Trend Graphs**

---





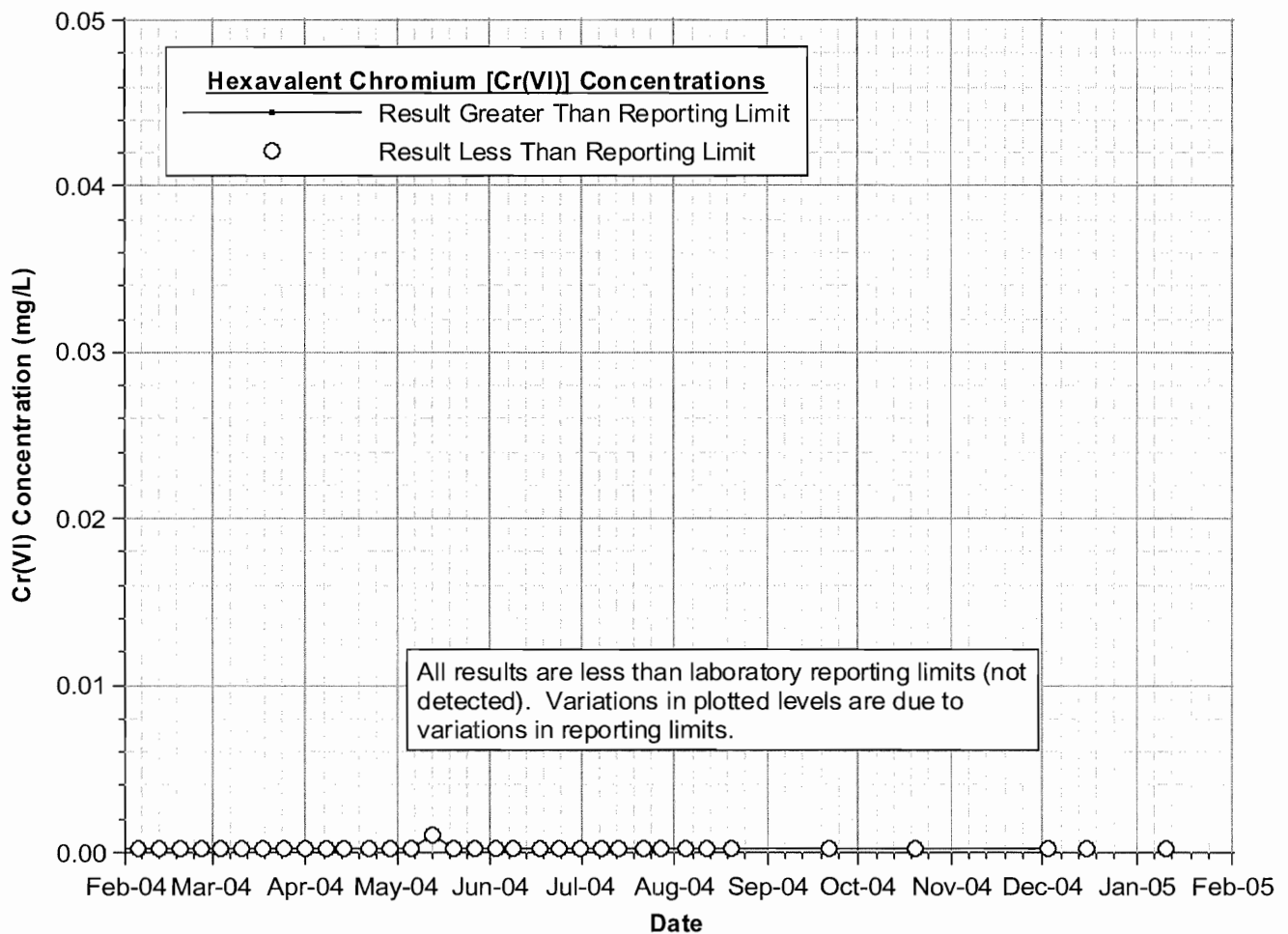
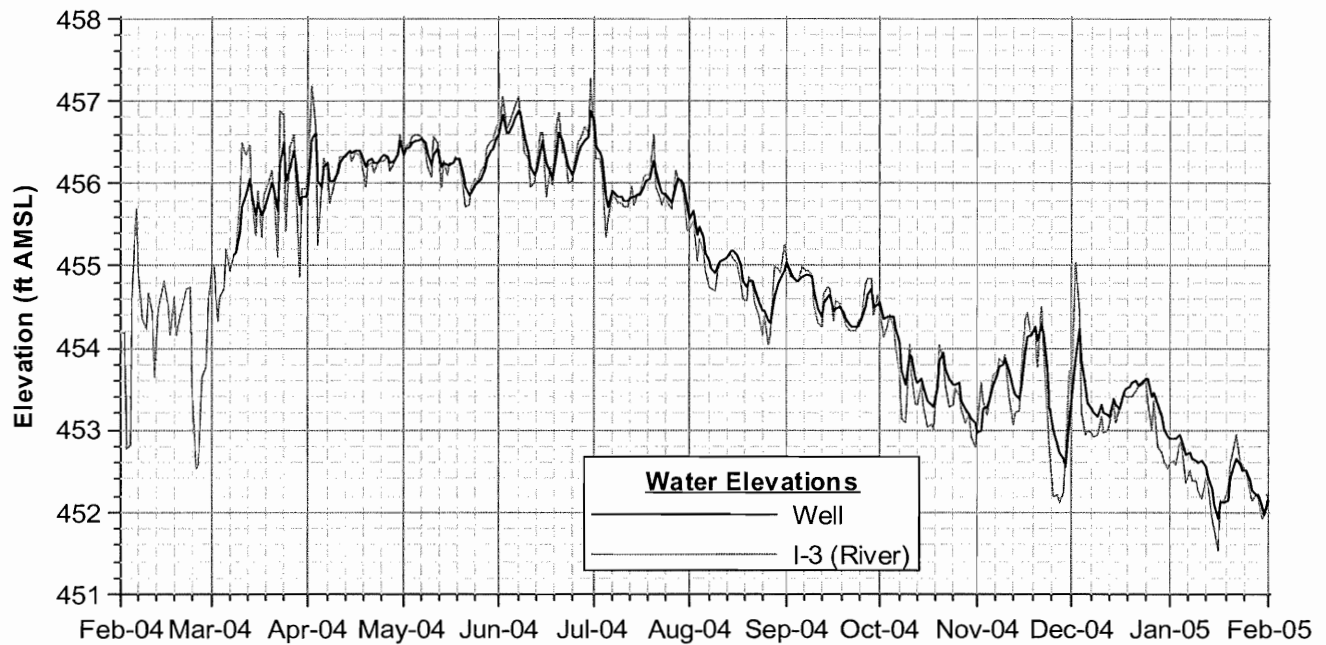
#### Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.

PMR No.14 - Data Through 01/31/05  
MW-29 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

**CH2MHILL**



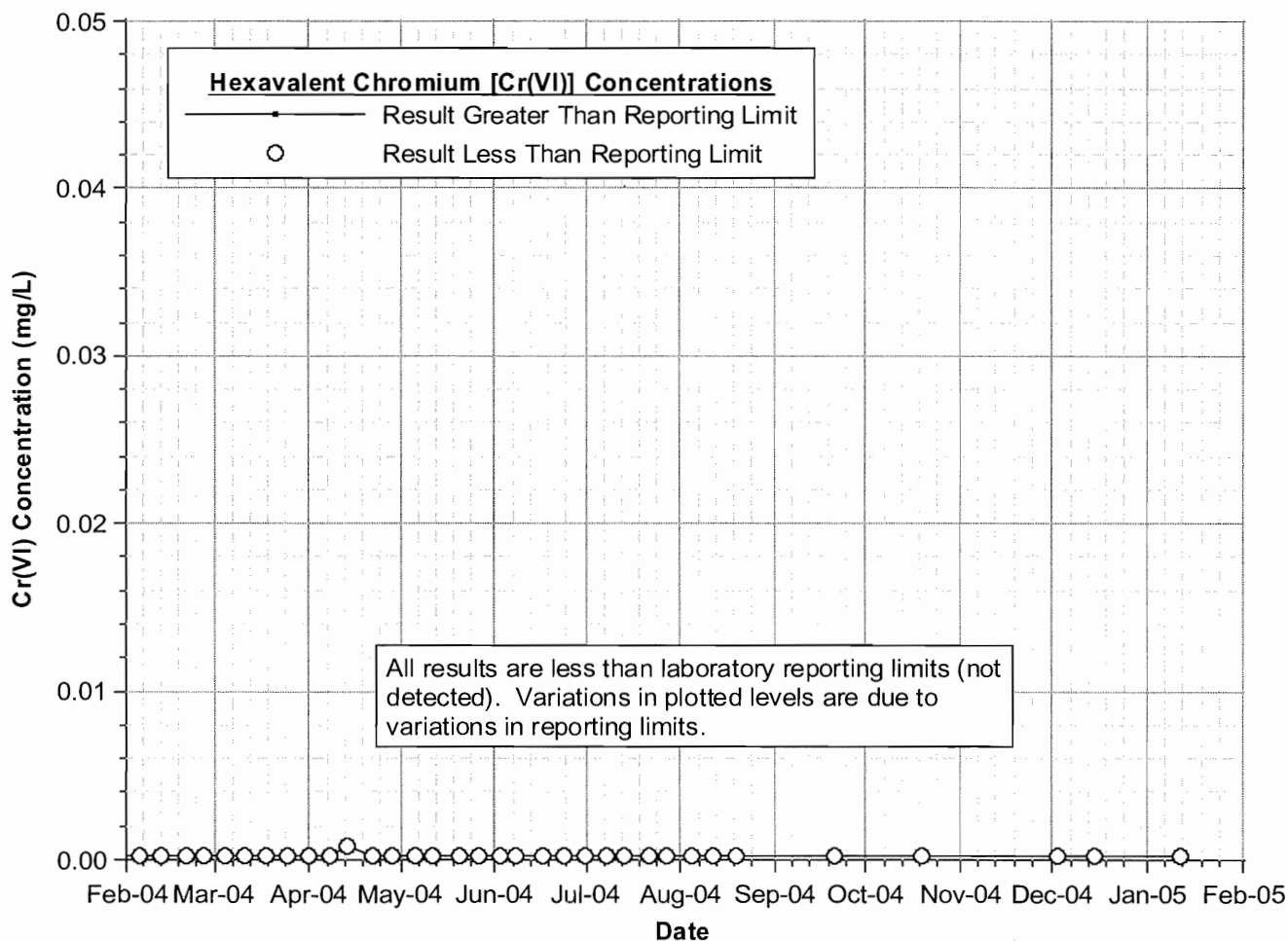
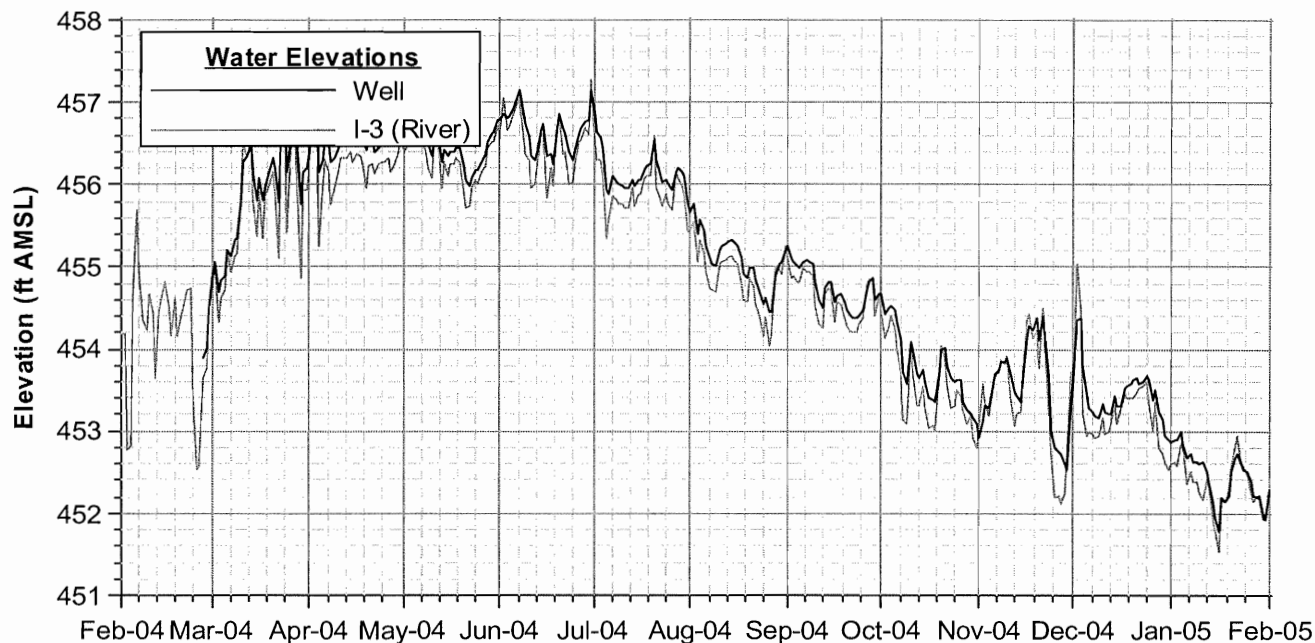
PMR No. 14 - Data Through 01/31/05  
MW-27 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

CH2MHILL

**Notes**

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.

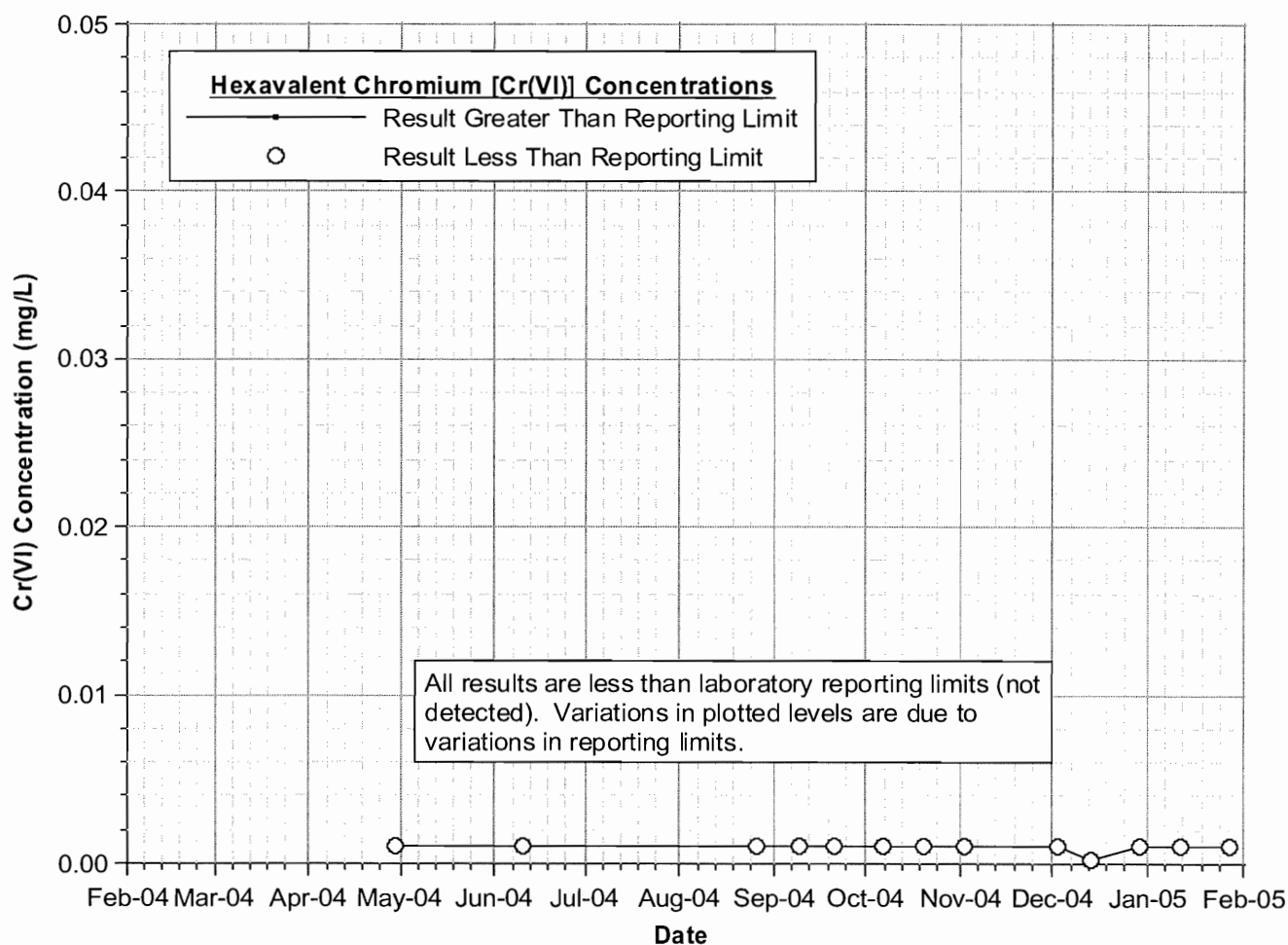
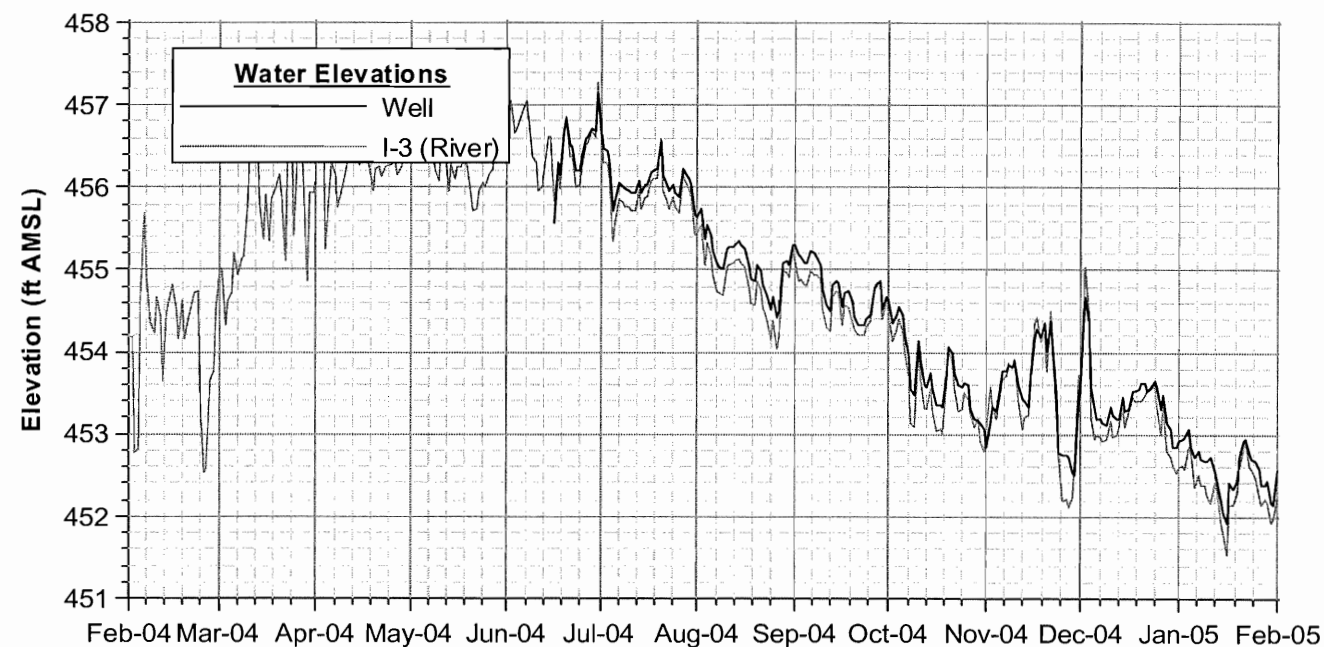


PMR No.14 - Data Through 01/31/05  
 MW-28-25 HEXAVALENT CHROMIUM  
 CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.



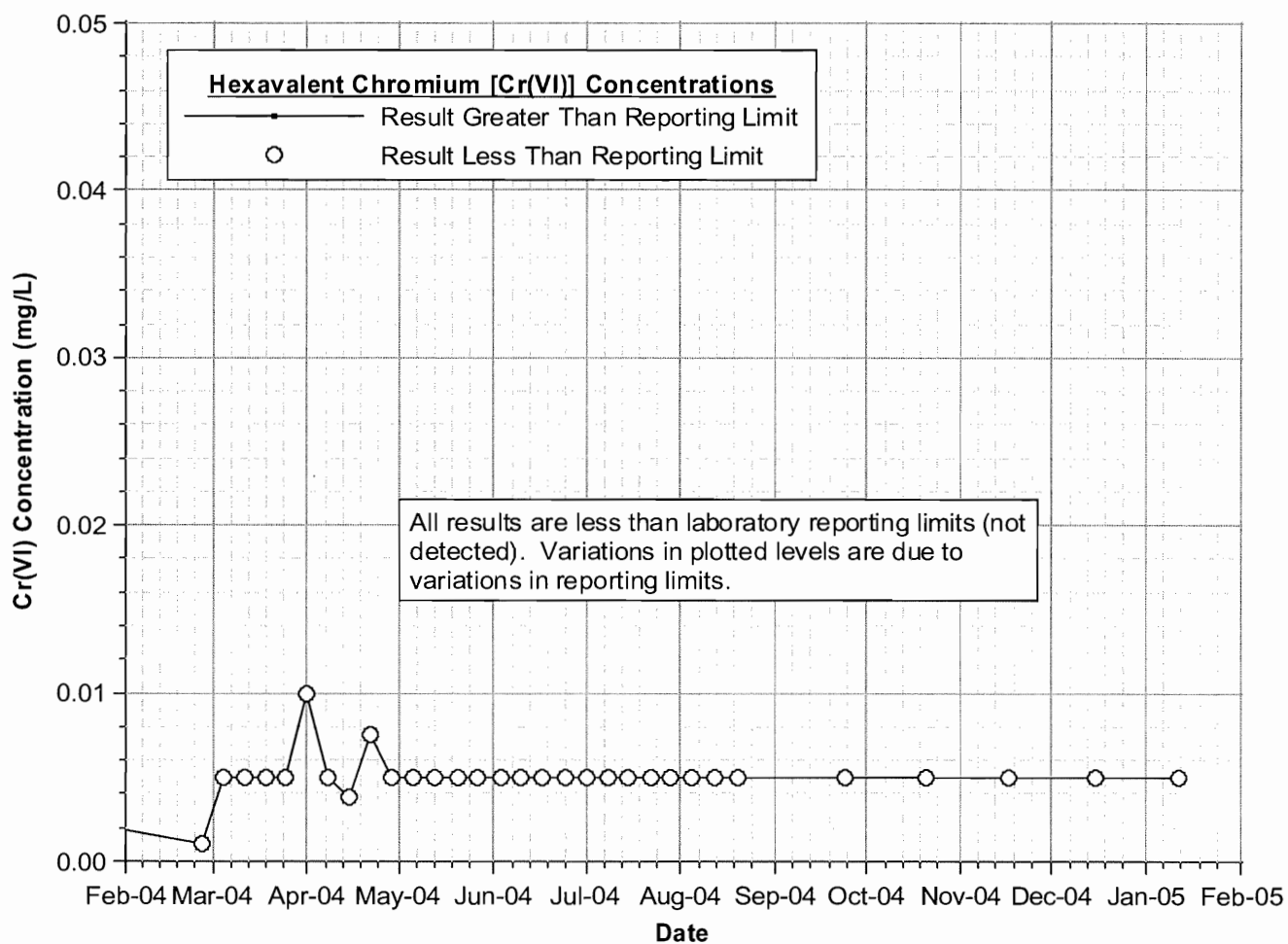
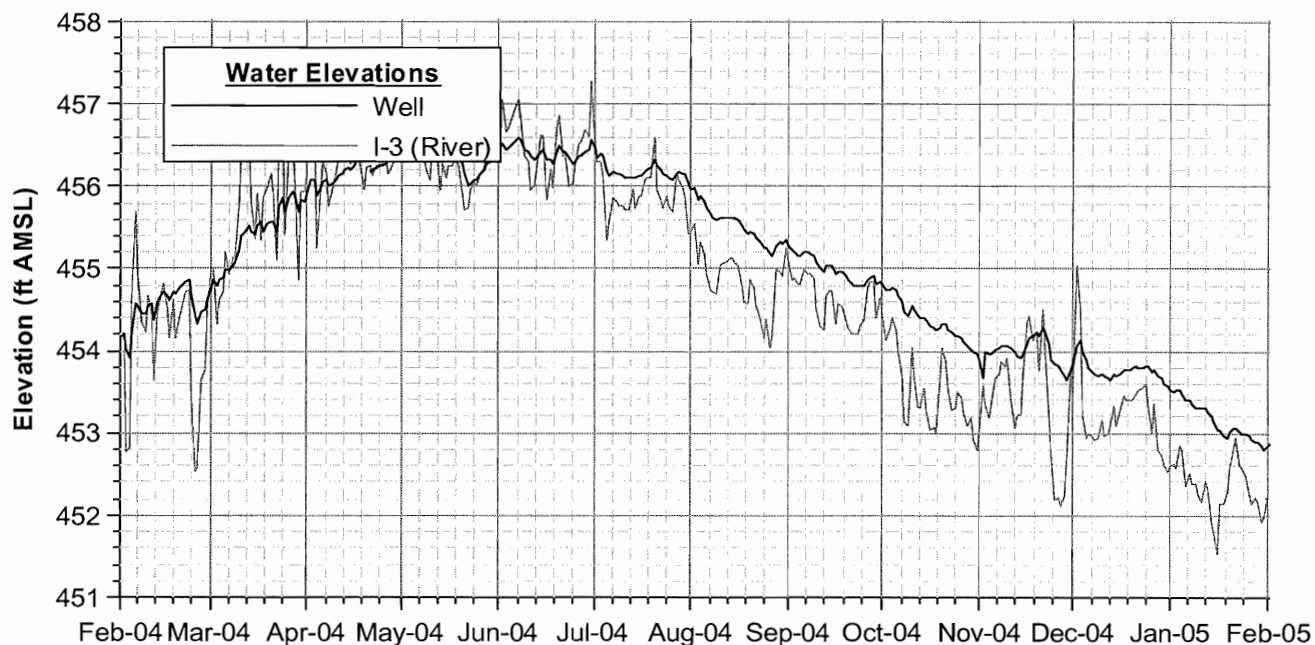
PMR No.14 - Data Through 01/31/05  
MW-28-90 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

**CH2MHILL**



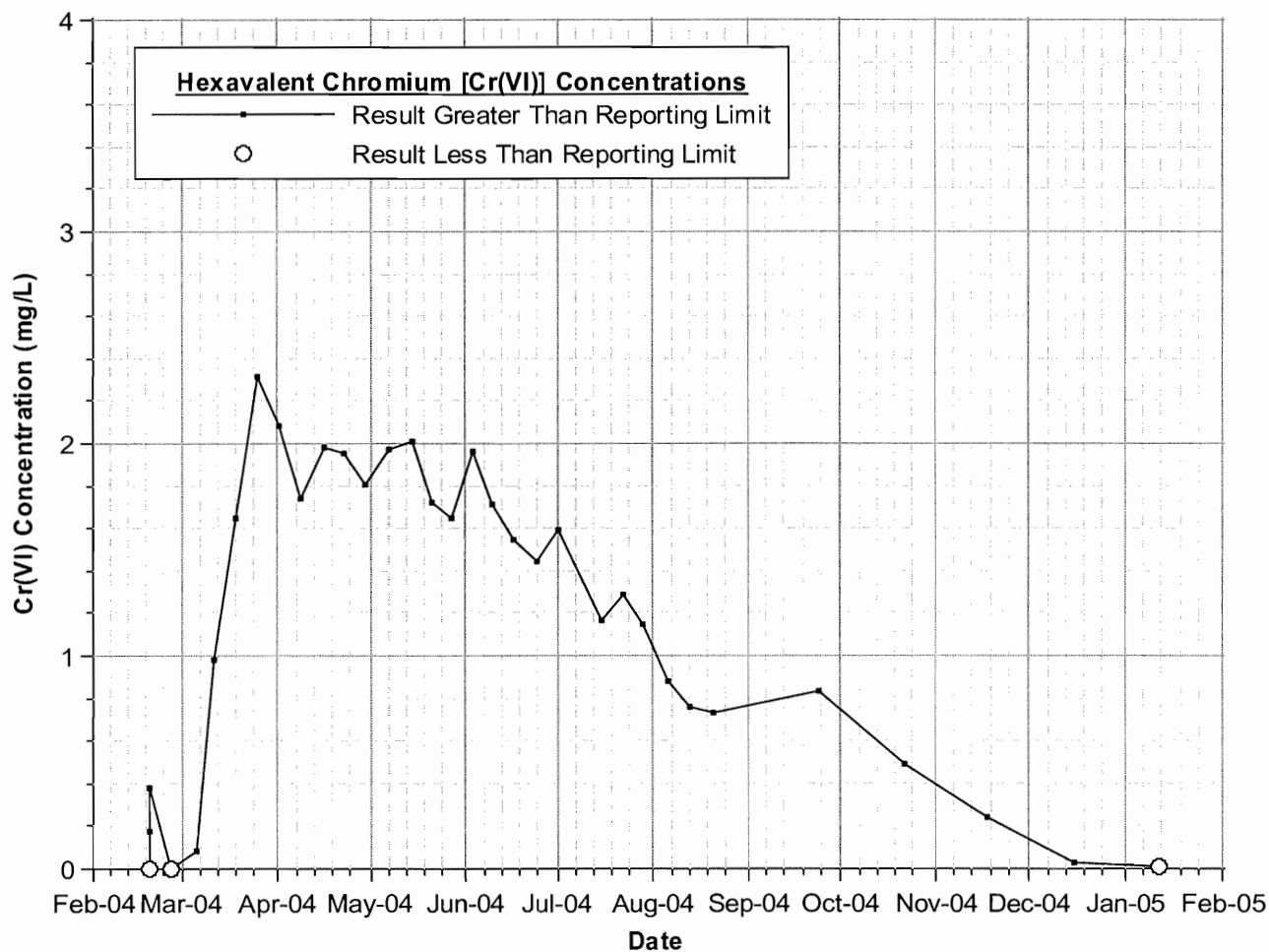
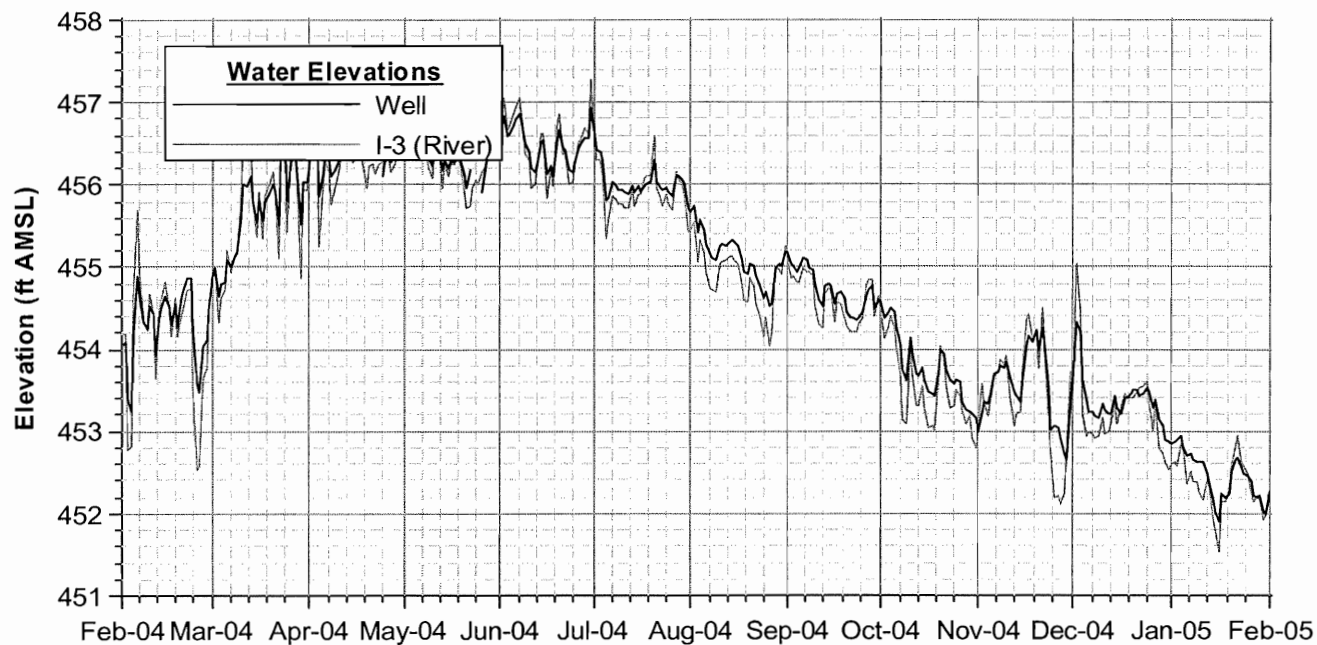
#### Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.

PMR No.14 - Data Through 01/31/05  
MW-30-30 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

**CH2MHILL**



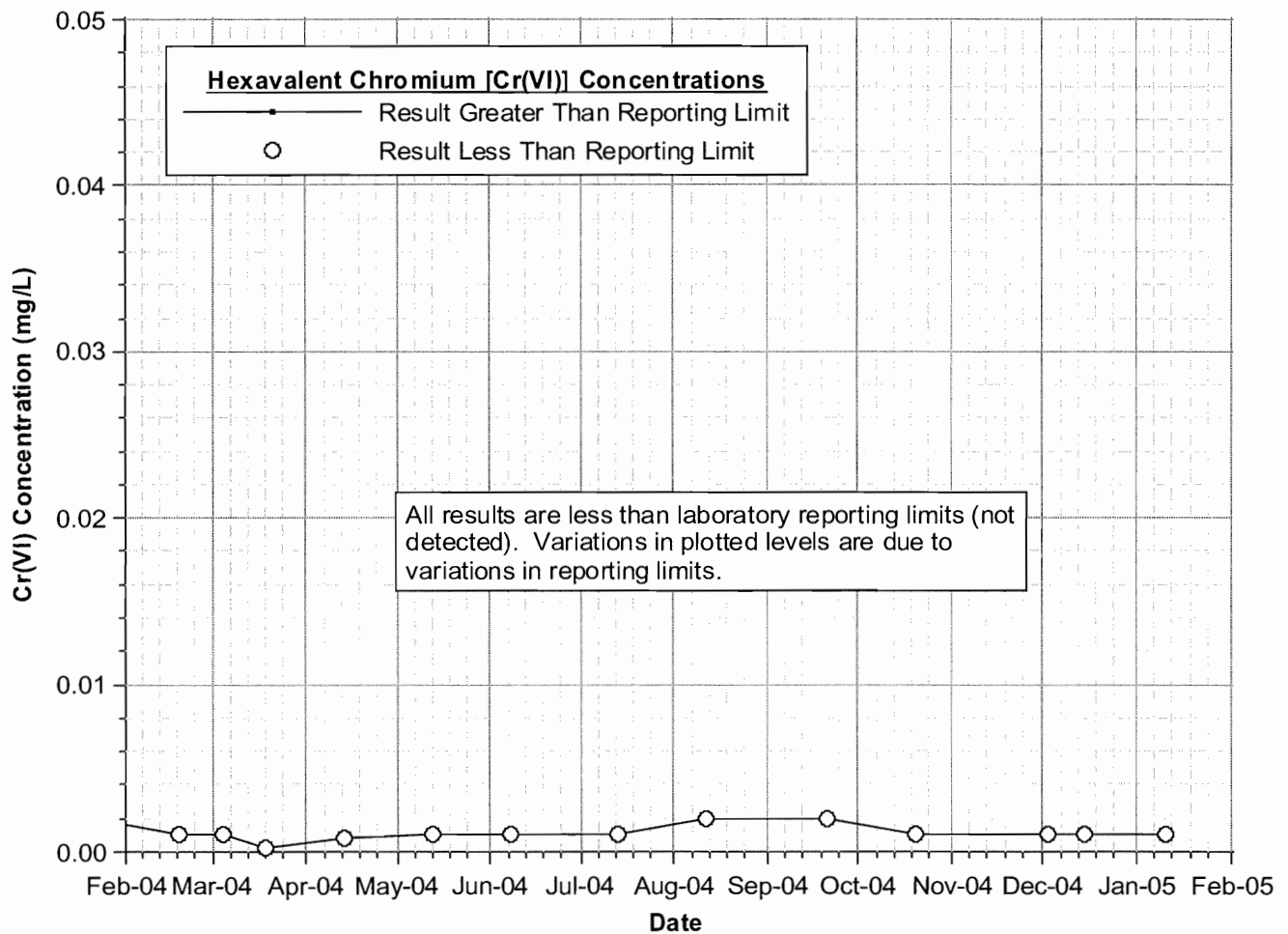
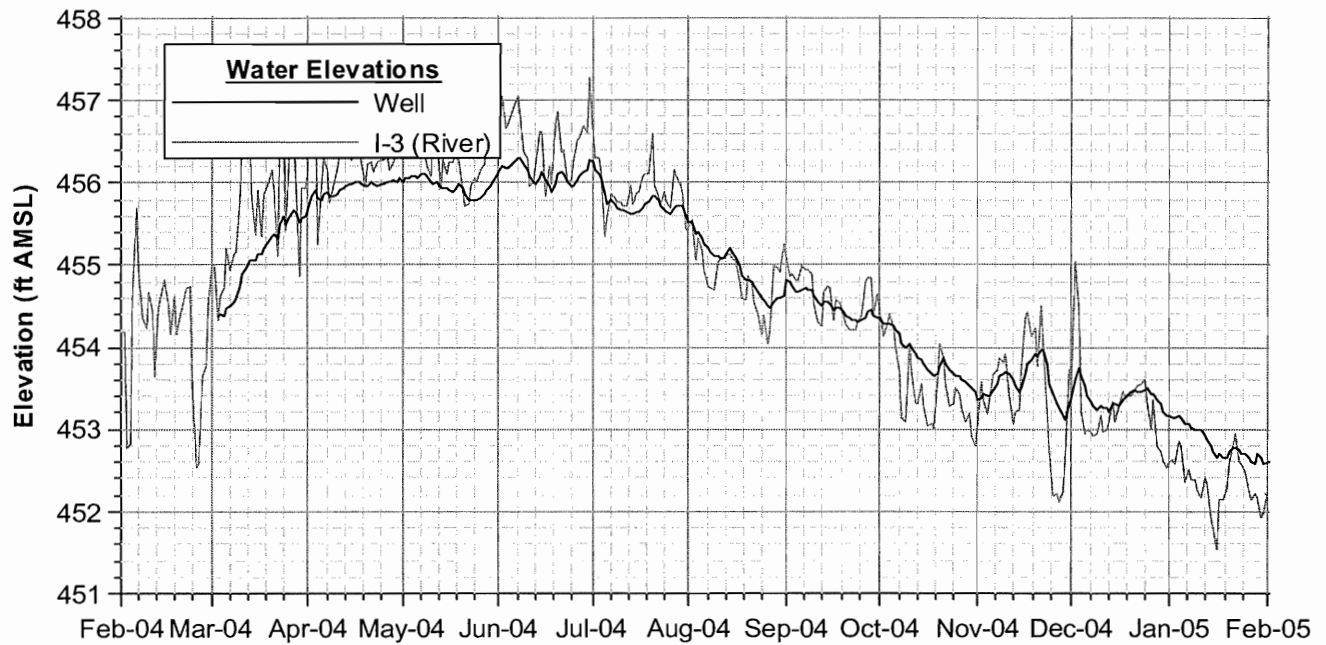
PMR No.14 - Data Through 01/31/05  
MW-30-50 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

CH2MHILL

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.



PMR No.14 - Data Through 01/31/05  
MW-32-20 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

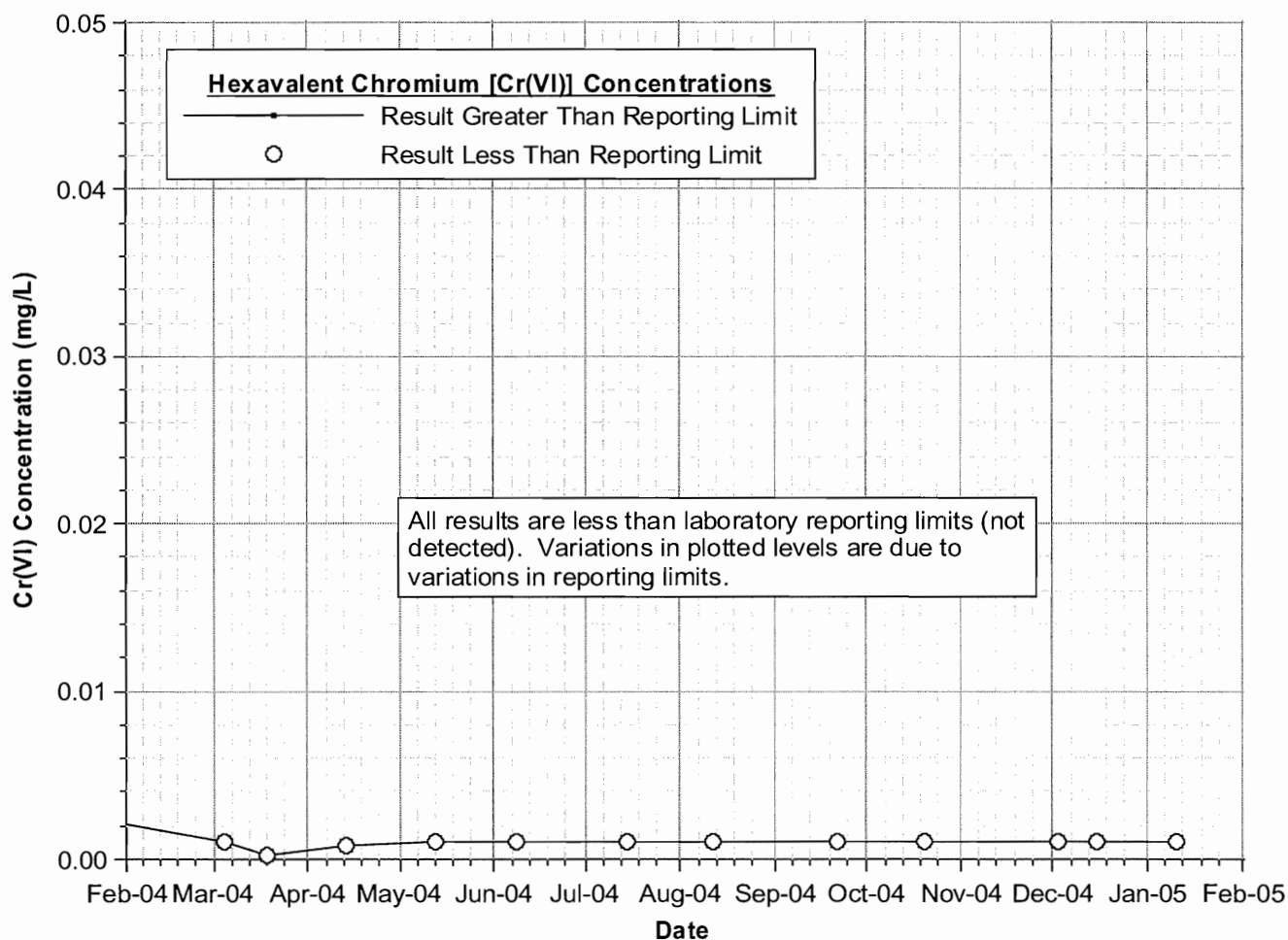
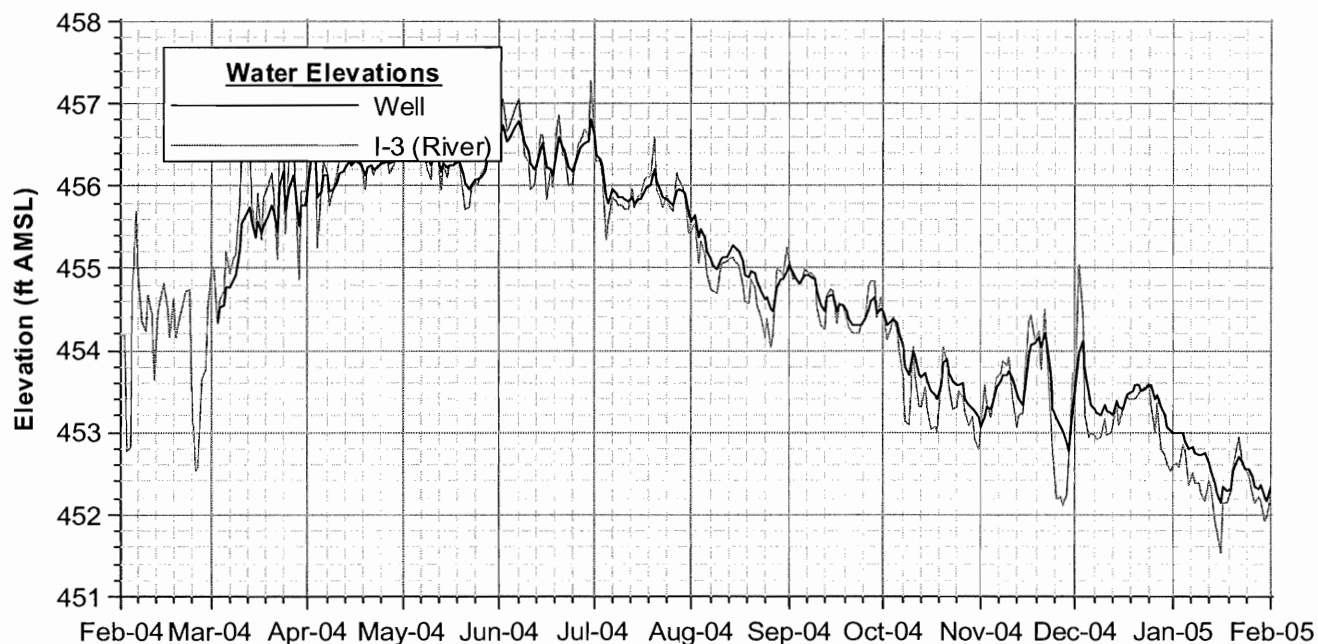
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

CH2MHILL

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.





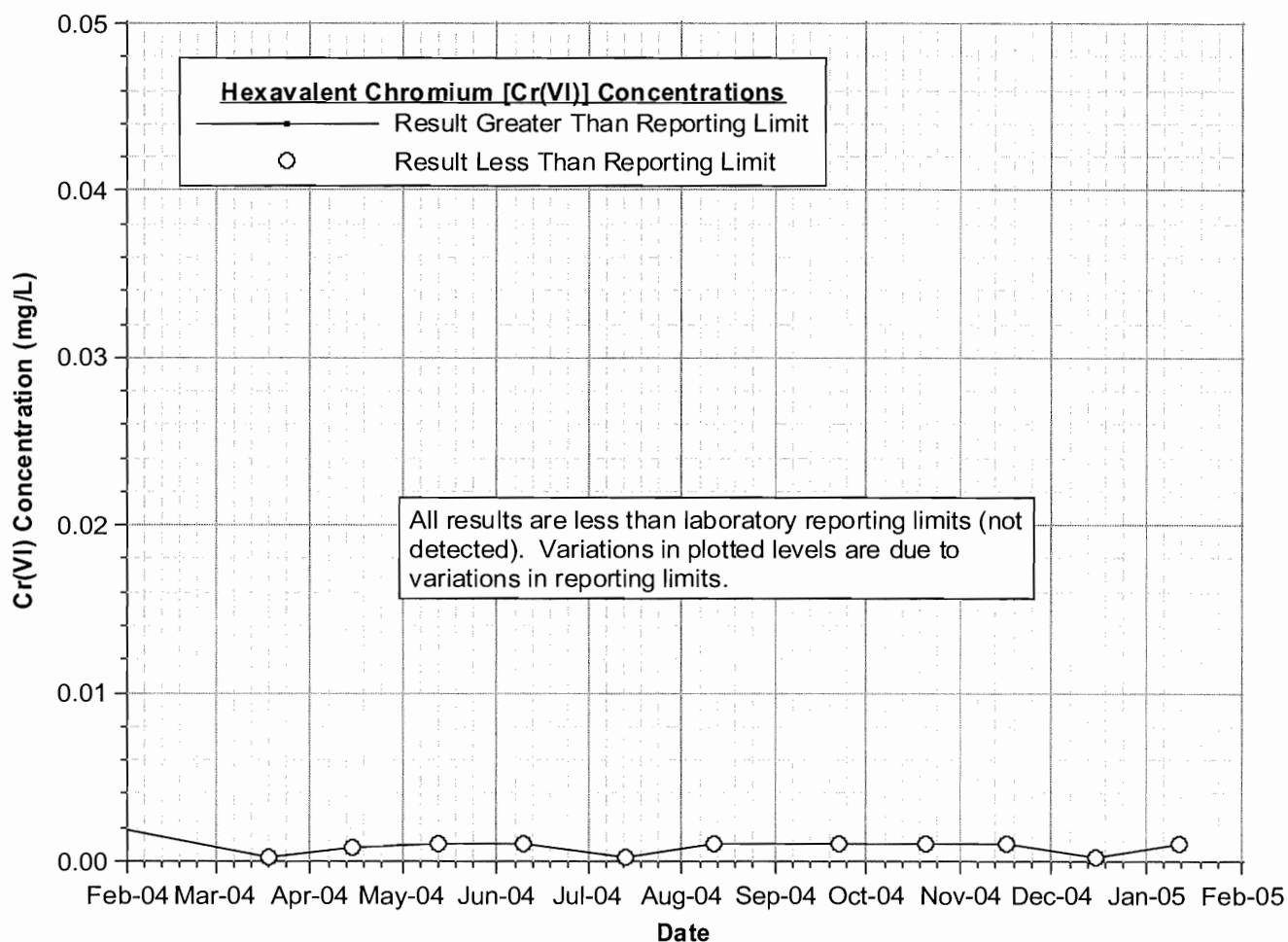
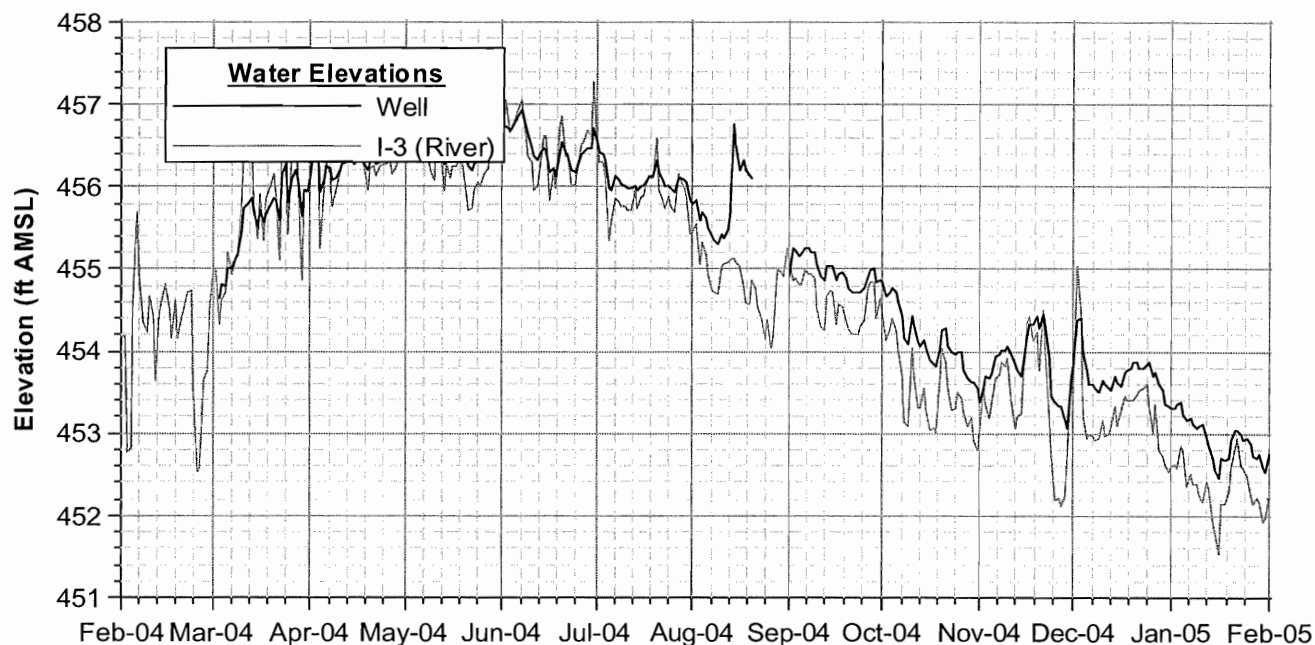
PMR No.14 - Data Through 01/31/05  
MW-32-35 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.



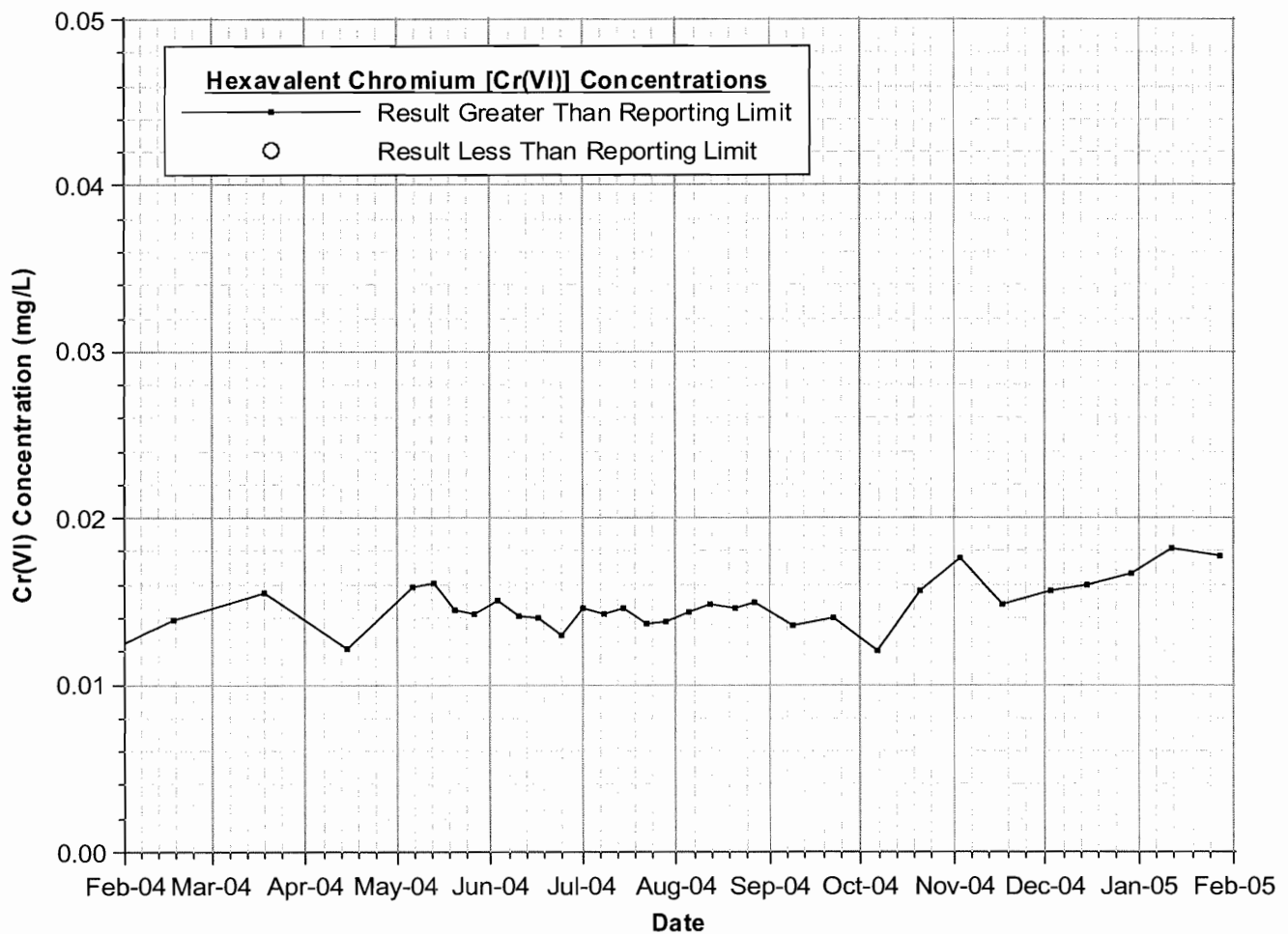
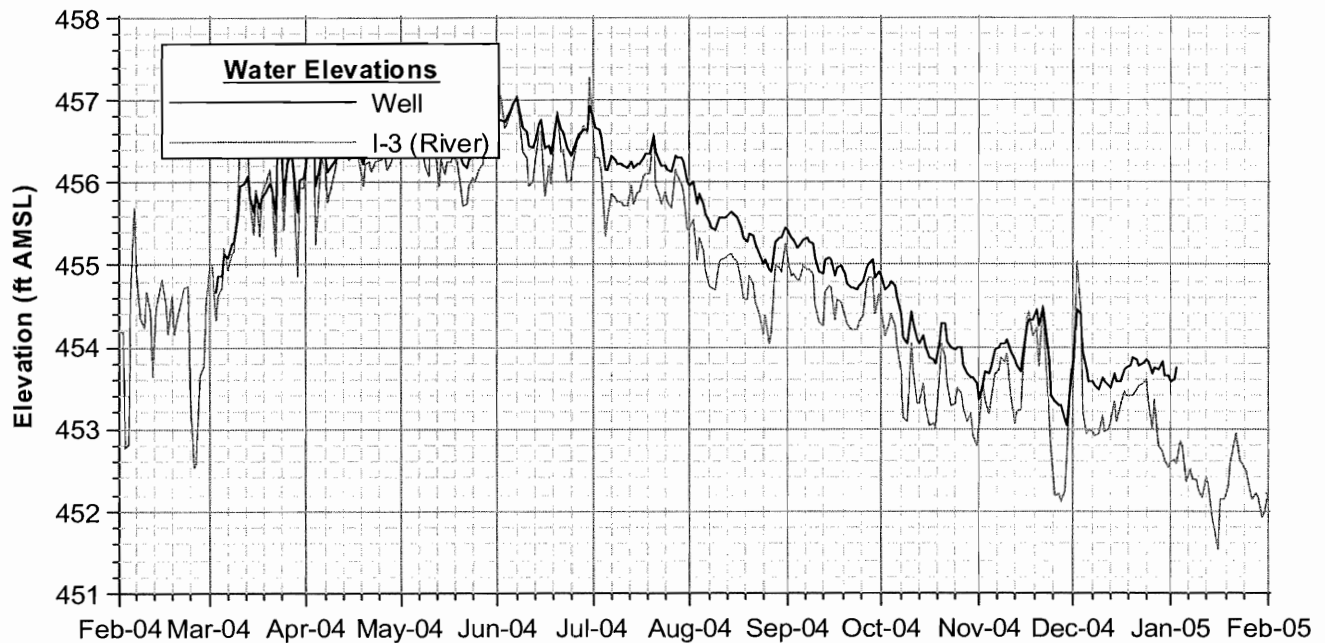


PMR No.14 - Data Through 01/31/05  
 MW-33-40 HEXAVALENT CHROMIUM  
 CONCENTRATION & HYDROGRAPH

**Notes**

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.

PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA



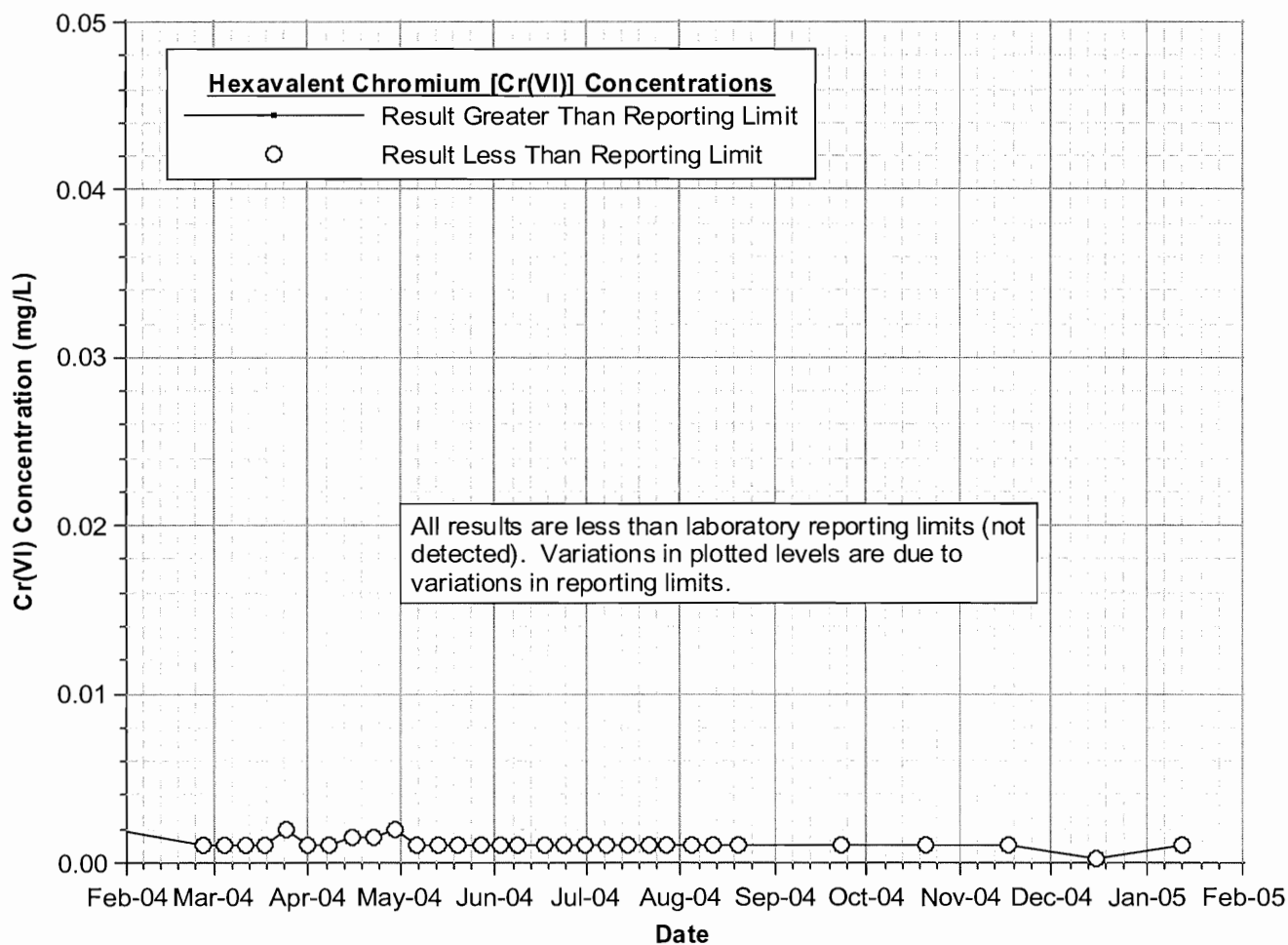
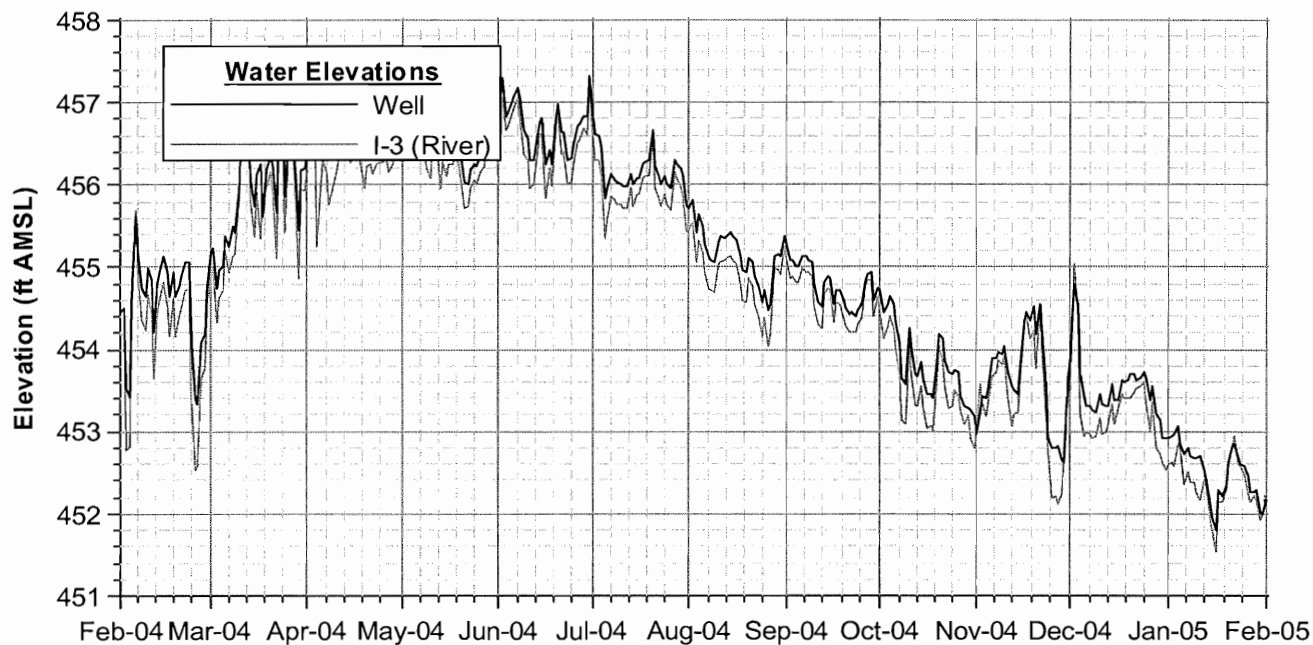
PMR No.14 - Data Through 01/31/05  
MW-33-90 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

**CH2MHILL**

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.



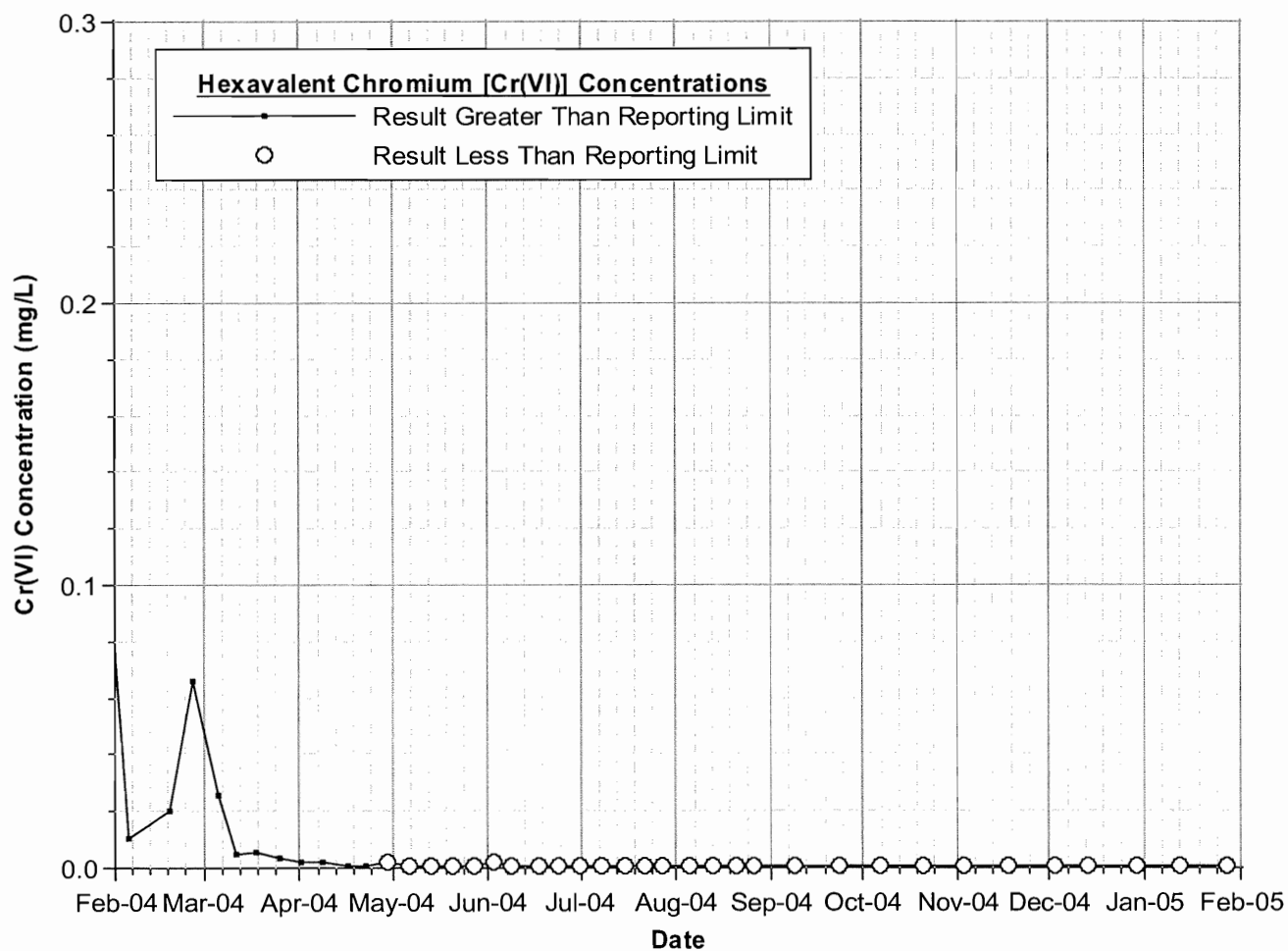
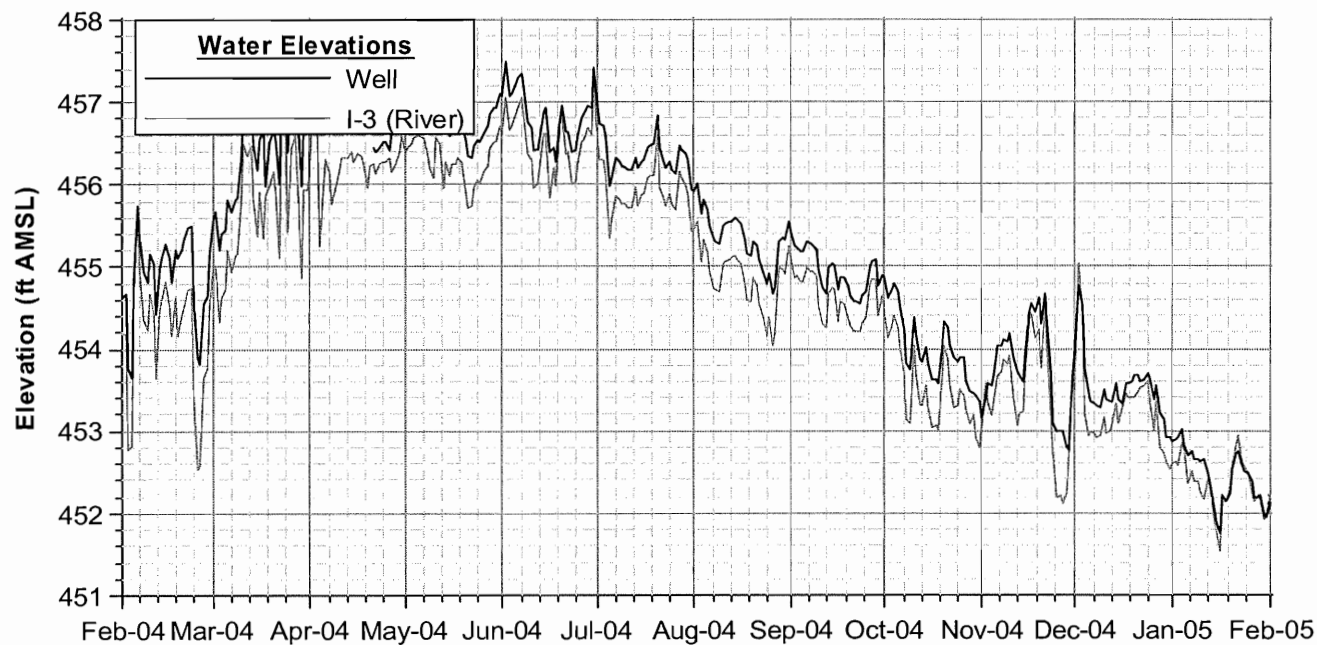
PMR No.14 - Data Through 01/31/05  
MW-34-55 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

CH2MHILL

Notes

- Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
- Data subject to review.



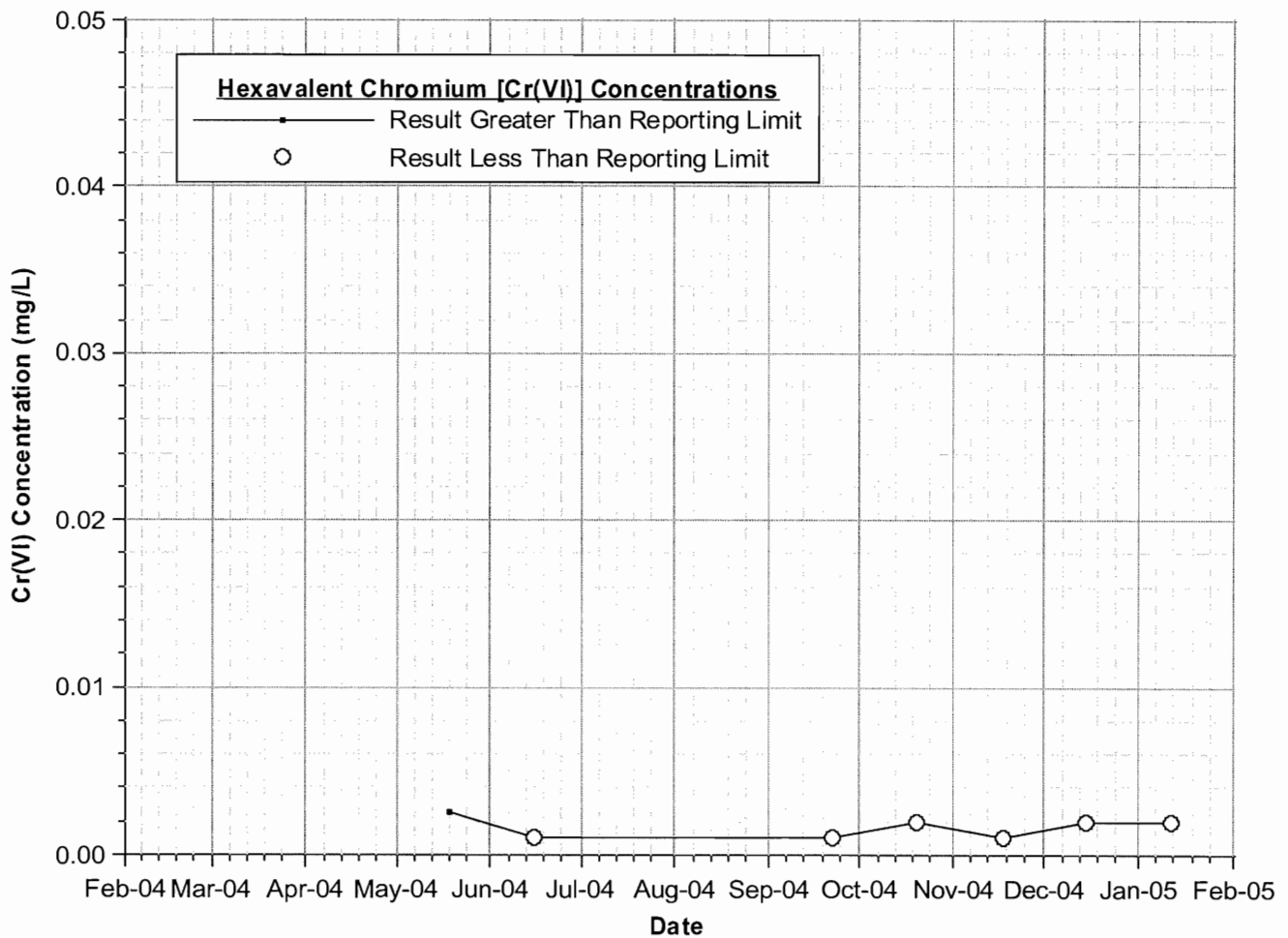
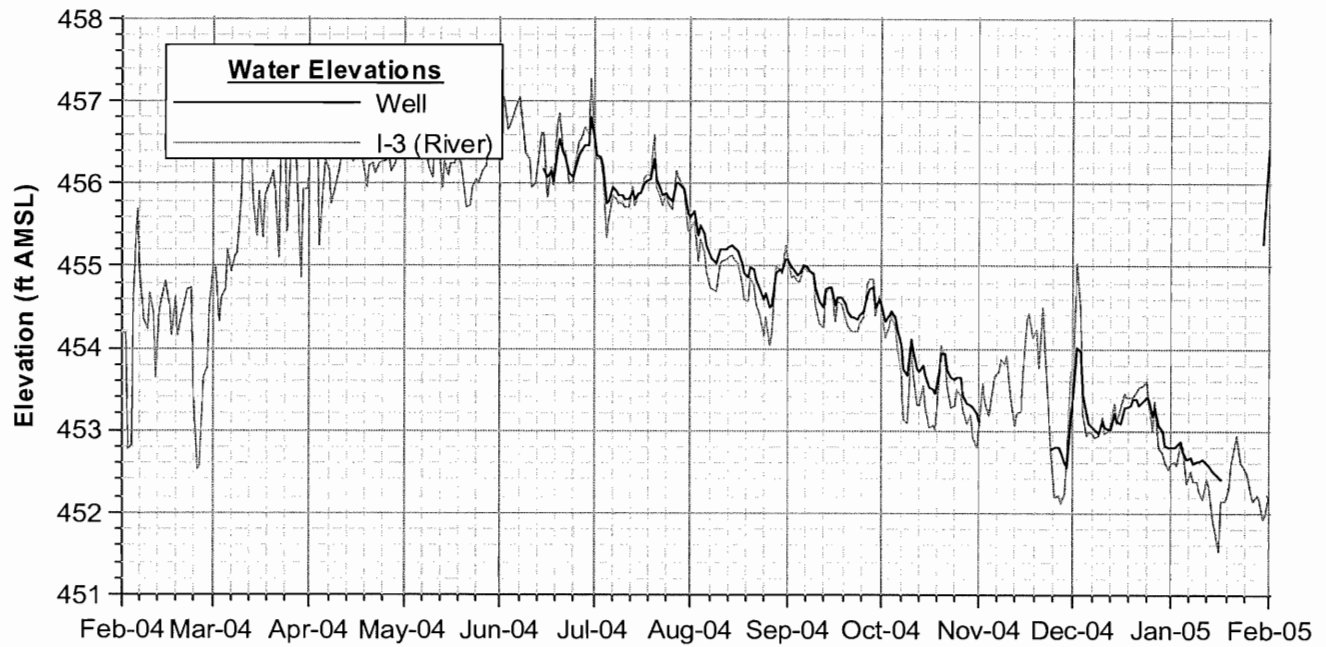
#### Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.

PMR No.14 - Data Through 01/31/05  
MW-34-80 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

**CH2MHILL**



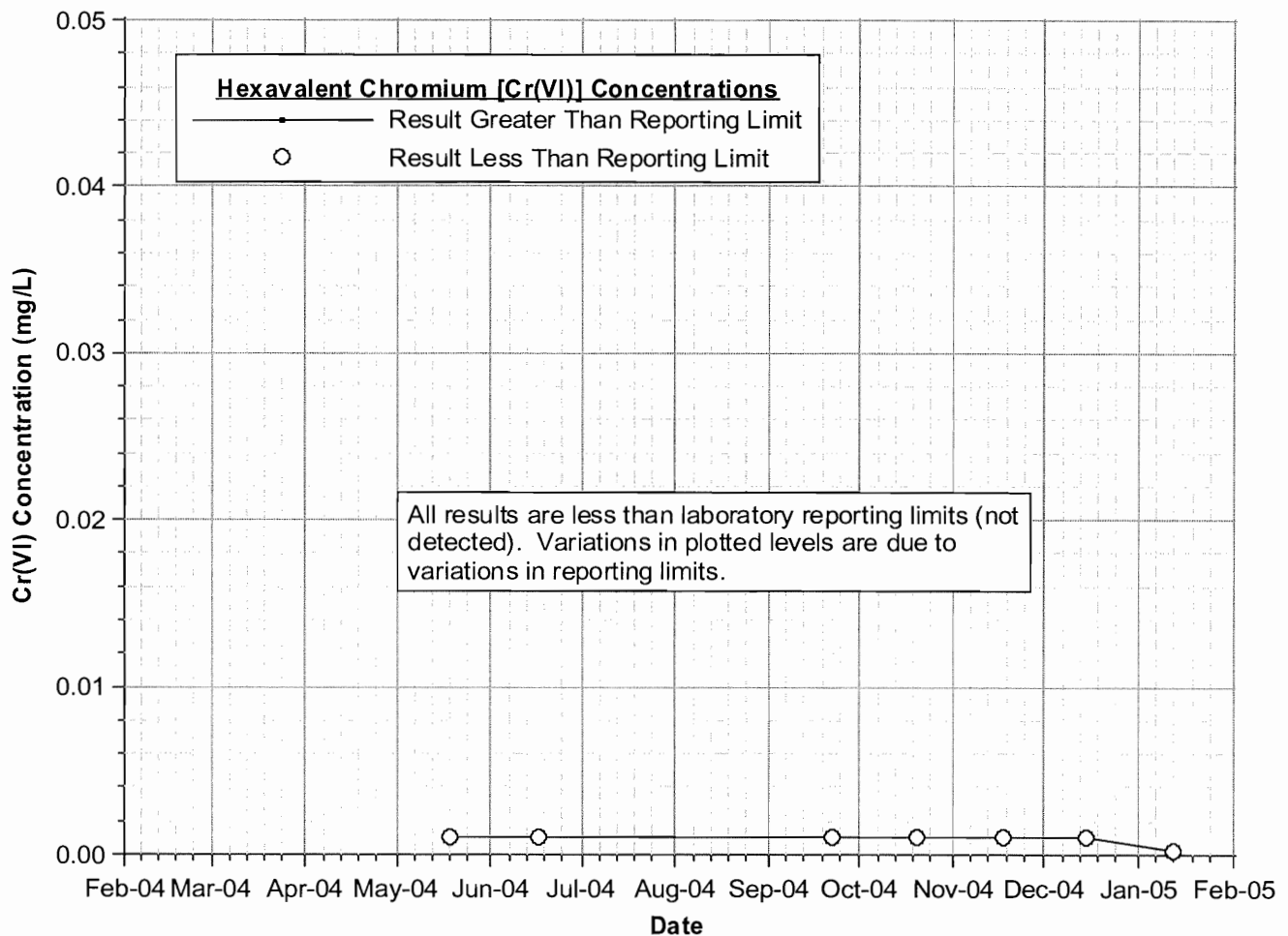
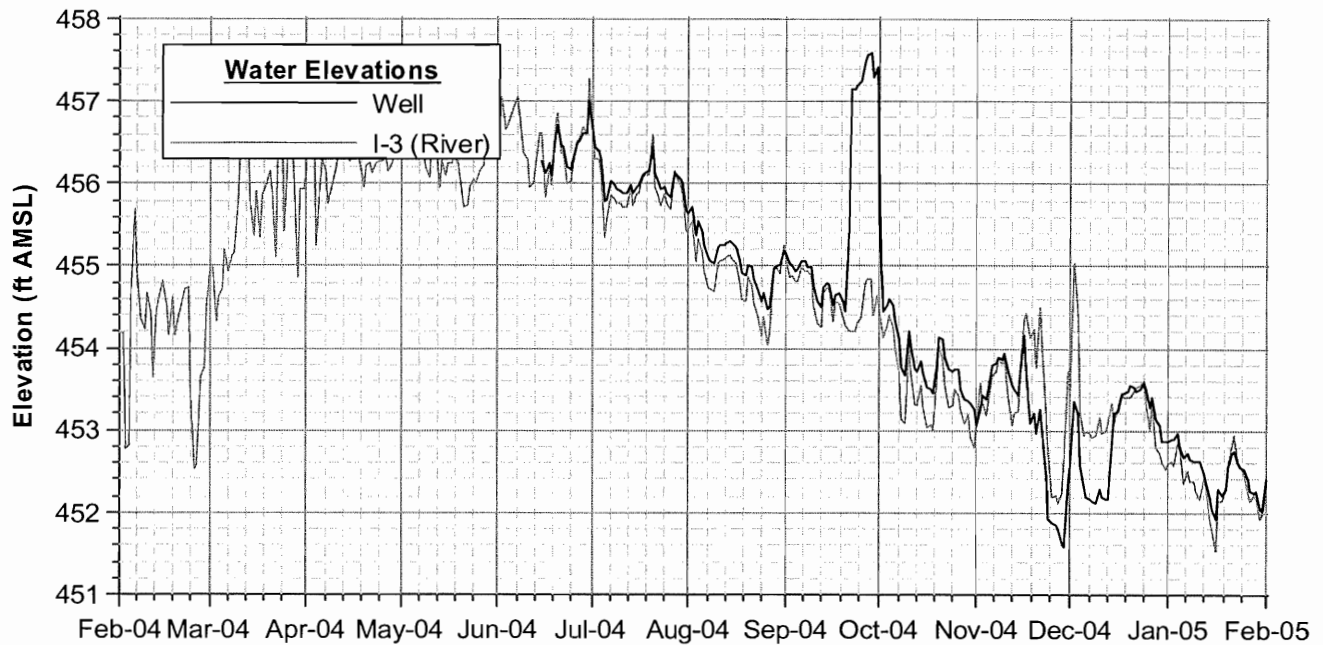
PMR No.14 - Data Through 01/31/05  
MW-36-20 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

CH2MHILL

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.

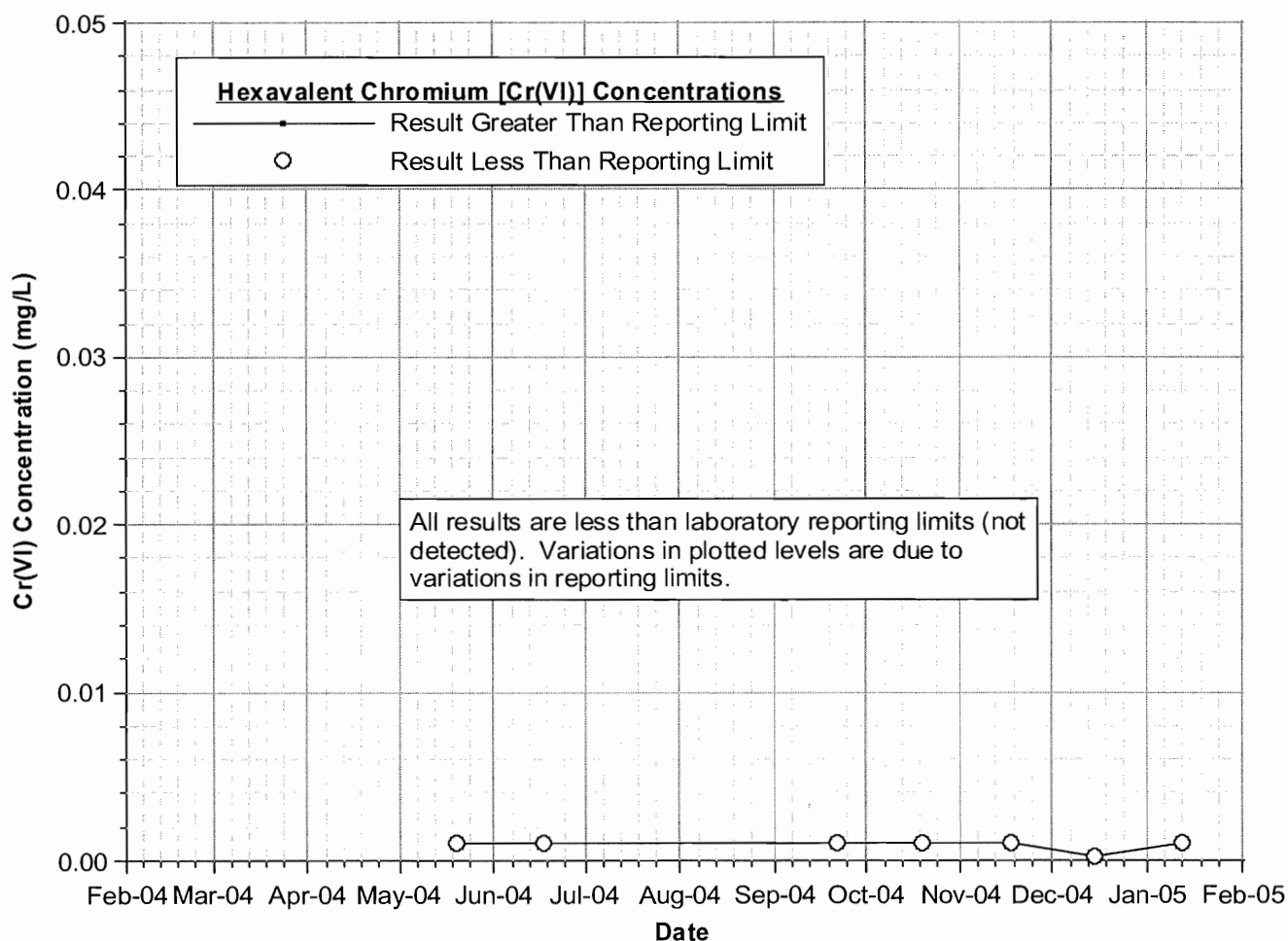


PMR No.14 - Data Through 01/31/05  
MW-36-40 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA



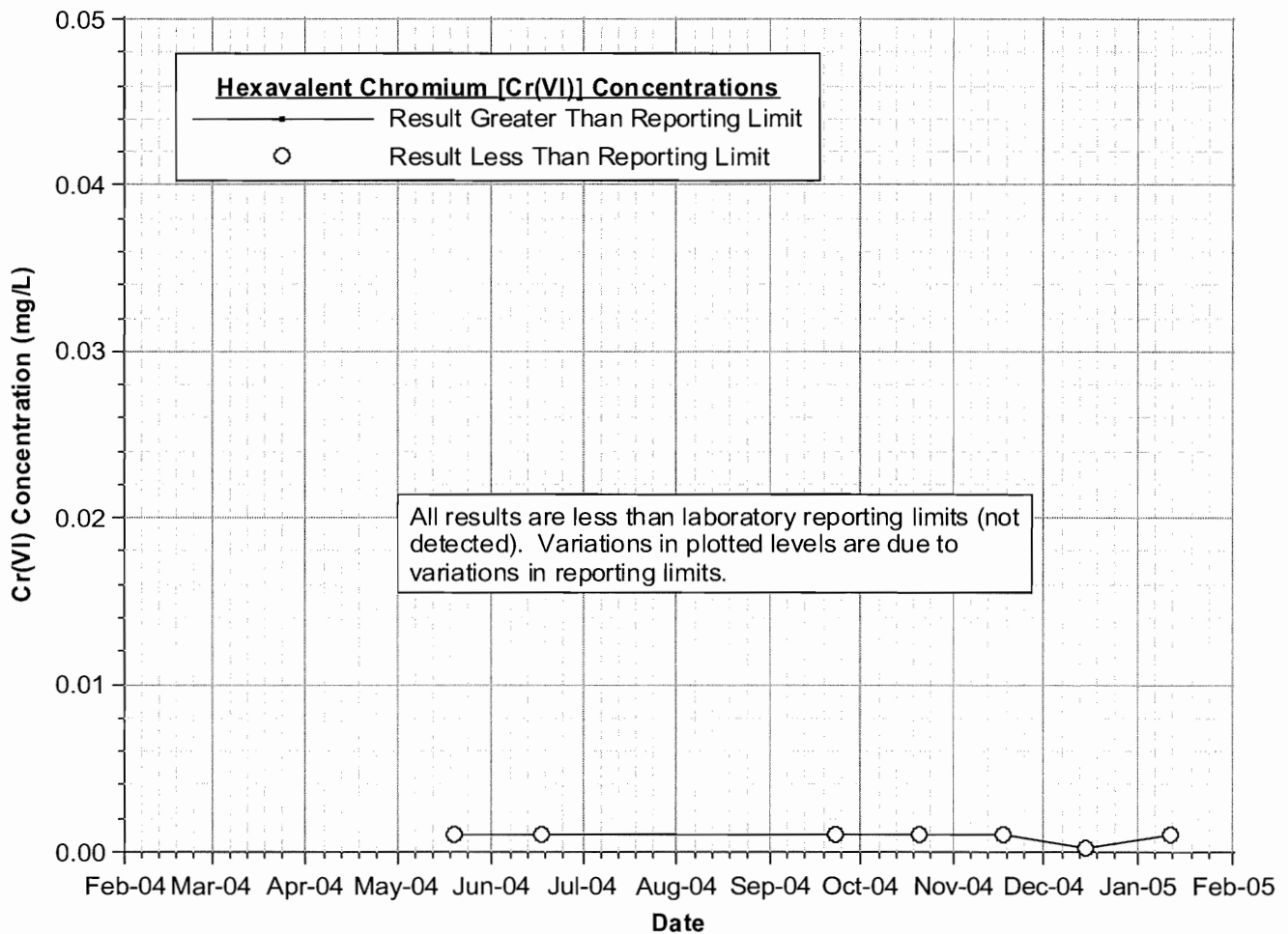
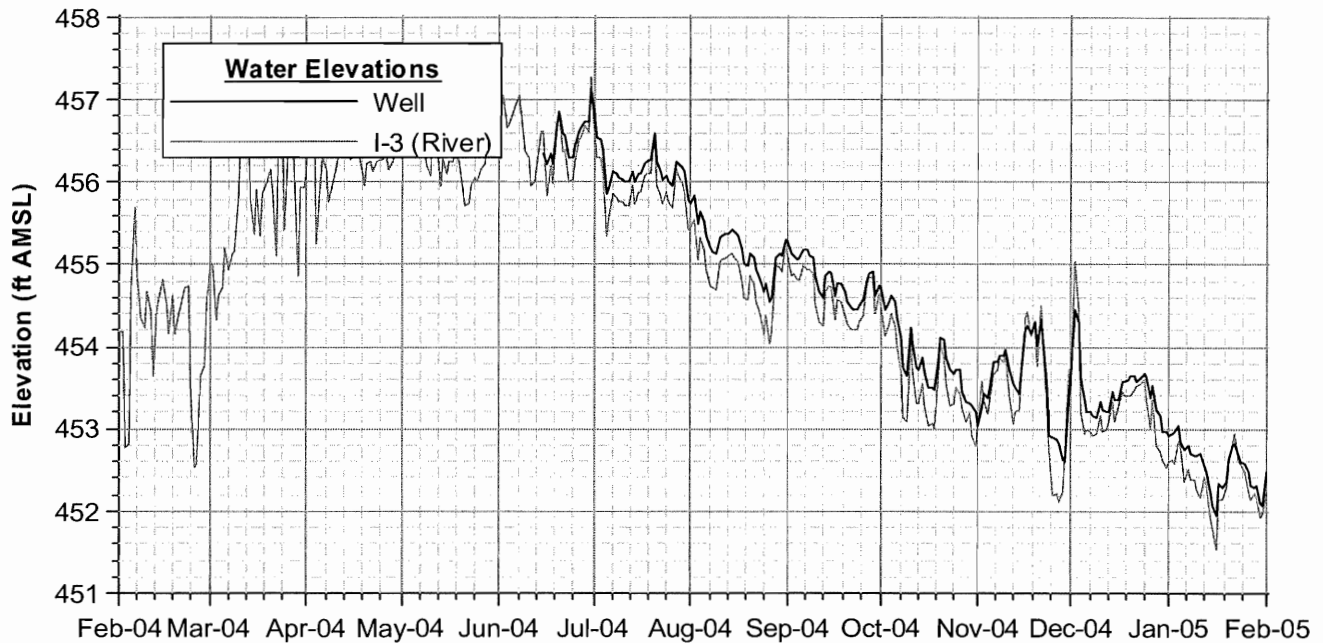
PMR No.14 - Data Through 01/31/05  
MW-36-50 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.





PMR No.14 - Data Through 01/31/05  
MW-36-70 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

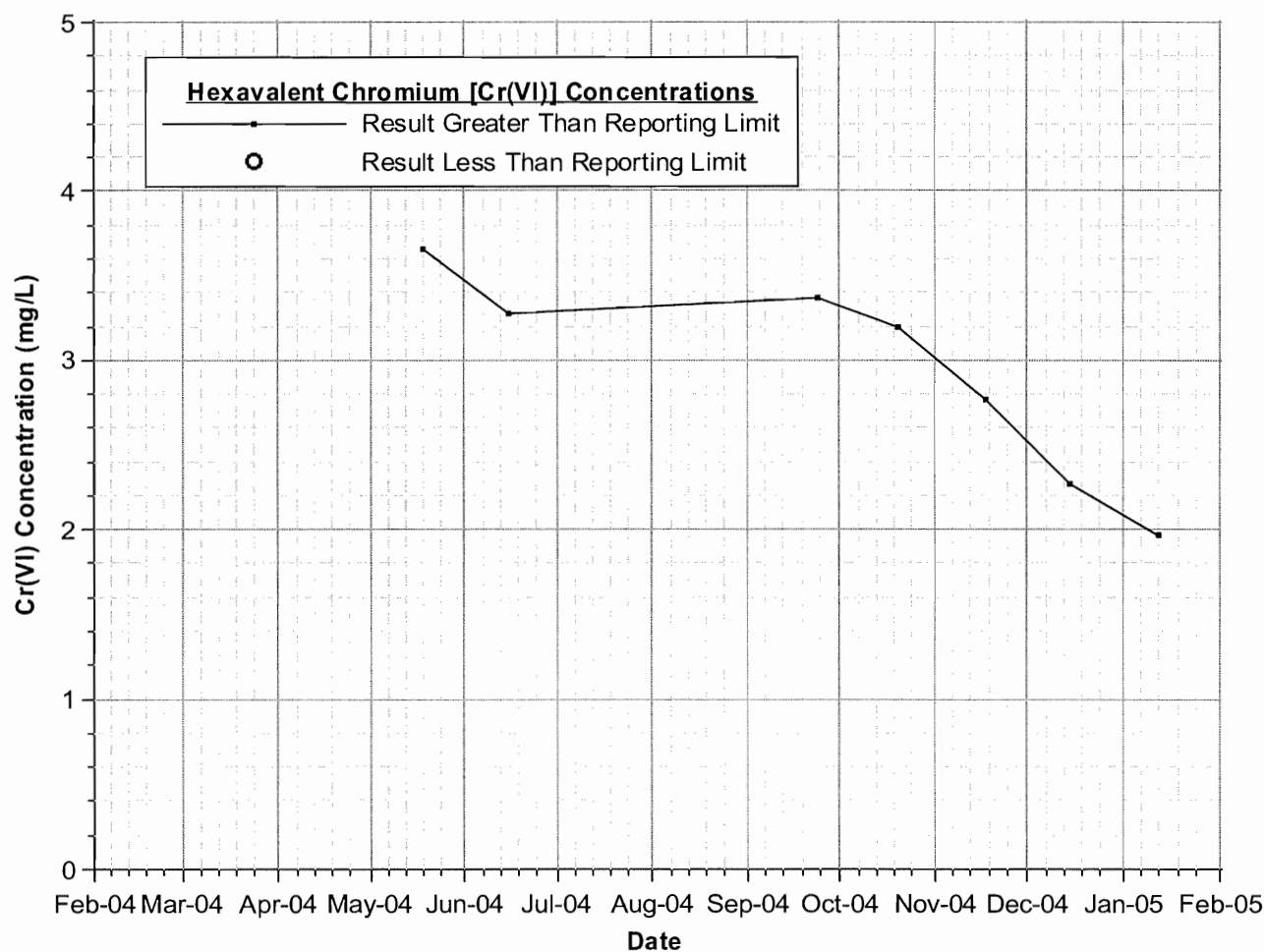
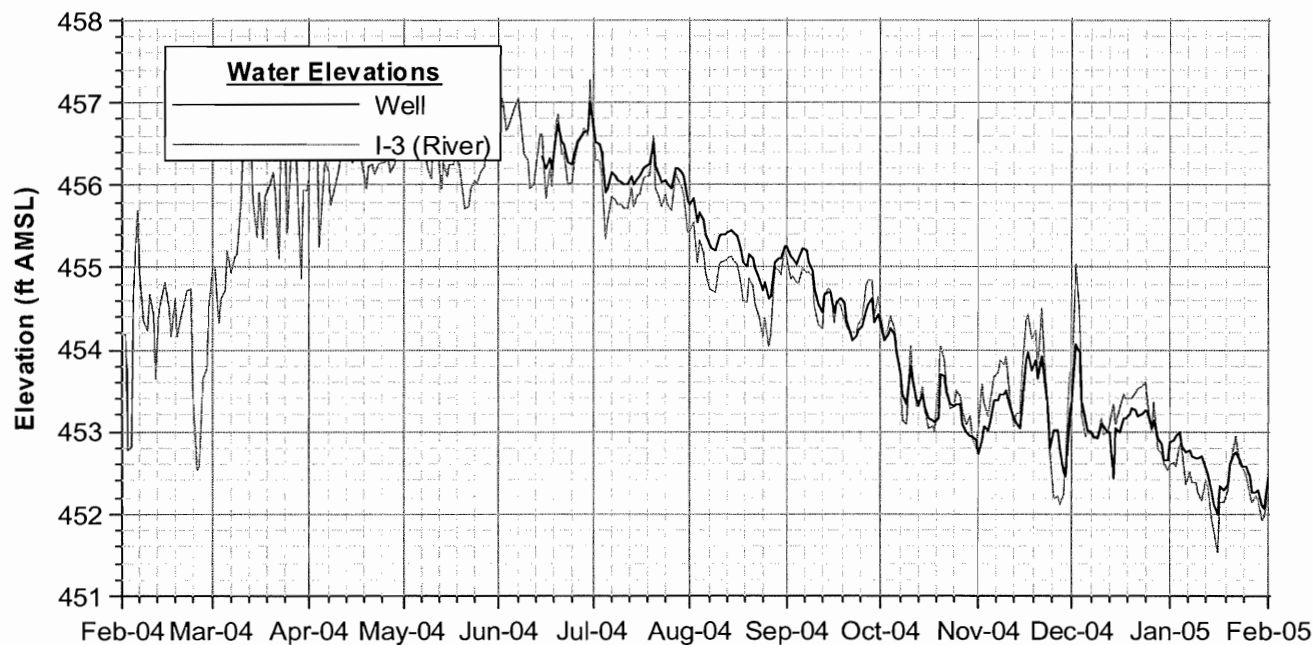
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

CH2MHILL

Notes

- Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
- Data subject to review.





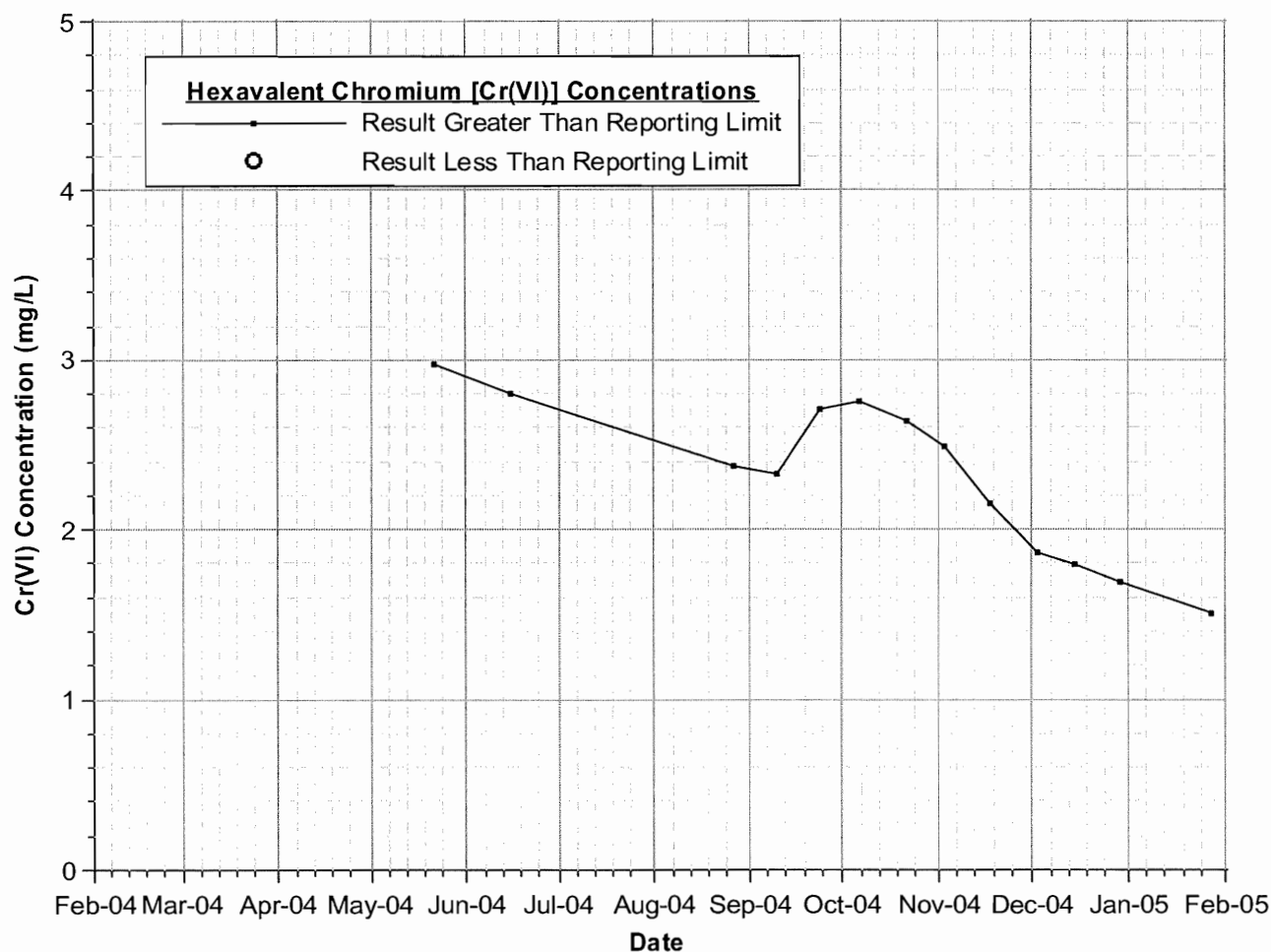
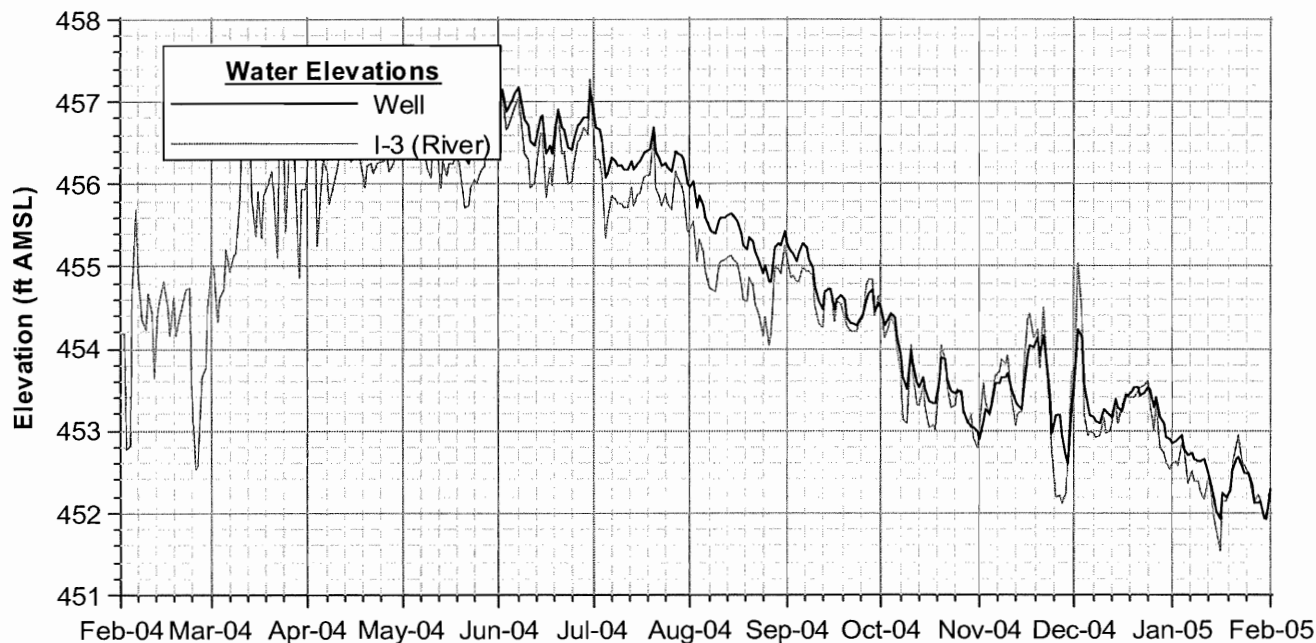
PMR No.14 - Data Through 01/31/05  
MW-36-90 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

CH2MHILL

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.



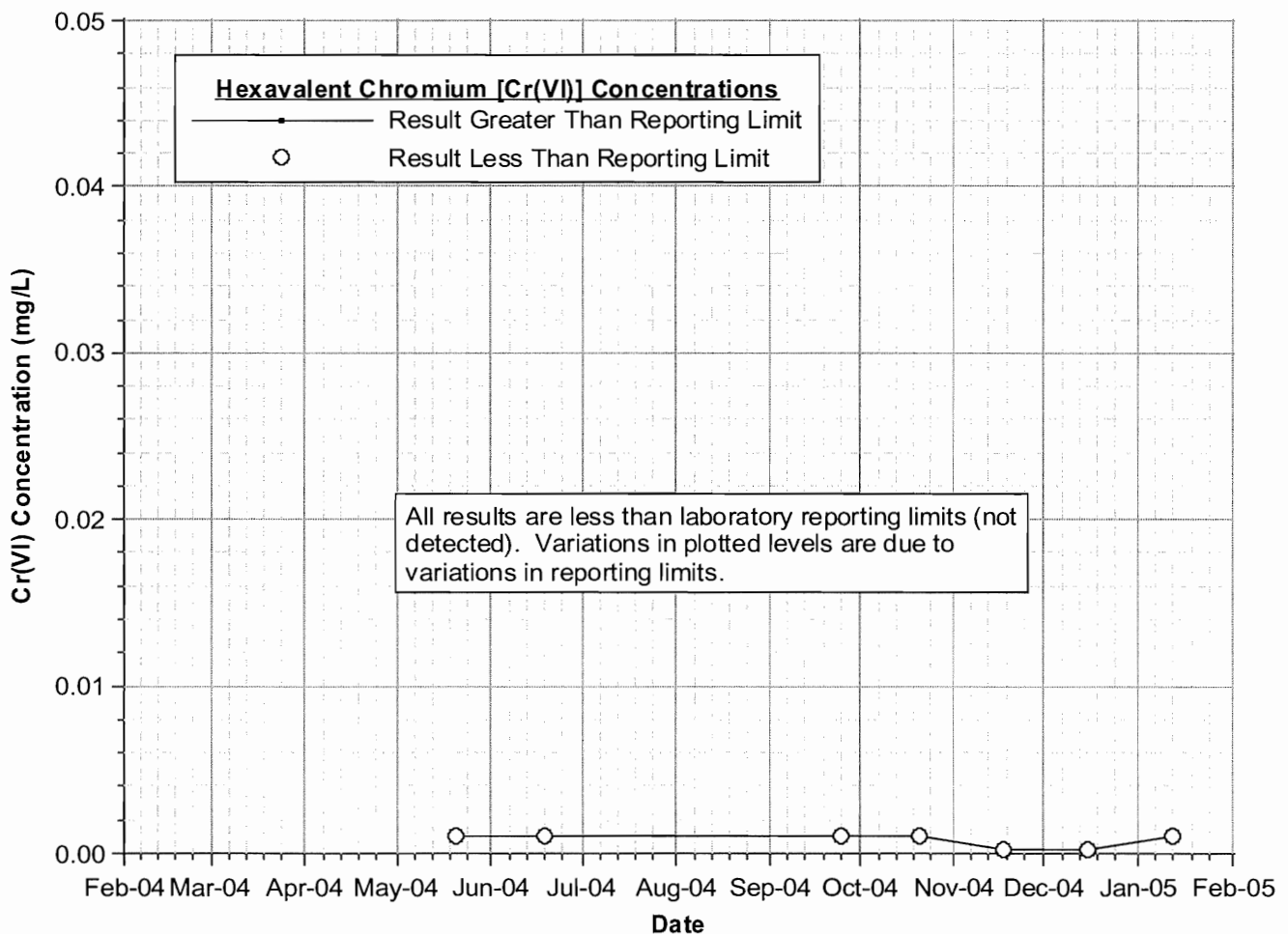
#### Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.
3. Review of the sample and field duplicate data for wells MW-36-100 and MW-39-100 collected on 1-12-05 indicate that the sampler switched the pre-printed labels for these two locations. On 1-27-05 these wells were resampled to verify chromium results for these locations. Review of the sample label information, field sampling logs, and resample results verified that the labels were switched. As such, the 1-12-05 laboratory analysis records for these wells have been corrected. The data are not presented on this figure.

PMR No.14 - Data Through 01/31/05  
MW-36-100 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

**CH2MHILL**



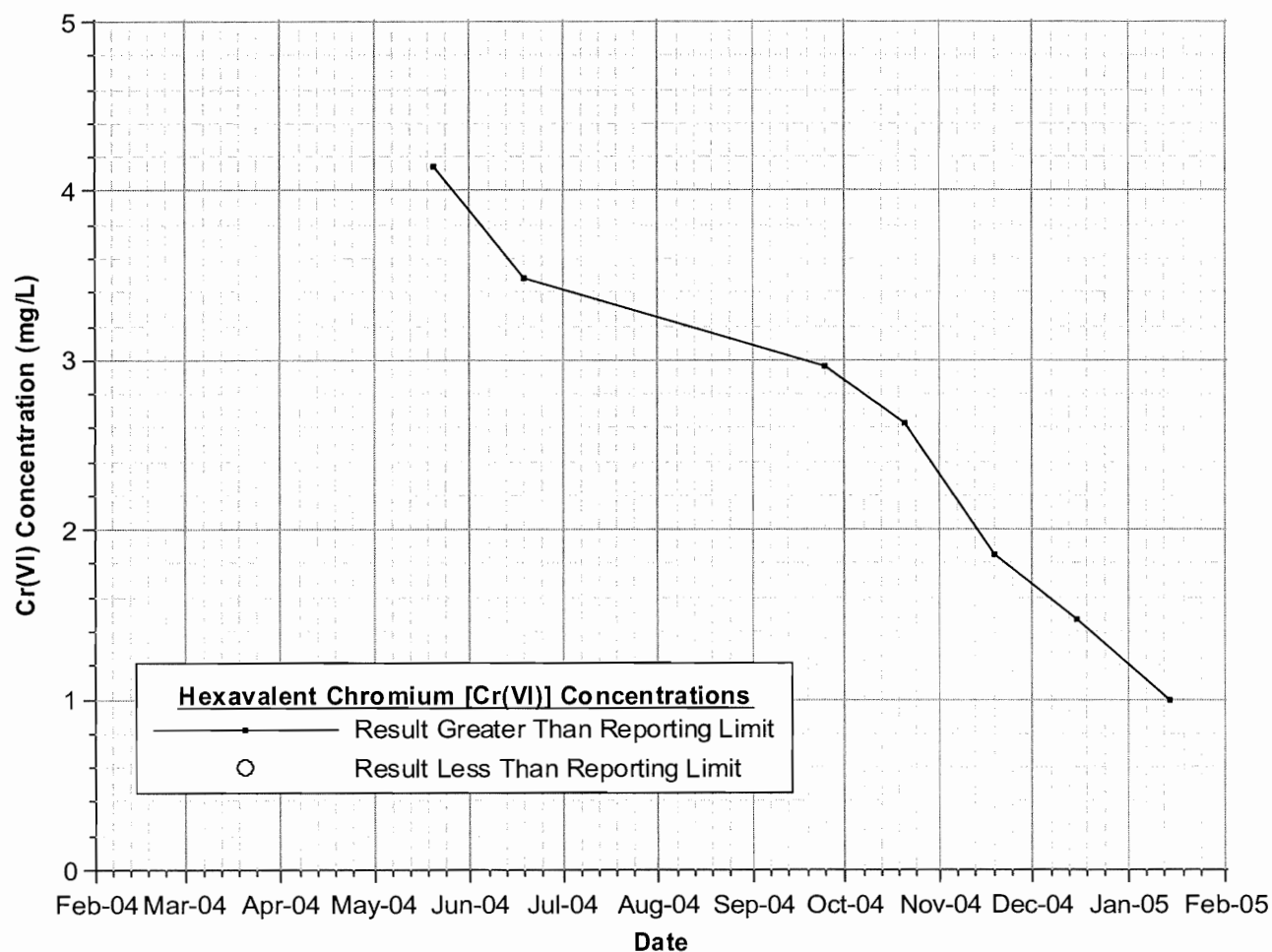
PMR No.14 - Data Through 01/31/05  
MW-39-40 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

Notes

- Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
- Data subject to review.

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

**CH2MHILL**

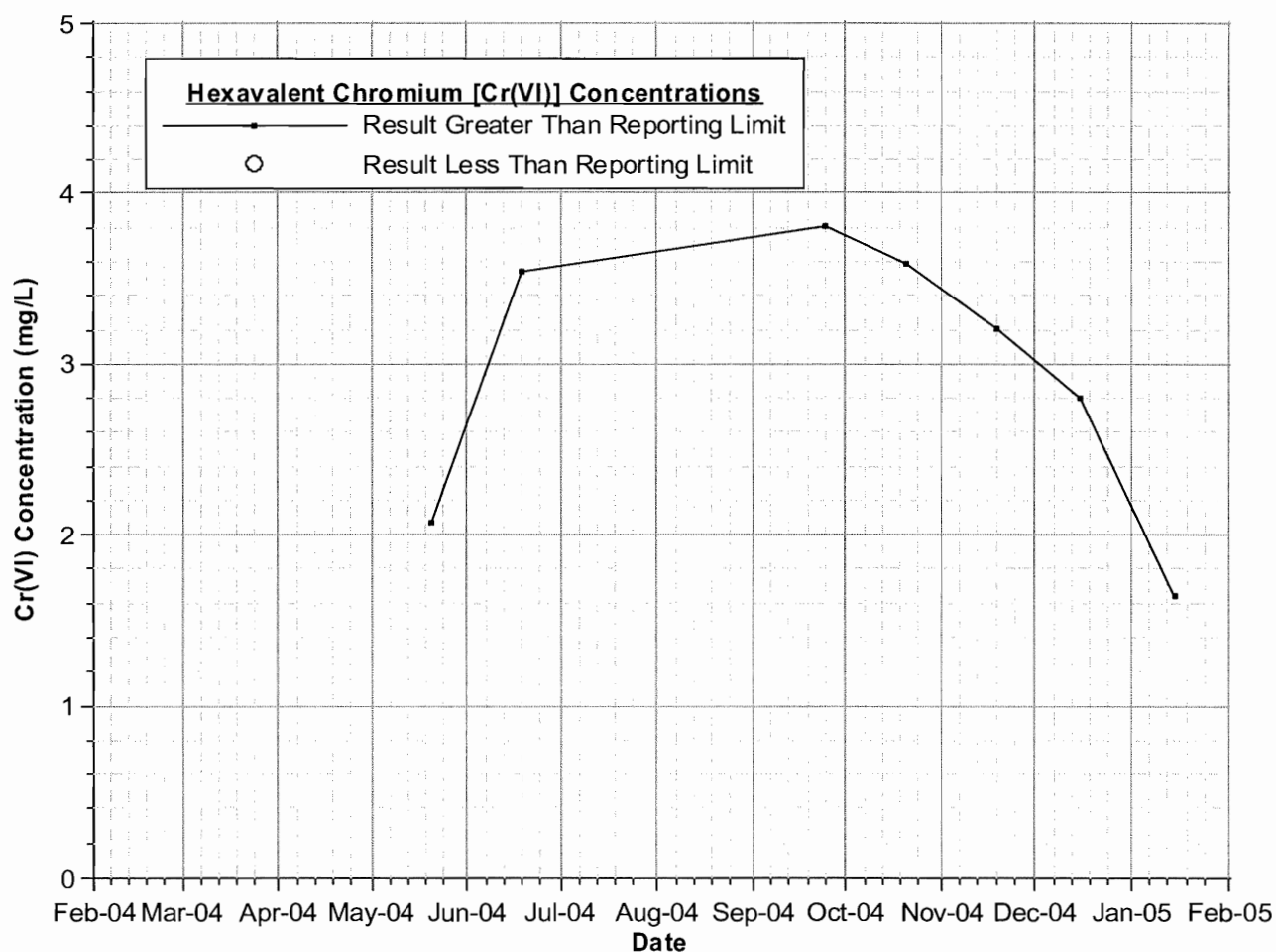
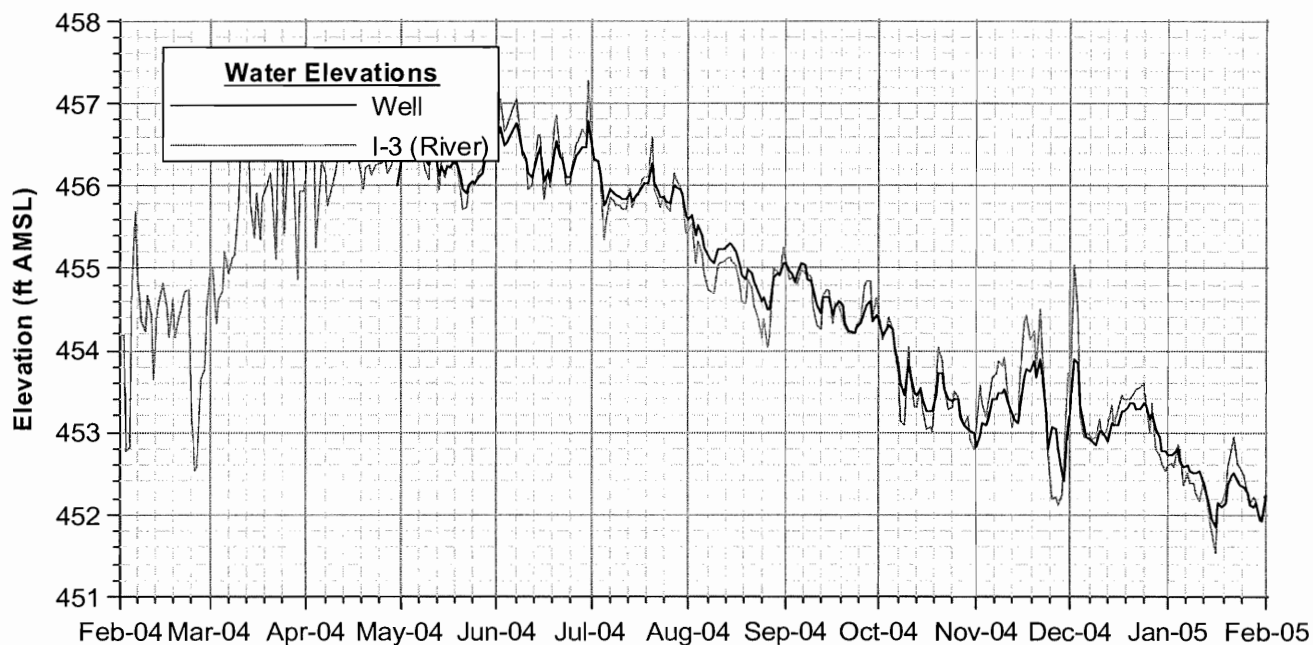


PMR No.14 - Data Through 01/31/05  
MW-39-50 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

Notes

- Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
- Data subject to review.



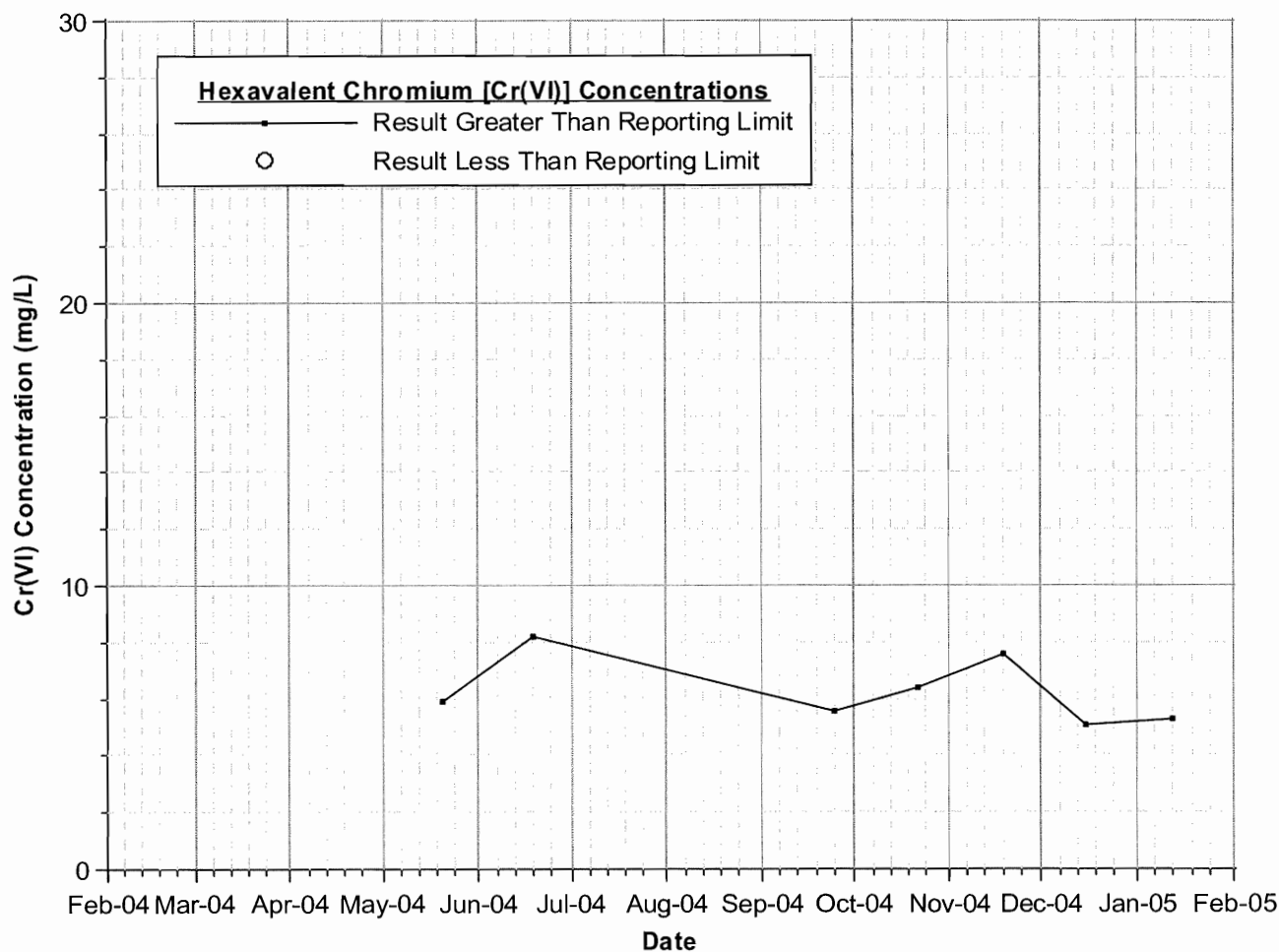
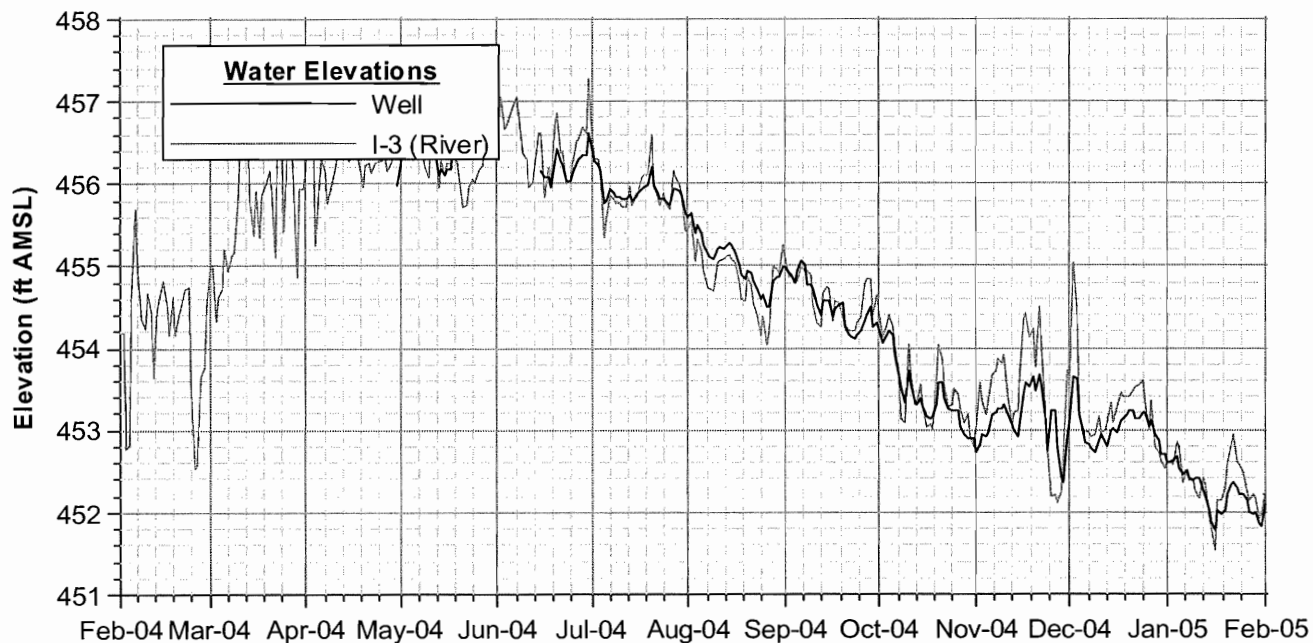
PMR No.14 - Data Through 01/31/05  
MW-39-60 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

CH2MHILL

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.



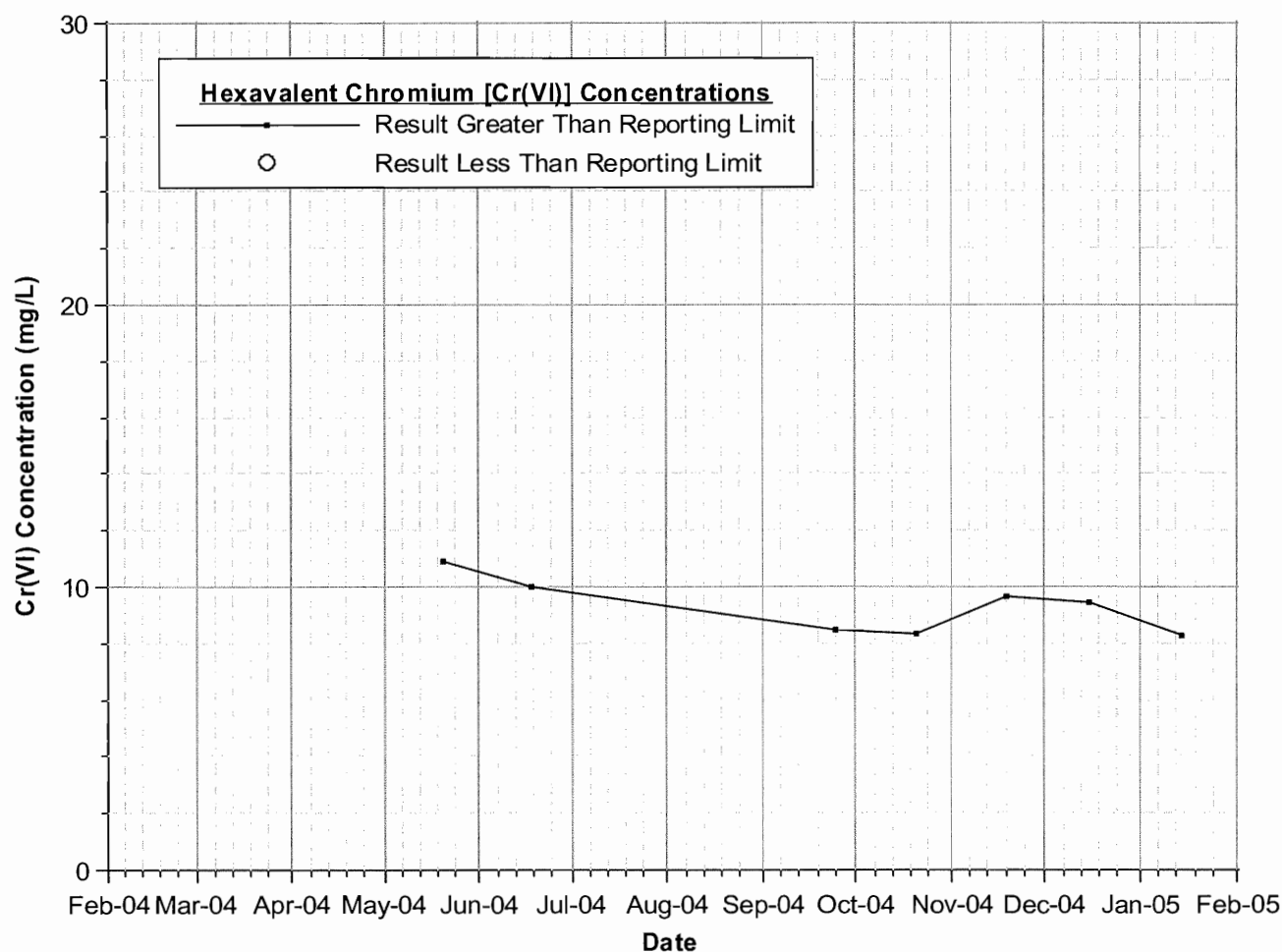
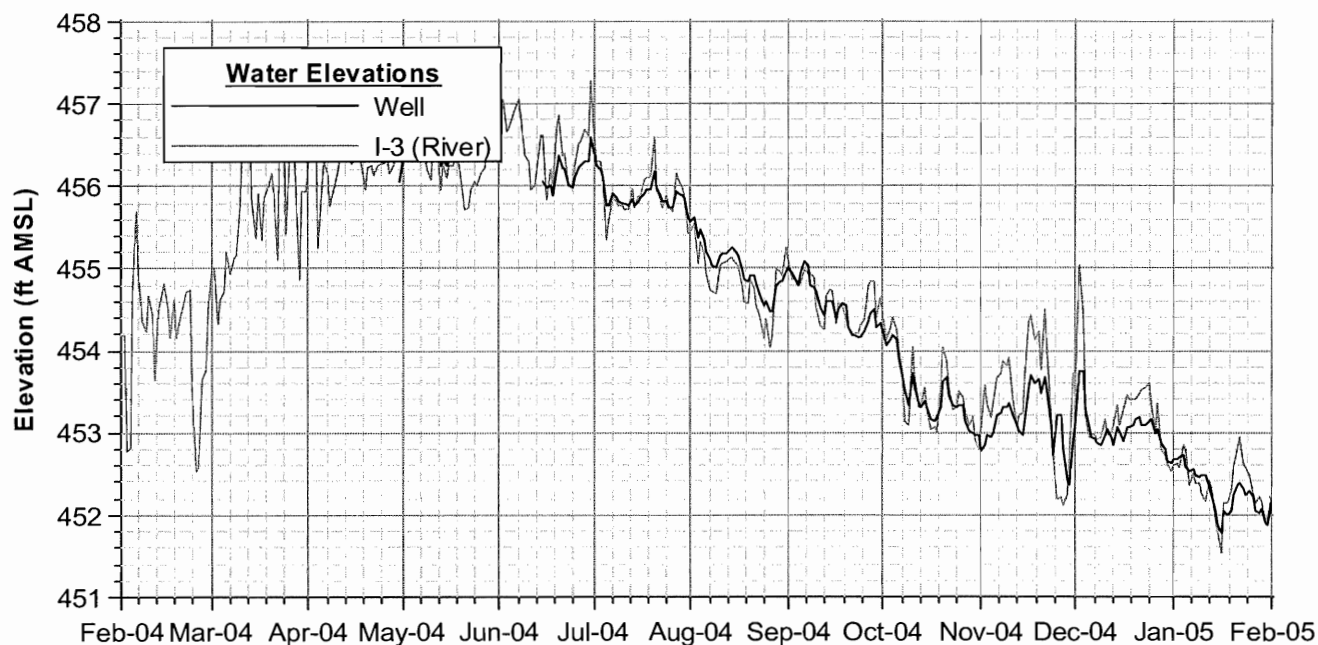
PMR No.14 - Data Through 01/31/05  
MW-39-70 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

CH2MHILL

Notes

- Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
- Data subject to review.



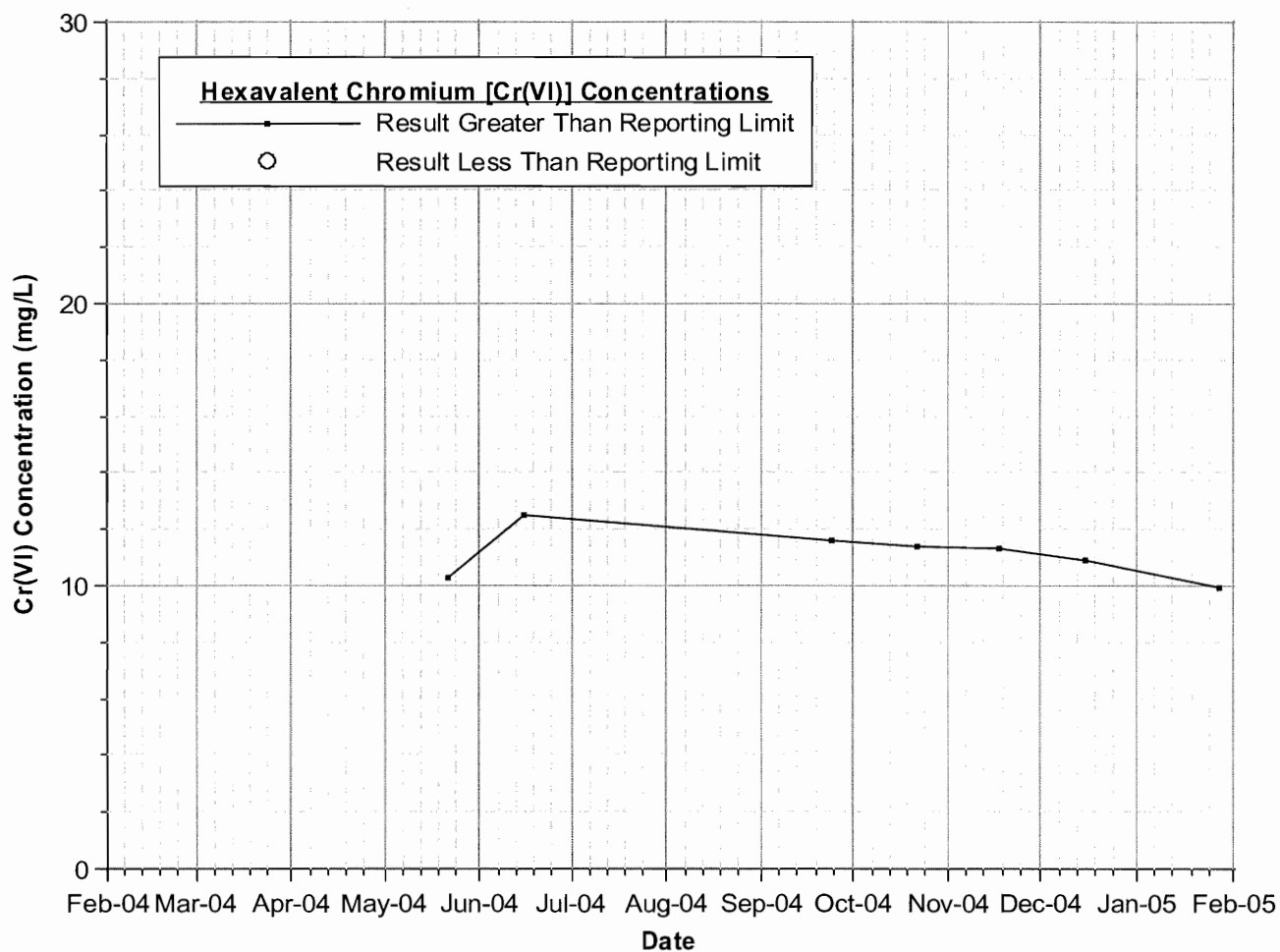
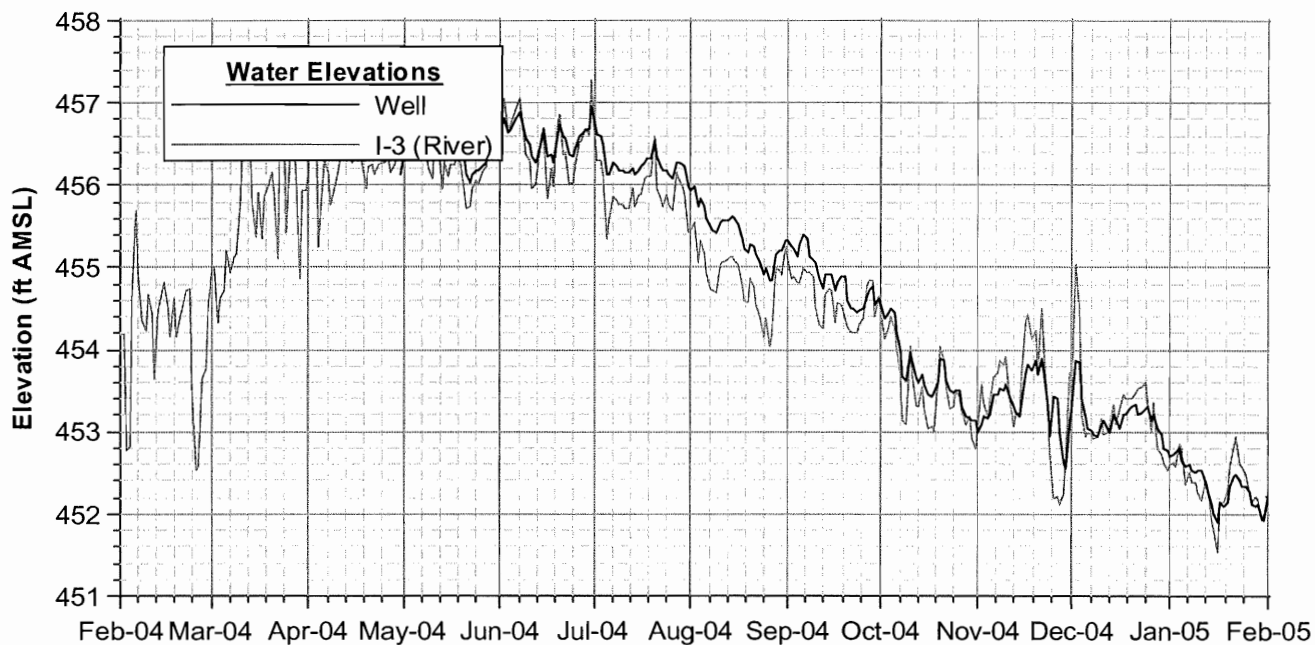
PMR No.14 - Data Through 01/31/05  
MW-39-80 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

Notes

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.





**Notes**

1. Beginning March 2004, groundwater samples from floodplain wells in the groundwater monitoring program are collected using the well-volume sampling method. Prior to the Feb. 17-20, 2004 sampling method comparison test, all samples from floodplain wells were collected using low-flow purging method.
2. Data subject to review.
3. Review of the sample and field duplicate data for wells MW-36-100 and MW-39-100 collected on 1-12-05 indicate that the sampler switched the pre-printed labels for these two locations. On 1-27-05 these wells were resampled to verify chromium results for these locations. Review of the sample label information, field sampling logs, and resample results verified that the labels were switched. As such, the 1-12-05 laboratory analysis records for these wells have been corrected. The data are not presented on this figure.

**PMR No.14 - Data Through 01/31/05  
MW-39-100 HEXAVALENT CHROMIUM  
CONCENTRATION & HYDROGRAPH**

PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

**CH2MHILL**