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August 30, 2006

Mr. Chris Guerre
Project Manager
California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

Subject: Second Quarter 2006 Performance Monitoring Report
Interim Measures Performance Monitoring Program
PG&E Topock Compressor Station, Needles, California

Dear Mr. Guerre:

Enclosed is the *Performance Monitoring Report for July 2006 and Quarterly Performance Evaluation, May through July 2006* for PG&E's Interim Measures (IM) performance monitoring program for the Topock project. This report presents the July 2006 performance monitoring results for the IM and summarizes the operations and performance evaluation for the second quarter 2006 reporting period.

The quarterly performance monitoring report is prepared and submitted in conformance with the IM reporting requirements described in Enclosure A of the Department of Toxic Substances Control's letter dated February 14, 2005.

Please contact me at (805) 546-5243 if you have any questions on the performance monitoring report.

Sincerely,

Paul Bertucci for Yvonne Meeks

Enclosure

Performance Monitoring Report for July 2006 and Quarterly Performance Evaluation, May through July 2006

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

Prepared for

California Department of Toxic Substances Control

on behalf of

Pacific Gas and Electric Company

August 30, 2006

CH2MHILL
155 Grand Ave. Ste. 1000
Oakland, CA 94612

Performance Monitoring Report for July 2006
and
Quarterly Performance Evaluation, May through July 2006

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PG&E Topock Compressor Station
Needles, California

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August 30, 2006

This report was prepared under the supervision of a California Certified Engineering Geologist

Paul Bertucci

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Acronyms and Abbreviations

µg/L	micrograms per liter (essentially the same as parts per billion [ppb])
cfs	cubic feet per second
Cr(T)	total chromium
Cr(VI)	hexavalent chromium
DTSC	Department of Toxic of Substances Control
gpm	gallons per minute
IM	Interim Measure
PG&E	Pacific Gas and Electric Company
PMP	Performance Monitoring Program
TDS	total dissolved solids
USBR	United States Bureau of Reclamation

1.0 Introduction

Pacific Gas and Electric Company (PG&E) is implementing an Interim Measure (IM) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California. The IM consists of groundwater extraction for hydraulic control of the plume boundaries in the Colorado River floodplain, and management of extracted groundwater. The groundwater extraction, treatment, and injection systems, collectively, are referred to as Interim Measure Number 3 (IM No. 3). Currently, the IM No. 3 facilities include a groundwater extraction system (four extraction wells: TW-2D, TW-3D, TW-2S, and PE-1), conveyance piping, a groundwater treatment plant, and an injection well field for the discharge of the treated groundwater. Figure 1-1 shows the location of the IM No. 3 extraction, conveyance, treatment, and injection facilities.

In a letter dated February 14, 2005, the California Department of Toxic of Substances Control (DTSC) established the criteria for evaluating the performance of the IM. As defined by DTSC, the performance standard for this IM is to "establish and maintain a net landward hydraulic gradient, both horizontally and vertically, that ensures that hexavalent chromium concentrations at or greater than 20 micrograms per liter [µg/L] in the floodplain are contained for removal and treatment" (Enclosure A, DTSC February 14, 2005 letter). The DTSC directive also defined the monitoring and reporting requirements for the IM. A draft *Performance Monitoring Plan for Interim Measures in the Floodplain Area* was submitted to DTSC on April 15 (CH2M HILL 2005a) (herein referred to as the Performance Monitoring Plan). The site monitoring, data evaluation, reporting, and response actions required under the February 2005 DTSC directive are collectively referred to as the IM Performance Monitoring Program (PMP) for the floodplain area.

This quarterly report has been prepared in compliance with DTSC's requirements and documents the monitoring activities and performance evaluation of the IM hydraulic containment system for the period from May 1 through July 31, 2006. The next monthly report for the August 2006 reporting period will be submitted on September 15, 2006. The next quarterly performance monitoring report will be submitted on November 30, 2006.

1.1 Report Organization

In support of the IM performance evaluation, this combined July monthly and second quarter monitoring report presents documentation for:

- Monthly performance monitoring results for July 2006 and status of the extraction and treatment system (Section 2.0).
- Evaluation of quarterly performance data including the extraction system, chromium trends in the floodplain monitoring wells, hydraulic gradients, and river levels during the period of May through July 2006 (Section 3.0).
- Conclusions (Section 4.0).

2.0 Performance Monitoring Report for July 2006

2.1 Introduction

Figure 2-1 shows the locations of wells used for IM extraction, performance monitoring, and hydraulic gradient measurements. The performance monitoring wells that were in service/active as of July 2006 are defined as:

- **Floodplain Wells** (monitoring wells on the Colorado River floodplain): MW-22, MW-27 cluster (three), MW-28 cluster (two), MW-29, MW-30 cluster (two), MW-32 cluster (two), MW-33 cluster (four), MW-34 cluster (three), MW-36 cluster (six), MW-39 cluster (six), MW-42 cluster (three), MW-43 cluster (three), MW-44 cluster (three), MW-45, MW-46 cluster (two), and MW-49 cluster (three).
- **Intermediate Wells** (monitoring wells located immediately north, west, and southwest of the floodplain): MW-12, MW-19, MW-20 cluster (three), MW-21, MW-26, MW-31 cluster (two), MW-35 cluster (two), MW-47 cluster (two), MW-50 cluster (two), and MW-51.
- **Interior Wells** (monitoring wells located upgradient of IM pumping): MW-10 and MW-25.

Three extraction wells (TW-2D, TW-3D, and TW-2S) are located on the MW-20 bench (Figure 1-1). In March 2005, extraction well PE-1 was installed on the floodplain approximately 450 feet east of extraction well TW-2D (Figure 1-1). Construction of the conveyance piping and power supply to well PE-1 was completed in January 2006. Testing and commissioning of well PE-1 began on January 25, with full-time operation of the well beginning on January 26, 2006. Currently, both extraction wells PE-1 and TW-3D are in full-time operation.

The wells screened in the unconsolidated alluvial fan and fluvial deposits, which comprise the Alluvial Aquifer, have been separated into three depth intervals to present groundwater quality and groundwater level data. The depth intervals of the Alluvial Aquifer—designated upper, middle, and lower—are based on grouping the monitoring wells screened at common elevations and do not represent distinct hydrostratigraphic units or separate aquifer zones. The subdivision of the aquifer into three depth intervals is an appropriate construct for presenting and evaluating groundwater quality data in the floodplain. The three-interval concept is also useful for presenting and evaluating lateral gradients while minimizing effects of vertical gradients and observing the influence of pumping from partially-penetrating wells. It should be noted, however, that these divisions do not correspond to any lithostratigraphic layers within the aquifer. The floodplain aquifer is considered to be hydraulically undivided.

2.2 Extraction System Operations

Pumping data for the IM groundwater extraction system for the period July 1 through 31, 2006 are shown in Table 2-1. During the reporting period, extraction wells TW-3D and PE-1 operated at a combined target pump rate of 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime.

The July 2006 monthly average pumping rate was 133 gpm. A total of 5,939,212 gallons of groundwater was extracted and treated by the IM No. 3 treatment plant during July 2006. The operational run time for the IM extraction system was greater than 98 percent during this reporting period. An operations log for the extraction system during July 2006, including downtime, is included in Appendix A. The IM No. 3 treatment facility also treated approximately 980 gallons of water generated from monitoring well development and groundwater monitoring activities during July 2006.

The concentrate (i.e., brine) from the reverse osmosis system was shipped offsite with shipping papers as a Resource Conservation and Recovery Act non-hazardous waste and transported to USFilter Corporation in Los Angeles, California for treatment and disposal. Two containers of solids from the IM No. 3 facility were disposed of at the Kettleman Hills Chemical Waste Management facility during July 2006.

Daily inspections included general facility inspections, flow measurements, and site security monitoring. Daily logs with documentation of inspections are maintained onsite.

Table 2-2 summarizes the analytical results for chromium and total dissolved solids (TDS) in groundwater samples collected from the IM extraction well system during the July reporting period and prior months. Monitoring of the extraction well(s) water quality will be completed at the frequency required by the Waste Discharge Requirements issued for the IM No. 3 treatment facility.

2.3 Chromium Sampling Results

During July 2006, the groundwater monitoring wells in the floodplain area were sampled for hexavalent chromium [Cr(VI)], total chromium [Cr(T)], and field water quality parameters under quarterly, monthly, and biweekly schedules, in accordance with the approved groundwater monitoring plan and DTSC directives. Refer to PG&E's Topock *Groundwater and Surface Water Monitoring Report, First Quarter 2006* (CH2M HILL 2006a) for the prior and current sampling plan and frequencies for groundwater wells in the performance monitoring area.

Figure 2-2 presents the Cr(VI) results distribution for July 2006 in plan view for the groundwater wells monitoring the upper, middle, and lower depth intervals of the Alluvial Aquifer in the floodplain area. The Cr(VI) contour maps for July 2006 performance monitoring have been revised to incorporate data from recently installed IM monitoring wells (listed in Section 1.0) and the water quality data trends observed in the floodplain area. The revised Cr(VI) contour maps presented on Figure 2-2 do not reflect plume migration during performance monitoring, but rather provide additional interpretation of the inferred distribution of Cr(VI) within the three depth intervals of the Alluvial Aquifer. The aquifer depth intervals, well screens, and July 2006 Cr(VI) sampling results and

contours are also shown on Figure 2-2 in a vertical cross-section extending east-west across the floodplain. The California drinking water standard for Cr(T) is 50 µg/L.

Figure 2-3 presents the July 2006 Cr(VI) results for additional floodplain monitoring wells on a cross-section oriented parallel to the Colorado River (see Figure 2-1 for locations of the cross-sections). The hydrogeologic cross-sections presented on Figures 2-2 and 2-3 show the sampling results for the new floodplain monitoring wells at locations MW-44, MW-45, and MW-46.

Cr(VI) concentration trend graphs and hydrographs for key floodplain monitoring wells are presented on Figures B-1 (MW-33-90), B-2 (MW-34-100), and B-3 (MW-36-100) in Appendix B for ongoing IM performance evaluation. Table B-1 (Appendix B) presents the groundwater sampling results for Cr(VI), Cr(T), groundwater elevation, and selected field water quality parameters for monitoring wells in the floodplain area from February 2006 through July 2006. Table B-2 presents the groundwater sampling data for the other wells monitored in the PMP area from February 2006 through July 2006.

2.4 Hydraulic Gradient Results

During July 2006, water levels were recorded at intervals of 30 minutes with pressure transducers in 65 wells and two river monitoring stations (I-3 and RRB). The data loggers typically run continuously, with only short interruptions for sampling or maintenance. The data from the transducer at RRB could not be downloaded in July due to the high river levels that made this location inaccessible. It is anticipated that river levels will drop and allow July data to be downloaded during August. The location of the wells monitored are shown on Figure 2-1 and listed in Section 2.1.

The daily minimum, maximum, and average groundwater and river elevations have been calculated from the pressure transducer data for the July reporting period (July 1 to 31, 2006) and are summarized in Appendix C, Table C-1. Due to the significant variation in groundwater salinity at the site, the water level measurements need to be adjusted (density-corrected) to equivalent fresh-water hydraulic heads prior to calculating groundwater elevations and gradients (Fetter 1994). The methods and procedures used for adjusting the performance monitoring water level data for salinity and temperature differences are described in the Performance Monitoring Plan. Groundwater elevation hydrographs (for July 2006) for all wells with transducers are included in Appendix C. The Colorado River elevation (I-3 gage station) during July 2006 is also shown on the hydrographs.

The July 2006 hydraulic data and groundwater gradient maps for the upper, middle, and lower depth intervals are shown on Figures 2-4, 2-5, and 2-6, respectively. The groundwater elevations for all depth intervals of the Alluvial Aquifer indicate very strong landward hydraulic gradients throughout the floodplain. The landward gradients measured during July 2006 were similar to June 2006. This was the result of a continued high extraction rate for the IM system during the reporting period (average 133 gpm).

To the west of the TW-3D and PE-1 pumping area, the hydraulic gradient in the upper depth interval is easterly and consistent with the regional gradient outside of the floodplain area. The average groundwater elevations measured in the new IM monitoring wells during July 2006 are presented on the middle and lower depth interval gradient maps (Figures 2-5

and 2-6, respectively). The water levels from some of the new monitoring wells are not contoured on the deep gradient maps. Many of the new monitoring wells are significantly deeper than other wells in the lower aquifer zone. Due to vertical gradients present at the Topock site, water levels in deeper wells tend to be higher than water levels in shallower wells. Consequently, some of the new wells with screen intervals significantly deeper than existing wells exhibit water levels that do not contour well with nearby shallower lower zone wells. The average monthly groundwater elevations are also presented and contoured in cross-section on Figure 2-7 (location of cross-section shown on Figure 2-1). The groundwater elevation contours on the floodplain cross-section (Figure 2-7) show the effects of the combined pumping from the IM extraction wells TW-3D and PE-1.

Table 2-3 summarizes the estimated and actual Davis Dam releases and river elevations since April 2004. The actual Davis Dam July 2006 release (15,171 cubic feet per second [cfs]) was greater than the United States Bureau of Reclamation (USBR) projected release for the July reporting period (14,700 cfs). The projected Colorado River elevation at I-3 (monthly average) is calculated using a multiple regression method that considers both the Davis Dam release and the Lake Havasu level. Current USBR projections show that the average Davis Dam release for August 2006 (12,900 cfs) will be less than in July 2006 (14,700 cfs). Based on August 10, 2006 USBR projections, it is anticipated that the Colorado River level at the I-3 gage location in August 2006 will decrease (0.9 foot) compared to levels in July 2006.

Table 2-4 summarizes gradients measured between the three designated well pairs (MW-31-135/MW-33-150, MW-20-130/MW-34-80, and MW-20-130/MW-42-65) during July 2006. Pumping from extraction well PE-1 began on January 26, 2006. Since that time, the central well pair has been affected by PE-1 pumping. Pumping at well PE-1 would tend to lower the water level in well MW-34-80 and decrease the apparent gradient in the central well pair. Nevertheless, average gradients in the three well pairs were landward at magnitudes that were between two to greater than three times the target value of 0.001 feet per foot (0.0020, 0.0031, and 0.0035 respectively). These gradients were less than the average gradients for these well pairs measured in June 2006 due to decreasing river levels over the reporting period.

2.5 Status of Operation and Monitoring

Reporting of the IM extraction and monitoring activities will continue as described in the Performance Monitoring Plan. The next monitoring report for August 2006 will be submitted by September 15, 2006.

Per DTSC direction, PG&E will continue to operate both well TW-3D and well PE-1 at a target combined pumping rate of 135 gpm during August 2006, except for periods when planned and unplanned downtime occurs. Extracted groundwater treated at the IM No. 3 facility will be discharged into the IM No. 3 injection wells in accordance with Waste Discharge Requirements Order No. R7-2004-0103. Brine generated as a byproduct of the treatment process will continue to be transported offsite.

PG&E will balance the pumping rates between wells TW-3D and PE-1 to maintain the target pumping rate and maintain appropriate hydraulic gradients across the Alluvial Aquifer. If, at any time, hydraulic data indicate that PE-1 pumping has the potential to draw higher concentrations of chromium away from the capture zone of well TW-3D, PG&E will request

authorization from DTSC to increase the pumping rate at well TW-3D and decrease the rate at well PE-1. Well TW-2D will serve as a backup to extraction wells TW-3D and PE-1.

3.0 Quarterly Performance Evaluation for May through July 2006

3.1 Extraction System Operations

During second quarter IM operations May through July 2006, a total of 17,356,020 gallons of groundwater was extracted. The average extraction rate, including system downtime, for the IM system during the quarter was 131 gpm. A summary of quarterly average extraction rates and volumes by extraction well is provided in Table 2-1.

3.2 Cr(VI) Distribution and Trends in Floodplain Area

The distribution of Cr(VI) in the upper, middle, and lower depth intervals of the Alluvial Aquifer in the PMP area for July 2006 is shown in plan view and cross-section on Figure 2-2. The Cr(VI) concentrations and distribution for July 2006 are very similar to the June and May 2006 monitoring results and Cr(VI) contour maps presented in the prior monthly performance monitoring reports (CH2M HILL 2006b-c).

Figure 3-1 presents Cr(VI) concentration trend graphs for six selected deep monitoring wells in the floodplain area through July 2006 sampling. Sampling data since May 2005 are plotted for wells MW-34-100, MW-36-90, and MW-36-100. Graphs of the initial 5 months' of Cr(VI) data from the new monitoring wells at MW-44 and MW-46 wells are also presented. The locations of the deep wells selected for performance evaluation are shown on Figures 2-2 and 2-3.

The effects of PE-1 pumping are evident in the sampling data from wells MW-34-100, MW-36-90, and MW-36-100. Since the initiation of PE-1 pumping, the Cr(VI) concentration at MW-36-90 has decreased while concentrations have increased in the deeper well MW-36-100 (well screen adjacent to PE-1 well screen). The increasing concentrations observed at MW-36-100 are consistent with the movement of groundwater toward PE-1 from areas on the landward side of MW-36. The concentration trend since for MW-34-100 has shown first declining concentrations and then generally increasing concentrations since PE-1 pumping commenced. During the past year of sampling, MW-34-100 has been the only well within the capture zone of the IM pumping that has shown a long-term increasing trend in concentration. It is important to note that landward gradients have been present at this location throughout this time and therefore the increasing trend in MW-34-100 does not indicate any movement of the plume toward the river.

New monitoring wells at MW-44 and MW-46 are located within the Cr(VI) plume (approximately 190 feet and 400 feet, respectively, north of PE-1). The recent sampling data from these wells appear to show stable to gradually declining concentrations. The MW-44 and MW-46 well clusters are well within hydraulic capture of the current IM pumping.

Hexavalent chromium concentration trend graphs and hydrographs for all floodplain monitoring wells with consistent Cr(VI) concentrations above the analytical reporting limit are presented in Appendix B, Figures B-1 through B-14. In addition to the wells presented on Figure 3-1 and previously discussed, declining Cr(VI) concentrations over the past six months are observed at the four deep wells at the MW-39 cluster (Appendix B, Figures B-8, B-9, B-10, B-11), reflecting the pumping influence from TW-3D.

3.3 Other Water Quality Data for Floodplain Wells

Common water quality parameters (temperature, pH, oxidation-reduction potential, dissolved oxygen, and specific conductance) were measured in the field during well purging and groundwater sampling, as outlined in *Sampling and Analysis Field Procedures Manual, PG&E Topock Program* (CH2M HILL 2005b). The field water quality data measured from February 2006 through July 2006 are presented in Tables B-1 and B-2 (Appendix B). Due to the density differences in groundwater caused by salinity variations, the groundwater elevations measured in the wells have been adjusted, or normalized, to a freshwater equivalent.

Table D-1 (Appendix D) presents the results of the general chemistry and stable isotope analyses for fourteen PMP monitoring wells and two river stations during sampling events from March 2004 through July 2006. Figure 2-1 shows the locations of the monitoring wells sampled for the performance monitoring parameters. Wells were sampled for specific chemical parameters in order to monitor the effects of IM pumping on groundwater chemistry in the floodplain area. Water samples were analyzed for TDS, chloride, sulfate, nitrate, bromide, calcium, potassium, magnesium, sodium, boron, alkalinity, deuterium, and oxygen-18.

While groundwater concentrations for most parameters have remained consistent and stable in the majority of these wells, the 2004-2006 monitoring data indicate some measurable changes in water quality have occurred in some wells affected by IM extraction. Concentrations of TDS, chloride, potassium, and other general chemistry parameters have decreased in the wells MW-32-20 and MW-34-55 over the monitoring period (Table D-1). These trends are likely the result of the continued landward and downward hydraulic gradients induced by IM pumping (pulling shallower, less-saline groundwater landward and downward). Chemical performance monitoring data at shallow floodplain wells in the MW-20 cluster and MW-32-35 show overall pronounced increasing concentrations of these same parameters, reflecting an influx of more saline groundwater at these locations over the monitoring period. Little change in general chemistry concentrations is observed in shallow interior well MW-26. Further assessment of the general chemistry data for monitoring wells in the PMP area will be presented in future quarterly and annual IM performance evaluation reports.

3.4 Hydraulic Gradients and River Levels during Quarterly Period

Average monthly groundwater and river elevations, contour maps of groundwater elevations, and hydraulic gradients between key monitoring wells are reported in each of the monthly performance monitoring reports. The groundwater contour maps for the upper, middle, and lower depth intervals for May, June, and July 2006 are included in this report as follows:

- July 2006: Figures 2-4 through 2-6 presented in this report
- June 2006: Appendix C, Figures C-2A through C-2C
- May 2006: Appendix C, Figures C-2D through C-2F

A review of the groundwater elevation contours on these figures shows that all floodplain monitoring wells where Cr(VI) was detected at greater than 20 µg/L are within the capture zone of the IM extraction system during each month of this reporting period, May through July 2006. That is, the inferred groundwater flow lines from the floodplain monitoring wells where Cr(VI) is detected greater then 20 µg/L are oriented towards the TW-3D and PE-1 extraction wells.

Average quarterly groundwater elevations (May through July 2006, inclusive) for the deep wells are presented and contoured in plan view on Figure 3-2. The average quarterly groundwater elevations are also presented and contoured in floodplain cross-section A (Figure 3-3). The floodplain cross-section also shows where the current IM pumping in the deep interval of the Alluvial Aquifer is occurring at TW-3D and PE-1. The landward hydraulic gradients for the deep monitoring wells presented on Figures 3-2 and 3-3 are consistent with the strong landward gradients observed in groundwater elevation maps and cross-sections for the deep interval submitted in the prior 2006 monthly performance monitoring reports.

With the initiation of pumping from PE-1 (late January 2006) and new IM monitoring well installations (February through April 2006), new gradient well pairs will be defined by DTSC to account for the more complex gradient caused by pumping at both TW-3D and PE-1. It is anticipated that the new gradient control well pairs will be confirmed in the upcoming months. As a result, the hydraulic gradients reported for the second quarter, May-July 2006 evaluation period use the original gradient wells pairs defined for the single MW-20 bench pumping center:

- MW-31-135 and MW-33-150 (northern gradient pair)
- MW-20-130 and MW-34-80 (central gradient pair)
- MW-20-130 and MW-42-65 (southern gradient pair)

The average hydraulic gradients between key gradient well pairs in May, June, and July 2006 are summarized in Table 3-1. The mean landward hydraulic gradients were generally between two and four times greater than the target gradient of 0.001 feet/foot for all gradient pairs during each month during the second quarter 2006 reporting period. Measured gradients in the central well pair are now affected by PE-1 pumping, and thus underestimating the true gradient present.

Figure 3-4 presents a graphical display of the measured hydraulic gradients and pumping rates and river levels throughout the quarterly reporting period. River levels were high during May-July 2006, and IM pumping rates were maintained at the IM system target goal of 135 gpm. Strong landward gradients were measured for each of the well pairs during second quarter 2006 performance monitoring.

3.5 Projected River Levels during the Next Quarter

Colorado River stage near the Topock Compressor Station is measured at the I-3 location and is directly influenced by releases from Davis Dam and, to a lesser degree, from Lake Havasu elevations, both of which are controlled by the USBR. Total releases from Davis Dam follow a predictable annual cycle, with largest monthly releases typically in spring and early summer and smallest monthly releases in winter (December and January). Superimposed on this annual cycle is a diurnal cycle determined primarily by daily fluctuations in electric power demand. Releases within a given 24-hour period often fluctuate over a wider range of flows than that of monthly average flows over an entire year.

The corresponding river stage at the I-3 station fluctuates in a similar pattern. The monthly average stage at I-3 typically peaks in the early summer and reaches its low point in the winter. Following Davis Dam releases, river stage also fluctuates on a diurnal cycle, though greatly attenuated. The magnitude of the daily river stage fluctuations at I-3 is less than the magnitude of the monthly average river stage fluctuations over a typical year.

Figure 3-5 shows river stage measured at I-3 superimposed on the projected I-3 river levels based on actual Davis Dam discharge and Lake Havasu levels. This graph shows that the formula used to calculate I-3 levels provides a very good estimate of the actual levels at I-3 over a wide range of river levels. The future projections shown on this graph are based on USBR long-range projections of Davis Dam release and Lake Havasu level. Current projections show that the highest river levels of the year will occur in April and May 2007 and that the lowest water levels will occur November through December 2006. Because water demand is based on climatic factors, there is more uncertainty in these projections at longer times in the future.

4.0 Conclusions

The groundwater elevation and hydraulic gradient data for May, June, and July 2006 performance monitoring indicate that the minimum landward gradient target (0.001 feet/foot) was exceeded throughout the quarterly reporting period. As summarized in Table 3-1, the landward strongest gradients during May, June, and July 2006 were greater than four times the required minimum magnitude in well pairs. The IM pumping was sufficient to meet the minimum gradient targets during each of the three months of the second quarter 2006.

The existing gradient well pairs were designed to measure the landward gradients associated with pumping from extraction well TW-3D. The existing north and south gradient control well pairs slightly underestimate the true landward gradients because they are slightly misaligned with the direction of the gradient. The central well pair greatly underestimates the gradient due to the influence of pumping from PE-1 on water levels in MW-34-100. With the initiation of pumping from PE-1 (late January 2006) and new IM monitoring well installations (February and April 2006) the gradient control well pairs are being re-evaluated. Pending direction by DTSC, the results for new gradient well pairs will be reported in future IM performance monitoring reports.

A total of 17,356,020 gallons of groundwater was extracted and treated from the IM system during the second quarter May through July 2006 reporting period. The average pumping rate, including system downtime, for the IM extraction system during the quarterly period was 131 gpm.

Overall, the Cr(VI) concentrations in the floodplain are stable or decreasing. For the current quarter, Cr(VI) concentrations at wells MW-36-90, MW-36-100, the MW-39 cluster, the MW-44 cluster, and MW-46-175 were stable to declining relative to the previous quarter. Concentrations of Cr(VI) have increased slightly at MW-36-100 since the onset of PE-1 pumping but have stabilized in the second quarter. Although strong landward gradients are present at MW-34, concentrations in MW-34-100 have been trending upward for the past year, with the exception of a few shorter-term declines. It is anticipated that, with continued pumping from TW-3D and PE-1, Cr(VI) concentrations in well MW-34-100 will ultimately show the same overall declining trends observed in the MW-39 and MW-36 well clusters.

The recent (May-July) Cr(VI) concentrations observed at new wells MW-44-115, MW-44-125, and MW-46-175 appear to be decreasing. Under current IM pumping, strong landward gradients are present in the lower depth interval at the MW-44 and MW-46 locations.

Based on the hydraulic and chemical performance monitoring data and evaluation presented in this report, the IM performance standard has been met for the second quarter, May - July 2006 reporting period. Performance monitoring of the IM hydraulic containment system will continue in accordance with the Performance Monitoring Plan and as directed by the DTSC.

5.0 References

California Department of Toxic Substances Control (DTSC). 2005. Letter. "Criteria for Evaluating Interim Measures Performance Requirements to Hydraulically Contain Chromium Plume in Floodplain Area, Pacific Gas & Electric Company, Topock Compressor Station" February 14.

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Tables

TABLE 2-1
Pumping Rate and Extracted Volume for IM System through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Extraction Well	July 2006 Period[a]		Quarterly Period[b]		Project To Date[c]
	Average Pumping Rate[d] (gpm)	Volume Pumped (gal)	Average Pumping Rate[d] (gpm)	Volume Pumped (gal)	Cumulative Volume Pumped (gal)
TW-2S	0	0	0	0	994,438
TW-2D	0	0	0	0	52,875,356
TW-3D	97.8	4,366,058	96.7	12,806,519	30,531,178
PE-1	35.2	1,573,154	34.3	4,549,501	9,367,112
Total	133.0	5,939,212	131.0	17,356,020	93,768,084
				Volume Pumped from the MW-20 Well Cluster	1,527,724
				Total Volume Pumped (gal)	95,295,808
				Total Volume Pumped (ac-ft)	292.5

gpm: gallons per minute.
gal: gallons.
ac-ft: acre-feet.

[a] Pumping results during the monthly period are based on readings collected between July 1, 2006 at 12:00 a.m. and July 31, 2006 at 11:59 p.m. (31 days).
[b] Pumping results during the quarterly period are based on readings collected between May 1, 2006 at 12:00 a.m. and July 31, 2006 at 11:59 p.m. (92 days).
[c] Interim Measure groundwater extraction at the Topock site was initiated in March 2004.
[d] The "Average Pumping Rate" is the overall average during the reporting period, including system downtime based on flow meter readings.

TABLE 2-2
Analytical Results for Extraction Wells, February through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well ID	Sample Date	Dissolved Total Chromium mg/L	Hexavalent Chromium mg/L	Total Dissolved Solids mg/L
TW-3D	08-Feb-06	2.88	3.25	5490
TW-3D	08-Mar-06	3.21	3.04	5380
TW-3D	06-Apr-06	2.71	2.95	5740
TW-3D	11-May-06	2.69	2.74	5720
TW-3D	15-Jun-06	2.45	2.61	5510
TW-3D	12-Jul-06	2.44	2.59	5510
PE-1	08-Feb-06	0.136	0.136	7380
PE-1	08-Mar-06	0.125	0.136	6830
PE-1	06-Apr-06	0.117	0.133	6680
PE-1	11-May-06	0.109	0.118	7000
PE-1	15-Jun-06	0.0873	0.101	6050
PE-1	12-Jul-06	0.0724	0.0959	6160

NOTES:
mg/L = concentration in milligrams per liter (mg/L)
J = concentration or reporting limit estimated by laboratory or data validation.
(---) = data not collected.

Analytical results from inactive extraction wells are presented in Table B-2.

TABLE 2-3

Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3

Interim Measures Performance Monitoring

PG&E Topock Compressor Station

Month	Davis Dam Release			Colorado River Elevation at I-3		
	Projected (cfs)	Actual (cfs)	Difference (cfs)	Predicted (ft AMSL)	Actual (ft AMSL)	Difference (feet)
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	4,820	-3,180	453.1	452.6	-0.5
March 2005	15,600	7,110	-8,490	455.8	452.9	-2.9
April 2005	16,700	16,306	-394	455.9	456.0	0.1
May 2005	16,700	15,579	-1,121	456.2	456.1	-0.1
June 2005	14,600	15,223	623	455.8	456.1	0.3
July 2005	15,400	15,612	212	456.0	456.0	0.0
August 2005	11,700	11,544	-156	454.6	454.8	0.2
September 2005	12,400	12,335	-65	454.6	NA	NA
October 2005	12,300	11,201	-1,099	454.5	454.3	-0.2
November 2005	10,900	10,216	-684	454.3	454.3	0
December 2005	6,900	6,745	-155	452.8	452.7	-0.1
January 2006	8,400	9,166	766	453.2	453.6	0.4
February 2006	11,100	10,790	-310	454.1	454.1	0.1
March 2006	13,000	12,429	-571	454.7	454.8	0.2
April 2006	16,600	18,300	1700	456.0	456.1	0.0
May 2006	15,500	16,818	1318	456.0	456.3	0.3
June 2006	16,100	17,547	1447	456.2	456.4	0.2
July 2006	14,700	15,171	-471	455.7	455.8	0.1
August 2006	12,900	----	----	454.9	----	----

NOTES:

NA = I-3 transducer data unavailable for month of September 2005 due to damage by debris.

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 2004 through July 2004 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

TABLE 2-4

Average Hydraulic Gradients Measured at Well Pairs, July 2006

Interim Measures Performance Monitoring

PG&E Topock Compressor Station

Well Pair[1]	Mean Landward Hydraulic Gradient[2] (feet/foot)	Measurement Dates 2006
Northern Gradient Pair		
MW-31-135 / MW-33-150	0.0020	July 1-24
Central Gradient Pair		
MW-20-130 / MW-34-80	0.0031	July 1-31
Southern Gradient Pair		
MW-20-130 / MW-42-65	0.0035	July 1-31

NOTES:

1. Refer to Figure 2-1 for location of well pairs
2. For IM pumping, the target landward gradient for the selected well pairs is 0.001 feet/foot

TABLE 3-1

Average Hydraulic Gradients Measured at Well Pairs, May through July 2006

Interim Measures Performance Monitoring

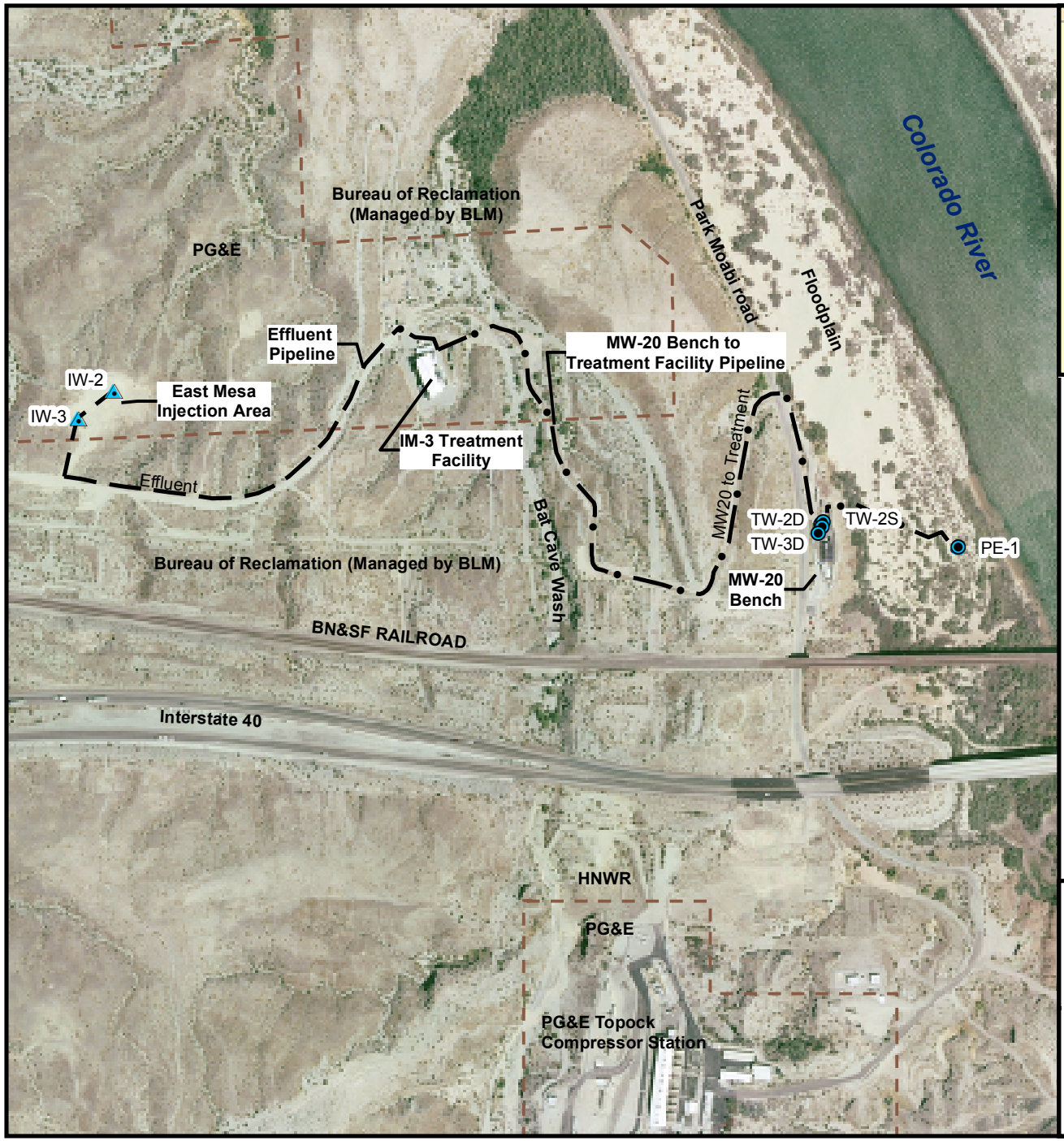
PG&E Topock Compressor Station

Well Pair[1]	Reporting Period	Mean Landward Hydraulic Gradient[2] (feet/foot)	Measurement Interval 2006
Northern Gradient Pair			
MW-31-135 / MW-33-150	May	0.0023	May 1-31
	June	0.0023	June 1-28
	July	0.0020	July 1-24
Central Gradient Pair			
MW-20-130 / MW-34-80	May	0.0039	May 1-31
	June	0.0037	June 1-28
	July	0.0031	July 1-31
Southern Gradient Pair			
MW-20-130 / MW-42-65	May	0.0042	May 1-31
	June	0.0040	June 1-28
	July	0.0035	July 1-31

Notes:

1. Refer to Figure 2-1 for location of well pairs
2. For IM pumping, the target landward gradient for the selected well pairs is 0.001 feet/foot

Figures



N

0 550 1,100 Feet

1 inch equals 550 feet

LEGEND

- PG&E Property Line
- Existing IM Extraction Well
- Existing IM Injection Well
- Treatment Facility Pipeline

Notes: Location map shows Interim Measures No.3 (IM-3) facilities as of of January 2006. Aerial photography taken May 2005.

FIGURE 1-1
LOCATIONS OF IM NO. 3 GROUNDWATER EXTRACTION, CONVEYANCE, AND TREATMENT FACILITIES

INTERIM MEASURES 2006 WELL
DRILLING INVESTIGATION REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

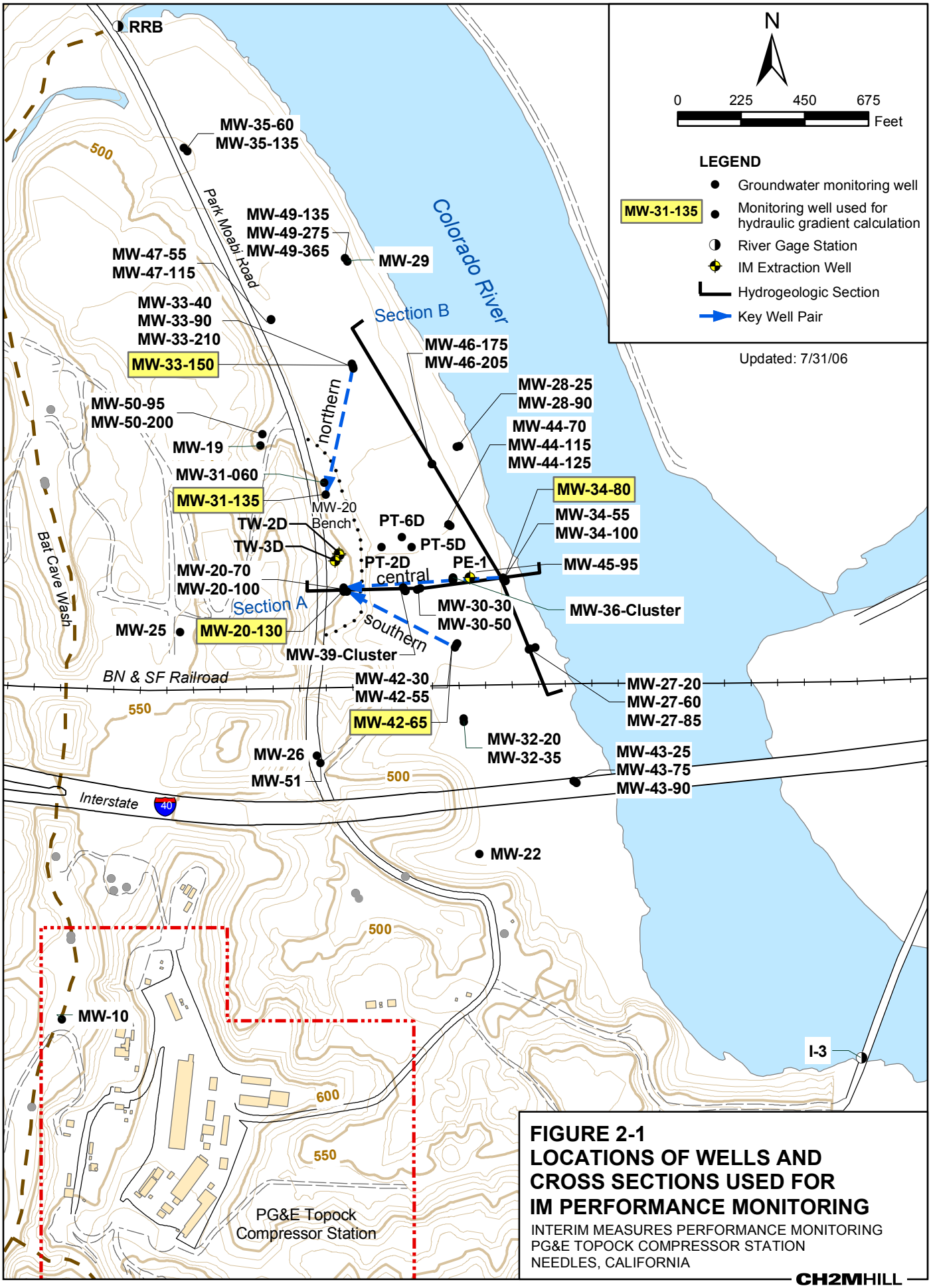


FIGURE 2-1
LOCATIONS OF WELLS AND CROSS SECTIONS USED FOR IM PERFORMANCE MONITORING
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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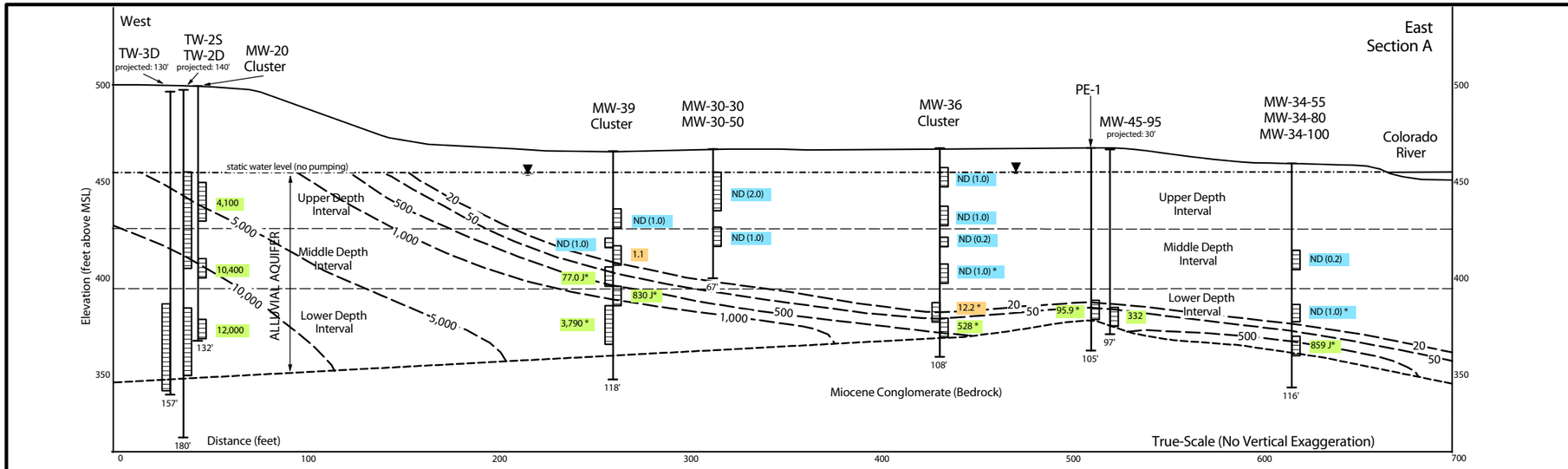
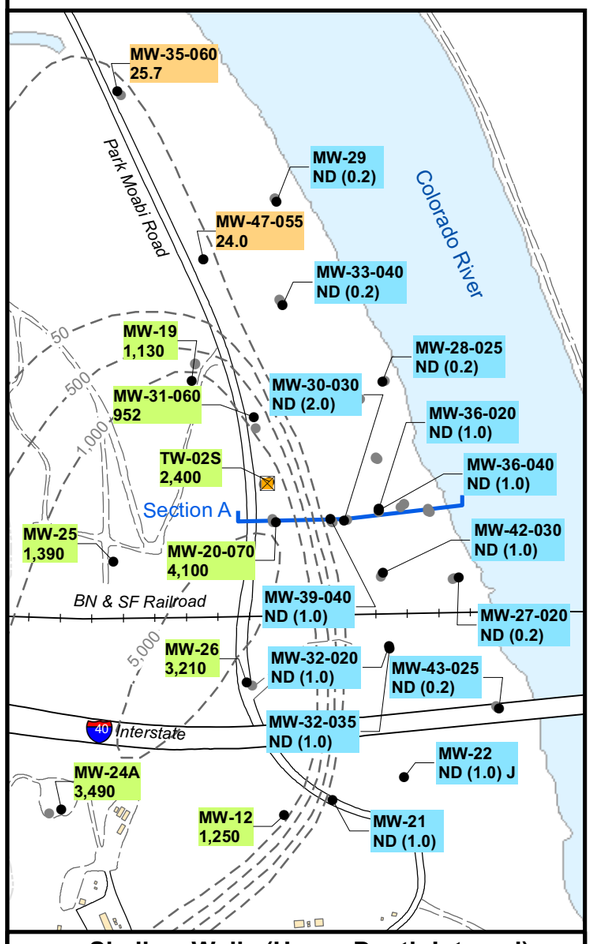
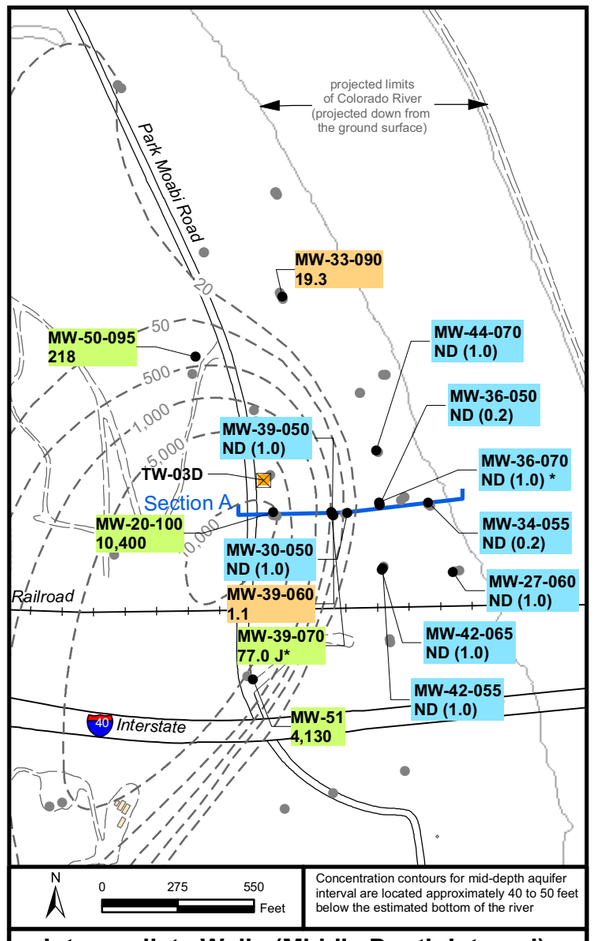
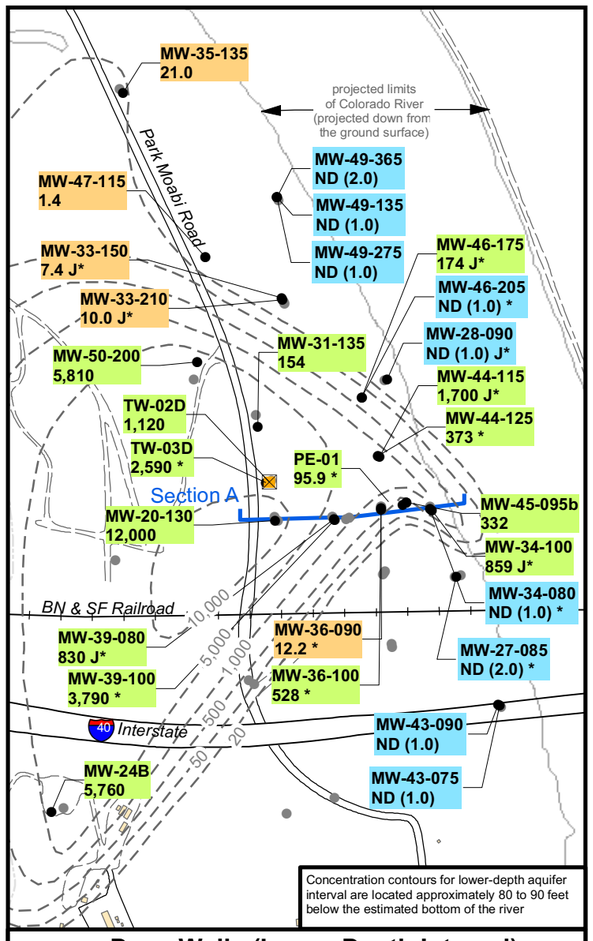




Shallow Wells (Upper Depth Interval)



Intermediate Wells (Middle Depth Interval)



Deep Wells (Lower Depth Interval)

LEGEND

Maximum Hexavalent Chromium [Cr(VI)] Concentrations in Groundwater, July 2006 Monitoring

Concentrations in micrograms per liter (µg/L)
equivalent to parts per billon (ppb)

ND = not detected at listed reporting limit
J = Concentration estimated by laboratory or data validation

Results marked * from July, 2006 sampling. All other data is from March, May or June 2006 sampling events. Results posted are maximum concentrations from primary and duplicate samples from March-July 2006.
See Tables B-1 and B-2 for sampling data and other results.

ND (1)	Not detected at listed reporting limit (ppb)
41	Less than 50 ppb
3,810	Greater than 50 ppb
50	Inferred Cr(VI) concentration contour
	Hydrogeologic Section A (true-scale) showing aquifer depth intervals, well screens, and Cr(VI) sampling results.

NOTES ON CONTOUR MAPS

1. The Cr(VI) contour maps for 2006 performance monitoring have been revised to incorporate data from new wells and water quality data trends for floodplain area. The revised maps provide additional interpretation of plume limits and do not reflect plume migration during performance monitoring.

2. The locations of the Cr(VI) contours shown for depths 80-90 feet below the Colorardo River (east and southeast of well clusters MW-34) are estimated based on hydrogeologic and geochemical conditions documented in site investigations 2004-2006. The actual locations of contours beyond well control points in these areas are not certain, but are inferred using available site investigation and monitoring data (bedrock structure, hydraulic gradients, observed distribution of geochemically reducing conditions and Cr(VI) concentration gradients). There is no data confirming the existence of Cr(VI) under the Colorado River.

FIGURE 2-2
MAXIMUM CR(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER, JULY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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North

South
Section B

Cross-Section Parallel to the Colorado River

BN & SF
Railroad

MW-33-40
MW-33-90
MW-33-150
MW-33-210

MW-46-175
MW-46-205

MW-28-25
MW-28-90
projected: 110'

MW-44-70
MW-44-115
MW-44-125

MW-34-55
MW-34-80
MW-34-100

MW-27-20
MW-27-60
MW-27-85

Elevation (feet above MSL)

700
600
500
400
300
200
100
0

water table (average 454' MSL)

Upper Depth Interval
Middle Depth Interval
Lower Depth Interval

ALLUVIAL AQUIFER

Oldest Alluvium

Fluvial Deposits

ND (0.2)
19.3
7.4 J*
10.0 J*
237'

ND (0.2)
ND (1.0) J*
174 J*
148'
ND (1.0) *
216'

ND (1.0)
1,700 J*
373 *
134'

ND (0.2)
ND (1.0) *
859 J*
116'

ND (0.2)
ND (1.0)
ND (2.0) *
107'

Approximate geologic contact
between alluvial fan
and fluvial deposits

20
50
500
1,000

Miocene Conglomerate (Bedrock)

True-Scale (No Vertical Exaggeration)

-100 0 100 200 300 400 500 600 700 800 900 1,000 1,100 1,200 1,300 1,400
Distance (feet)

Notes:
Cross section updated March 2006
with MW-44 and MW-46 drilling data.

Results posted are maximum concentrations from primary
and duplicate samples from May-July 2006.
Results marked * are from July 2006 sampling.
See Tables B-1 and B-2 for sampling data and other results.

J = Concentration estimated by laboratory or data validation

water level
well screen
3,810
boring depth (feet)
103'

50
Inferred Hexavalent Chromium
concentration contour

Hexavalent Chromium concentration
in micrograms per liter (ug/L)
equivalent to parts per billion (ppb)

ND (1)	Not detected at listed reporting limit (ppb)
42	Less than 50 ppb
3,810	Greater than 50 ppb

FIGURE 2-3
CR(VI) CONCENTRATIONS
FLOODPLAIN CROSS-SECTION B
JULY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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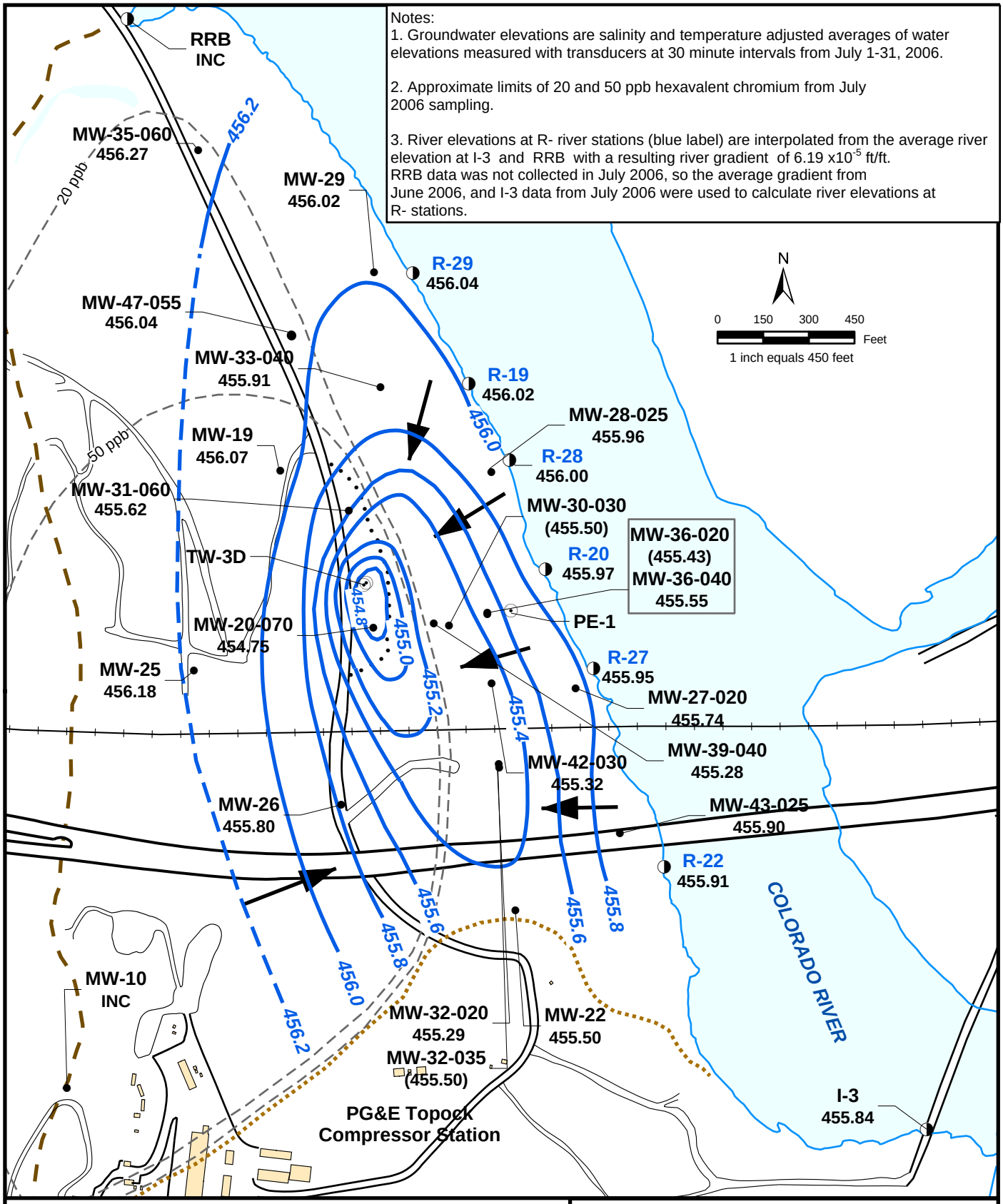

FIGURE 2-4
AVERAGE GROUNDWATER ELEVATIONS SHALLOW WELLS AND RIVER, JULY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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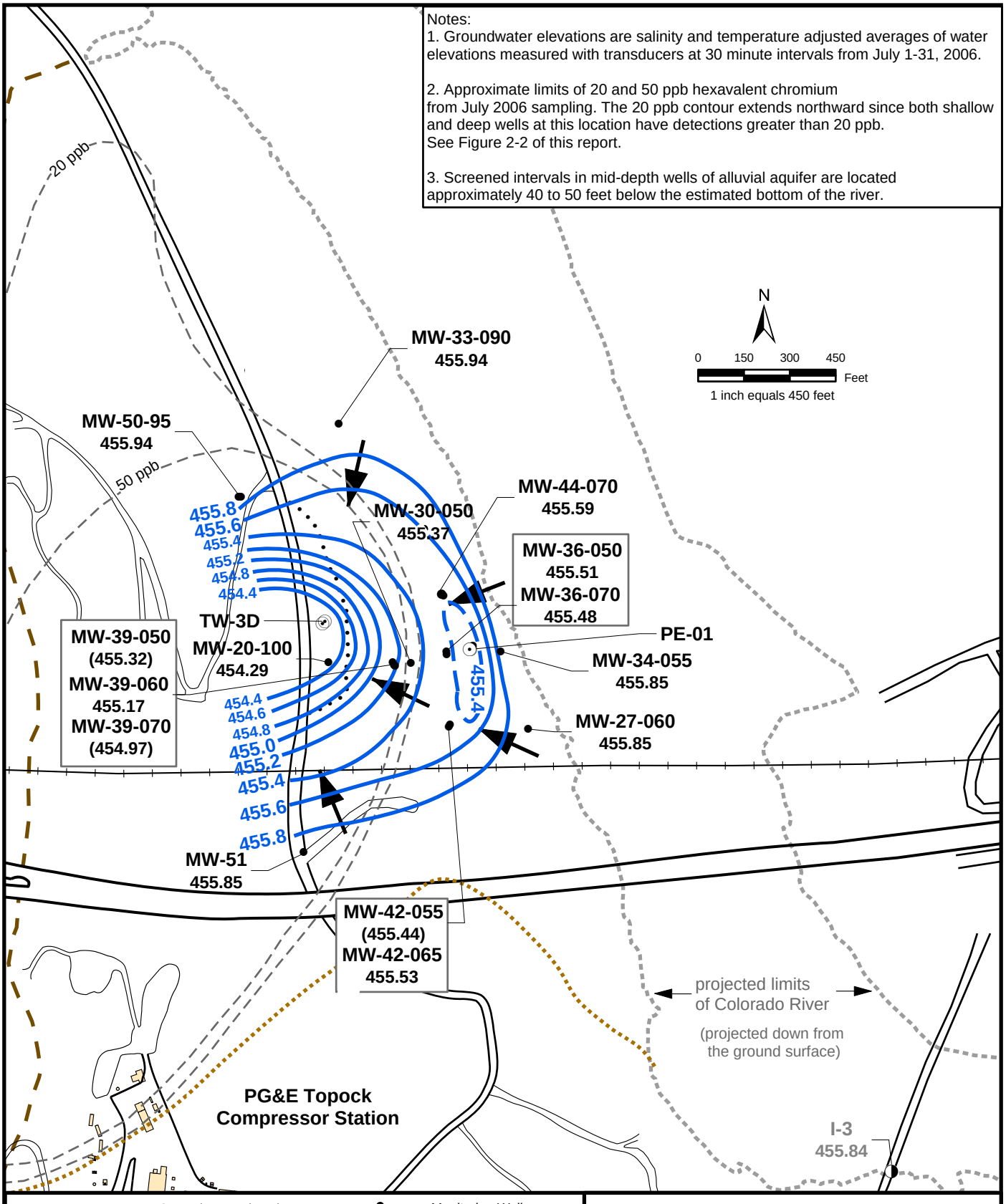

FIGURE 2-5
AVERAGE GROUNDWATER ELEVATIONS MID-DEPTH WELLS JULY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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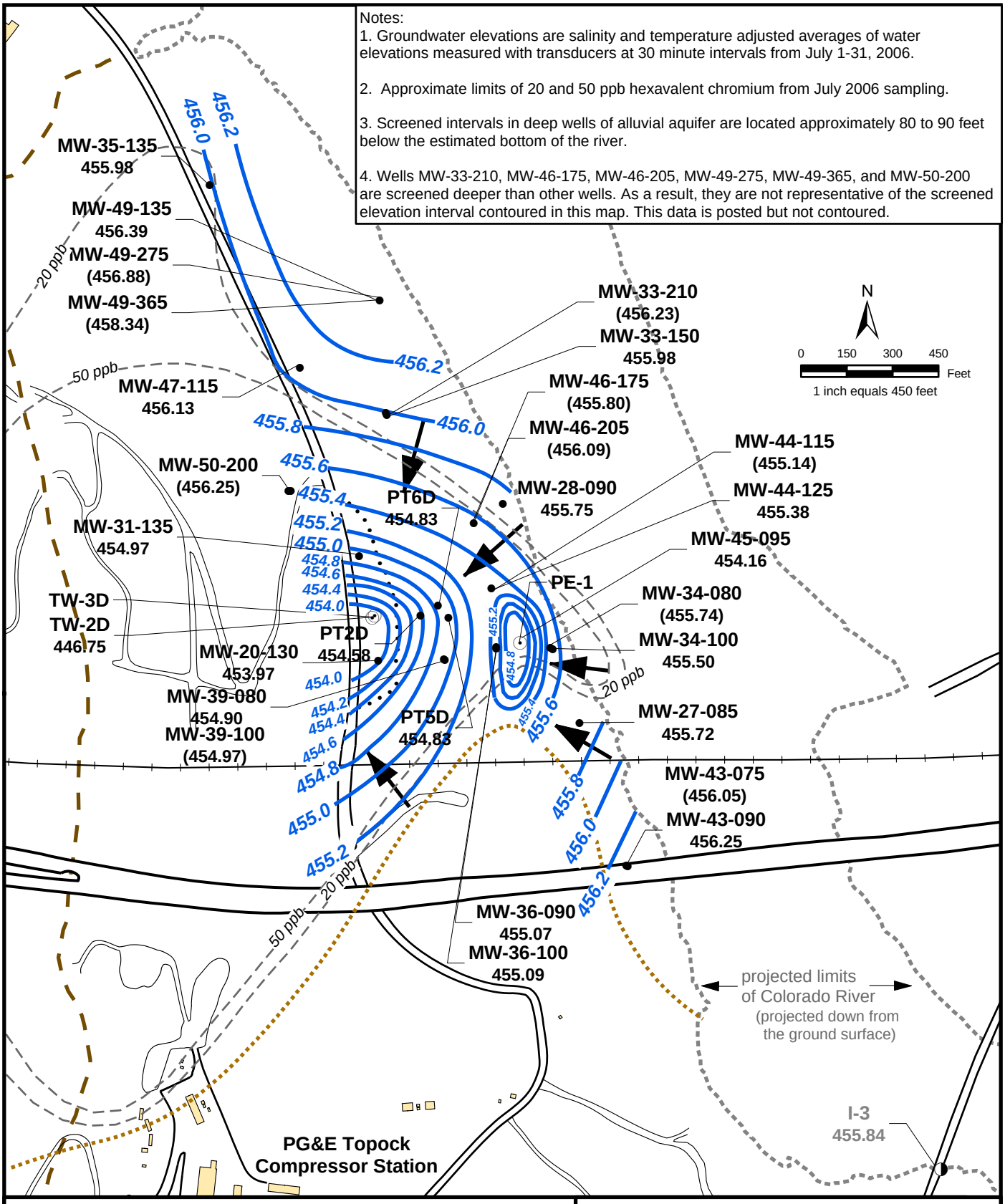

FIGURE 2-6
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS JULY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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West

East
Section A

TW-2S
TW-2D*
projected: 140'

TW-3D
projected: 130'

MW-20-70
MW-20-100
MW-20-130

MW-39-40
MW-39-50
MW-39-60
MW-39-70
MW-39-80
MW-39-100

MW-30-30*
MW-30-50

MW-36-20
MW-36-40
MW-36-50
MW-36-70
MW-36-90*
MW-36-100

PE-1

MW-45-95
projected:30'

MW-34-55
MW-34-80
MW-34-100

Colorado River

Elevation (feet above MSL)

550
500
450
400
350
300
250

454.75
454.29
453.97
132'
446.75
157'
180'

454.6
454.4
454.2
454.0

454.8
455.2
455.0
455.4

455.28
455.32
455.17
454.94
454.90
454.97
118'

455.50
455.37
67'

20
50

Groundwater Divide

455.43
455.55
455.51
455.48
455.07
455.09
108'

455.2
455.0
454.8
454.6
454.4

455.6
455.8
455.4
455.2

454.16
97'
105'

455.85
455.74
455.50
116'

455.97

Miocene Conglomerate (Bedrock)

True-Scale (No Vertical Exaggeration)

0 Distance (feet) 100 200 300 400 500 600 700

Notes:
Results show average groundwater elevations for July 1-31, 2006 measured with transducers at 30 minute intervals.
Groundwater elevations adjusted for salinity and temperature.

Wells TW-2D*, MW-30-30*, and MW-36-90* excluded from contouring.

PE-1 pumping began on 1/26/06.
River elevation (R-20) is the calculated average river level based upon the river gradient between RRB and I-3.
Data subject to review.

Legend:

MW-30-50
Inferred water table
well screen
453.66
103 boring depth (feet)

20
Inferred hexavalent chromium contour (ppb) July, 2006

Monthly average groundwater head (ft MSL)

453.5
Groundwater head contour

453.5
Inferred groundwater head contour

Interpreted groundwater flow direction

FIGURE 2-7
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS ON FLOODPLAIN CROSS-SECTION A JULY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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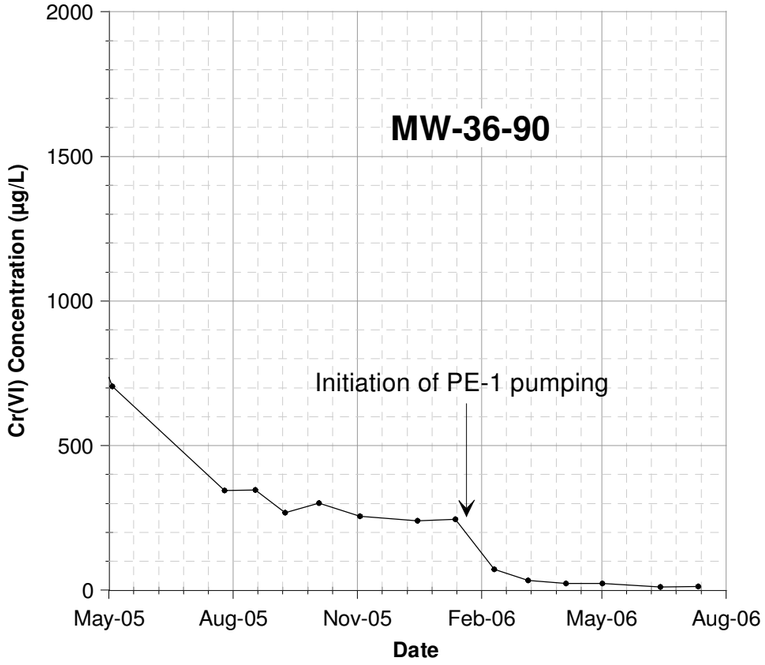

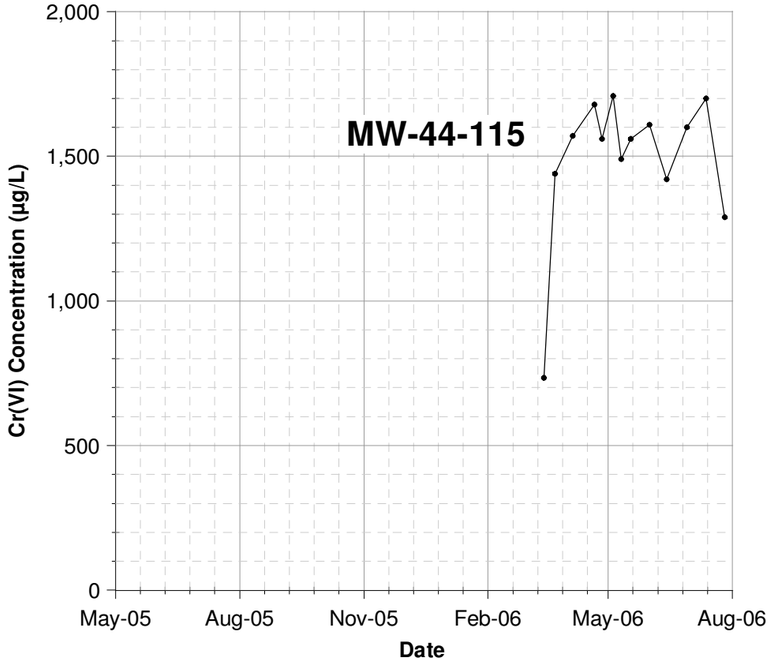

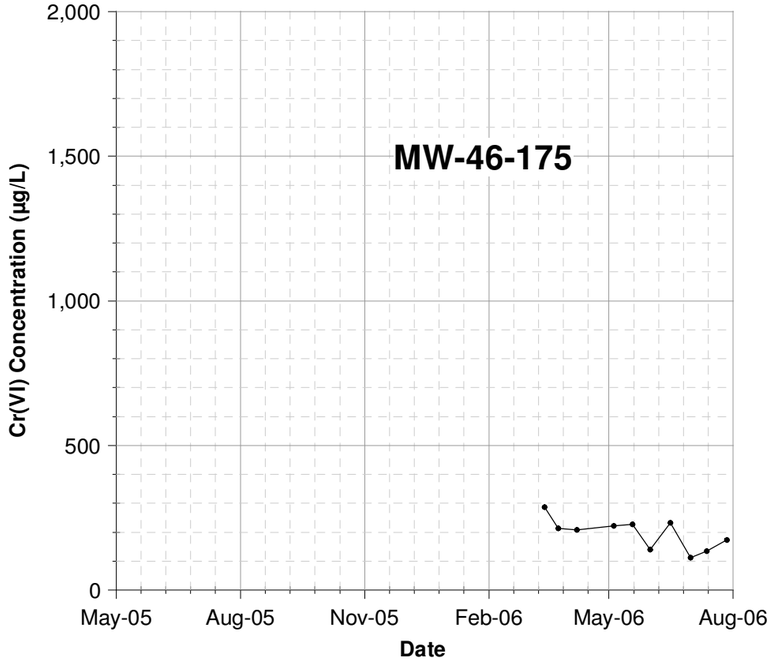

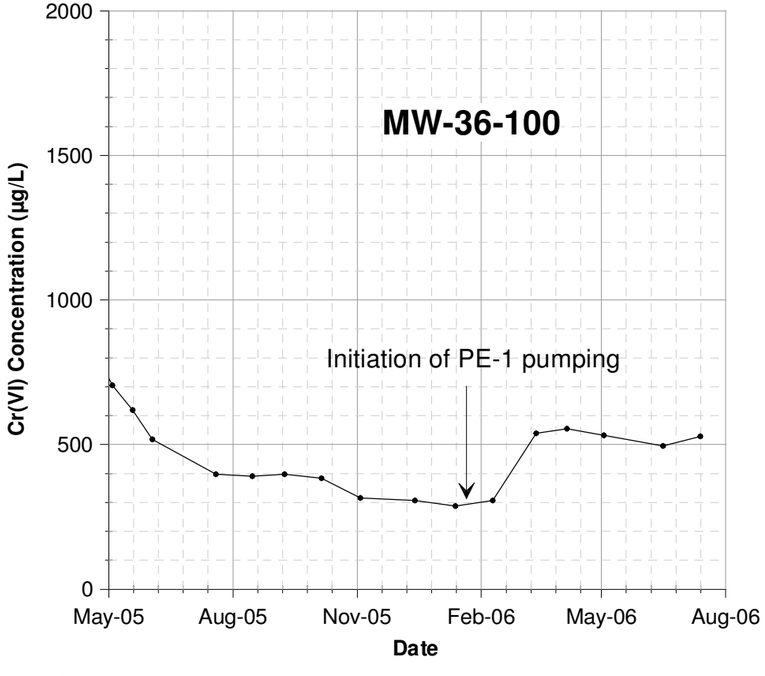

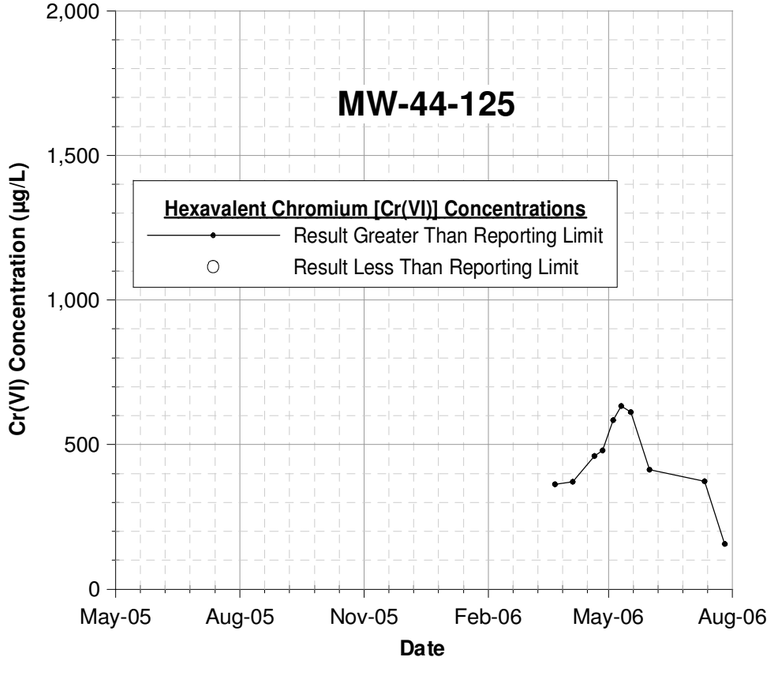

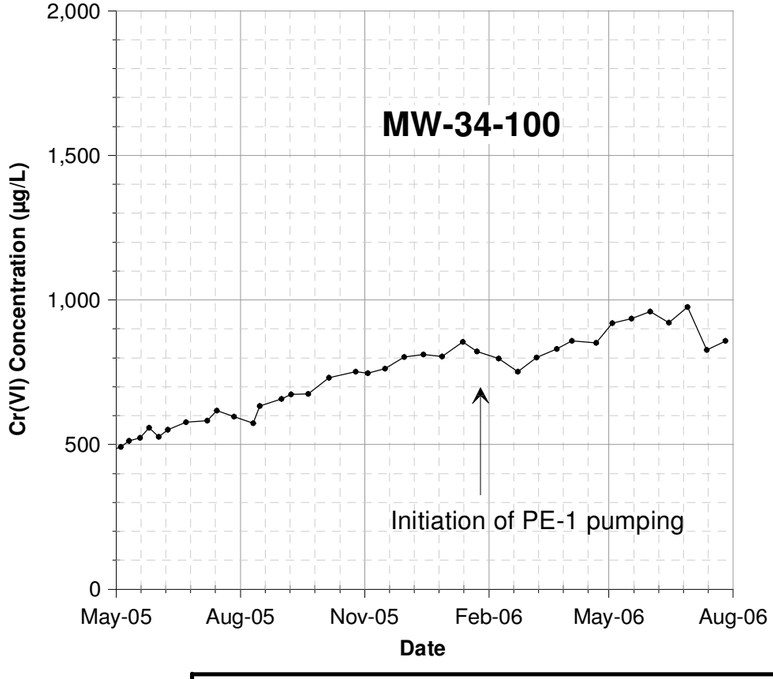

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples through July 27, 2006; see Table B-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping on plume west of PE-1.
MW-44 wells, MW-46-175, and MW-34-100 selected to monitor concentrations within the plume.
4. Data subject to review.
5. For MW-44-125: Non-detect results from the 6/28/06 sampling event are not shown
while these data undergo a more rigorous field QC evaluation.

FIGURE 3-1
CHROMIUM CONCENTRATION TRENDS IN SELECT PERFORMANCE MONITORING WELLS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA
CH2MHILL

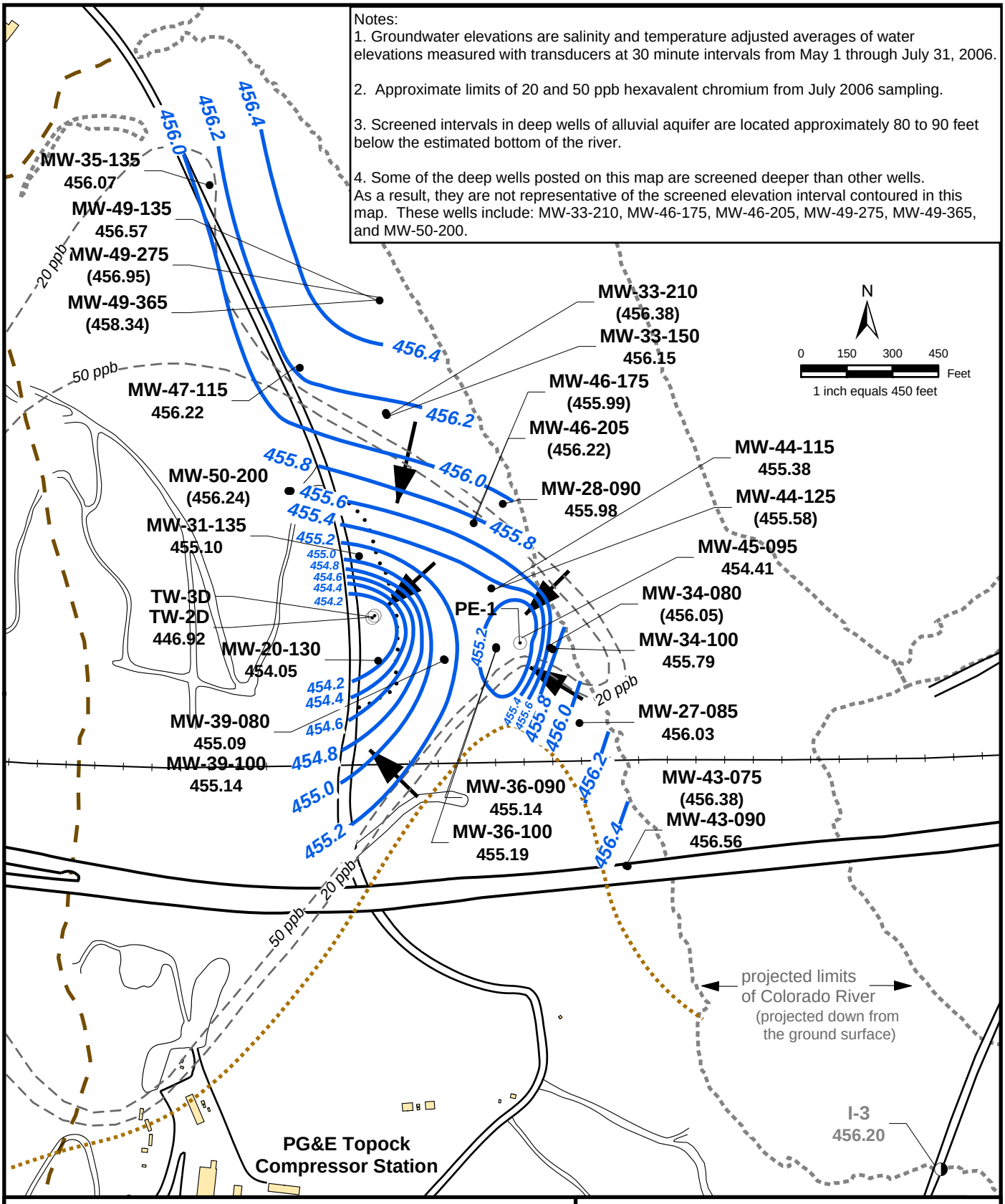

FIGURE 3-2
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS MAY THROUGH JULY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\2006\GW\IM_Average_groundwater_LA_May-June-July_06.mxd

West

East

Section A

TW-2S
TW-2D
projected: 140'

TW-3D
projected: 130'

MW-20-70
MW-20-100
MW-20-130

MW-39-40
MW-39-50
MW-39-60
MW-39-70
MW-39-80
MW-39-100

MW-30-30*
MW-30-50

MW-36-20
MW-36-40
MW-36-50
MW-36-70
MW-36-90*
MW-36-100

PE-1

MW-45-95
projected:30'

MW-34-55
MW-34-80
MW-34-100

Colorado River
456.24

Elevation (feet above MSL)

550
500
450
400
350
300
250

454.75
454.34
454.05
454.6
454.4
454.2
454.0
132'
157'
180'

455.49
455.53
455.41
455.06
455.09
455.14
118'

455.58
455.60
67'

455.67
455.81
455.76
455.75
455.14
455.19
108'

454.16
97'
105'

456.10
455.74
455.50
116'

454.8
455.0
455.4
455.2
455.6
455.8
456.0
456.2
20
50

Groundwater Divide

Miocene Conglomerate (Bedrock)

True-Scale (No Vertical Exaggeration)

0 Distance (feet) 100 200 300 400 500 600 700

Notes:
Results show average groundwater elevations for May through July, 2006 measured with transducers at 30 minute intervals.
Groundwater elevations adjusted for salinity and temperature.

Wells MW-30-30 and MW-36-90* excluded from contouring.

PE-1 pumping began on 1/26/06.
River elevation (R-20) is the calculated average river level based upon the river gradient between RRB and I-3.
Data subject to review.

Legend:

MW-30-50
Inferred water table
well screen
453.66
103 boring depth (feet)

20 Inferred hexavalent chromium contour (ppb) July 2006

Annual average groundwater head (ft MSL)

453.5 Groundwater head contour

453.5 Inferred groundwater head contour

Interpreted groundwater flow direction

FIGURE 3-3
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS ON FLOODPLAIN CROSS-SECTION A MAY THROUGH JULY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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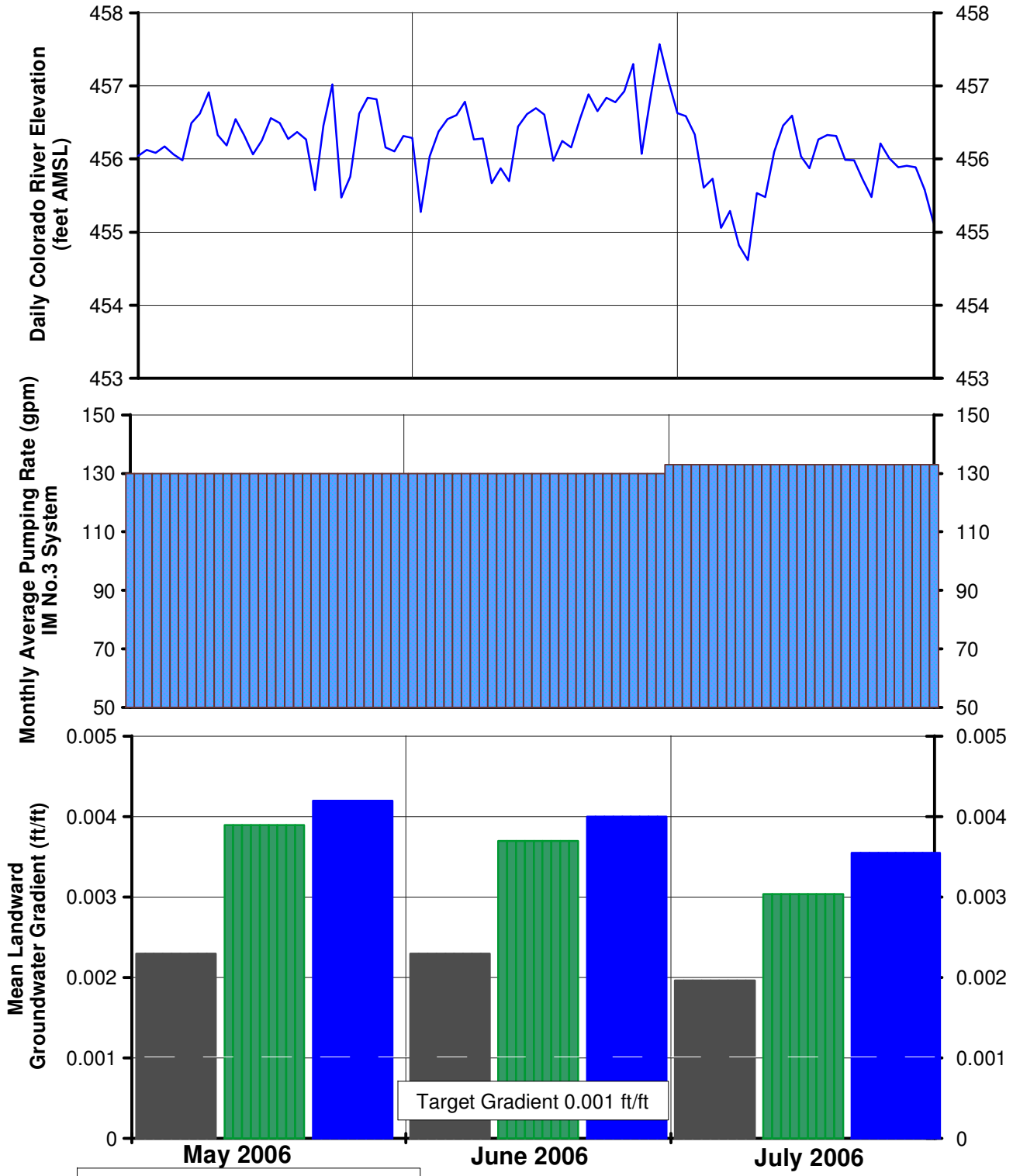

Notes:

1) For IM pumping, the target landward gradient for well pairs is 0.001 feet/foot.
2) Refer to Table 2-1 and Section 2.1 for discussion of pumping data.
3) Pumping rate plotted is the combined rate of extraction wells TW-3D and PE-1 in operation each month.
4) Refer to Table 3-1 and Sections 2.4 and 3.4 for discussion of gradient data.

FIGURE 3-4
MEASURED HYDRAULIC GRADIENTS, RIVER ELEVATION, AND PUMPING RATE MAY THROUGH JULY 2006
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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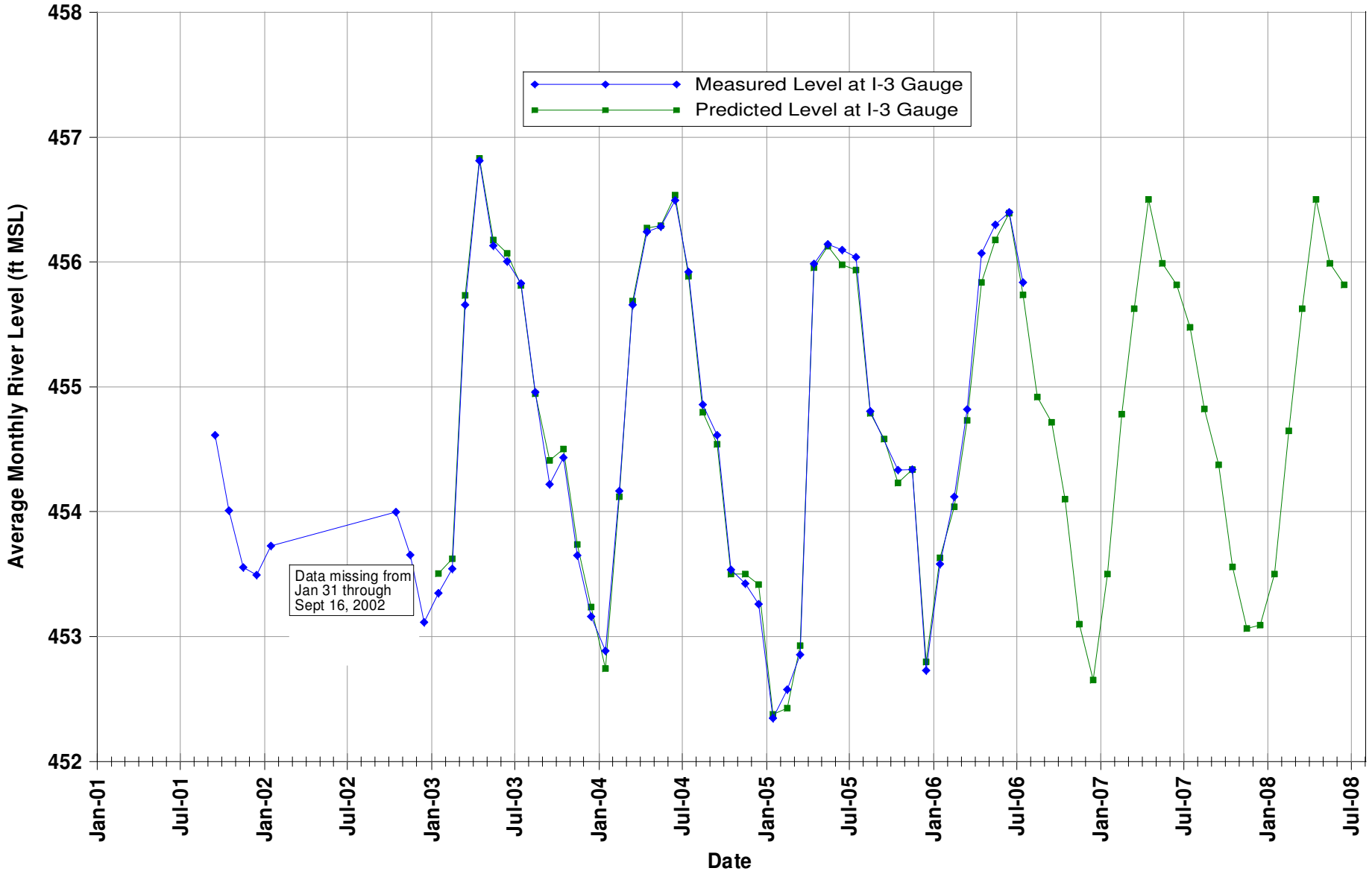


Note:
Projected river level is calculated based on monthly averages of Davis Dam release and stage in Lake Havasu as of August 10, 2006.
Measured data through July 31, 2006.

FIGURE 3-5
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

Appendix A
Extraction System Operations Log for July 2006

Appendix A
Extraction System Operations Log for July 2006
PG&E Topock Interim Measures Performance Monitoring Program

During July 2006, extraction wells TW-3D and PE-1 operated at a target pump rate of at 135 gallons per minute (gpm) excluding periods of planned and unplanned downtime. The operational run time for the IM groundwater extraction system (combined or individual pumping from TW-3D and PE-1) was approximately 98 percent during the July 2006 reporting period.

The IM No. 3 facility also treated approximately 980 gallons of water generated from the groundwater monitoring program during July 2006. Treatment of this water at the IM No. 3 facility was approved by the Regional Board on January 26, 2006, according to the conditions of Order No. R7-2004-0103. Two containers of solids (approximately 24 cubic yards each) from the IM No. 3 facility were transported to the Chemical Waste Management at the Kettleman Hills facility during June 2006.

Periods of planned and unplanned extraction system downtime during July 2006 are summarized below. The times shown are in Pacific Standard Time (PST) to be consistent with other data collected (e.g. water level data) at the site.

- **July 1, 2006 (unplanned)**: The extraction well system was shut down from 4:24 p.m. until 5:01 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 37 minutes.
- **July 2, 2006 (unplanned)**: The extraction well system was shut down from 6:06 a.m. until 6:11 a.m. to return operations to Needles power. Extraction system downtime was 5 minutes.
- **July 3, 2006 (unplanned)**: The extraction well system was shut down from 10:45 a.m. until 10:54 a.m. due to a Needles power imbalance (non-weather related). Extraction system downtime was 5 minutes.
- **July 4, 2006 (unplanned)**: The extraction well system was shut down from 2:18 p.m. until 2:34 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 16 minutes.
- **July 5, 2006 (unplanned)**: The extraction well system was shut down from 6:37 a.m. until 6:53 a.m. to return operations to Needles power. Extraction system downtime was 16 minutes.
- **July 6, 2006 (unplanned)**: The extraction well system was shut down from 9:27 p.m. until 9:47 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 20 minutes.
- **July 9, 2006 (unplanned)**: The extraction well system was shut down from 2:15 p.m. until 2:20 p.m. to return operations to Needles power. Extraction system downtime was 5 minutes.

- **July 10, 2006 (unplanned)**: The extraction well system was shut down from 7:01 a.m. until 7:24 p.m. to replace the uninterruptible power supply to the human-machine interface (HMI). Extraction system downtime was 23 minutes.
- **July 11, 2006 (unplanned)**: The extraction well system was shut down from 9:11 p.m. until 12:07 p.m. for replacement of the polymer system feed pump P-804 that failed with a temporary oversized shelf spare. Extraction system downtime was 2 hours 54 minutes.
- **July 14, 2006 (unplanned)**: The extraction well system was shut down from 1:40 p.m. until 2:23 p.m. to replace polymer pump P-804 with correct-sized pump. Extraction system downtime was 43 minutes.
- **July 15, 2006 (unplanned)**: The extraction well system was shut down from 6:43 p.m. until 7:11 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 28 minutes.
- **July 16, 2006 (unplanned)**: The extraction well system was shut down from 5:51 a.m. until 6:01 a.m. to return operations to Needles power. Extraction system downtime was 10 minutes.
- **July 24, 2006 (unplanned)**: The extraction well system was shut down from 6:10 p.m. until 6:22 p.m. to switch to generator power after a weather-caused power failure and from 10:24 p.m. until 10:28 p.m. to return operations to Needles power. Extraction system downtime was 16 minutes.
- **July 25, 2006 (unplanned)**: The extraction well system was shut down from 3:52 p.m. until 4:09 p.m., 8:18 p.m. until 8:23 p.m., 10:02 to 10:07 p.m., and 10:27 to 10:29 p.m. due to a Needles power imbalance (non-weather related) and eventual switch to generator power. Extraction system downtime was 29 minutes.
- **July 26, 2006 (unplanned)**: The extraction well system was shut down from 4:50 a.m. until 4:53 a.m. to return operations to Needles power. Extraction system downtime was 3 minutes.
- **July 28, 2006 (planned)**: The extraction well system was shut down from 11:10 am until 4:21 pm to complete maintenance (i.e. backwashing) of Injection Well IW-02. Approximately 1,800 gallons of purge water were generated during the maintenance and returned to the IM-3 facility for treatment. Extraction system downtime was 5 hours 12 minutes.
- **July 28, 2006 (unplanned)**: The extraction well system was shut down from 9:23 p.m. until 10:53 p.m. due to a Needles power outage caused by electrical storms in the area. Extraction system downtime was 1 hour 30 minutes.
- **July 30, 2006 (unplanned)**: The extraction well system was shut down from 4:25 a.m. until 4:34 a.m. to return operations to Needles power. Extraction system downtime was 9 minutes.

Appendix B
Chromium Sampling Results for Monitoring Wells in Floodplain Area

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, February through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Shallow Wells								
MW-27-020	06-Mar-06	ND (0.2)	ND (1.0)	-153	0.4	910	455.0	455.1
	01-May-06	ND (0.2)	ND (1.0)	---	2.5	1,510	455.4	454.7
MW-28-025	09-Mar-06	ND (0.2)	ND (1.0)	-54	3.5	1,140	455.2	455.2
	05-May-06	ND (0.2)	ND (1.0)	-126	0.8	1,260	456.3	455.8
MW-29	13-Apr-06	ND (0.2)	ND (1.0)	-142	4.2	4,220	455.7	455.2
	05-May-06	ND (0.2)	ND (1.0)	-128	1.3	4,430	456.0	455.4
MW-30-030	13-Mar-06	ND (5.0)	ND (1.0)	-99	1.1	55,600	454.1	454.2
	02-May-06	ND (2.0)	ND (1.0)	-104	2.4	54,600	455.4	455.7
MW-32-020	10-Mar-06	ND (2.0)	ND (1.0)	-125	0.4	---	454.4	455.1
	04-May-06	ND (1.0)	ND (1.0)	-120	0.4	25,500	455.2	454.9
MW-32-035	10-Mar-06	ND (2.0)	ND (1.0)	-161	0.1	9,570	454.7	454.9
	04-May-06	ND (1.0)	ND (1.0)	-171	0.3	16,500	455.5	455.1
MW-33-040	09-Mar-06	ND (0.2)	ND (1.0) LF	---	---	---	454.8	455.2
	04-May-06	ND (0.2)	ND (1.0) LF	12	5.3	4,580	455.5	454.8
MW-36-020	07-Mar-06	ND (1.0)	ND (1.0)	-148	2.5	18,900	---	455.2
	01-May-06	ND (1.0)	ND (1.0)	-180	5.3	20,100	455.5	456.0
MW-36-040	07-Mar-06	ND (1.0)	ND (1.0)	-166	3.3	17,000	454.4	454.6
	01-May-06	ND (1.0)	ND (1.0)	-179	5.1	13,500	455.4	455.0
MW-39-040	07-Mar-06	ND (1.0)	ND (1.0)	-162	3.0	8,450	454.1	454.3
	02-May-06	ND (1.0)	ND (1.0)	-188	0.1	8,150	455.6	456.4
MW-42-030	07-Mar-06	ND (1.0)	ND (1.0)	-154	0.4	11,400	454.3	454.5
	02-May-06	ND (1.0)	ND (1.0)	-160	2.3	18,500	455.2	455.2
MW-43-025	10-Mar-06	ND (0.2)	ND (1.0)	-153	0.3	1,350	455.3	455.4
	04-May-06	ND (0.2)	ND (1.0)	-176	0.4	1,280	456.2	455.4
Middle-Depth Wells								
MW-27-060	07-Mar-06	ND (1.0)	ND (1.0)	-118	2.5	13,700	454.8	454.9
	01-May-06	ND (1.0)	ND (1.0)	-140	1.0	12,100	455.7	455.1
MW-30-050	09-Mar-06	ND (1.0)	ND (1.0)	-81	2.4	8,800	454.2	454.2
	02-May-06	ND (1.0)	ND (1.0)	-102	2.8	14,300	455.6	456.1
MW-33-090	08-Mar-06	16.7	14.3	-42	0.3	10,200	454.9	455.0
	03-May-06	16.1	16.4	-44	0.4	10,400	455.5	454.7
	03-May-06 FD	19.3	15.3	FD	FD	FD	FD	FD
MW-34-055	08-Mar-06	ND (1.0)	ND (1.0)	-106	---	8,460	454.4	454.4
	03-May-06	ND (0.2)	ND (1.0)	-117	0.3	7,580	456.3	456.0
MW-36-050	07-Mar-06	ND (1.0)	ND (1.0)	-110	2.7	8,400	454.5	454.8
	07-Mar-06 FD	ND (1.0)	ND (1.0)	FD	FD	FD	FD	FD
	01-May-06	ND (0.2)	ND (1.0)	-162	3.6	6,810	454.8	454.7
MW-36-070	10-Feb-06	ND (10)	ND (1.0)	-91	2.7	12,600	453.5	453.7
	07-Mar-06	ND (1.0)	ND (1.0)	-67	2.5	9,720	454.6	455.0
	06-Apr-06	ND (1.0)	ND (1.0)	---	1.8	7,740	455.5	456.0

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, February through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Middle-Depth Wells								
MW-36-070	01-May-06	ND (1.0)	ND (1.0)	-130	4.6	8,180	455.7	455.4
	13-Jun-06	ND (0.2) J	ND (1.0)	---	---	7,840	456.1	455.9
	11-Jul-06	ND (1.0)	ND (1.0)	-108	0.6	7,320	455.4	454.8
MW-39-050	08-Mar-06	ND (1.0)	ND (1.0)	71	2.3	16,000	454.3	455.0
	02-May-06	ND (1.0)	ND (1.0)	-45	0.2	9,380	455.4	455.3
MW-39-060	08-Mar-06	7.10	2.70	12	2.1	---	453.8	454.3
	08-Mar-06 FD	6.90	2.40	FD	FD	FD	FD	FD
	02-May-06	1.10	1.40	-39	0.2	12,000	455.3	454.8
MW-39-070	10-Feb-06	338	340	48	2.8	15,500	452.9	454.0
	08-Mar-06	200	169	201	2.8	16,300	453.5	454.5
	06-Apr-06	223	204	88	2.1	12,300	454.8	456.3
	02-May-06	137	123	31	0.2	11,200	455.0	455.7
	14-Jun-06	107 J	94.6	197	0.0	10,300	455.9	457.0
	12-Jul-06	77.0 J	66.7	74	0.9	9,570	455.1	456.4
MW-42-055	07-Mar-06	ND (1.0)	ND (1.0)	-122	0.3	16,500	454.3	454.4
	02-May-06	ND (1.0)	ND (1.0)	-138	2.2	21,400	456.1	455.0
MW-42-065	07-Mar-06	ND (1.0)	ND (1.0)	-58	0.4	20,100	454.4	454.3
	02-May-06	ND (1.0)	ND (1.0)	-76	2.2	25,400	455.3	454.6
MW-44-070	09-Mar-06	ND (1.0)	ND (1.0)	-393	2.4	6,970	453.2	454.0
	23-Mar-06	ND (1.0) J	ND (1.0)	-166	2.4	7,600	454.1	454.1
	04-Apr-06	ND (1.0)	ND (1.0)	-96	1.6	9,200	455.3	455.3
	04-May-06	ND (1.0)	ND (1.0)	-156	4.5	10,000	455.6	455.3
	13-Jun-06	ND (1.0)	ND (1.0)	-131	4.3	12,200	456.3	456.1
	13-Jun-06 FD	ND (1.0)	ND (1.0)	FD	FD	FD	FD	FD
	15-Jun-06	ND (1.0)	ND (1.0)	-118	5.4	14,900	456.4	456.8
Deep Wells								
MW-27-085	08-Feb-06	ND (1.0)	ND (1.0)	-82	2.6	21,100	453.9	453.7
	06-Mar-06	ND (1.0)	ND (1.0)	-92	0.2	15,800	454.8	454.8
	03-Apr-06	ND (1.0)	ND (1.0)	-102	2.5	18,200	454.5	454.3
	01-May-06	ND (1.0)	ND (1.0)	-104	0.9	18,300	455.1	454.7
	14-Jun-06	ND (1.0)	ND (1.0)	-98	3.3	22,400	456.4	456.3
	12-Jul-06	ND (2.0)	ND (1.0)	-71	2.2	21,400	456.2	456.8
MW-28-090	09-Feb-06	ND (0.2) J	ND (1.0)	-156	2.8	8,830	453.8	453.8
	06-Mar-06	ND (1.0)	ND (1.0)	-151	0.3	6,830	454.4	454.4
	06-Apr-06	ND (1.0)	ND (1.0)	---	2.1	8,160	455.5	455.4
	05-May-06	ND (1.0)	ND (1.0)	-150	0.8	8,690	455.9	456.2
	15-Jun-06	ND (1.0)	ND (1.0)	-153	3.9	7,980	456.4	456.5
	13-Jul-06	ND (1.0) J	ND (1.0)	-150	1.6	---	456.6	457.1
MW-33-150	07-Feb-06	4.30 J	6.40	-61	2.7	20,400	455.2	453.9
	08-Mar-06	4.20	3.20	-55	0.3	20,400	454.9	455.2
	06-Apr-06	4.50	3.00	39	2.1	18,300	455.5	455.2
	03-May-06	6.60	5.50	-23	1.0	17,100	455.4	454.5

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, February through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Deep Wells								
MW-33-150	16-Jun-06	5.50	5.40	38	2.8	21,300	456.6	457.1
	13-Jul-06	7.40 J	6.70	-14	1.1	22,400	456.2	456.5
MW-33-210	07-Feb-06	9.00	7.20	-14	2.7	22,800	454.6	454.0
	06-Mar-06	10.7	6.50	-37	0.2	16,600	455.1	454.5
	13-Apr-06	4.20	ND (4.2)	21	6.8	18,100	455.7	454.7
	05-May-06	10.0	8.80	34	0.4	20,100	456.4	456.5
	16-Jun-06	9.20	8.30	-27	2.9	23,600	456.7	456.9
	13-Jul-06	10.0 J	7.50	36	2.2	27,100	456.5	456.8
MW-34-080	08-Feb-06	ND (1.0)	ND (1.0)	-22	2.6	16,400	454.1	454.2
	09-Mar-06	ND (1.0)	ND (1.0)	-12	2.2	15,100	454.8	454.8
	03-Apr-06	ND (1.0)	ND (1.0)	-38	2.4	13,500	454.4	454.0
	03-May-06	ND (1.0)	ND (1.0)	-68	0.2	13,800	456.3	455.3
	14-Jun-06	ND (1.0)	ND (1.0)	-99	2.7	15,600	456.9	456.8
	12-Jul-06	ND (1.0)	ND (1.0)	-75	1.6	14,800	456.1	456.3
MW-34-100	08-Feb-06	797	706	65	2.5	20,100	453.8	453.8
	08-Feb-06 FD	785	708	FD	FD	FD	FD	FD
	22-Feb-06	752	831	225	3.0	21,900	---	453.6
	22-Feb-06 FD	748	846	FD	FD	FD	FD	FD
	08-Mar-06	800	857	-8	---	18,600	454.2	454.3
	08-Mar-06 FD	801	773	FD	FD	FD	FD	FD
	23-Mar-06	830	851	113	2.2	18,400	454.1	454.4
	23-Mar-06 FD	828	855	FD	FD	FD	FD	FD
	03-Apr-06	858	910	42	2.8	16,800	454.1	454.1
	21-Apr-06	852	873	---	---	---	---	455.8
	03-May-06	900	946	-10	0.3	18,200	455.2	454.8
	03-May-06 FD	920	946	FD	FD	FD	FD	FD
	17-May-06	935	1180	44	3.1	23,800	455.2	455.2
	17-May-06 FD	930	1190	FD	FD	FD	FD	FD
	31-May-06	960	929	104	3.1	16,100	456.6	456.3
	14-Jun-06	922	839	-2	3.2	20,800	456.5	456.6
	14-Jun-06 FD	921	864	FD	FD	FD	FD	FD
	28-Jun-06	976	1130	132	5.0	21,800	456.2	456.6
	12-Jul-06	823 J	851	27	1.5	19,300	455.9	456.6
	12-Jul-06 FD	828 J	864	FD	FD	FD	FD	FD
	26-Jul-06	859	955	36	2.2	---	456.2	456.7
MW-36-090	10-Feb-06	71.8	71.4	37	3.4	16,100	453.0	453.8
	07-Mar-06	33.0	27.5	42	3.1	14,700	453.7	454.4
	04-Apr-06	23.5	15.7	5	2.4	12,700	455.4	455.3
	01-May-06	22.8	18.3	24	4.4	11,400	454.3	454.6
	13-Jun-06	10.9	9.00	---	---	10,300	455.7	456.4
	11-Jul-06	12.2	11.1	-34	0.8	14,000	454.4	455.3
MW-36-100	09-Feb-06	307	288	18	2.6	19,700	452.9	453.6
	13-Mar-06	540	531	-16	0.2	17,400	453.1	453.7

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, February through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Deep Wells								
MW-36-100	05-Apr-06	554	492	24	0.1	15,300	453.7	455.3
	02-May-06	532	517	23	2.7	21,900	454.4	454.8
	15-Jun-06	496 J	465	7	3.6	18,200	455.4	456.2
	13-Jul-06	528	497	37	1.0	19,600	455.7	457.5
MW-39-080	10-Feb-06	1750	1610	66	2.6	18,900	453.0	454.0
	08-Mar-06	1420	1400	154	2.2	20,900	453.7	454.6
	06-Apr-06	1200	1120	86	2.0	15,800	454.8	456.2
	02-May-06	1410	1450	61	0.2	14,900	454.9	455.0
	14-Jun-06	1000 J	934	184	0.0	15,100	455.9	456.8
	12-Jul-06	830 J	750	69	1.1	14,600	455.2	456.8
MW-39-100	09-Feb-06	4500	4310	120	2.9	21,700	453.1	453.5
	13-Mar-06	4070	4640	51	0.7	20,400	452.9	453.9
	05-Apr-06	4470	4050	73	0.9	18,300	454.2	454.9
	05-Apr-06 FD	4460	4330	FD	FD	FD	FD	FD
	02-May-06	3680	3480	67	3.5	---	454.4	454.7
	14-Jun-06	3270	3250	79	3.4	23,100	455.8	455.7
	13-Jul-06	3790	3470	80	1.5	26,200	455.5	457.4
MW-43-075	10-Feb-06	ND (1.0)	ND (1.0)	-154	3.0	18,500	454.4	454.3
	10-Mar-06	ND (1.0)	ND (1.0)	-149	0.1	14,400	455.4	455.4
	03-Apr-06	ND (1.0)	ND (1.0)	-148	2.3	15,000	454.9	454.2
	04-May-06	ND (1.0)	ND (1.0)	-167	0.3	15,400	456.6	456.1
MW-43-090	10-Feb-06	ND (1.0)	ND (1.0)	-112	2.8	25,900	453.9	454.2
	10-Mar-06	ND (2.0)	ND (1.0)	-116	0.0	21,100	455.5	455.1
	03-Apr-06	ND (1.0)	ND (1.0)	-97	2.3	21,100	455.2	454.3
	04-May-06	ND (1.0)	ND (1.0)	-124	0.4	22,400	456.6	455.9
MW-44-115	14-Mar-06	735 J	730	-11	1.5	16,500	452.8	454.2
	22-Mar-06	1440	1970	-74	3.0	---	453.4	453.8
	04-Apr-06	1550	1620	37	1.8	15,800	455.4	455.3
	04-Apr-06 FD	1570	1570	FD	FD	FD	FD	FD
	20-Apr-06	1680	1650	-38	0.4	11,400	455.0	455.4
	20-Apr-06 FD	1680	1610	FD	FD	FD	FD	FD
	26-Apr-06	1560	1580	-27	2.5	15,800	456.1	455.8
	04-May-06	1710	1870	-21	4.9	17,300	454.9	454.8
	10-May-06	1490	1550	7	2.2	22,700	454.9	454.7
	17-May-06	1560	1880	-10	1.9	19,600	455.5	456.1
	31-May-06	1610	1580	-11	0.2	13,100	455.0	455.5
	31-May-06 FD	1610	1600	FD	FD	FD	FD	FD
	13-Jun-06	1420	1350	-26	3.3	17,700	455.6	455.9
	28-Jun-06	1600	1830	-37	4.0	16,800	455.6	456.5
	12-Jul-06	1700 J	1430	14	1.2	17,300	455.2	455.9
	26-Jul-06	1290	1530	-31	0.6	---	455.4	455.9
MW-44-125	09-Mar-06	66.6 R	67.5 R	-419	2.6	13,500	453.0	454.1
	22-Mar-06	362	430	-280	1.5	15,000	453.9	453.7

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, February through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Deep Wells								
MW-44-125	04-Apr-06	372	374	10	1.9	15,600	455.9	455.5
	20-Apr-06	461	504	-138	0.0	11,400	455.3	455.9
	26-Apr-06	480	485	-147	2.5	16,200	456.4	456.0
	26-Apr-06 FD	479	493	FD	FD	FD	FD	FD
	04-May-06	584	592	-144	4.4	17,200	455.7	455.4
	10-May-06	634 J	667	-96	2.2	23,000	455.5	454.9
	17-May-06	612	740	-103	1.7	19,700	455.9	456.1
	31-May-06	413	398	-95	0.4	13,600	455.6	455.6
	11-Jul-06	373	395	-16	0.7	12,100	455.0	455.1
	11-Jul-06 FD	365	335	FD	FD	FD	FD	FD
	26-Jul-06	155	177	-140	1.9	---	455.7	455.9
	26-Jul-06 FD	157	180	FD	FD	FD	FD	FD
MW-45-095a	24-Mar-06	259	216	-20	2.3	16,100	453.3	454.6
MW-45-095b	24-Mar-06	332	327	-12	2.1	16,700	452.0	454.5
MW-46-175	14-Mar-06	287	279	-44	2.2	19,500	455.2	454.5
	24-Mar-06	213	173	-93	1.9	19,900	456.4	454.7
	07-Apr-06	208 J	186	-116	2.1	18,500	455.8	455.9
	04-May-06	222	237	-27	4.8	20,800	455.2	454.7
	18-May-06	227	268	-17	2.6	20,500	455.4	454.8
	31-May-06	139 J	169	37	1.2	15,900	455.7	455.3
	15-Jun-06	233	211	-16	3.2	19,900	456.5	456.9
	30-Jun-06	112	160	56	6.2	21,800	456.0	456.0
	30-Jun-06 FD	111	164	FD	FD	FD	FD	FD
	12-Jul-06	135 J	85.8	38	1.5	19,500	456.0	455.6
	27-Jul-06	174	206	16	0.7	---	456.2	456.6
MW-46-205	14-Mar-06	ND (1.0)	ND (1.0)	-117	2.3	22,600	455.1	454.9
	24-Mar-06	ND (1.0)	ND (1.0)	-202	1.7	24,000	456.5	454.4
	07-Apr-06	ND (1.0) J	ND (1.0)	-200	1.9	22,400	460.2	456.2
	04-May-06	ND (1.0)	ND (1.0)	-177	4.6	25,900	455.5	454.8
	15-Jun-06	ND (1.0)	1.80	-147	2.9	24,100	456.8	457.2
	13-Jul-06	ND (1.0)	3.50	-152	1.0	24,900	456.4	457.4
MW-49-135	25-Apr-06	ND (1.0) J	ND (1.0)	-167	2.4	18,800	455.8	455.2
	18-May-06	ND (1.0)	ND (1.0)	-178	2.3	17,100	456.6	455.8
MW-49-275	25-Apr-06	ND (1.0)	ND (1.0)	-143	3.3	29,400	455.4	454.9
	18-May-06	ND (1.0)	ND (1.0)	-214	2.2	26,700	456.4	455.1
MW-49-365	26-Apr-06	ND (2.0)	ND (1.0)	-244	2.2	37,600	458.0	455.1
	16-May-06	ND (2.0)	ND (1.0)	-192	1.8	44,900	458.3	455.5

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, February through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

NOTES:

ND = not detected at listed reporting limit (RL)
FD = field duplicate
J = concentration or RL estimated by laboratory or data validation
T = data from the downhole transducers to fill groundwater elevation data gaps at some locations
MSL = mean sea level
(---) = data not collected, available, rejected, or field instrumentation malfunctioned
µg/L= micrograms per liter
mV = oxidation-reduction potential (ORP)
µS/cm = microSiemens per centimeter
M = I-3 Transducer damaged

Beginning in July 2005, samples analyzed for total chromium by EPA Method 6010B or 6020 were filtered and preserved in the field after sample collection, as per DTSC's June 30, 2005 letter.

The RLs for certain hexavalent chromium results from Method 7199 analyses have been elevated above the standard RL of 0.2 µg/L due to required sample dilution to accommodate matrix interferences.

Groundwater and river elevations in feet above mean sea level (MSL) rounded to 0.1 foot. River elevations from presssure transducer record at I-3.

Results for MW-44-125 from the June 28, 2006 sampling event are not shown while these data undergo more rigorous field QC evaluation.

TABLE B-2
Groundwater Sampling Results for Other Monitoring Wells in PMP Area, February through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well ID	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters		
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm
Shallow Wells						
MW-12	18-Apr-06	1210	1300	91.0	7.28	3460
	01-May-06	1250	1280	-38	---	3840
MW-19	09-Mar-06	1090	1080	227	7.43	3850
	02-May-06	1130	1120	38.0	3.30	2450
MW-20-070	10-Mar-06	5170	4510	228	7.32	5830
	05-May-06	4100	4440	97.0	7.21	3050
MW-21	09-Mar-06	---	---	---	4.20	15100
	02-May-06	ND (1.0)	ND (1.0)	-77	---	11500
MW-22	15-Mar-06	ND (2.0)	ND (1.0)	---	8.54	34800
	03-May-06	ND (1.0) J	ND (1.0)	-88	4.14	34200
MW-24A	06-Mar-06	3490	3980	239	5.17	3140
MW-25	09-Mar-06	1360	1430	210	7.40	2750
	03-May-06	1390	1310	98.0	7.72	2110
	03-May-06 FD	1280	1310	FD	FD	FD
MW-26	08-Mar-06	3280	3020	170	9.16	3840
	01-May-06	3210	3110	---	---	3290
MW-31-060	15-Mar-06	1020	1010	217	7.01	2750
	15-Mar-06 FD	1000	1010	FD	FD	FD
	01-May-06	952	959	---	---	2740
MW-35-060	14-Mar-06	31.6	24.3	42.0	2.92	---
	01-May-06	25.7	26.4	-37	---	6770
MW-47-055	23-Mar-06	10.9 J	7.90	-94	2.98	5800
	16-May-06	24.0	27.3	22.0	2.89	4430
TW-02S	15-Mar-06	2720	2870	-38	7.53	3200
	03-May-06	2400	2600	80.0	6.75	3150
Middle-Depth Wells						
MW-20-100	10-Mar-06	10100	10200	198	3.77	4360
	05-May-06	10400	12100	98.0	5.20	3760
MW-50-095	09-May-06	199	194	30.0	3.00	5480
	24-May-06	218	221	50.0	3.42	---
MW-51	12-May-06	4370	4630	92.0	2.51	12100
	30-May-06	4130	4530	17.0	1.53	10600
Deep Wells						
MW-20-130	10-Mar-06	10700	10600	213	3.49	14500
	05-May-06	12000	13700	97.0	2.21	12400
MW-24B	07-Mar-06	5650	5970	199	2.59	17200
MW-31-135	15-Mar-06	173	186	33.0	3.05	13400
	09-May-06	154	146 LF	82.0	2.75	15900
MW-35-135	10-Mar-06	28.0	24.0	103	2.44	12400
	10-Mar-06 FD	26.5	25.7	FD	FD	FD
	02-May-06	21.0	20.7	0.00	2.70	13000

TABLE B-2
Groundwater Sampling Results for Other Monitoring Wells in PMP Area, February through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well ID	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters		
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm
MW-47-115	23-Mar-06	ND (2.0) J	ND (1.0)	-161	2.32	15600
	16-May-06	1.40	5.10	-67	1.93	18400
MW-50-200	09-May-06	7750	7360	-11	1.91	20200
	24-May-06	5810	5910	60.0	4.11	37000
TW-02D	15-Mar-06	1360	1360	5.00	5.20	8470
	03-May-06	1120	1120	82.0	6.10	8490
TW-04	18-May-06	1.00	6.40	-97	0.56	15600
	05-Jun-06	ND (1.0)	4.10	-131	0.00	18300
TW-05	10-May-06	1.10 J	1.30	-161	0.60	15100
	01-Jun-06	ND (1.0) J	ND (1.0)	17.0	1.51	10600

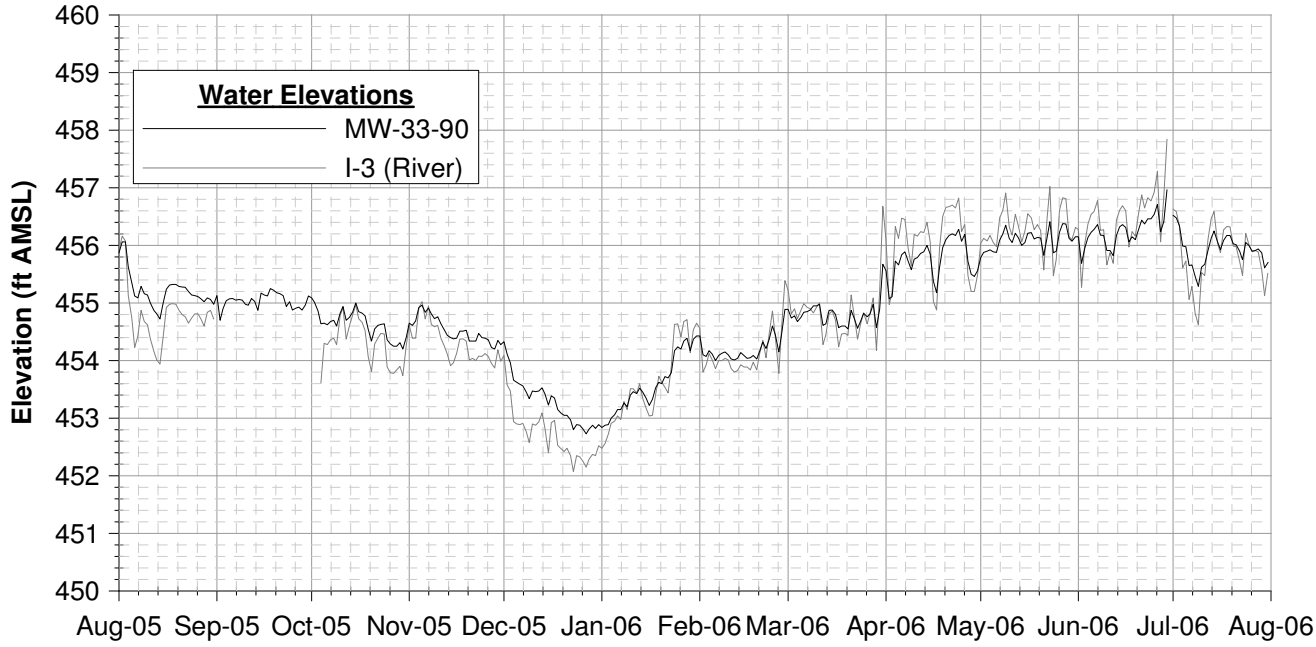
NOTES:

Analytical results are validated.
ND = not detected at listed reporting limit (RL)
FD = field duplicate
J = concentration or RL estimated by laboratory or data validation
LF = lab filtered
(---) = data not collected, available, or field instrumentation malfunctioned
µg/L= micrograms per liter
mg/L = milligrams per liter
mV = oxidation-reduction potential (ORP)
µS/cm = microSiemens per centimeter

PMP = Interim Measure Performance Monitoring Program

Samples analyzed for total chromium by EPA Method 6010B or 6020 were filtered and preserved in the field after sample collection, as per DTSC's June 30, 2005 letter.

MW-21 was not sampled in March 2006 because the well was purged dry and did not produce enough water within 24 hours.



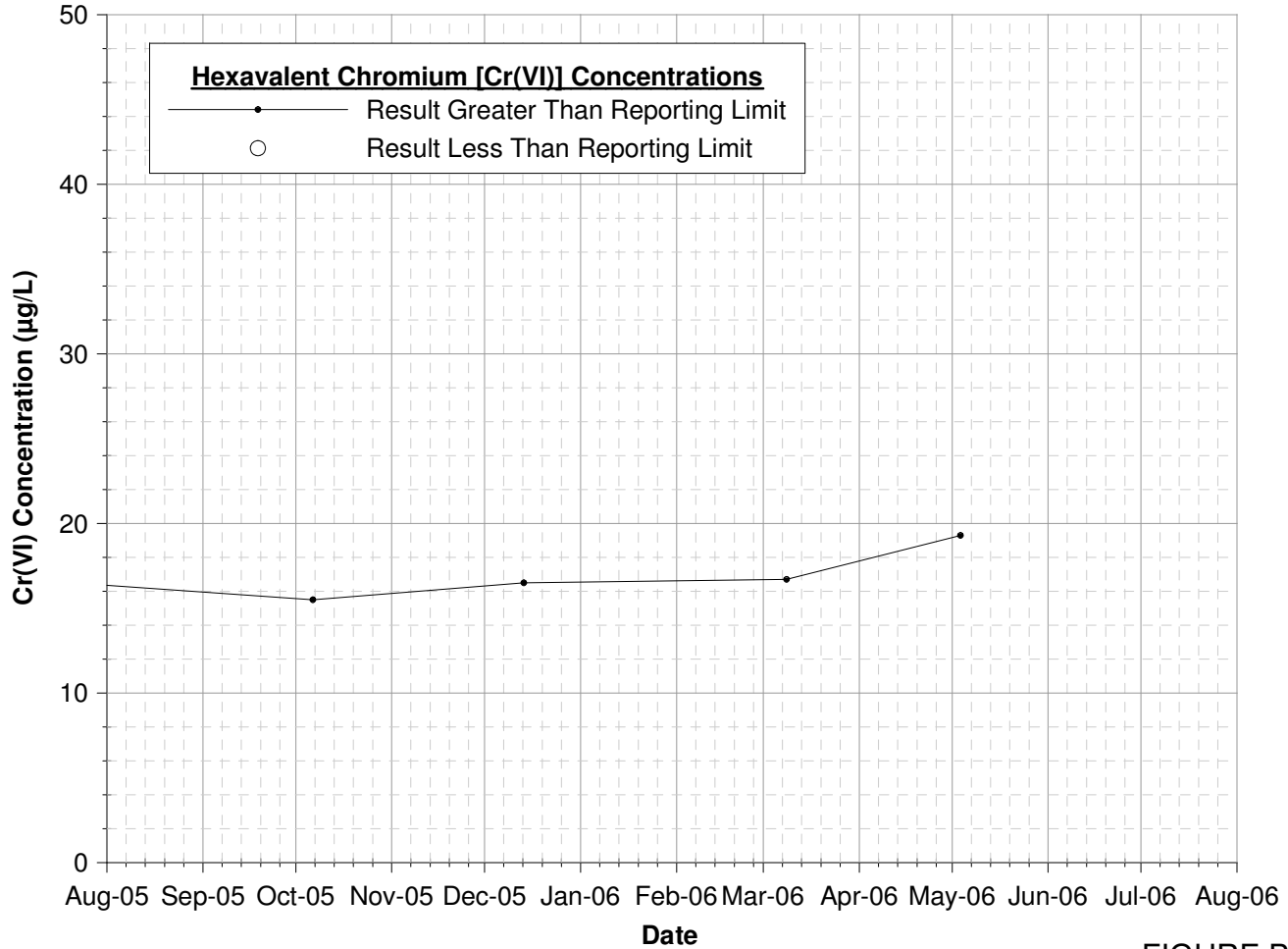


FIGURE B-1
MW-33-90 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 5/3/2006
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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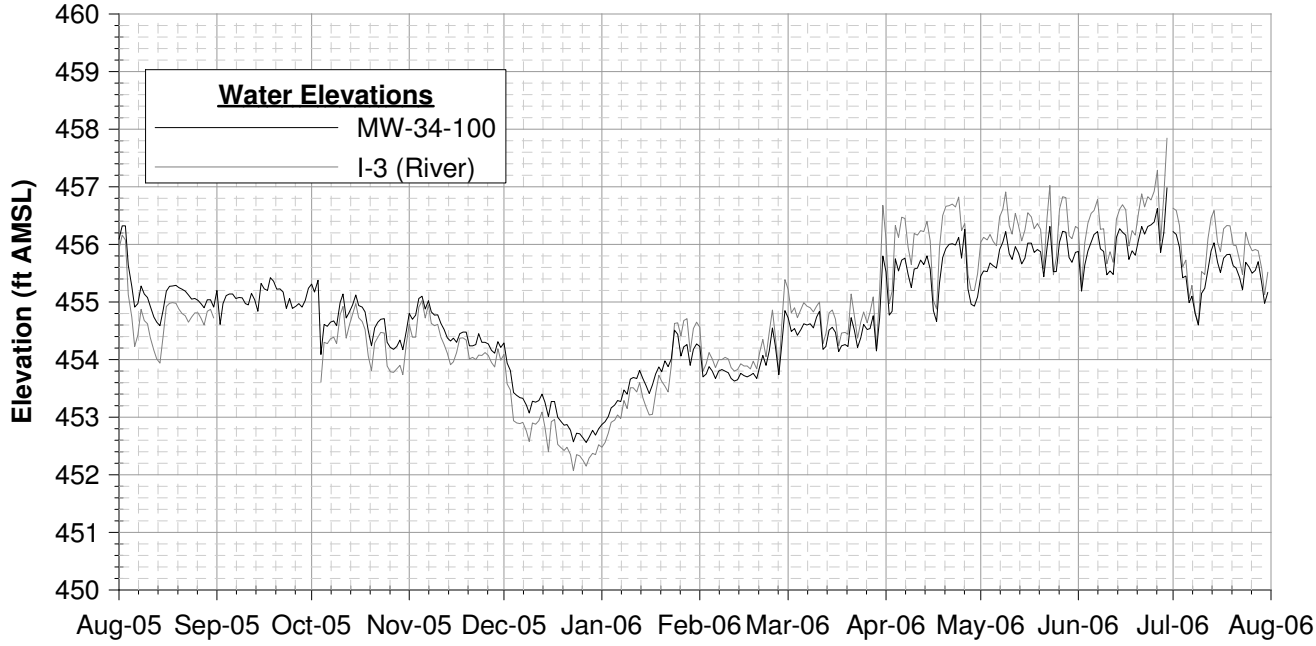

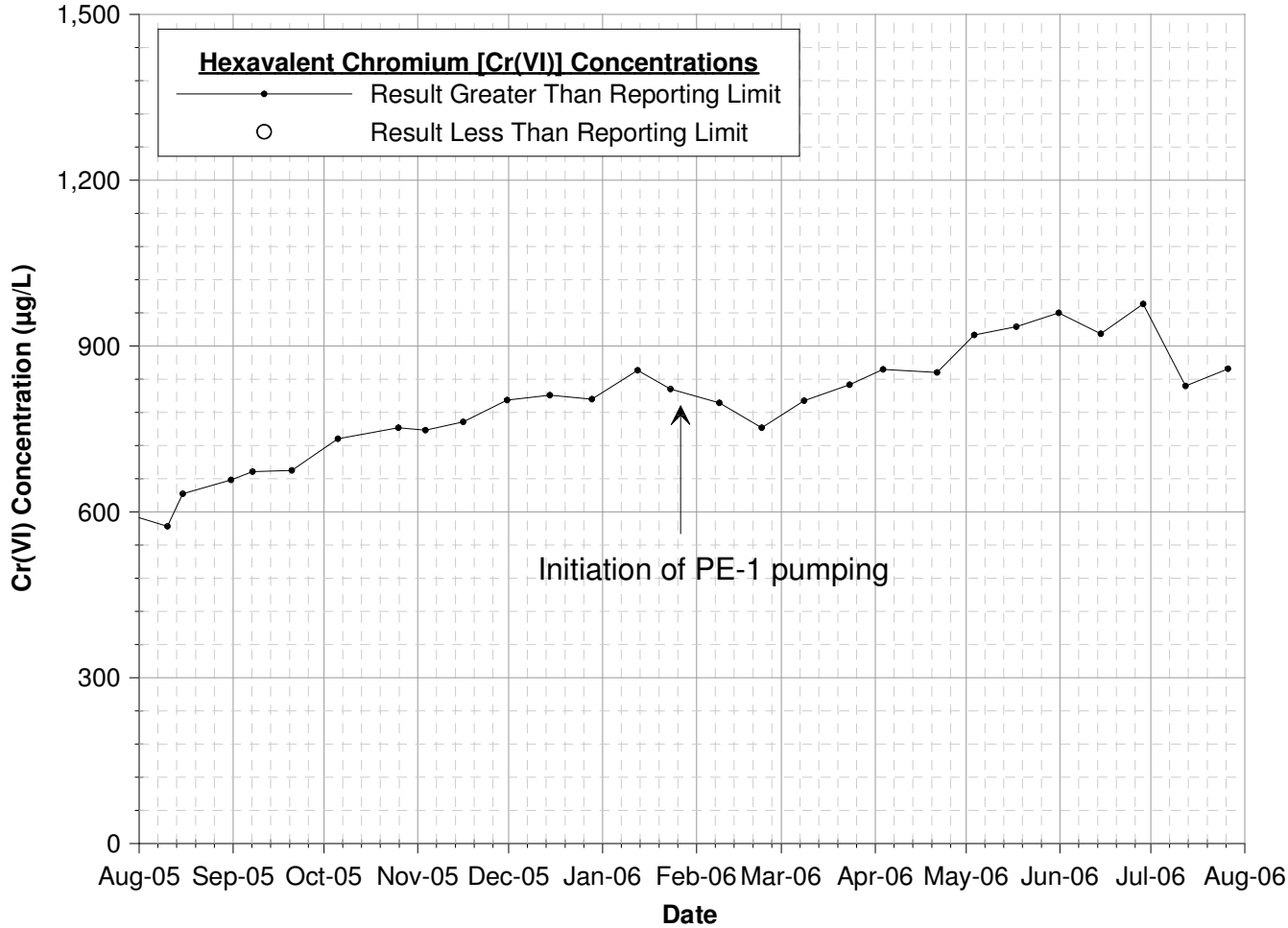

FIGURE B-2
MW-34-100 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 7/12/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. No groundwater elevation data available during May 2005 due to transducer malfunction.
3. Data subject to review.
4. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
5. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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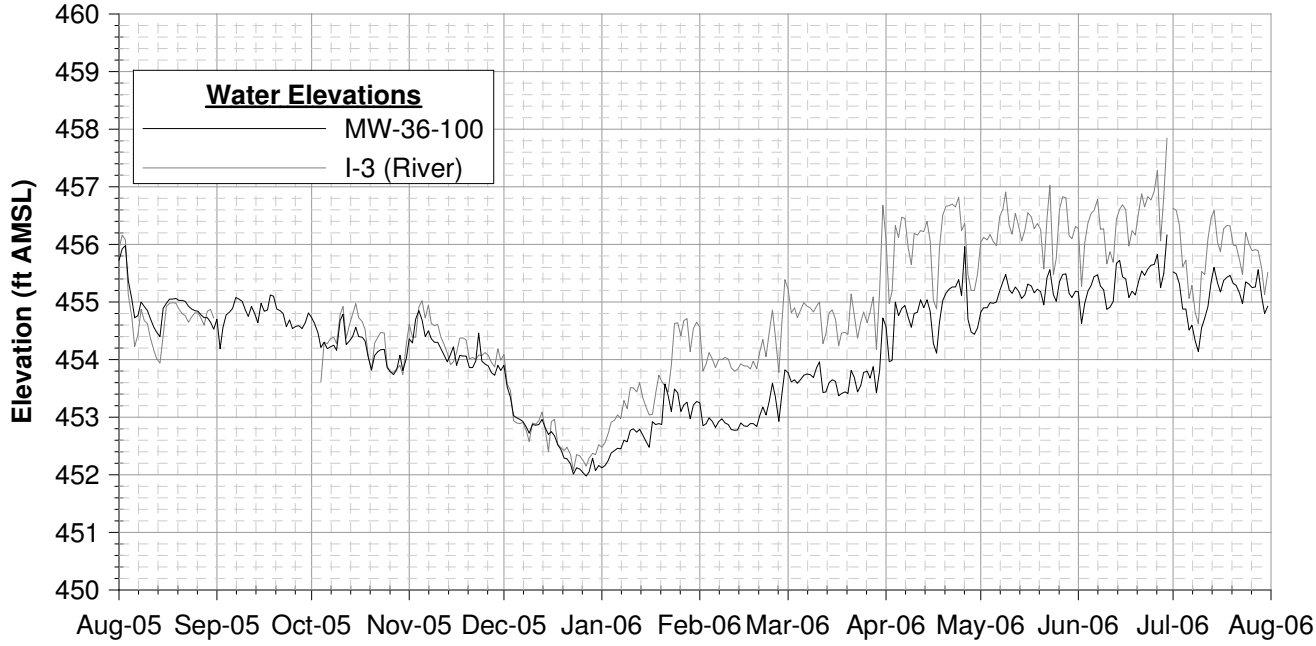

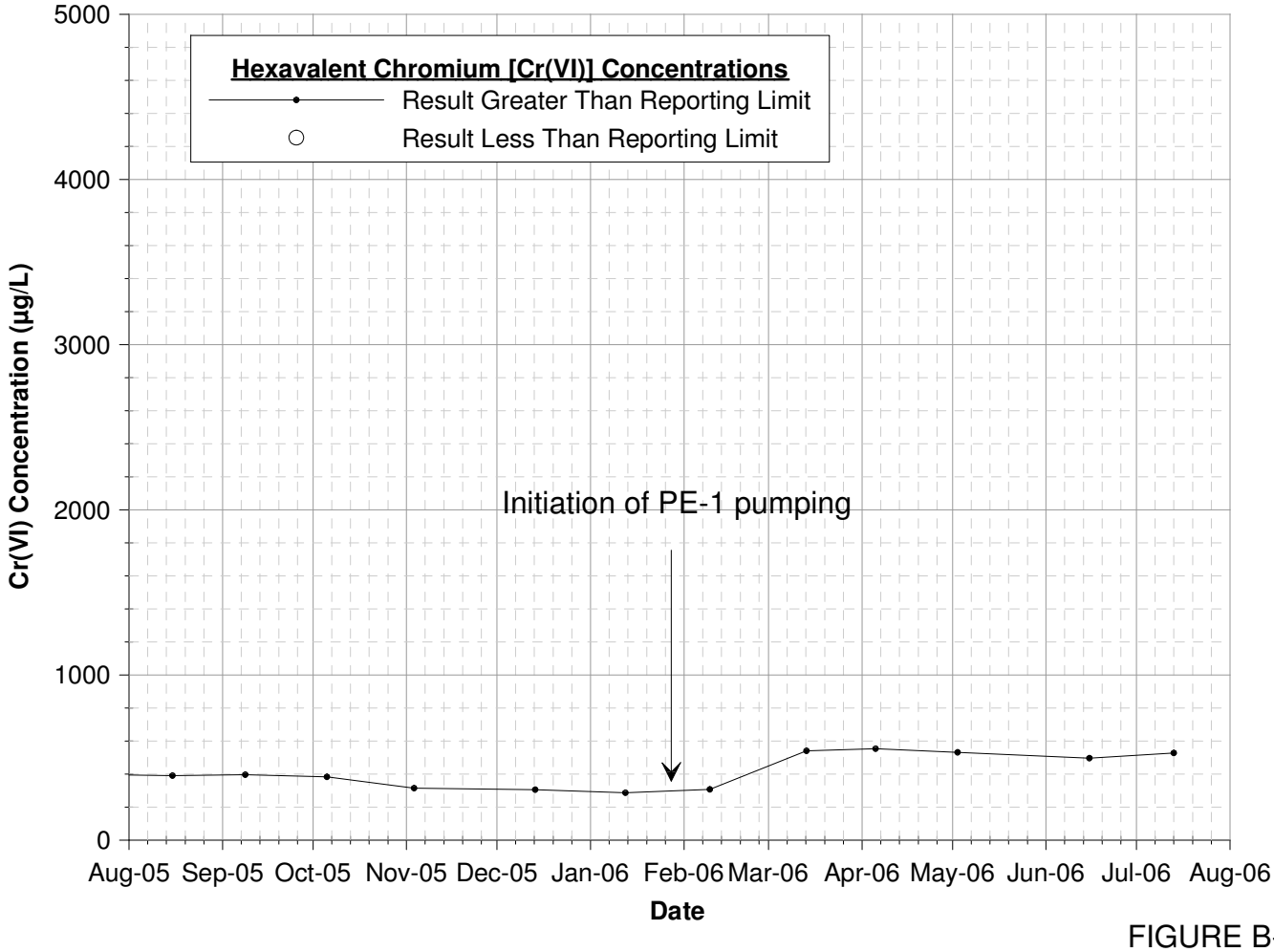

FIGURE B-3
MW-36-100 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 7/13/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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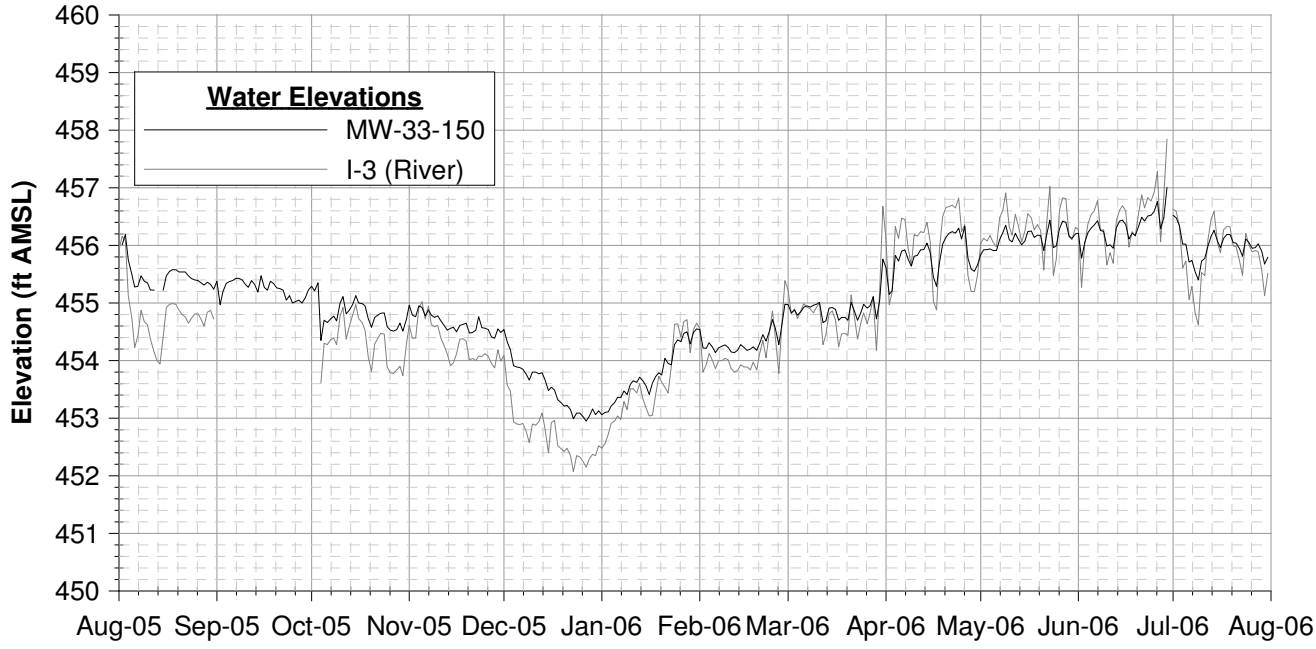

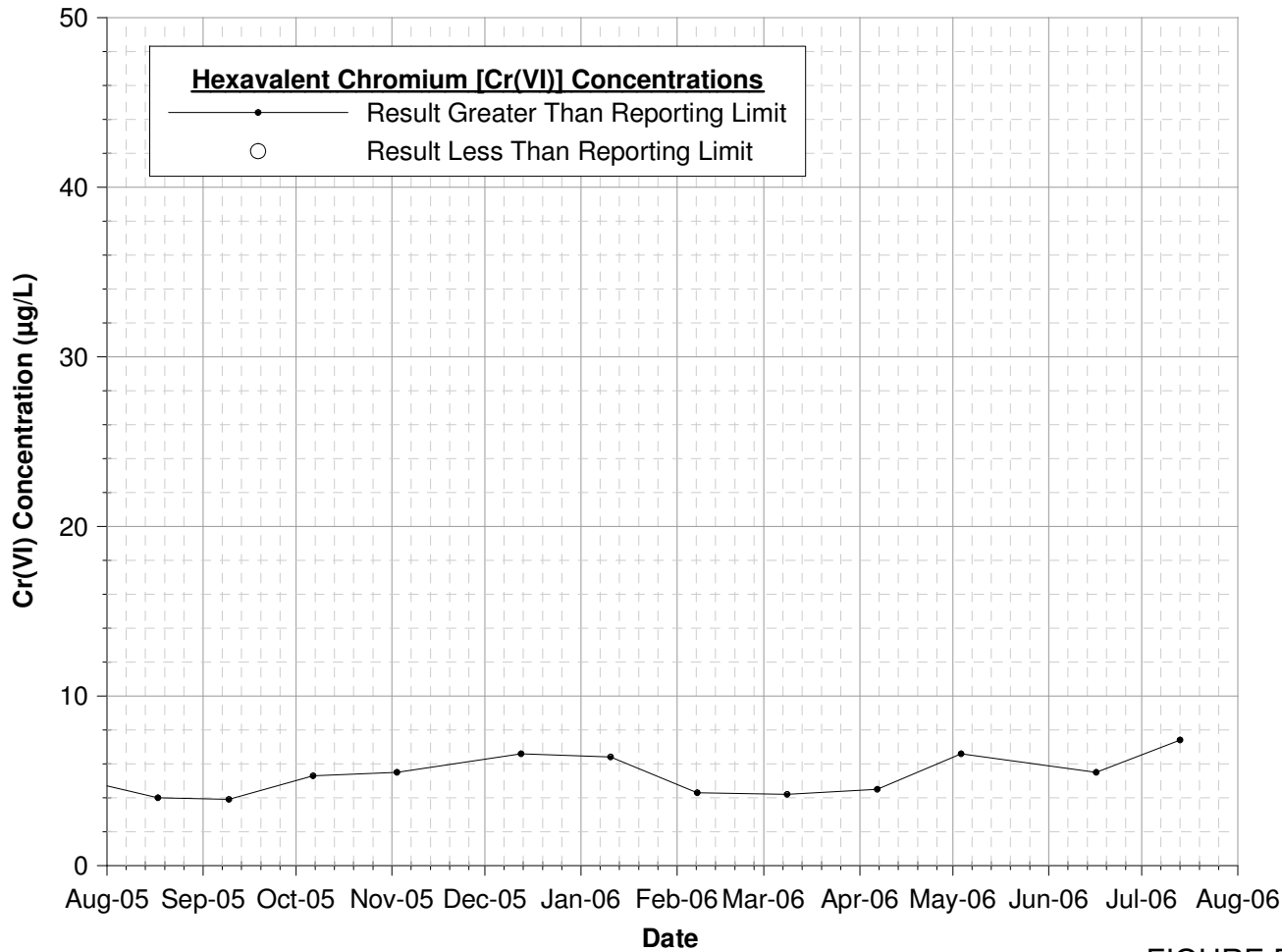

FIGURE B-4
MW-33-150 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 7/13/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. MW-33-150 transducer data not available during July 2005 due to transducer failure.
5. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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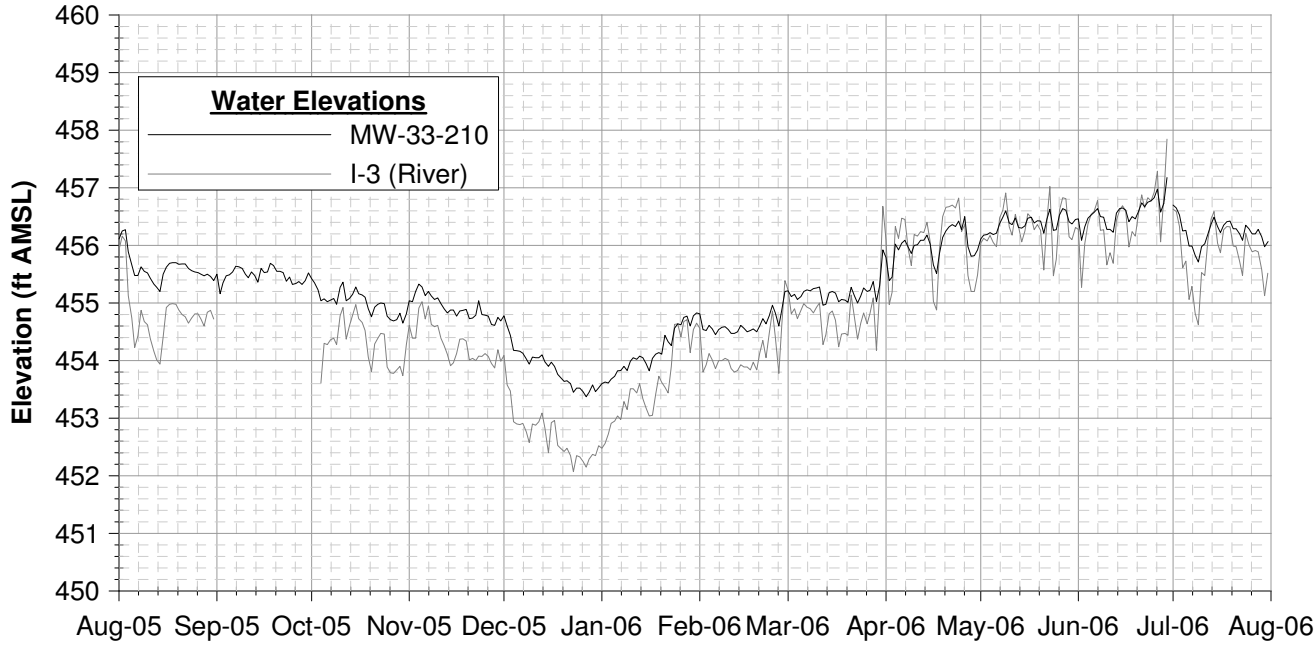

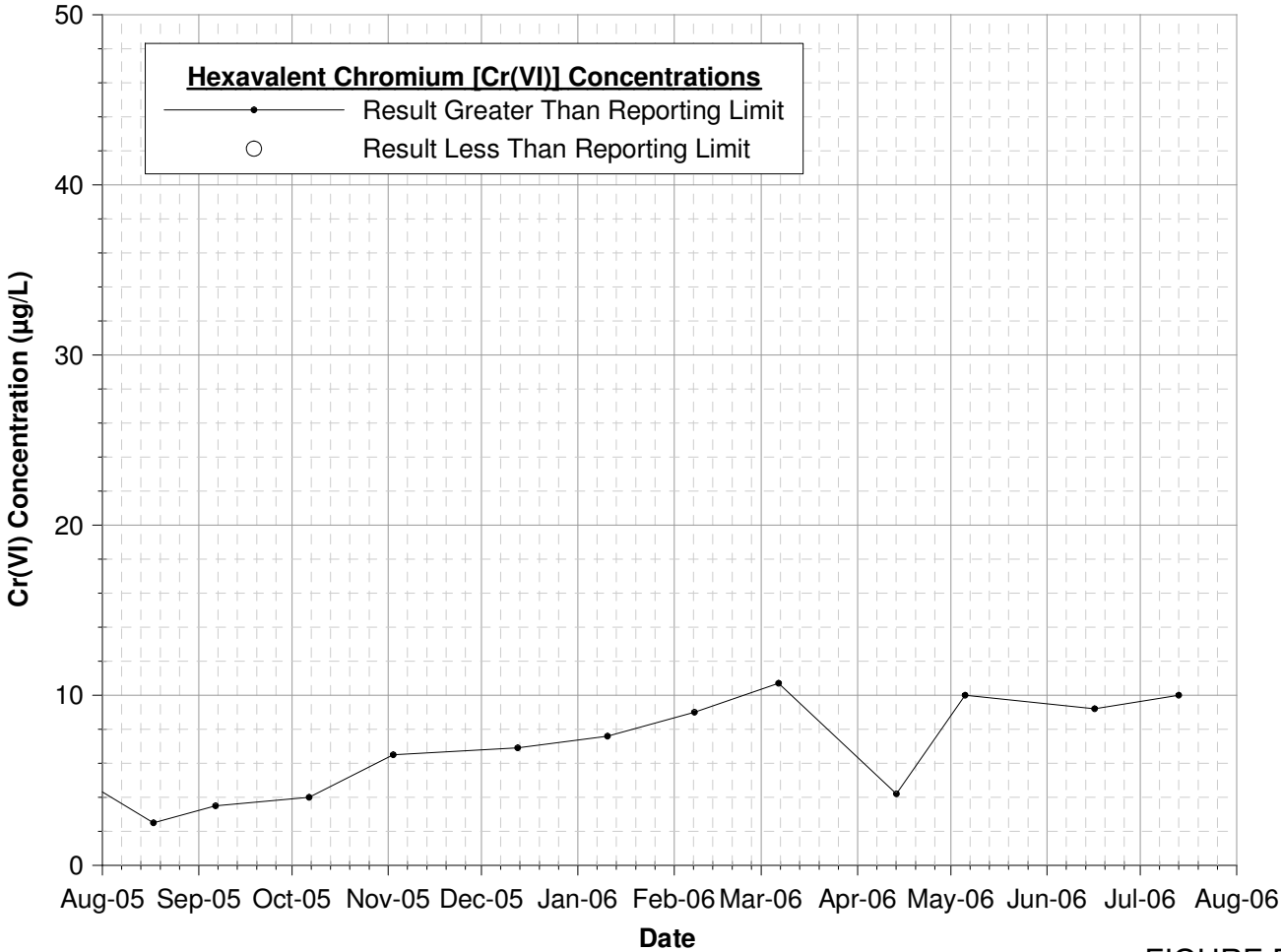

FIGURE B-5
MW-33-210 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 7/13/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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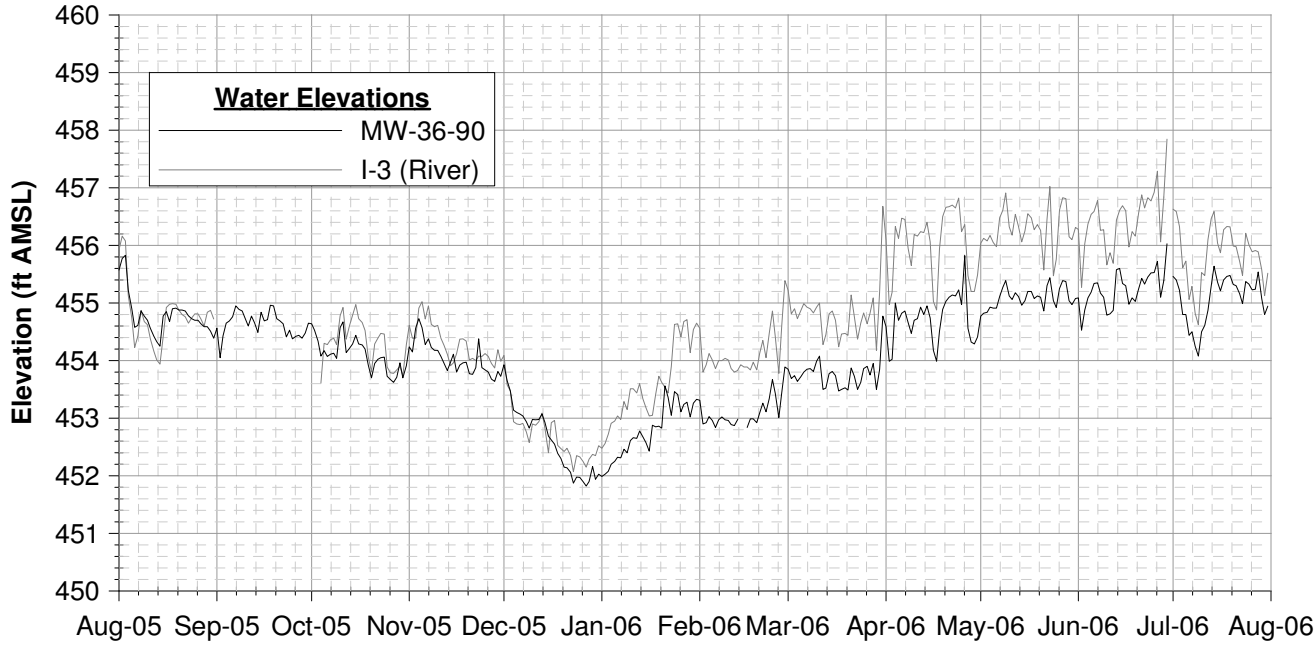

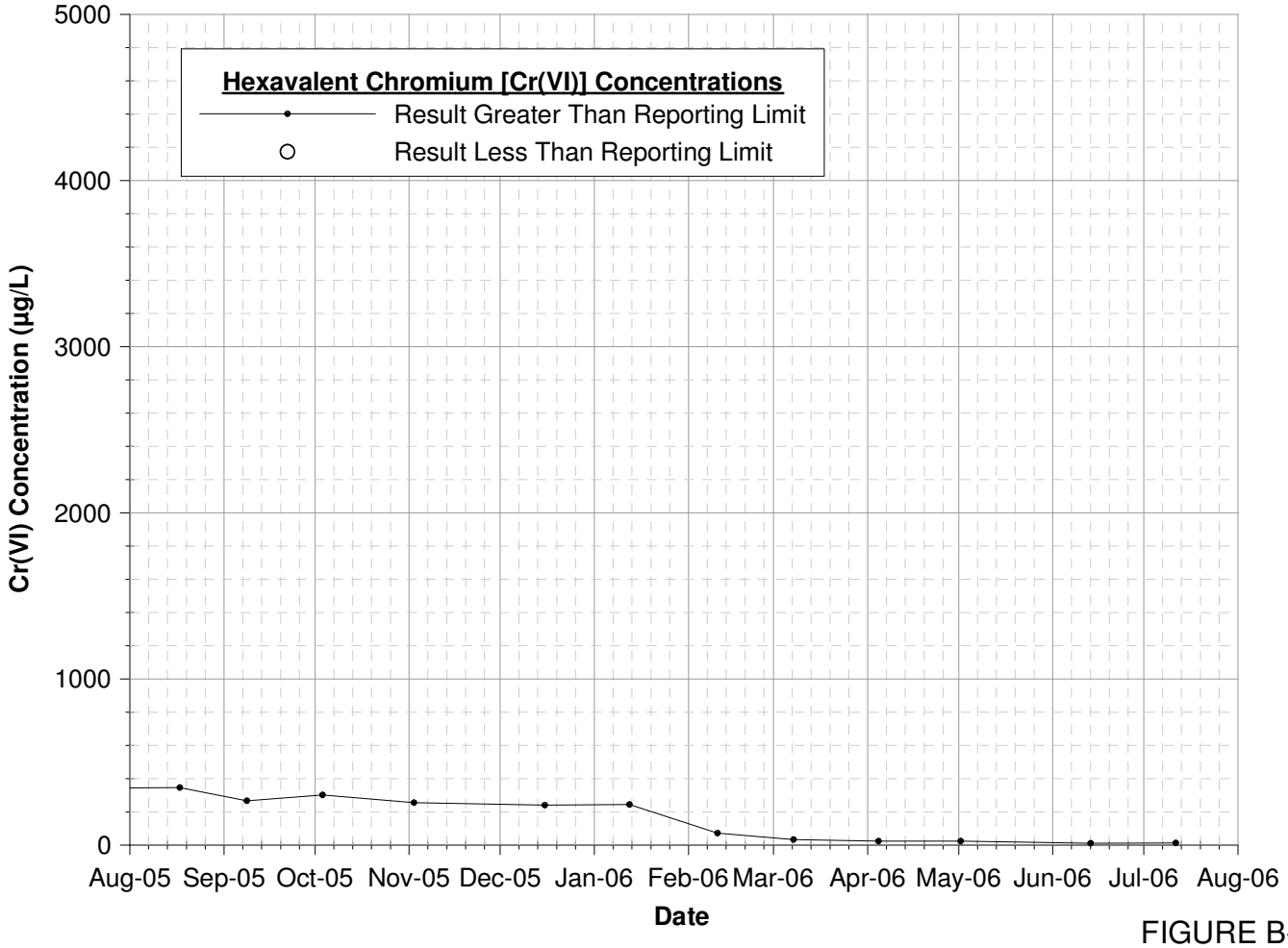

FIGURE B-6
MW-36-90 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 7/11/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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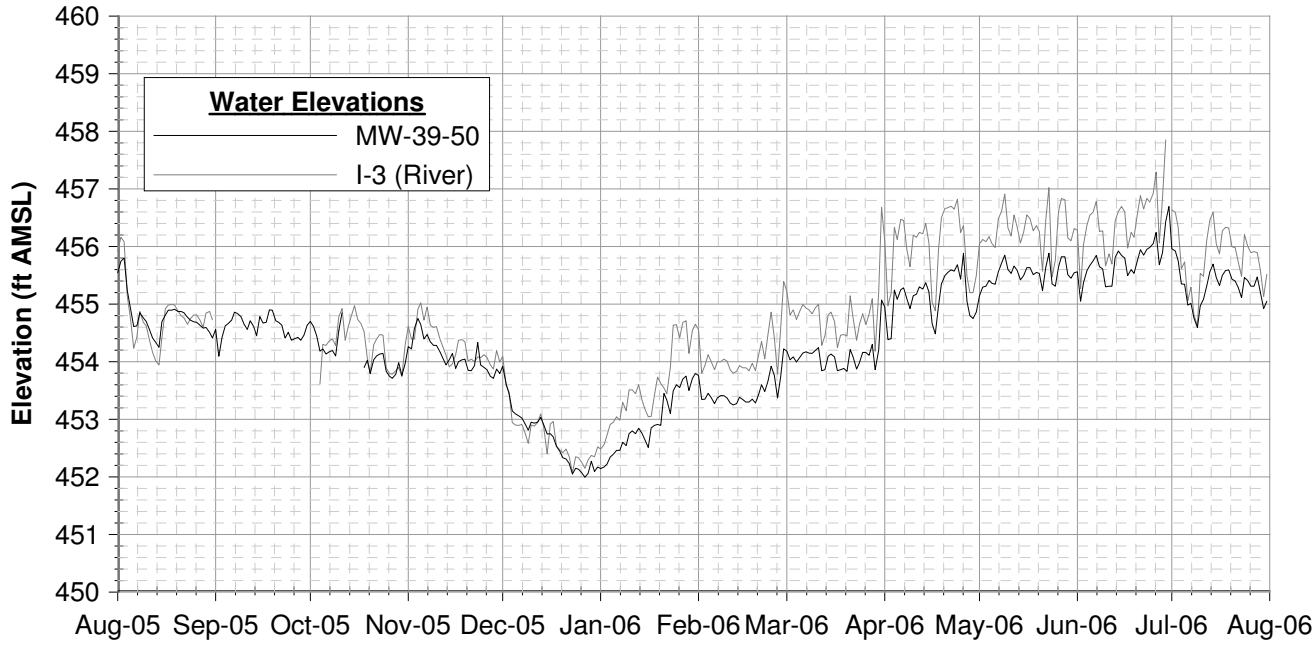

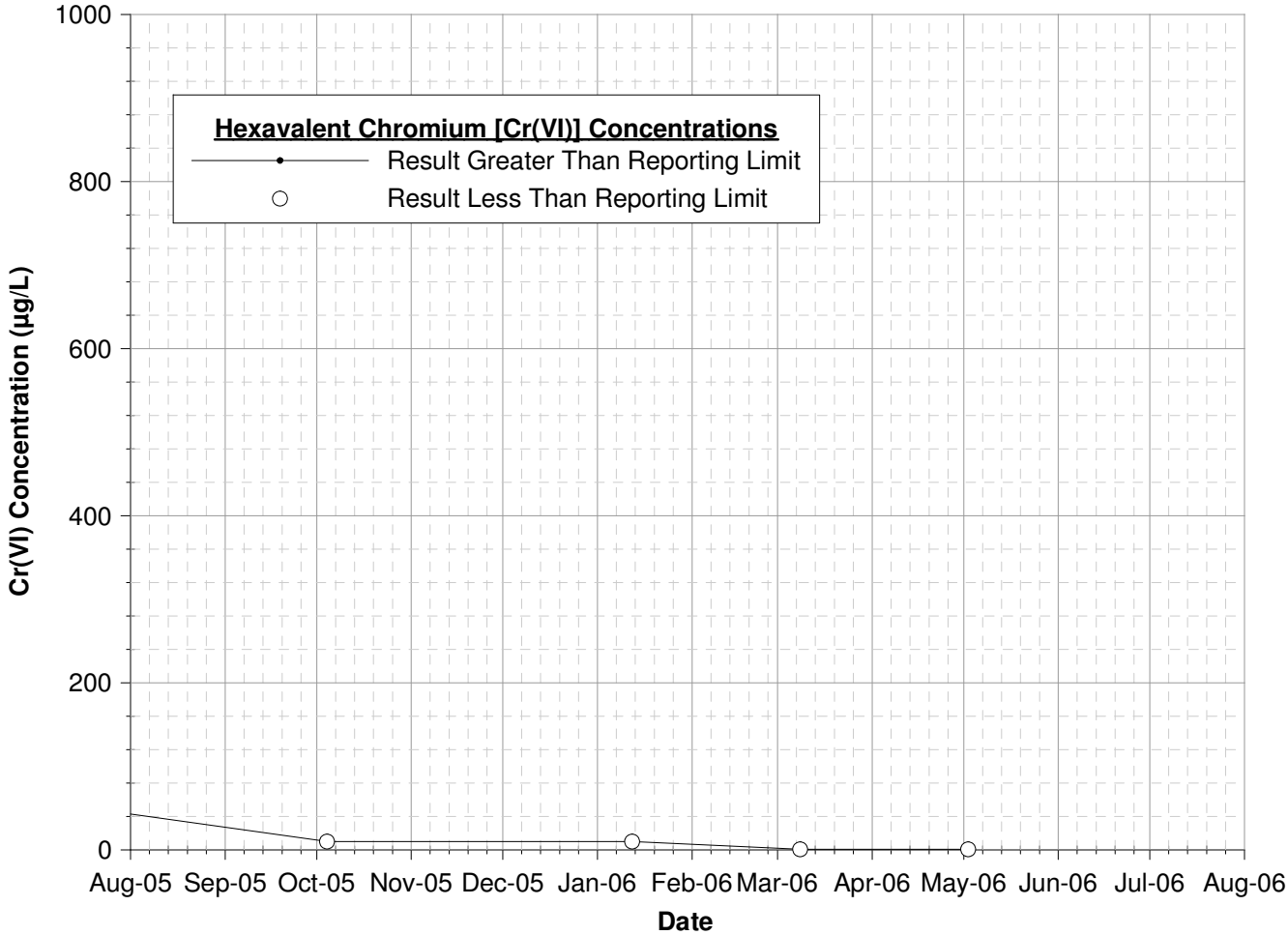

FIGURE B-7
MW-39-50 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 7/31/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.
5. MW-39-50 transducer data not available during mid-October 2005 due to transducer failure.

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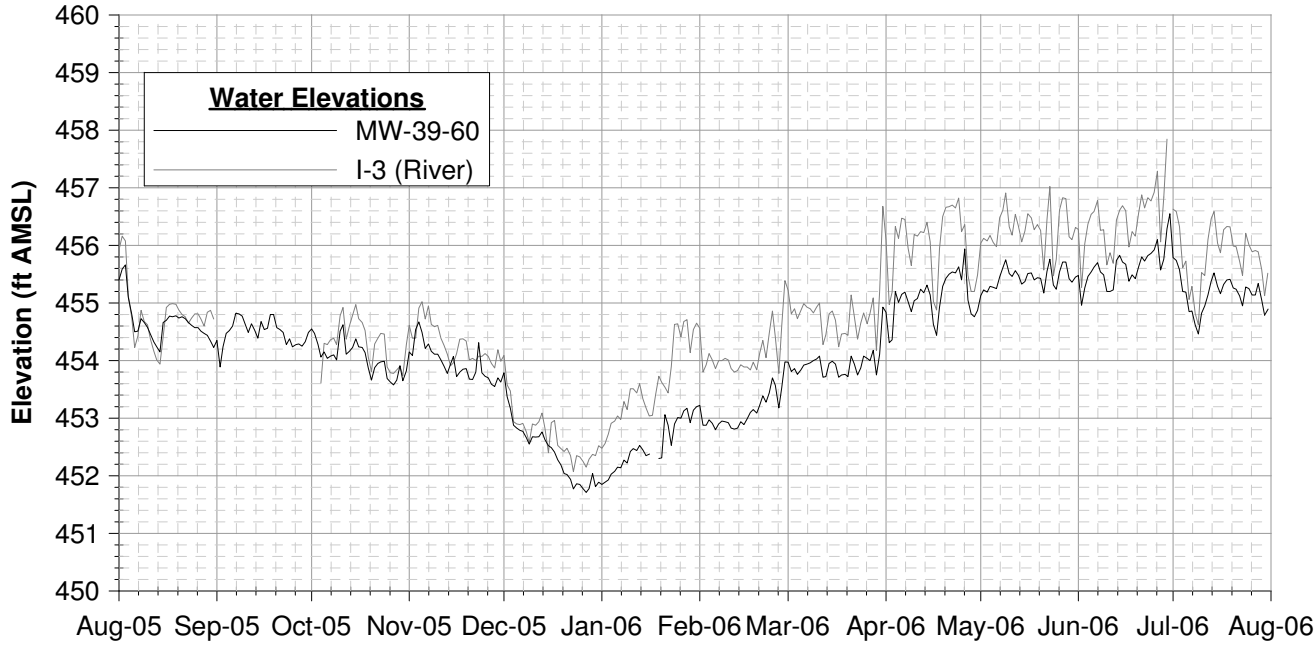

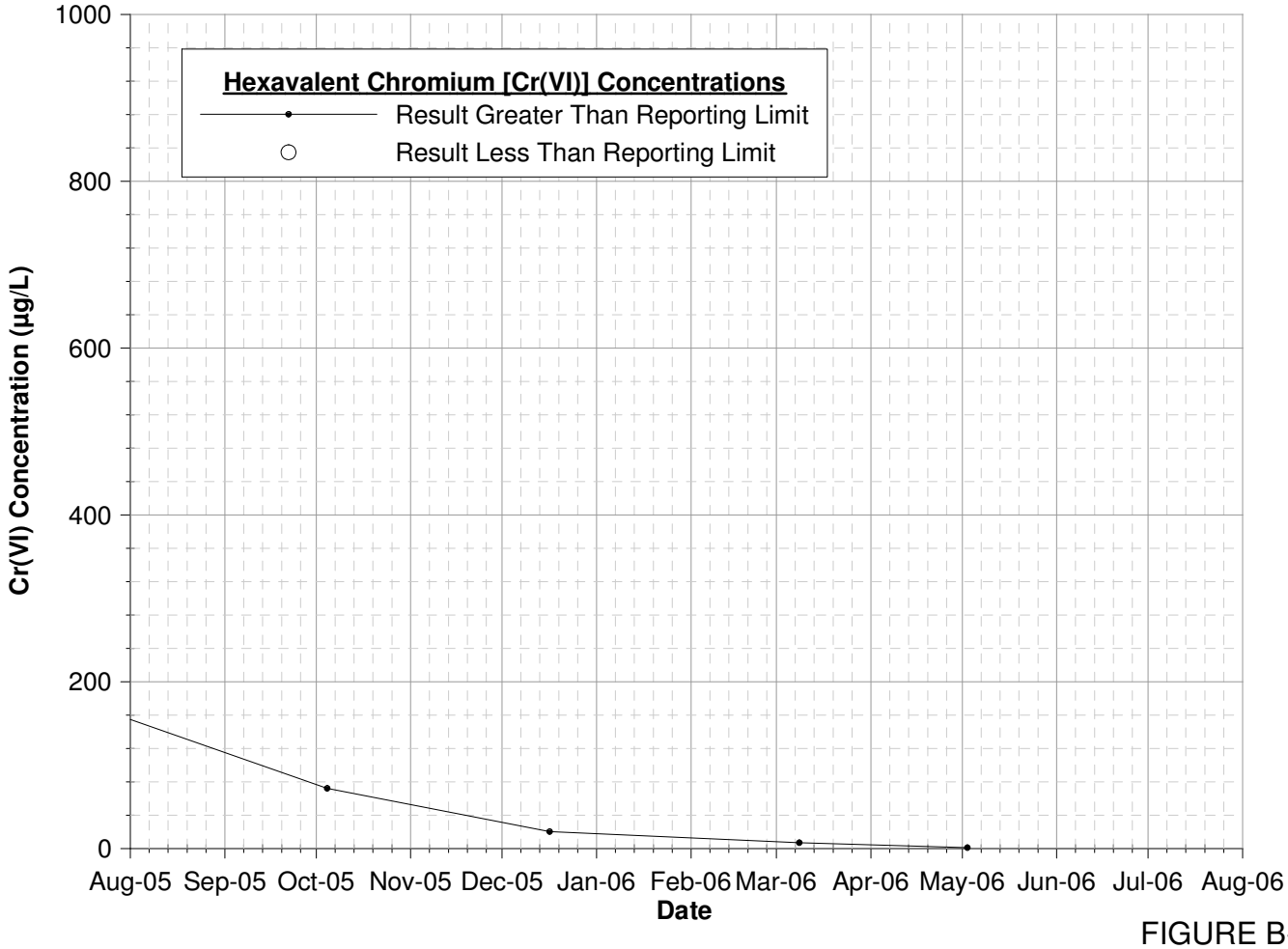

FIGURE B-8
MW-39-60 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 5/2/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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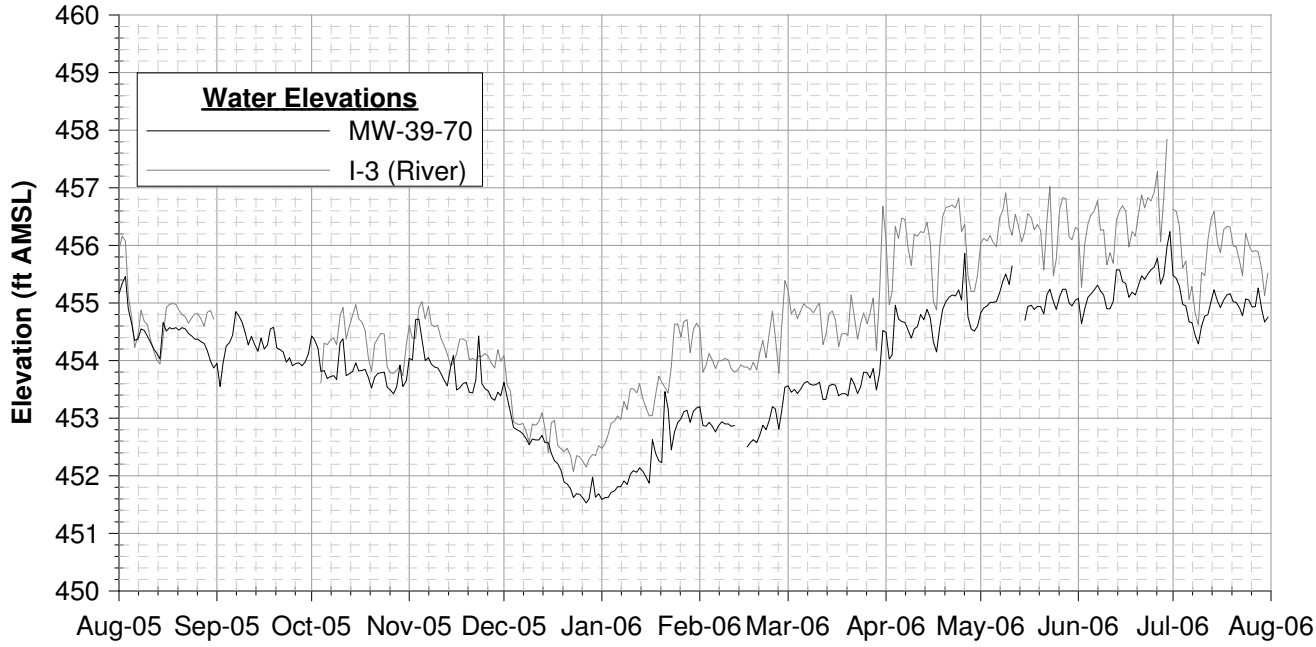

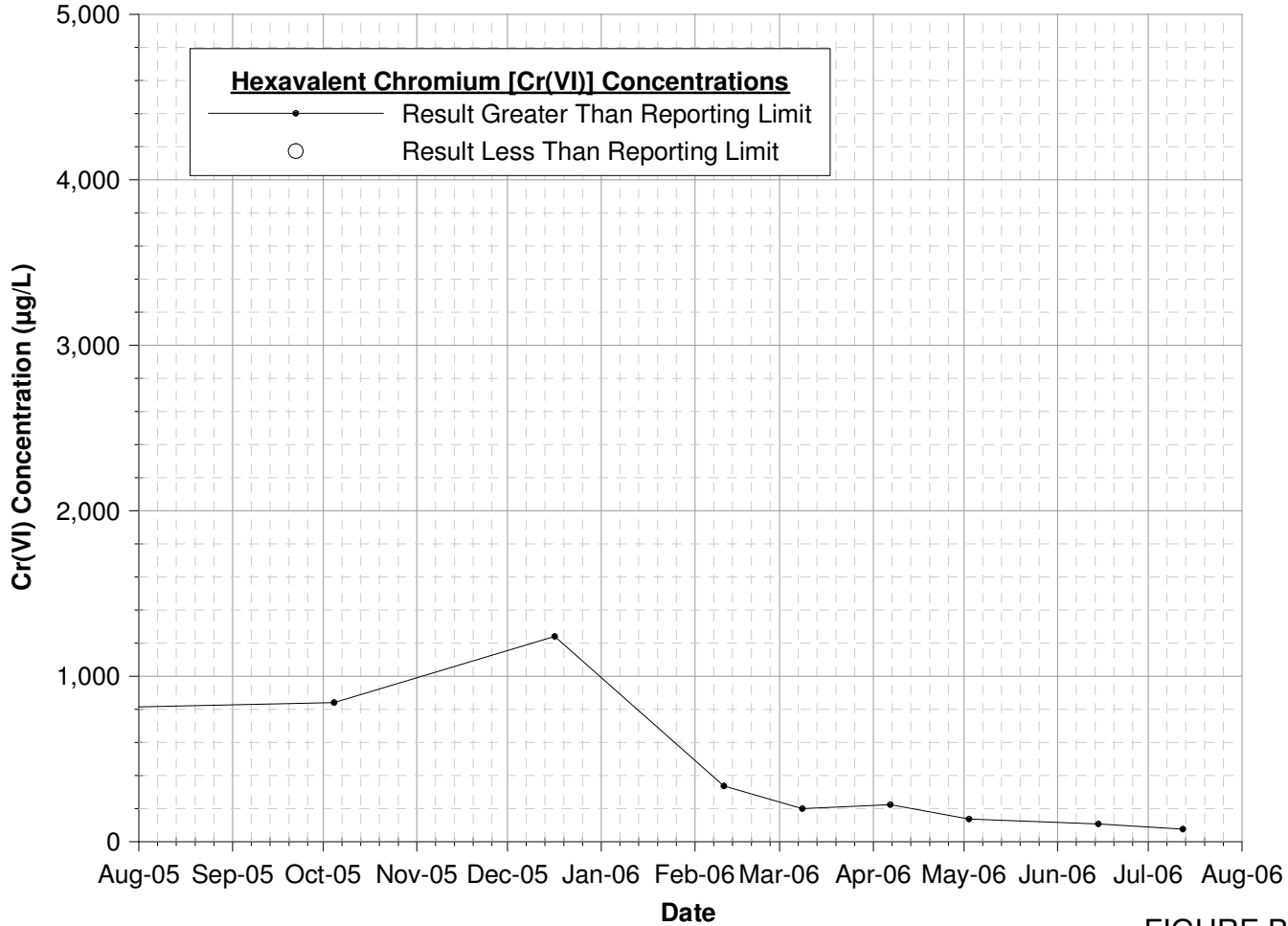

FIGURE B-9
MW-39-70 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 7/12/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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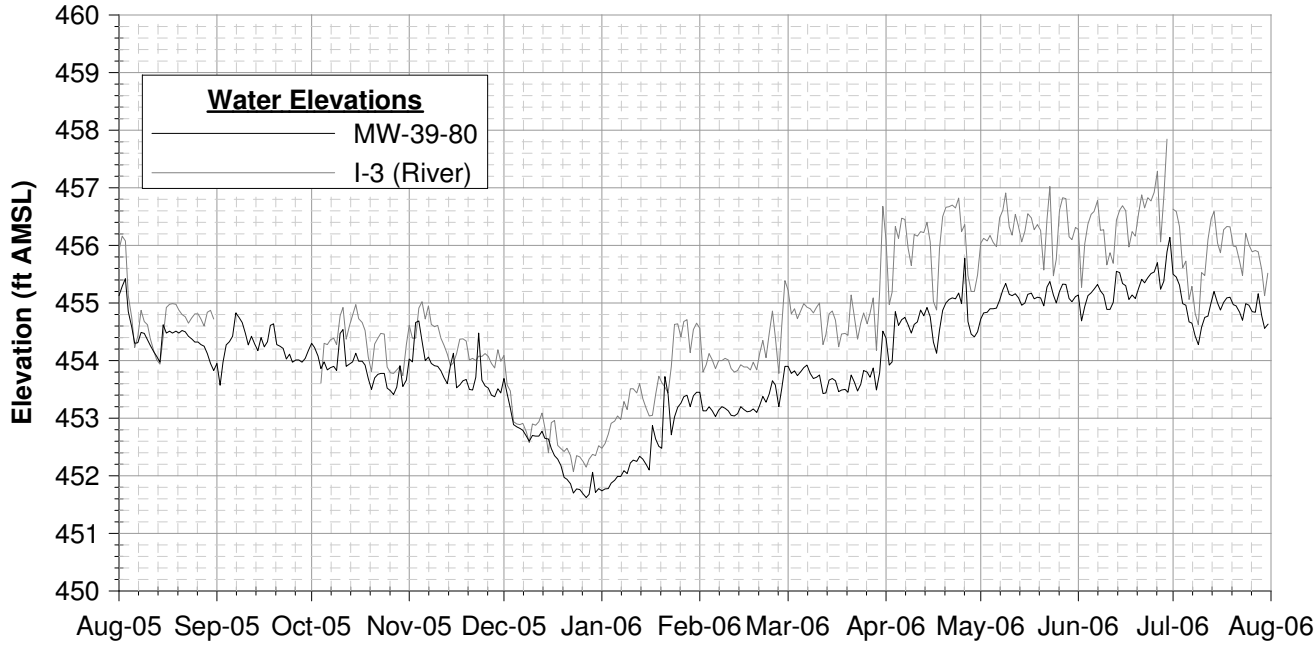

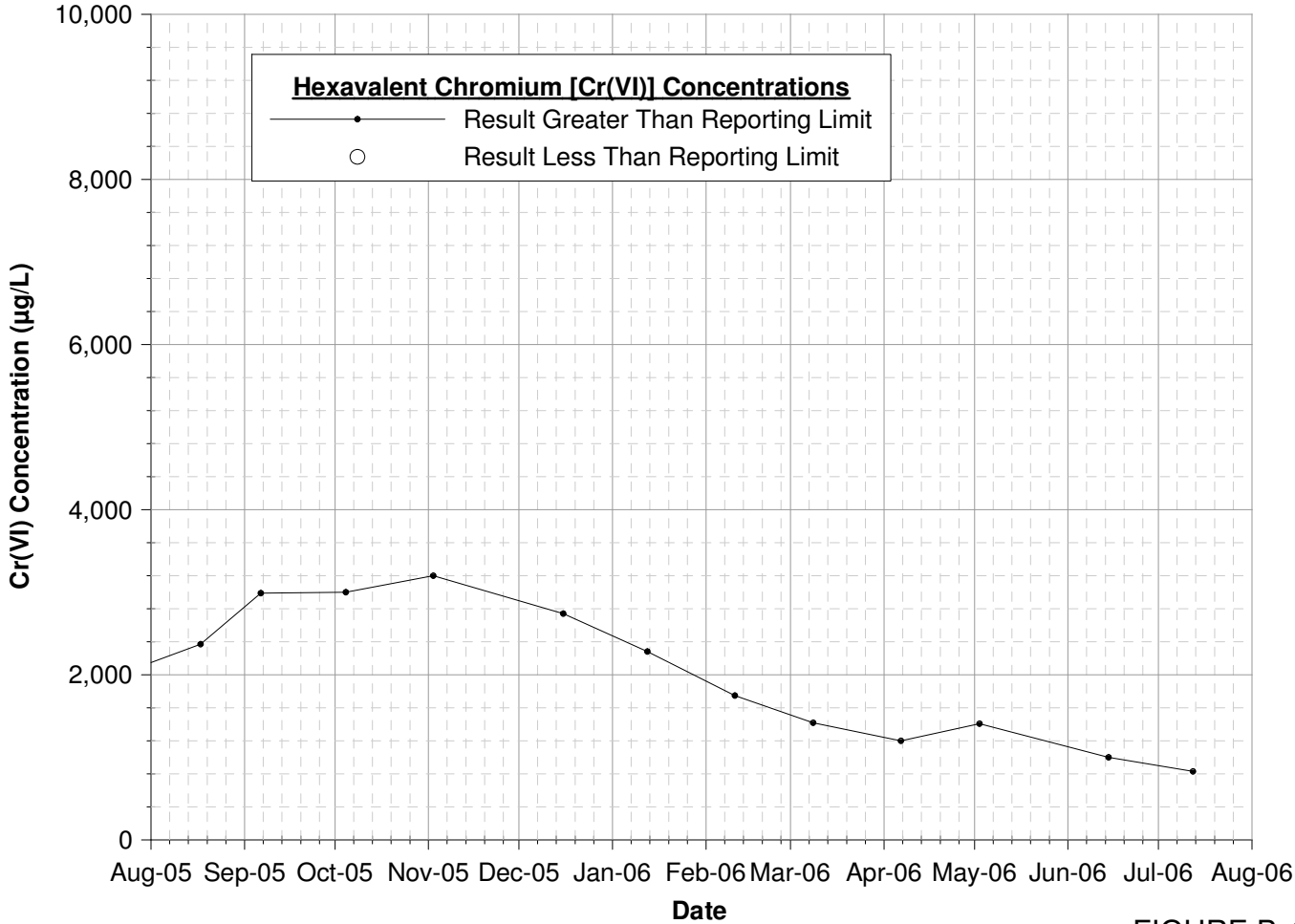

FIGURE B-10
MW-39-80 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 7/12/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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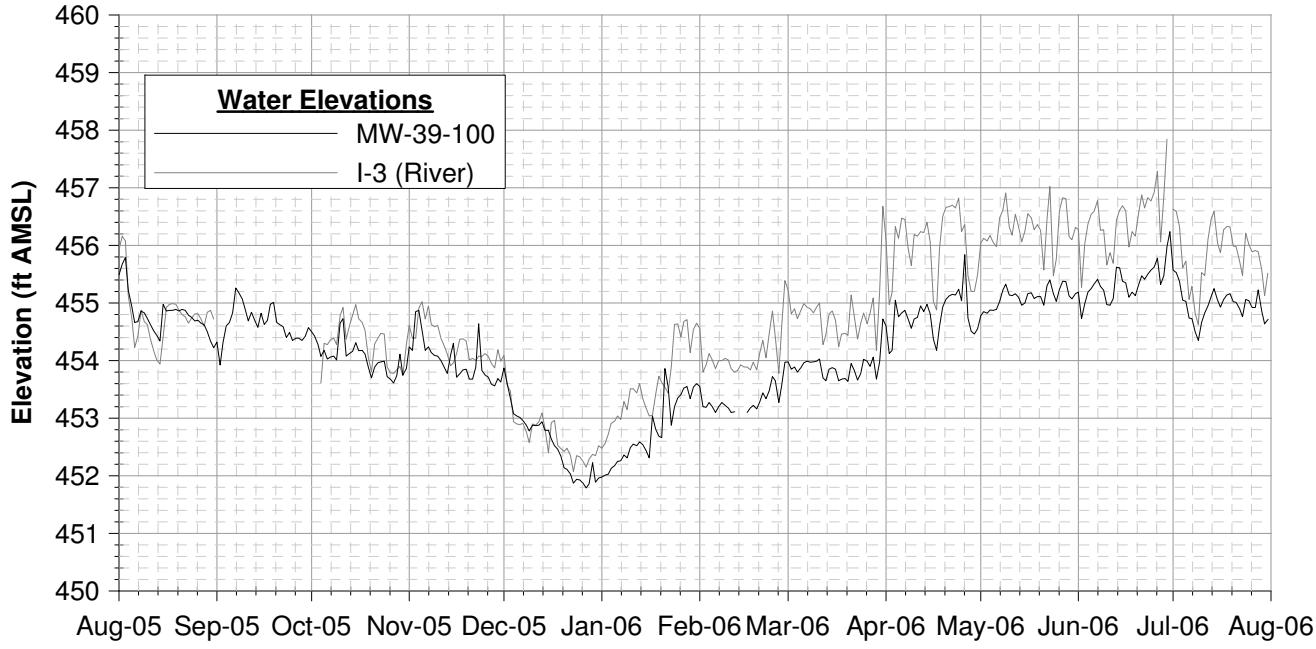

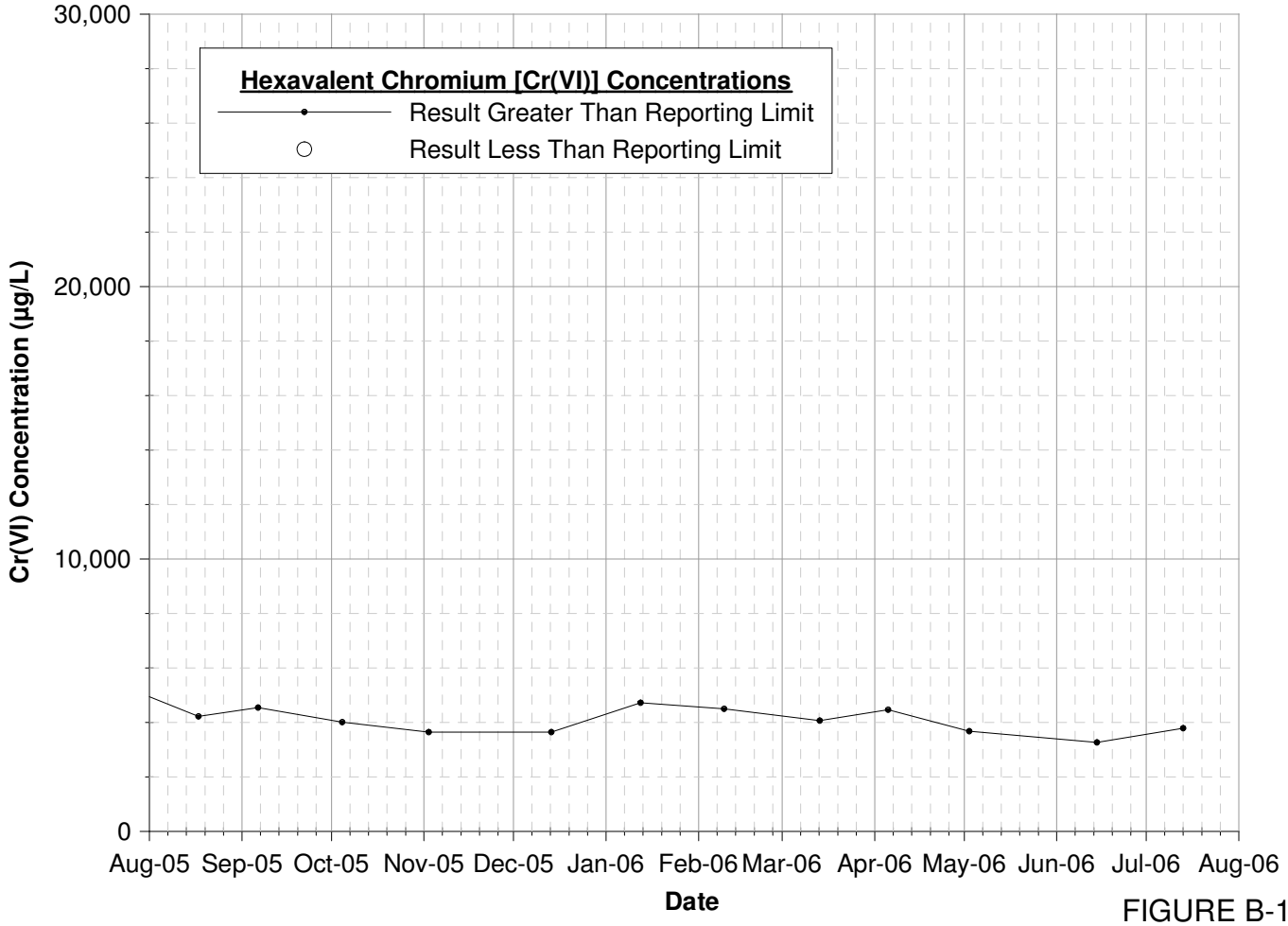

FIGURE B-11
MW-39-100 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 7/13/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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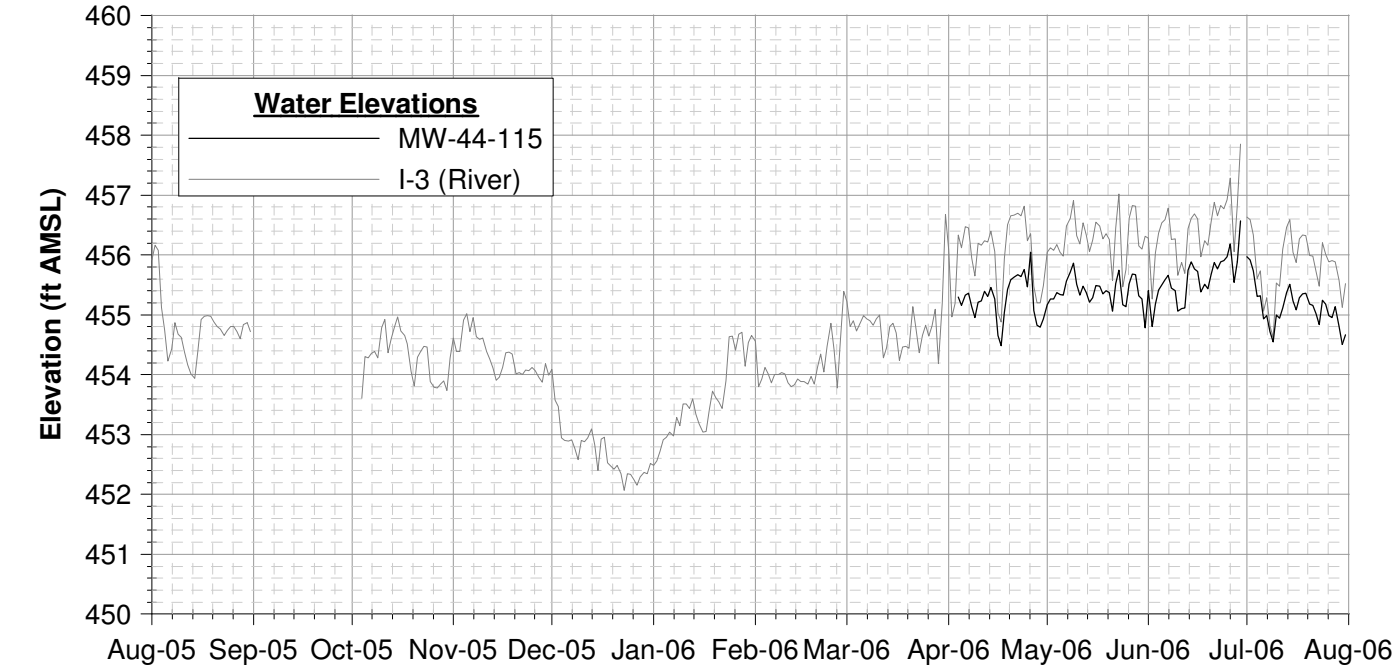

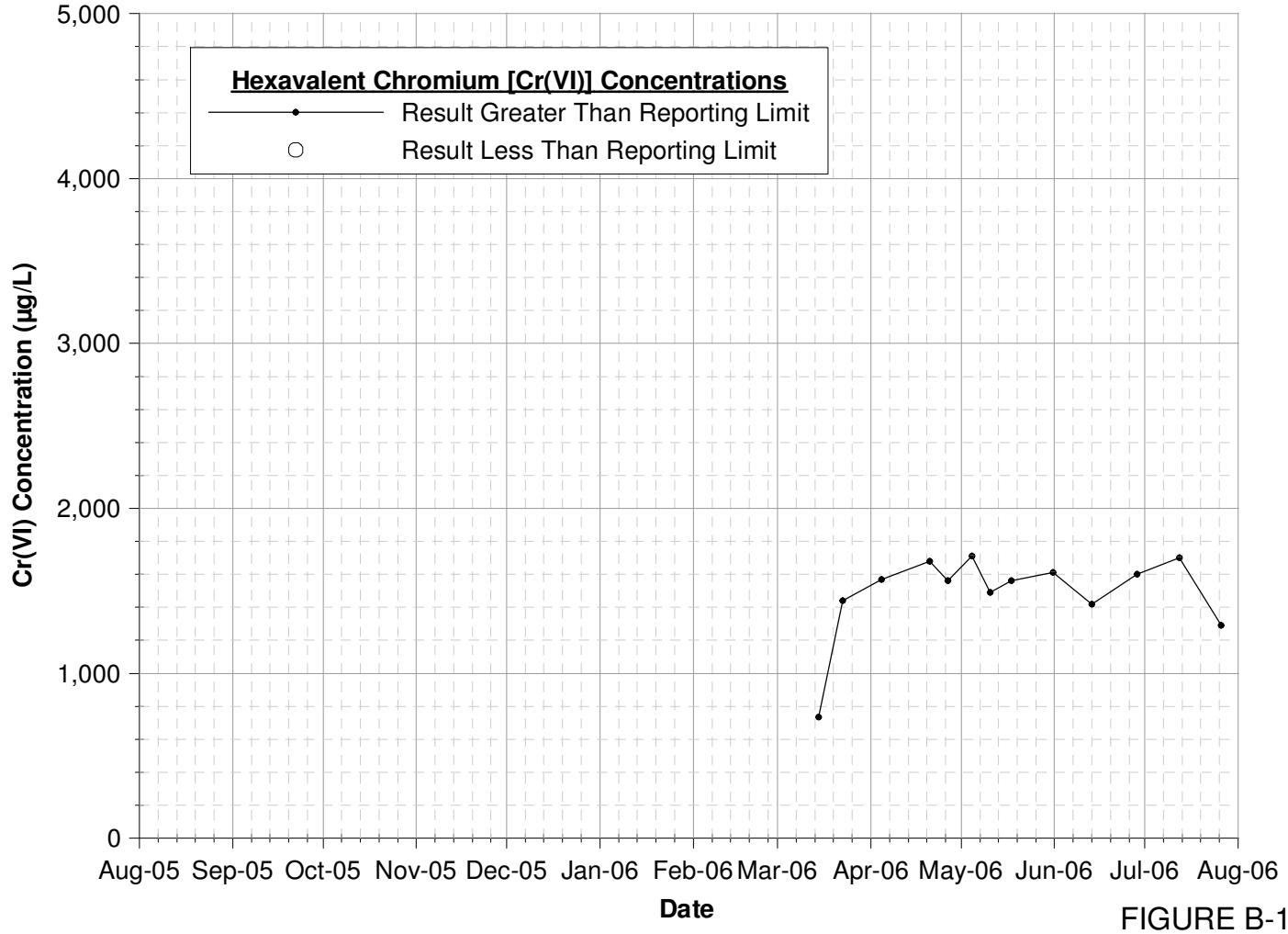

FIGURE B-12
MW-44-115 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 7/26/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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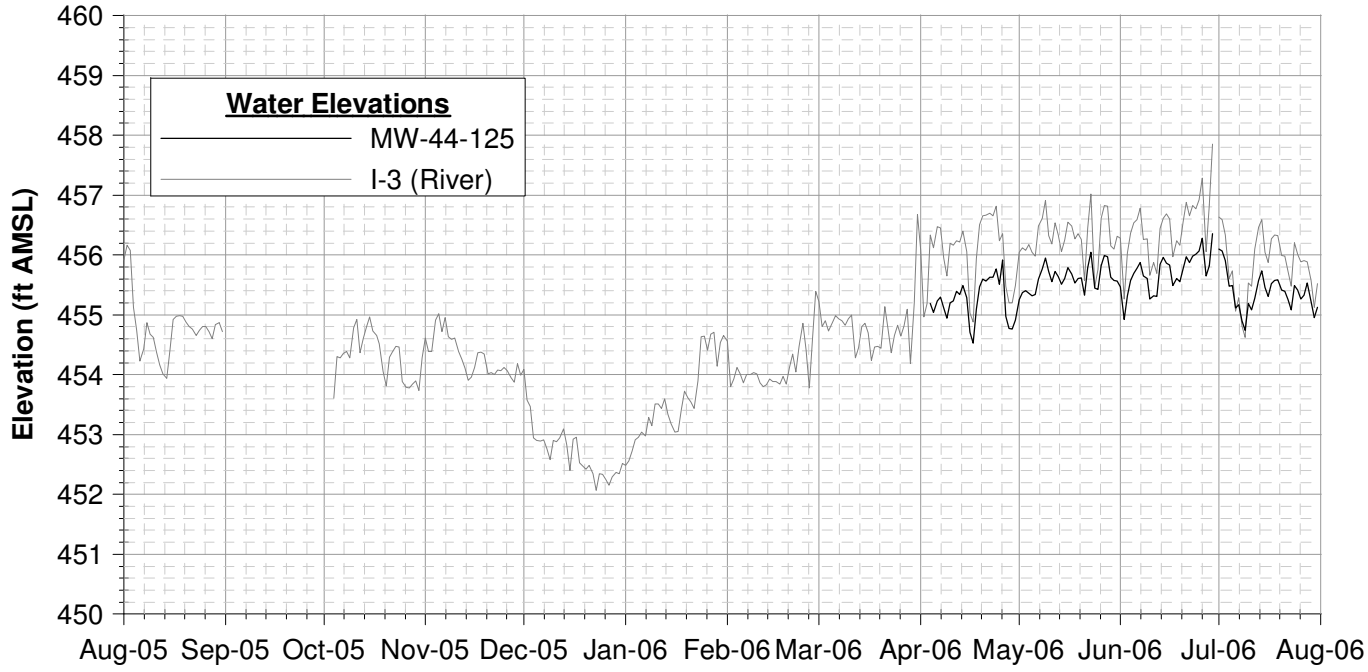

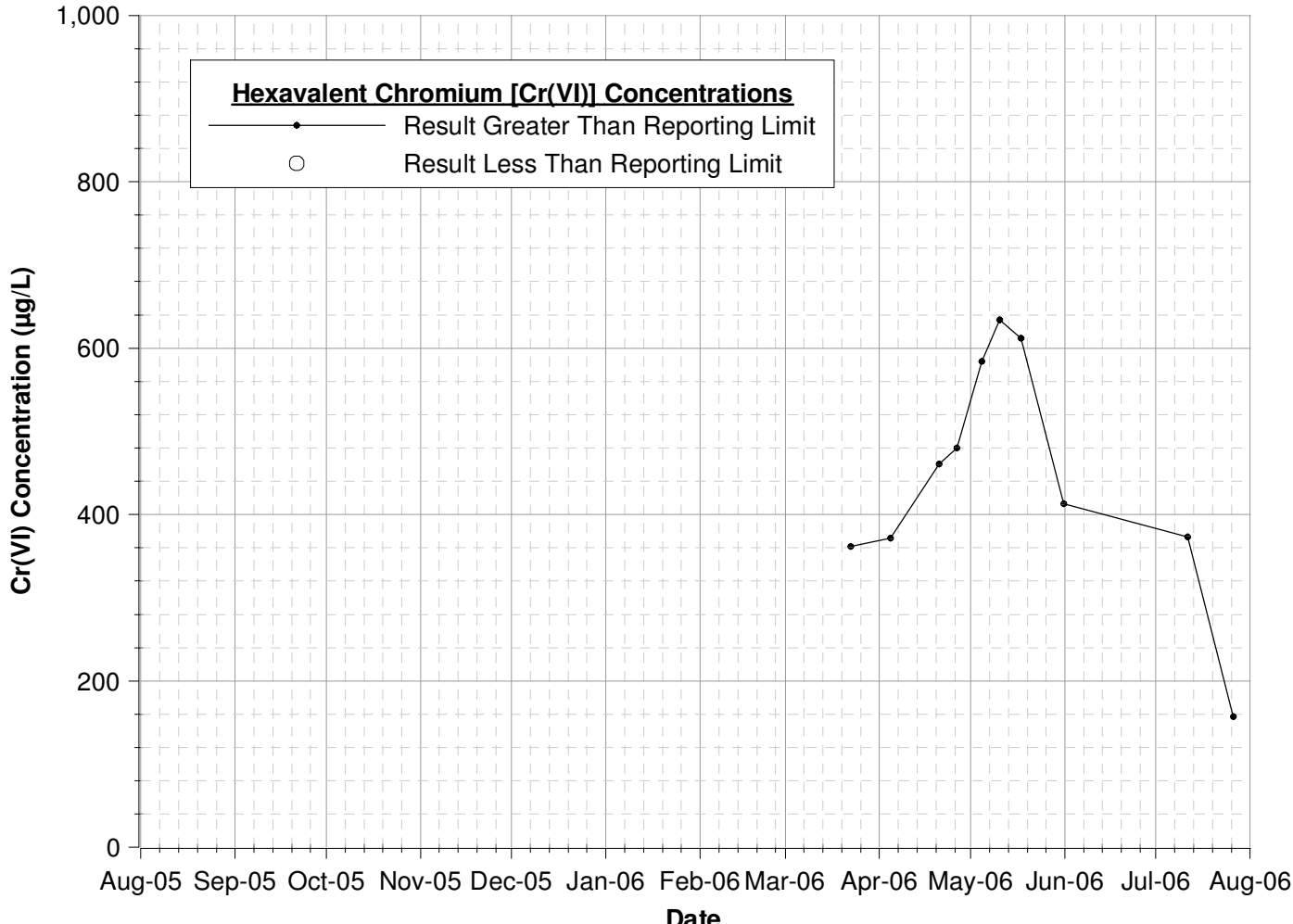

FIGURE B-13
MW-44-125 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 7/26/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.
5. Initial sampling results from 3/9/06 are not plotted because the well was not fully developed at this time.
6. Non-detect results from the 6/28/06 sampling event are not shown while these data undergo a more rigorous field QC evaluation.

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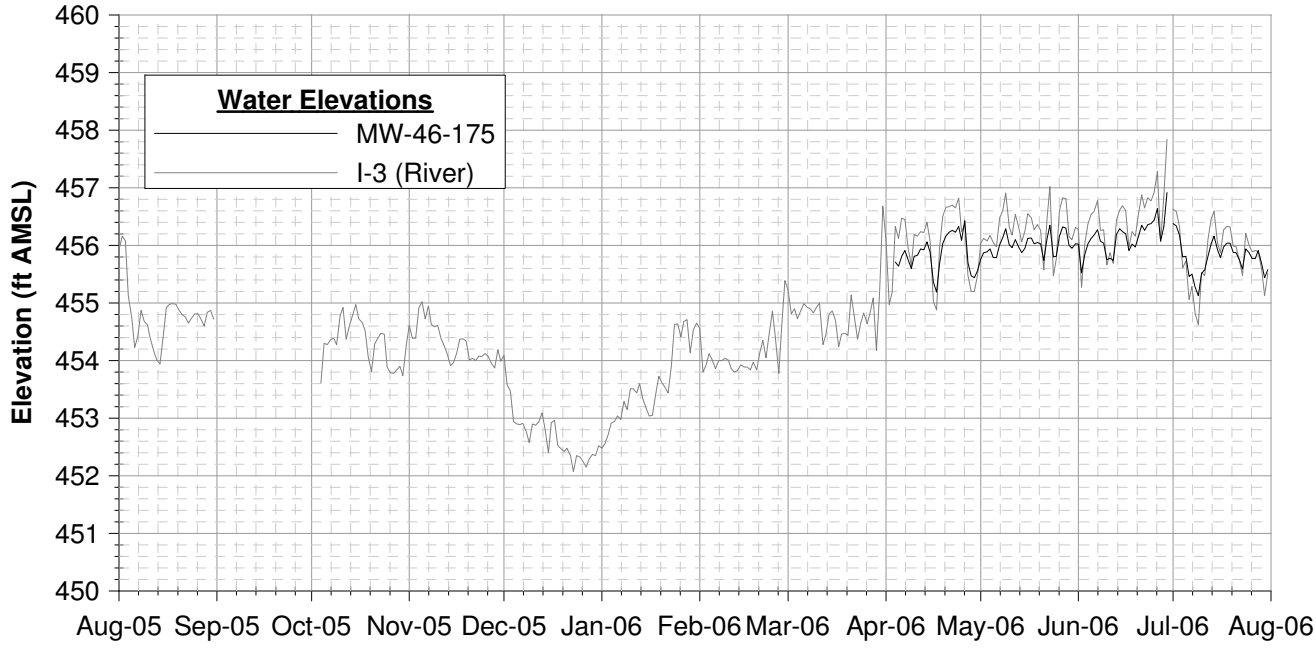

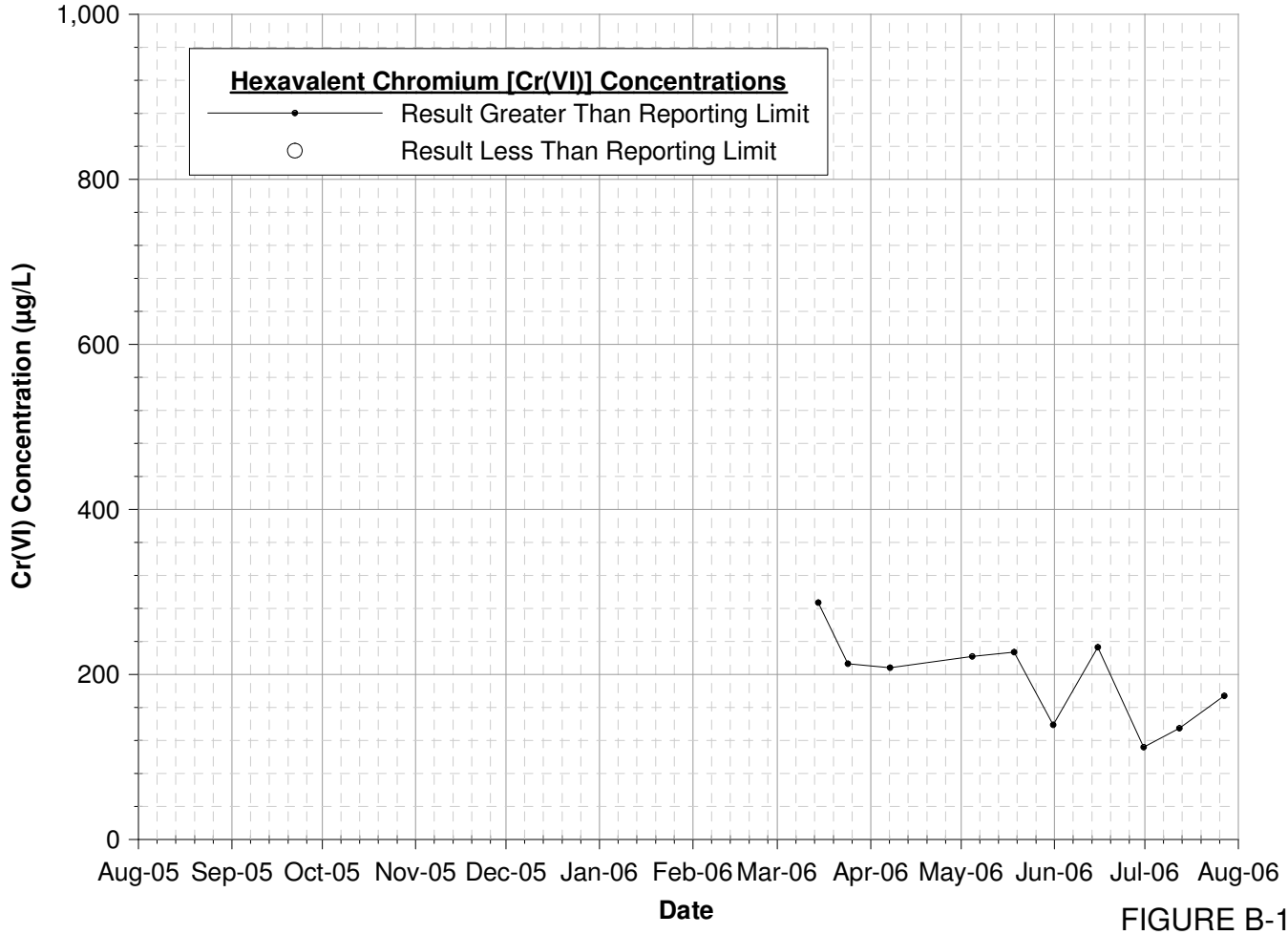

FIGURE B-14
MW-46-175 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 7/27/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Data subject to review.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data unavailable 9/1/05 through 10/4/05 due to river damage.

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Appendix C
Hydrographs and Hydraulic Gradient Maps for Reporting Period

TABLE C-1
Monthly Average, Minimum, and Maximum Groundwater Elevations, July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well	**Average** (ft AMSL)	**Minimum** (ft AMSL)	**Maximum** (ft AMSL)	**Aquifer Depth**
I-3	455.84	454.59	457.02	River Station
MW-10	457.11	457.03	457.21	Shallow
MW-19	456.07	455.95	456.15	Shallow
MW-20-070	454.75	454.63	454.90	Shallow
MW-20-100	454.29	454.08	454.70	Mid-Depth
MW-20-130	453.97	453.69	454.58	Deep
MW-22	455.50	455.39	455.61	Shallow
MW-25	456.18	456.14	456.23	Shallow
MW-26	455.80	455.74	455.87	Shallow
MW-27-020	455.74	455.37	456.15	Shallow
MW-27-060	455.85	455.14	454.90	Mid-Depth
MW-27-085	455.72	455.02	454.70	Deep
MW-28-025	455.96	455.42	454.58	Shallow
MW-28-090	455.75	454.92	455.61	Deep
MW-29	456.02	455.96	456.23	Shallow
MW-30-030	455.50	455.30	455.87	Shallow
MW-30-050	455.37	454.78	456.10	Mid-Depth
MW-31-060	455.62	455.46	456.54	Shallow
MW-31-135	454.97	454.71	456.40	Deep
MW-32-020	455.29	455.12	456.51	Shallow
MW-32-035	455.50	455.12	456.55	Shallow
MW-33-040	455.91	455.53	456.05	Shallow
MW-33-090	455.94	455.50	455.70	Mid-Depth
MW-33-150	455.98	455.55	455.95	Deep
MW-33-210	456.23	455.87	455.77	Deep
MW-34-055	455.85	454.99	455.34	Mid-Depth
MW-34-080	455.74	454.91	455.45	Deep
MW-34-100	455.50	454.74	455.86	Deep
MW-35-060	456.27	455.91	456.28	Shallow
MW-35-135	455.98	455.76	456.38	Deep
MW-36-020	455.43	454.78	456.42	Shallow
MW-36-040	455.55	455.46	456.60	Shallow
MW-36-050	455.51	454.71	456.66	Mid-Depth
MW-36-070	455.48	455.12	456.52	Mid-Depth
MW-36-090	455.07	455.12	456.24	Deep
MW-36-100	455.09	455.53	456.65	Deep
MW-39-040	455.28	455.50	456.20	Shallow
MW-39-050	455.32	455.55	455.97	Mid-Depth
MW-39-060	455.17	455.87	456.17	Mid-Depth
MW-39-070	454.94	454.99	456.16	Mid-Depth
MW-39-080	454.90	454.91	456.14	Deep
MW-39-100	454.97	454.74	455.68	Deep
MW-42-030	455.32	455.91	455.71	Shallow

TABLE C-1
Monthly Average, Minimum, and Maximum Groundwater Elevations, July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well	**Average** (ft AMSL)	**Minimum** (ft AMSL)	**Maximum** (ft AMSL)	**Aquifer Depth**
MW-42-055	455.44	455.76	455.82	Mid-Depth
MW-42-065	455.53	454.87	455.85	Mid-Depth
MW-43-025	455.90	454.90	455.67	Shallow
MW-43-075	456.05	454.84	455.43	Deep
MW-43-090	456.25	454.80	455.40	Deep
MW-44-070	455.59	454.49	455.47	Mid-Depth
MW-44-115	455.14	454.72	455.75	Deep
MW-44-125	455.38	454.78	455.89	Deep
MW-45-095a	454.16	454.65	455.98	Deep
MW-46-175	455.80	454.52	456.58	Deep
MW-46-205	456.09	454.47	456.79	Deep
MW-47-055	456.04	454.53	456.99	Shallow
MW-47-115	456.13	454.88	456.34	Deep
MW-49-135	456.39	454.98	455.76	Deep
MW-49-275	456.88	455.07	455.98	Deep
MW-49-365	458.34	455.21	455.36	Deep
MW-50-095	455.94	455.31	456.32	Deep
MW-50-200	456.25	455.50	456.51	Deep
MW-51	455.85	454.81	456.23	Mid-Depth
RRB	NA	NA	NA	River Station
PT2D	454.58	454.81	456.37	Deep
PT5D	454.83	454.51	456.89	Deep
PT6D	454.83	454.76	457.18	Deep
TW-02D	446.75	453.43	458.60	Deep

NA= Data incomplete over reporting period

TABLE C-2
Quarterly Average, Minimum, and Maximum Groundwater Elevations, May through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well	**Average** (ft AMSL)	**Minimum** (ft AMSL)	**Maximum** (ft AMSL)	**Aquifer Depth**
I-3	455.84	454.59	457.02	River Station
MW-10	457.11	457.03	457.21	Shallow
MW-19	456.07	455.95	456.15	Shallow
MW-20-070	454.75	454.63	454.90	Shallow
MW-20-100	454.29	454.08	454.70	Mid-Depth
MW-20-130	453.97	453.69	454.58	Deep
MW-22	455.50	455.39	455.61	Shallow
MW-25	456.18	456.14	456.23	Shallow
MW-26	455.80	455.74	455.87	Shallow
MW-27-020	455.74	455.37	456.15	Shallow
MW-27-060	455.85	455.14	454.90	Mid-Depth
MW-27-085	455.72	455.02	454.70	Deep
MW-28-025	455.96	455.42	454.58	Shallow
MW-28-090	455.75	454.92	455.61	Deep
MW-29	456.02	455.96	456.23	Shallow
MW-30-030	455.50	455.30	455.87	Shallow
MW-30-050	455.37	454.78	456.10	Mid-Depth
MW-31-060	455.62	455.46	456.54	Shallow
MW-31-135	454.97	454.71	456.40	Deep
MW-32-020	455.29	455.12	456.51	Shallow
MW-32-035	455.50	455.12	456.55	Shallow
MW-33-040	455.91	455.53	456.05	Shallow
MW-33-090	455.94	455.50	455.70	Mid-Depth
MW-33-150	455.98	455.55	455.95	Deep
MW-33-210	456.23	455.87	455.77	Deep
MW-34-055	455.85	454.99	455.34	Mid-Depth
MW-34-080	455.74	454.91	455.45	Deep
MW-34-100	455.50	454.74	455.86	Deep
MW-35-060	456.27	455.91	456.28	Shallow
MW-35-135	455.98	455.76	456.38	Deep
MW-36-020	455.43	454.78	456.42	Shallow
MW-36-040	455.55	455.46	456.60	Shallow
MW-36-050	455.51	454.71	456.66	Mid-Depth
MW-36-070	455.48	455.12	456.52	Mid-Depth
MW-36-090	455.07	455.12	456.24	Deep
MW-36-100	455.09	455.53	456.65	Deep
MW-39-040	455.28	455.50	456.20	Shallow
MW-39-050	455.32	455.55	455.97	Mid-Depth
MW-39-060	455.17	455.87	456.17	Mid-Depth
MW-39-070	454.94	454.99	456.16	Mid-Depth
MW-39-080	454.90	454.91	456.14	Deep
MW-39-100	454.97	454.74	455.68	Deep
MW-42-030	455.32	455.91	455.71	Shallow
MW-42-055	455.44	455.76	455.82	Mid-Depth

TABLE C-2
Quarterly Average, Minimum, and Maximum Groundwater Elevations, May through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well	**Average** (ft AMSL)	**Minimum** (ft AMSL)	**Maximum** (ft AMSL)	**Aquifer Depth**
MW-42-065	455.53	454.87	455.85	Mid-Depth
MW-43-025	455.90	454.90	455.67	Shallow
MW-43-075	456.05	454.84	455.43	Deep
MW-43-090	456.25	454.80	455.40	Deep
MW-44-070	455.59	454.49	455.47	Mid-Depth
MW-44-115	455.14	454.72	455.75	Deep
MW-44-125	455.38	454.78	455.89	Deep
MW-45-095a	454.16	454.65	455.98	Deep
MW-46-175	455.80	454.52	456.58	Deep
MW-46-205	456.09	454.47	456.79	Deep
MW-47-055	456.04	454.53	456.99	Shallow
MW-47-115	456.13	454.88	456.34	Deep
MW-49-135	456.39	454.98	455.76	Deep
MW-49-275	456.88	455.07	455.98	Deep
MW-49-365	458.34	455.21	455.36	Deep
MW-50-095	455.94	455.31	456.32	Deep
MW-50-200	456.25	455.50	456.51	Deep
MW-51	455.85	454.81	456.23	Mid-Depth
RRB	NA	NA	NA	River Station
PT2D	454.58	454.81	456.37	Deep
PT5D	454.83	454.51	456.89	Deep
PT6D	454.83	454.76	457.18	Deep
TW-02D	446.75	453.43	458.60	Deep

NA= Data incomplete over reporting period

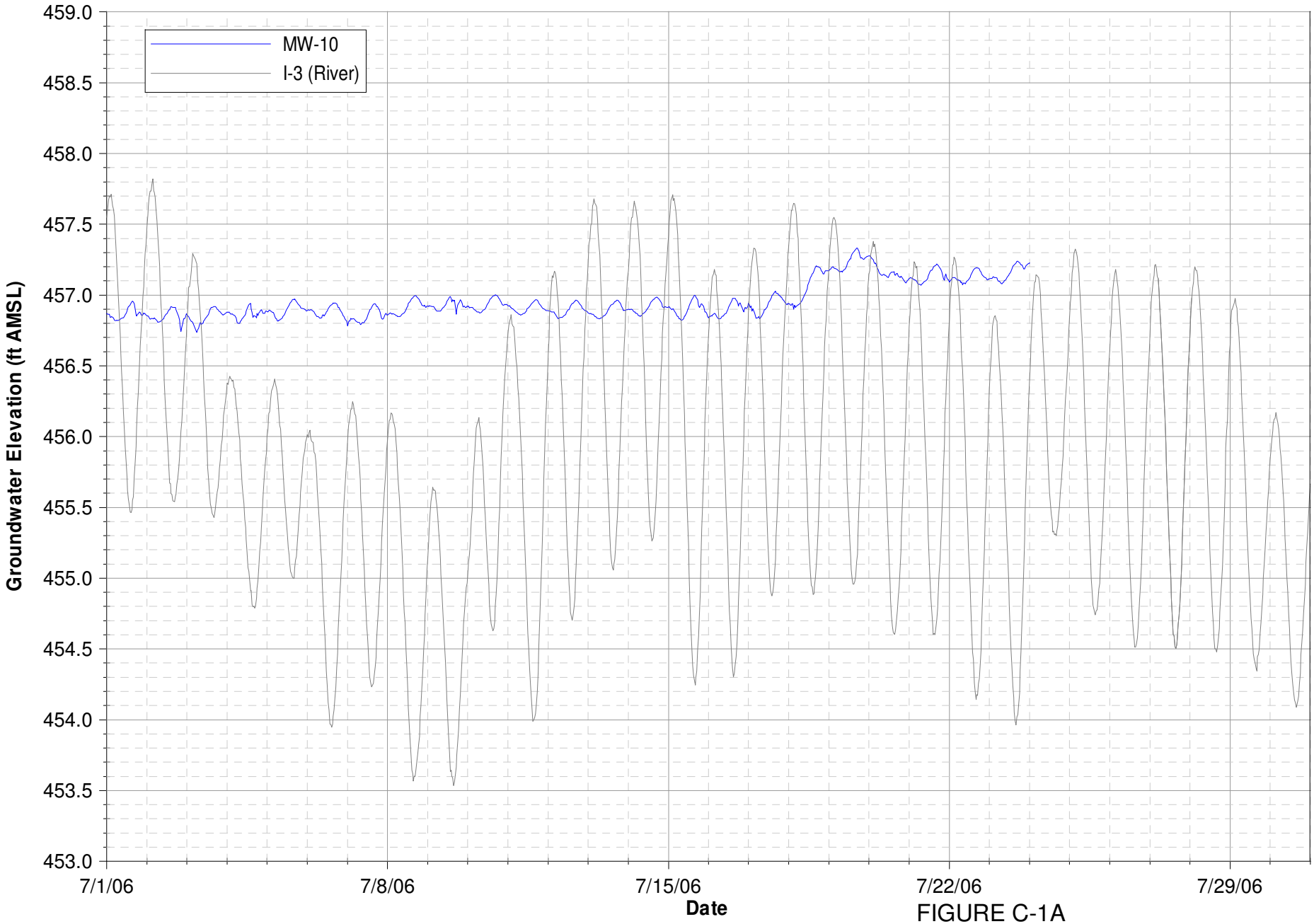


FIGURE C-1A
MW-10 HYDROGRAPH
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

CH2MHILL

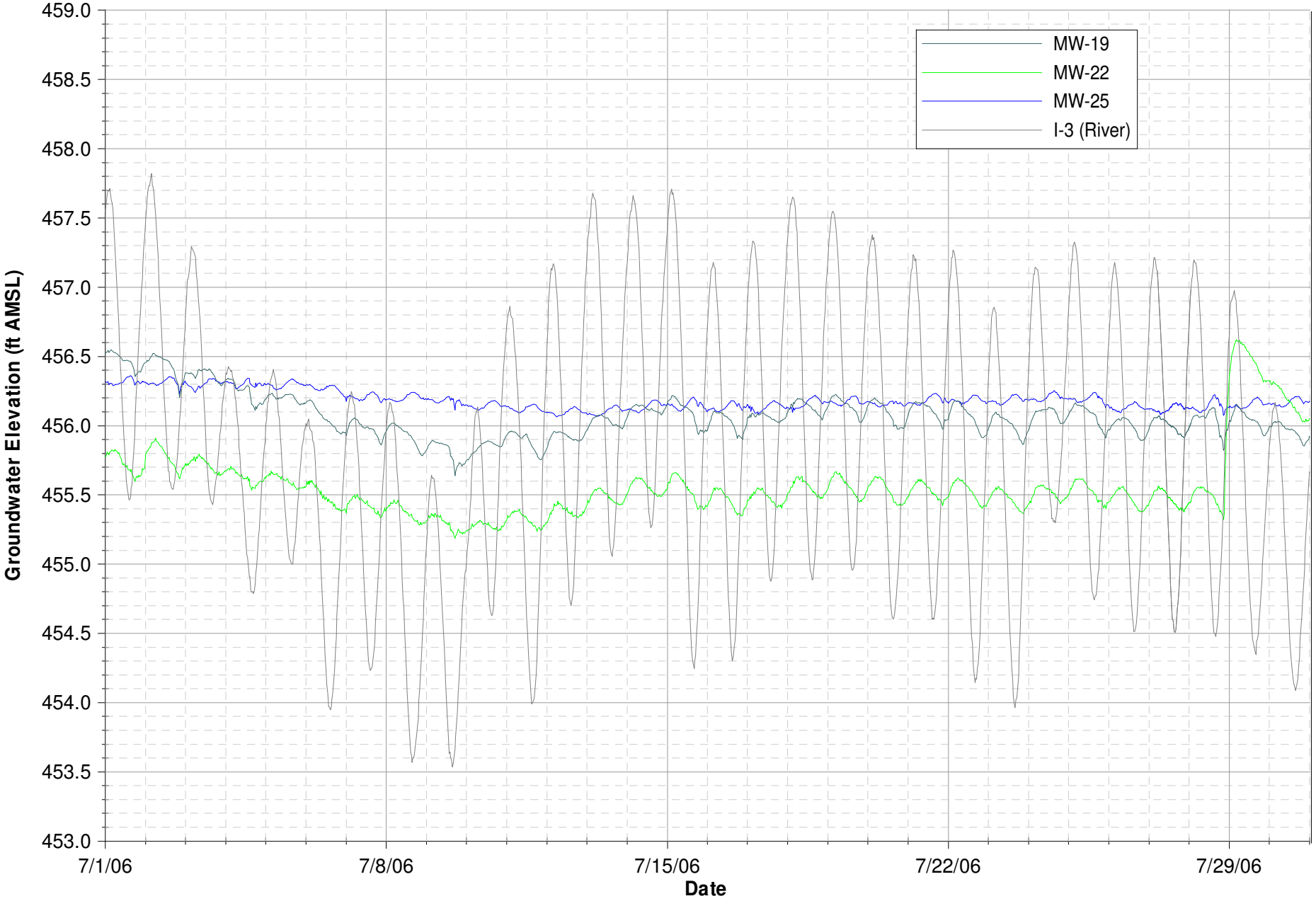


FIGURE C-1B
MW-19, MW-22, AND MW-25 HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

CH2MHILL

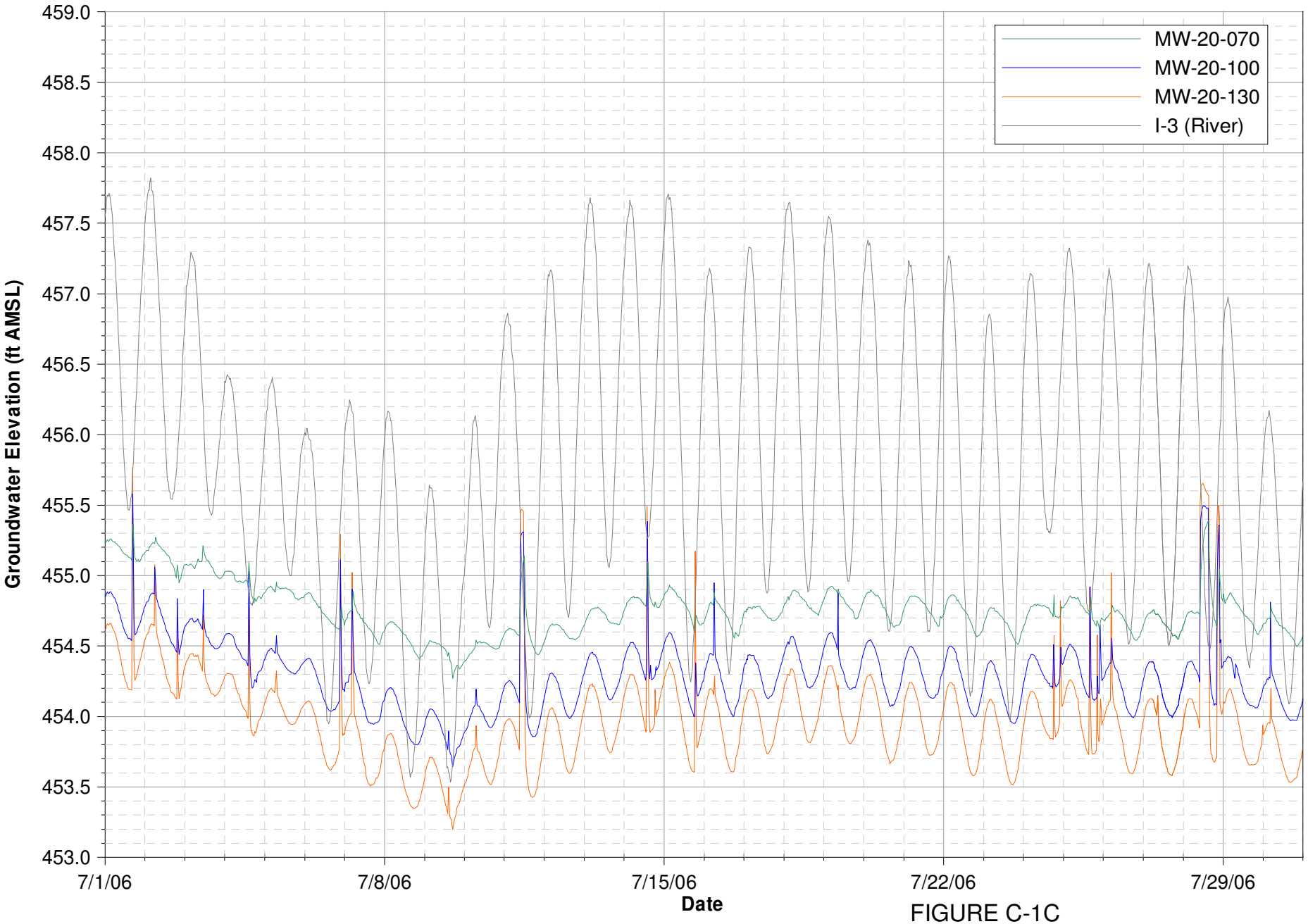


FIGURE C-1C
MW-20 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

CH2MHILL

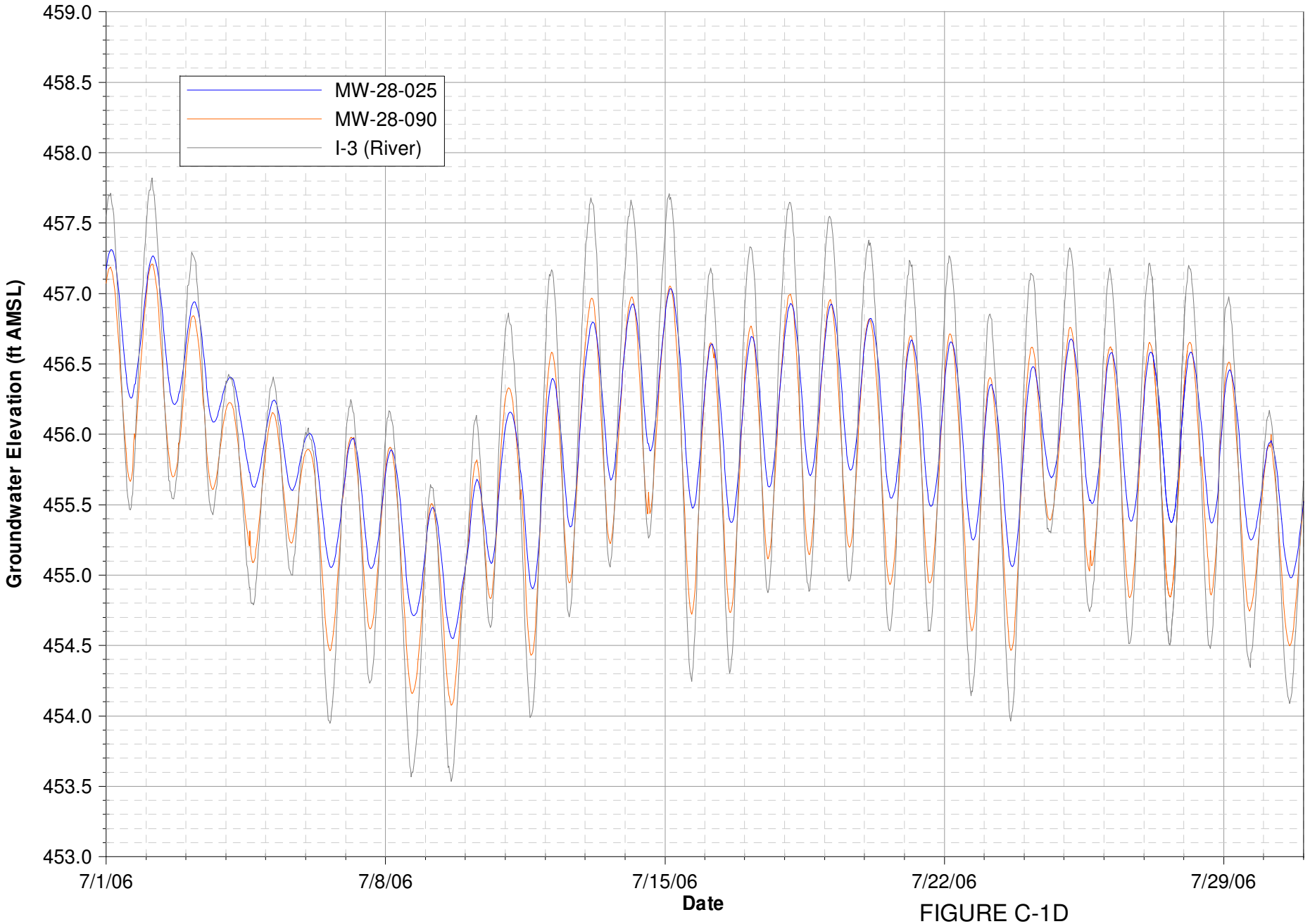


FIGURE C-1D
MW-28 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

CH2MHILL

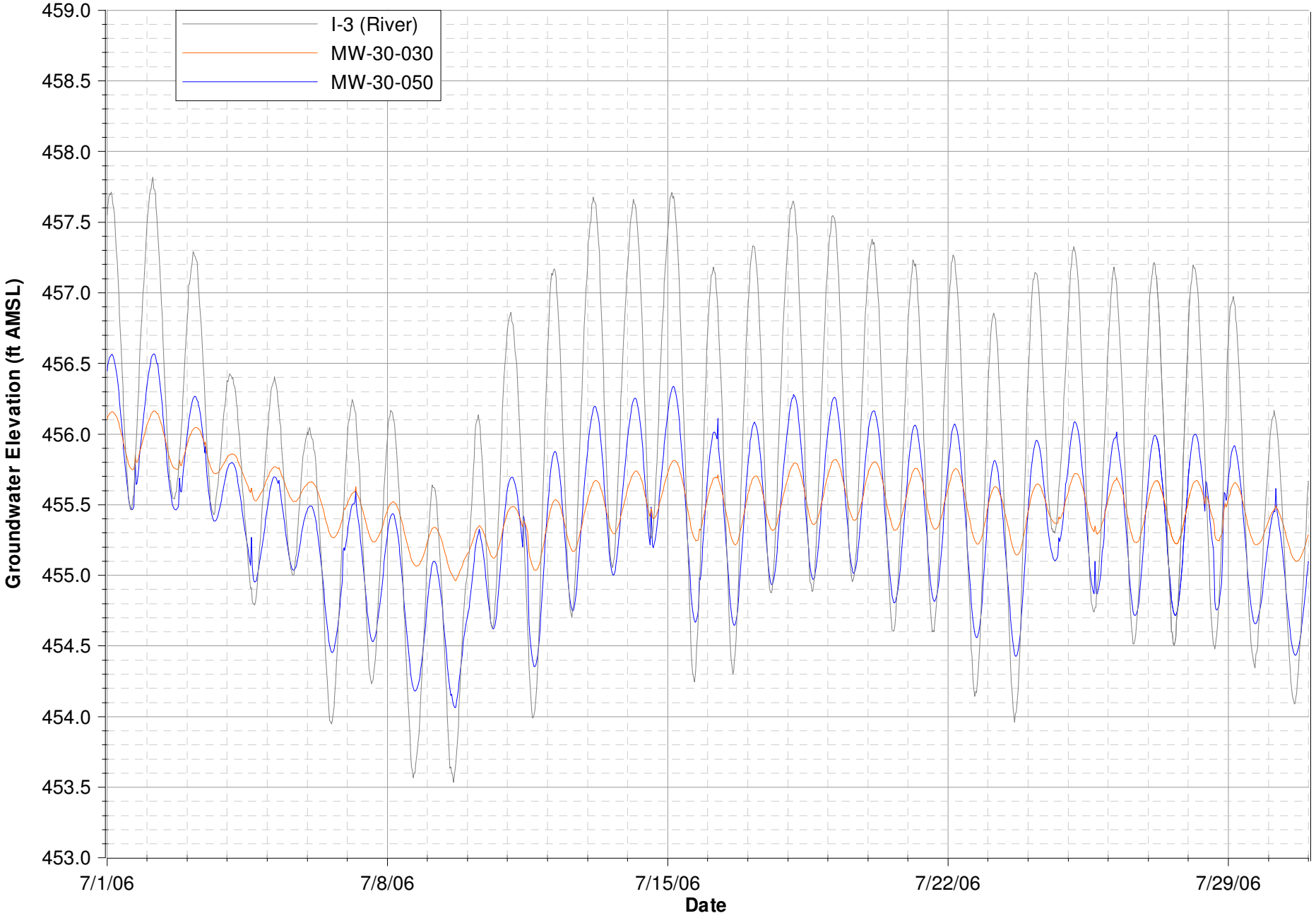
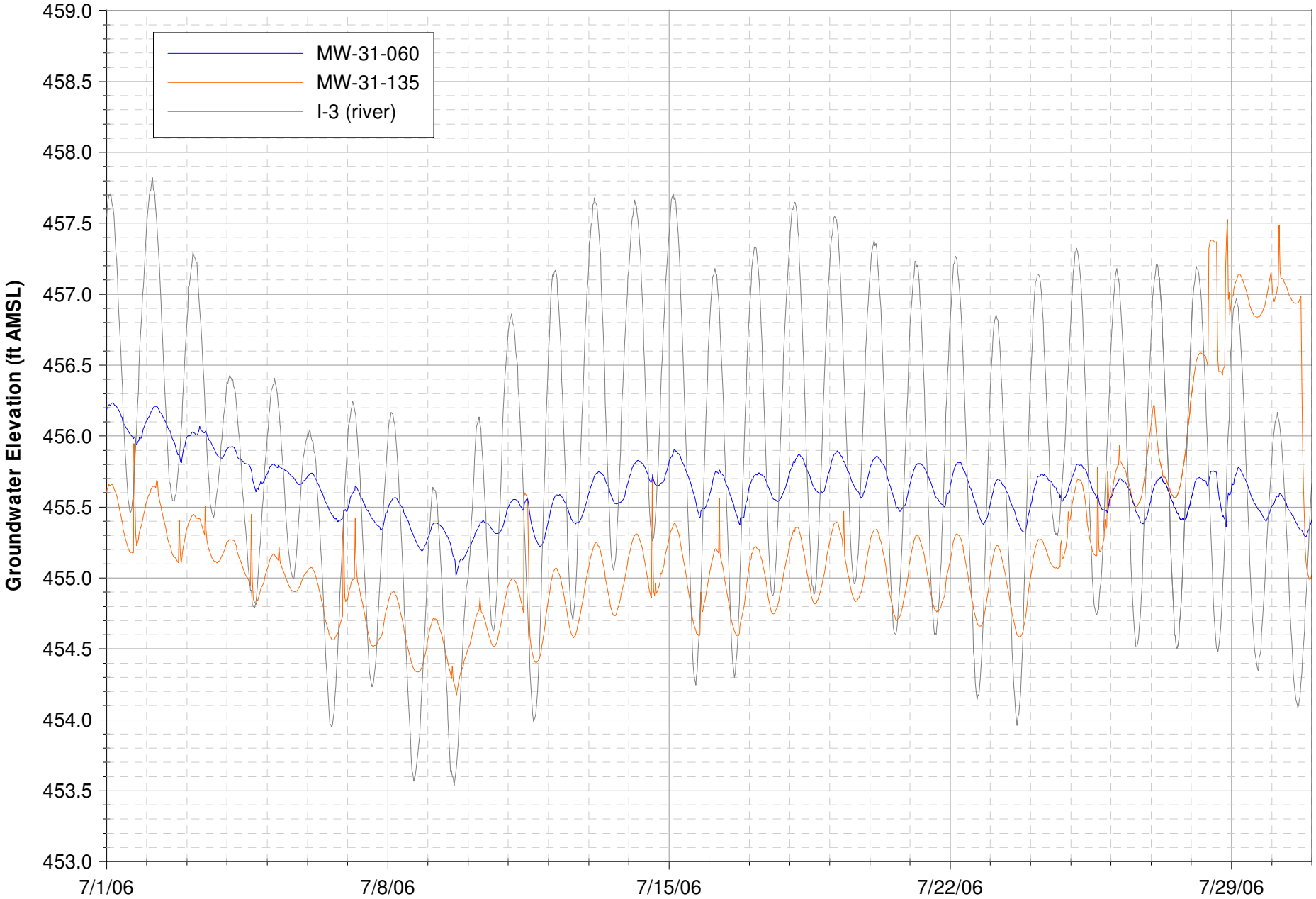


FIGURE C-1E
MW-30 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

CH2MHILL



Note: Data subject to review.

FIGURE C-1F
MW-31 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

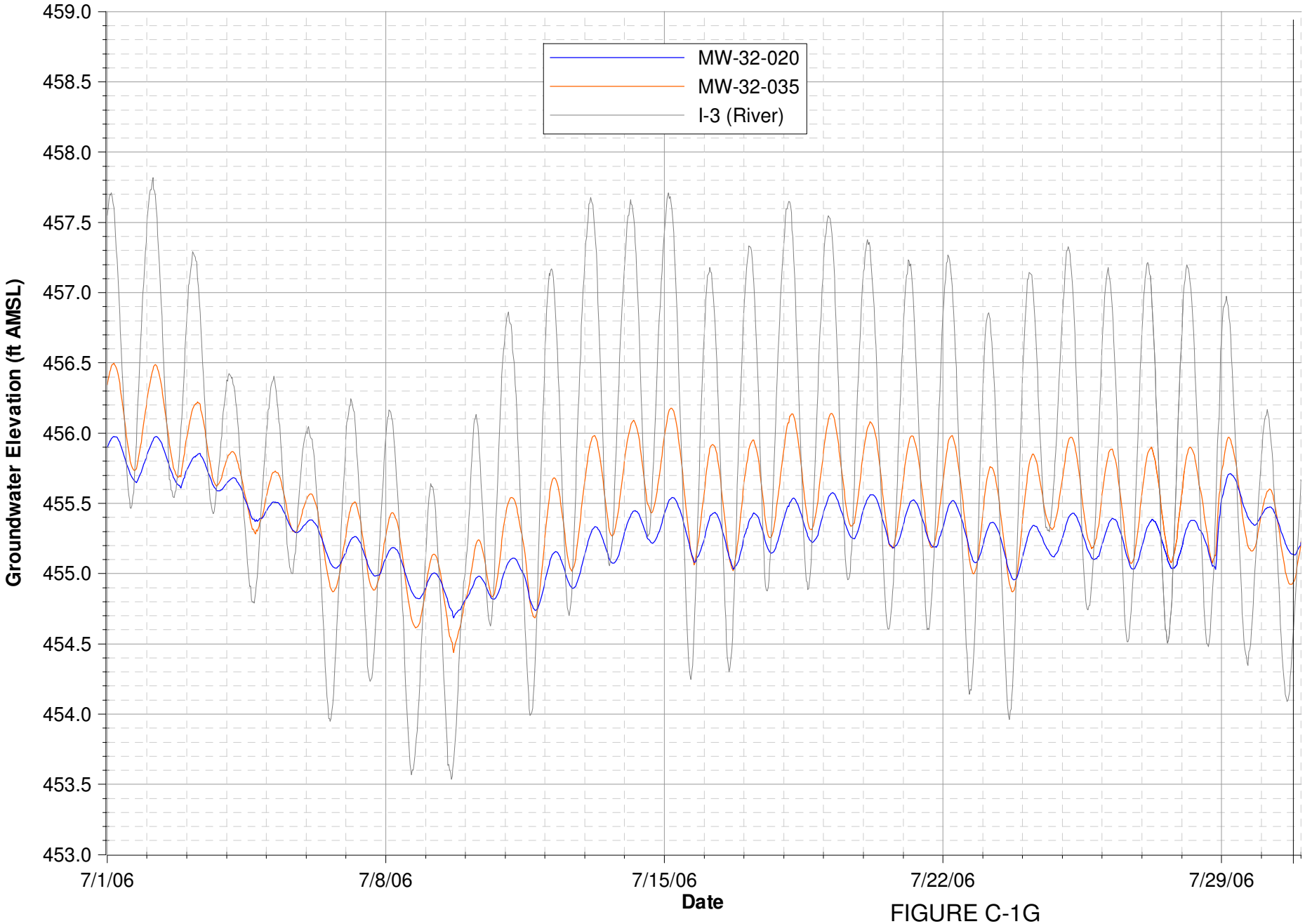


FIGURE C-1G
MW-32 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

CH2MHILL

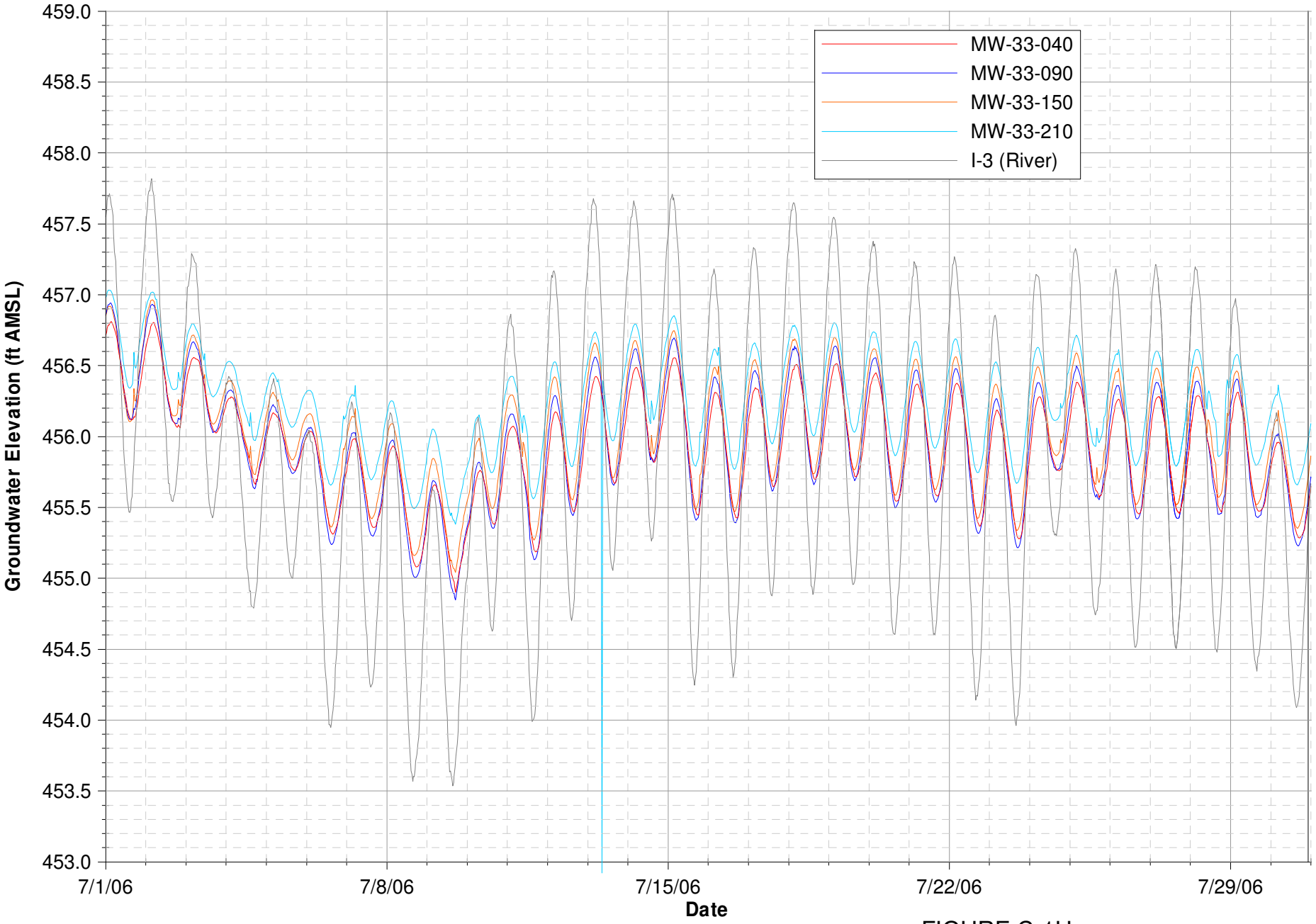


FIGURE C-1H
MW-33 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

CH2MHILL

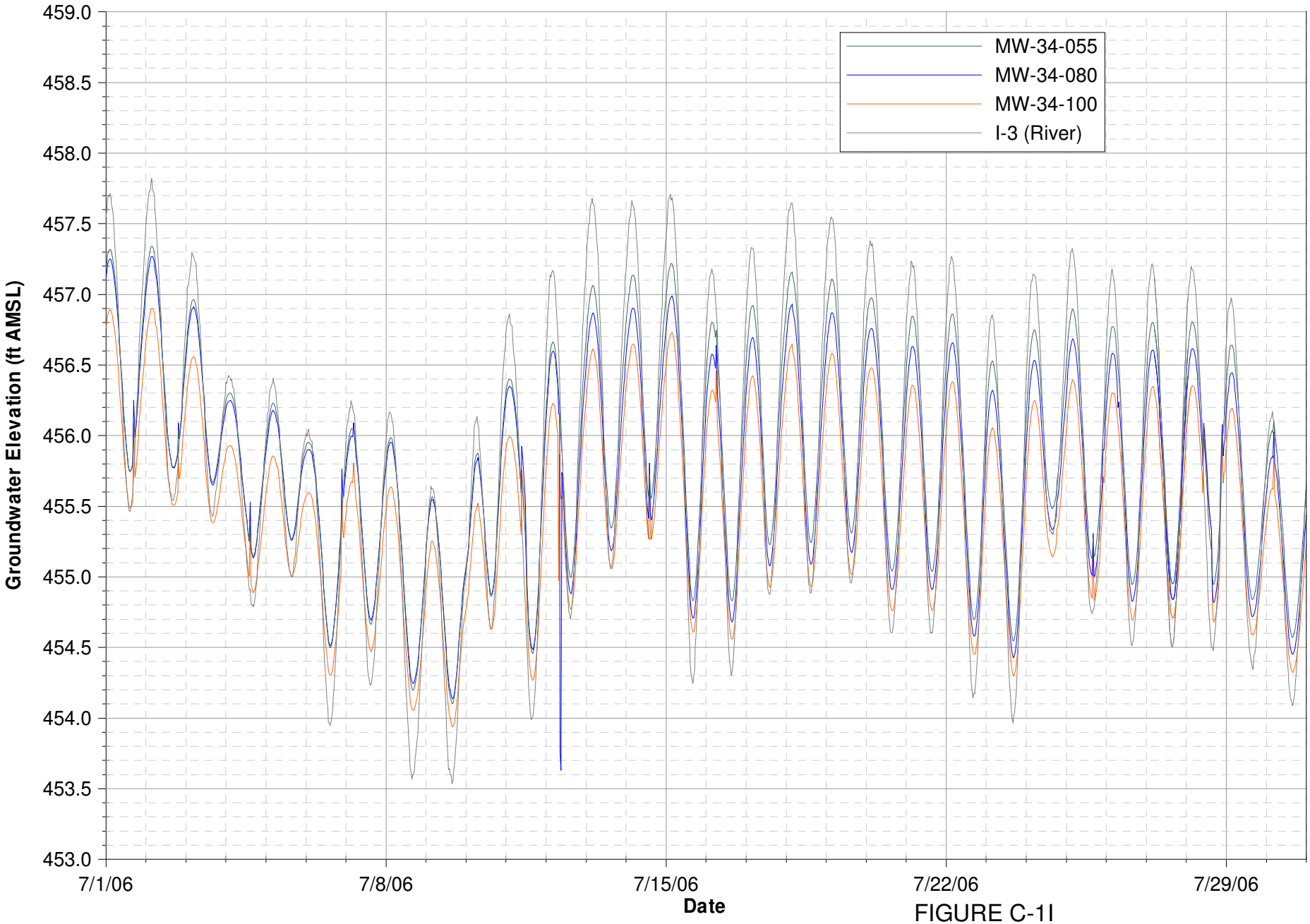


FIGURE C-1I
MW-34 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

CH2MHILL

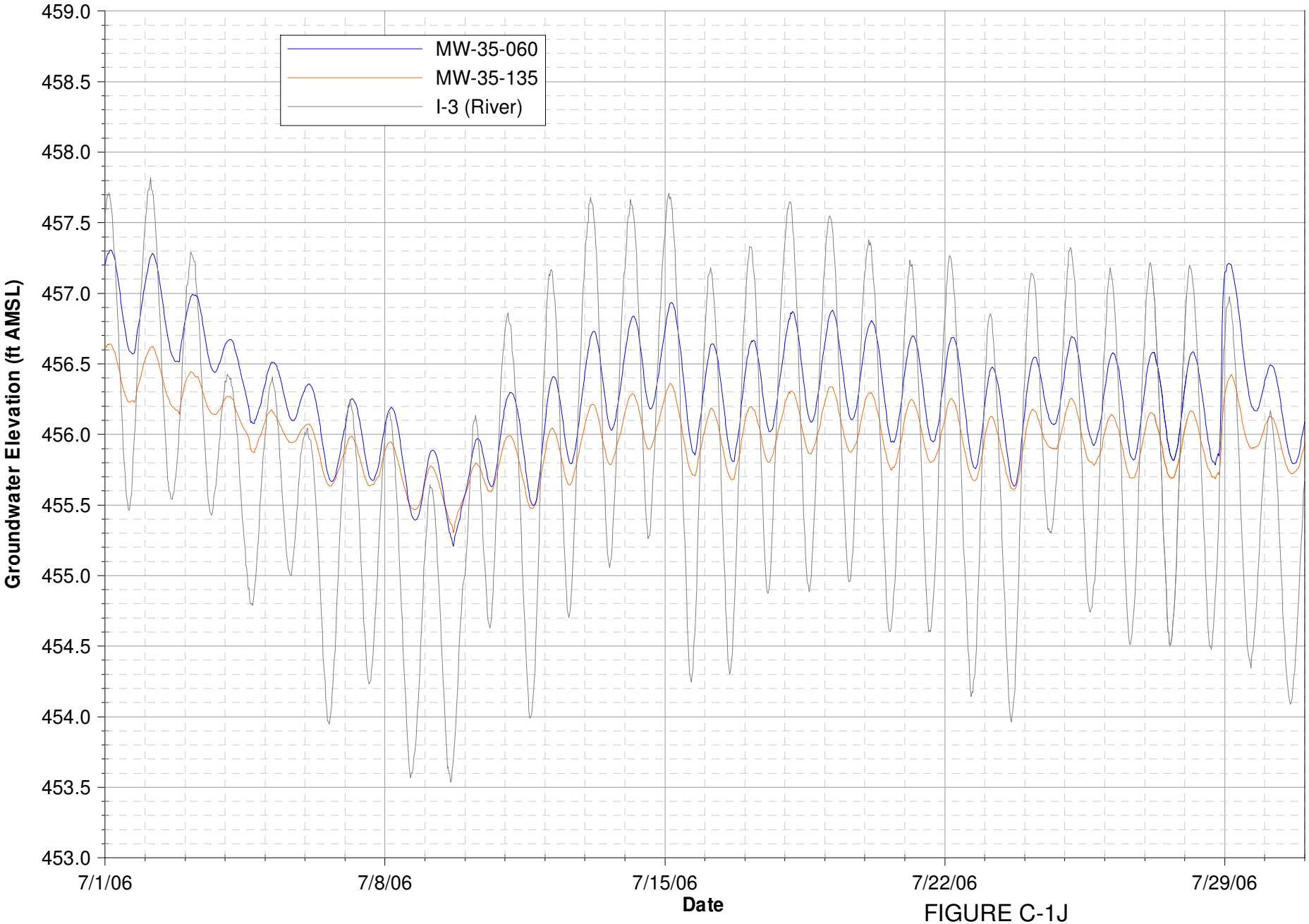
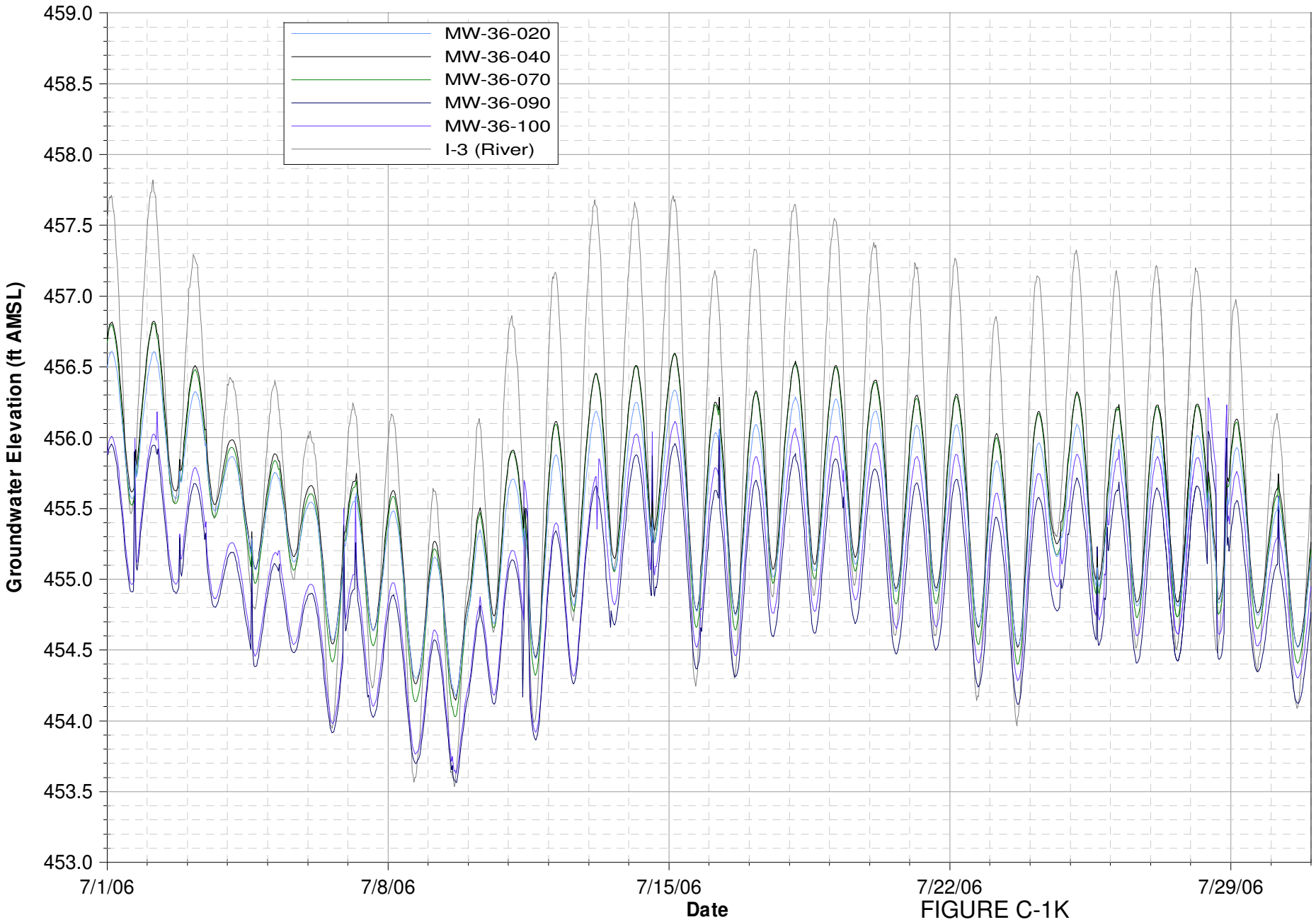


FIGURE C-1J
MW-35 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

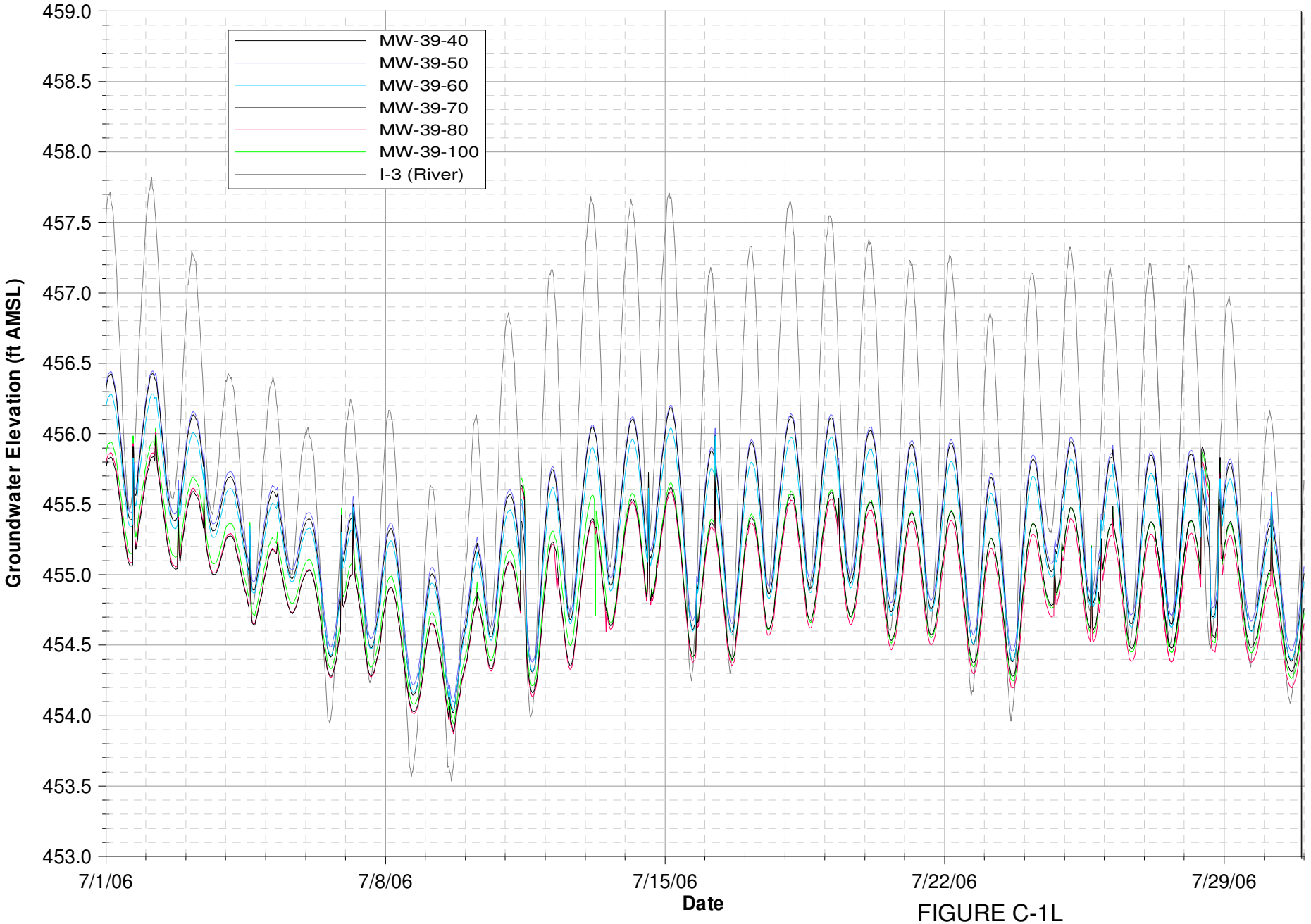
CH2MHILL



Note: Data subject to review.

FIGURE C-1K
MW-36 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL



Note: Data subject to review.

FIGURE C-1L
MW-39 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

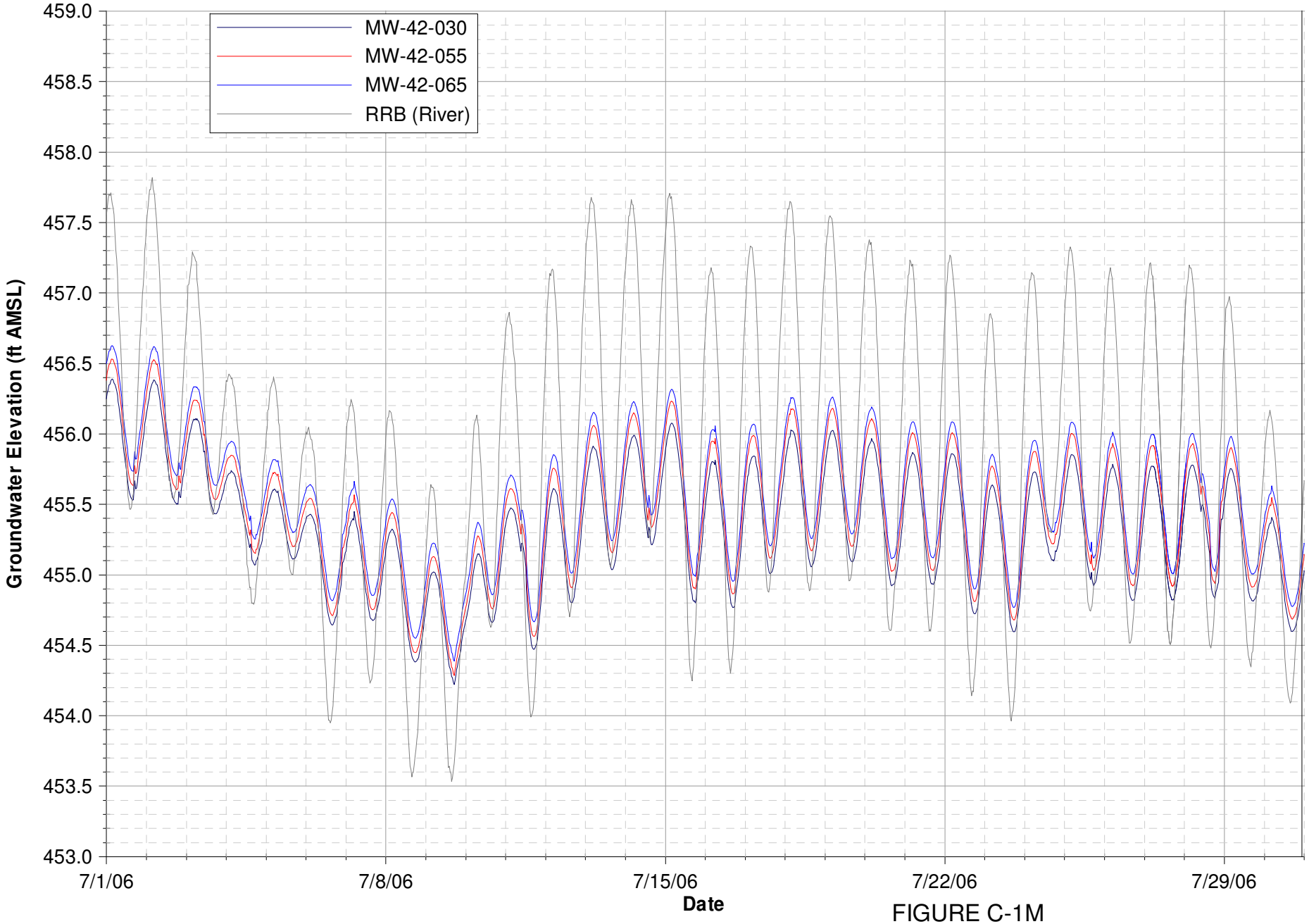
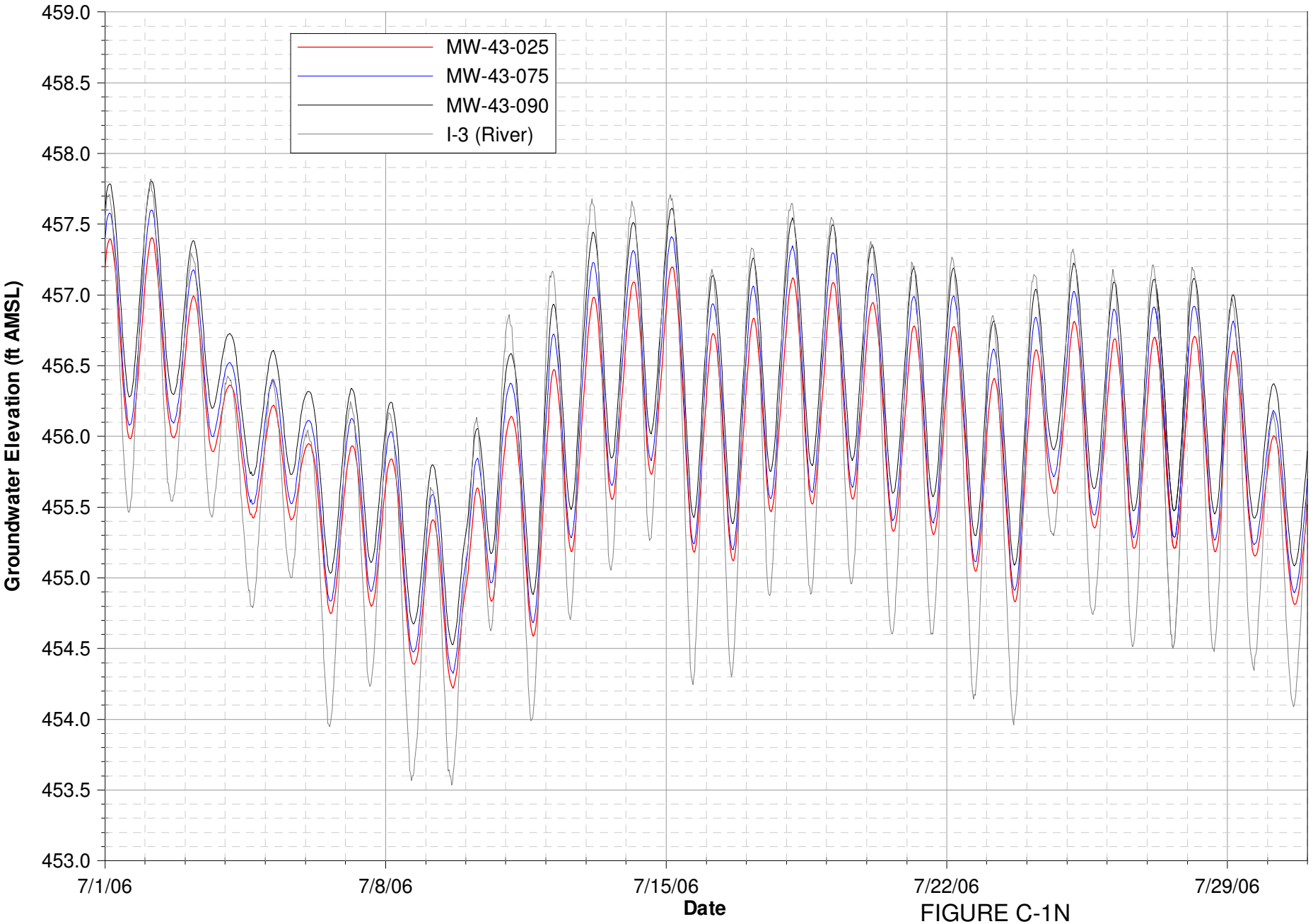


FIGURE C-1M
MW-42 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

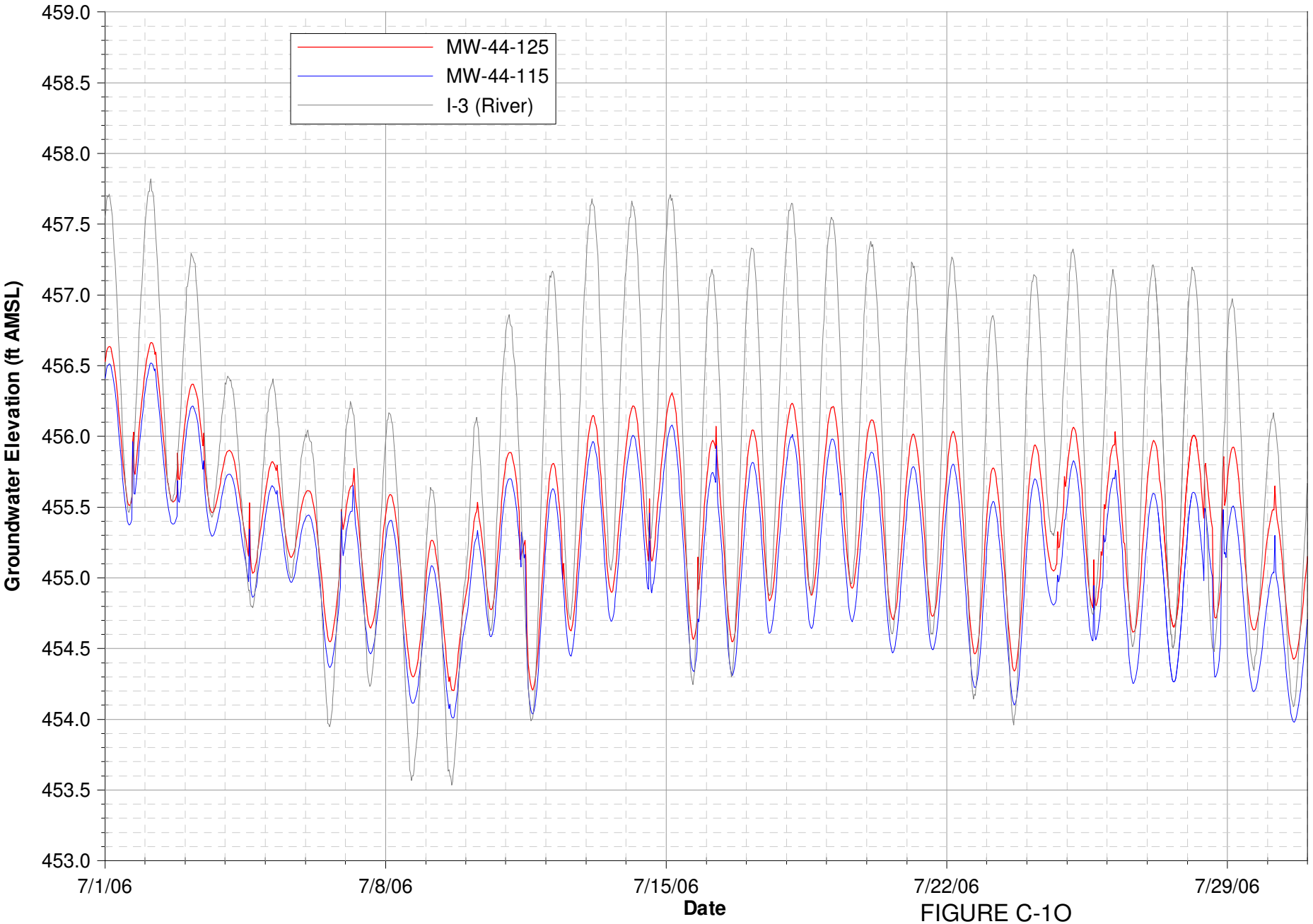
CH2MHILL



Note: Data subject to review.

FIGURE C-1N
MW-43 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

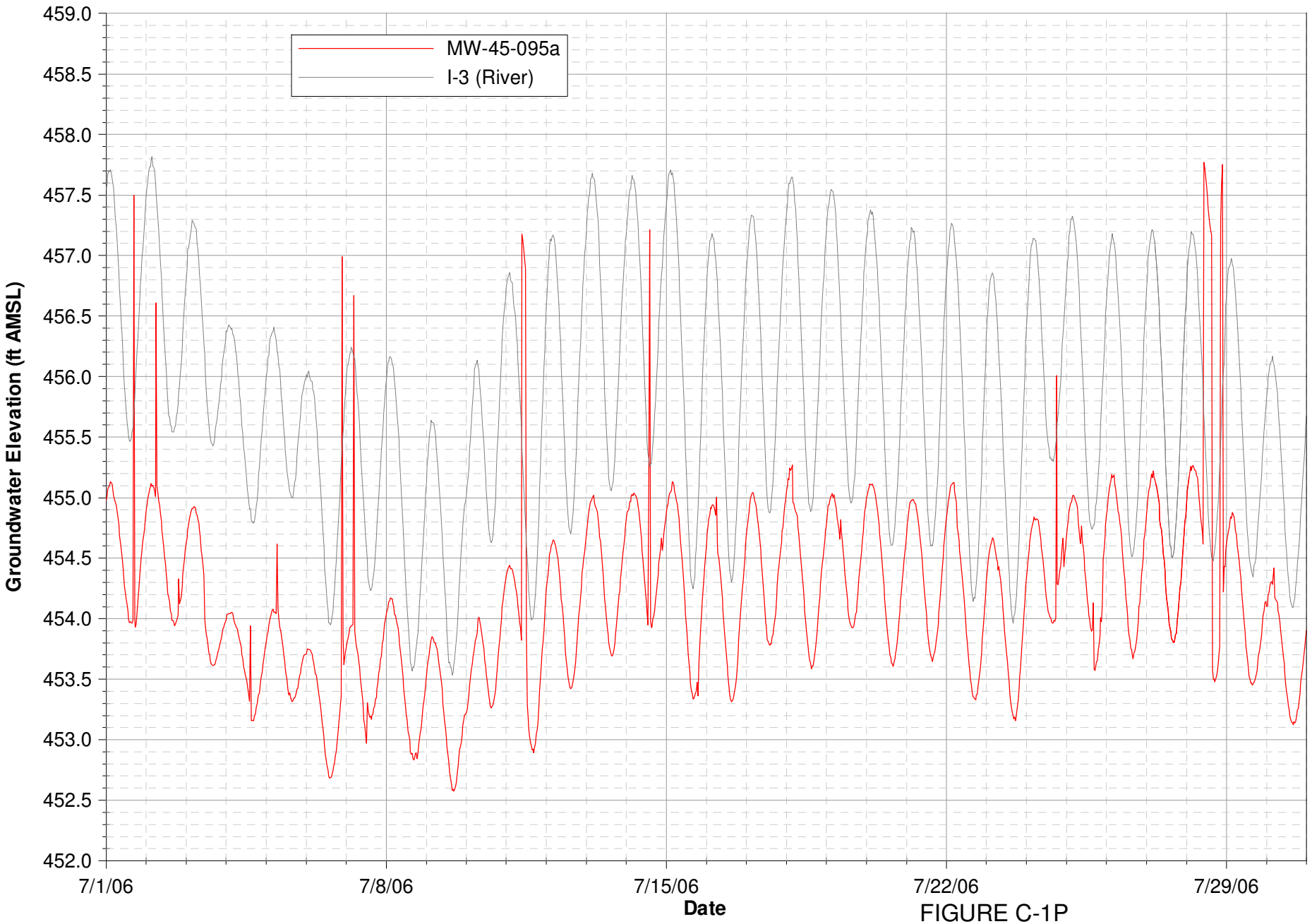
CH2MHILL



Note: Data subject to review.

FIGURE C-1O
MW-44 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

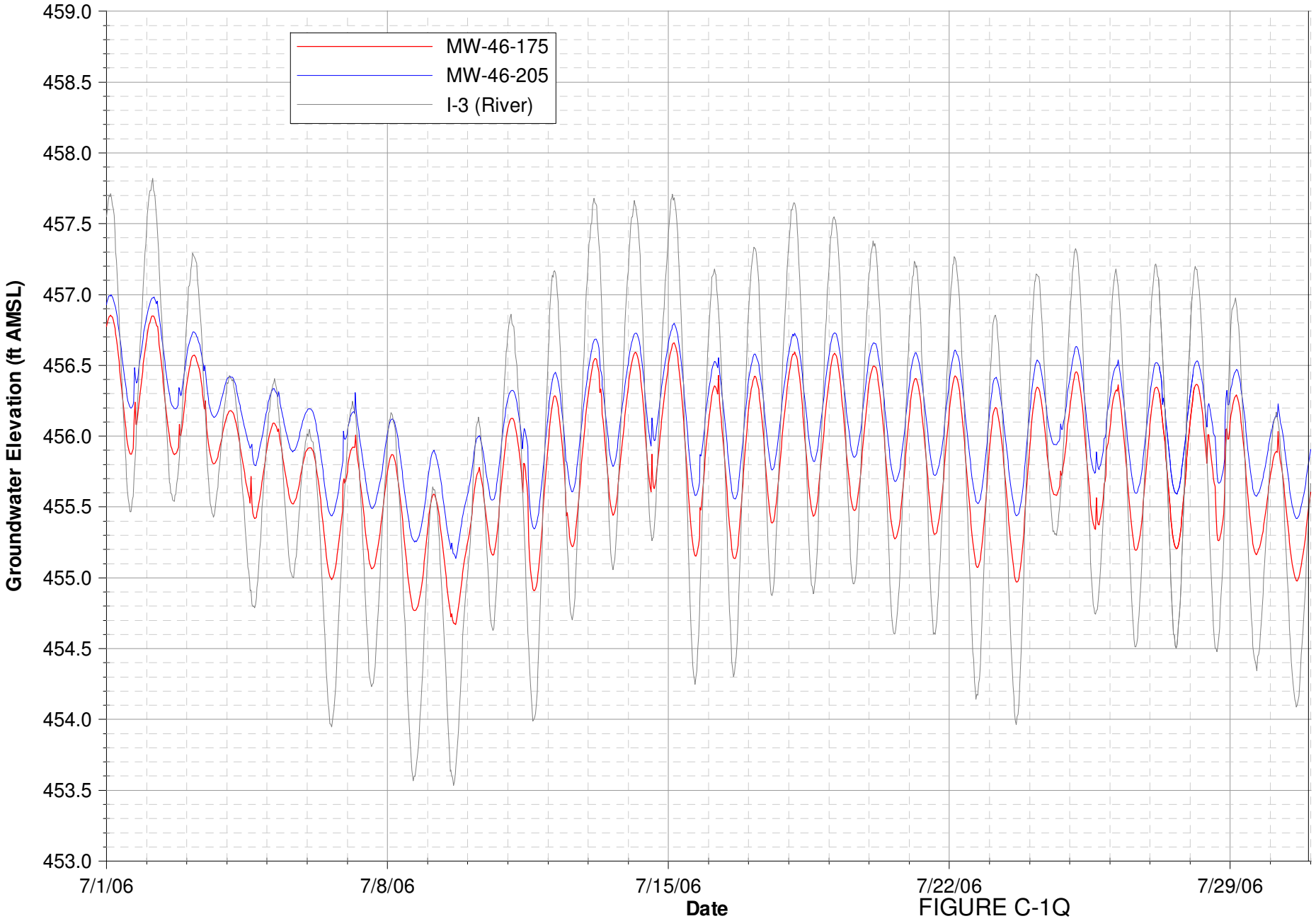
CH2MHILL



Note: Data subject to review.

FIGURE C-1P
MW-45 HYDROGRAPH
INTERIM MEASURES PERFORMANCE MONITORING
PG & E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL



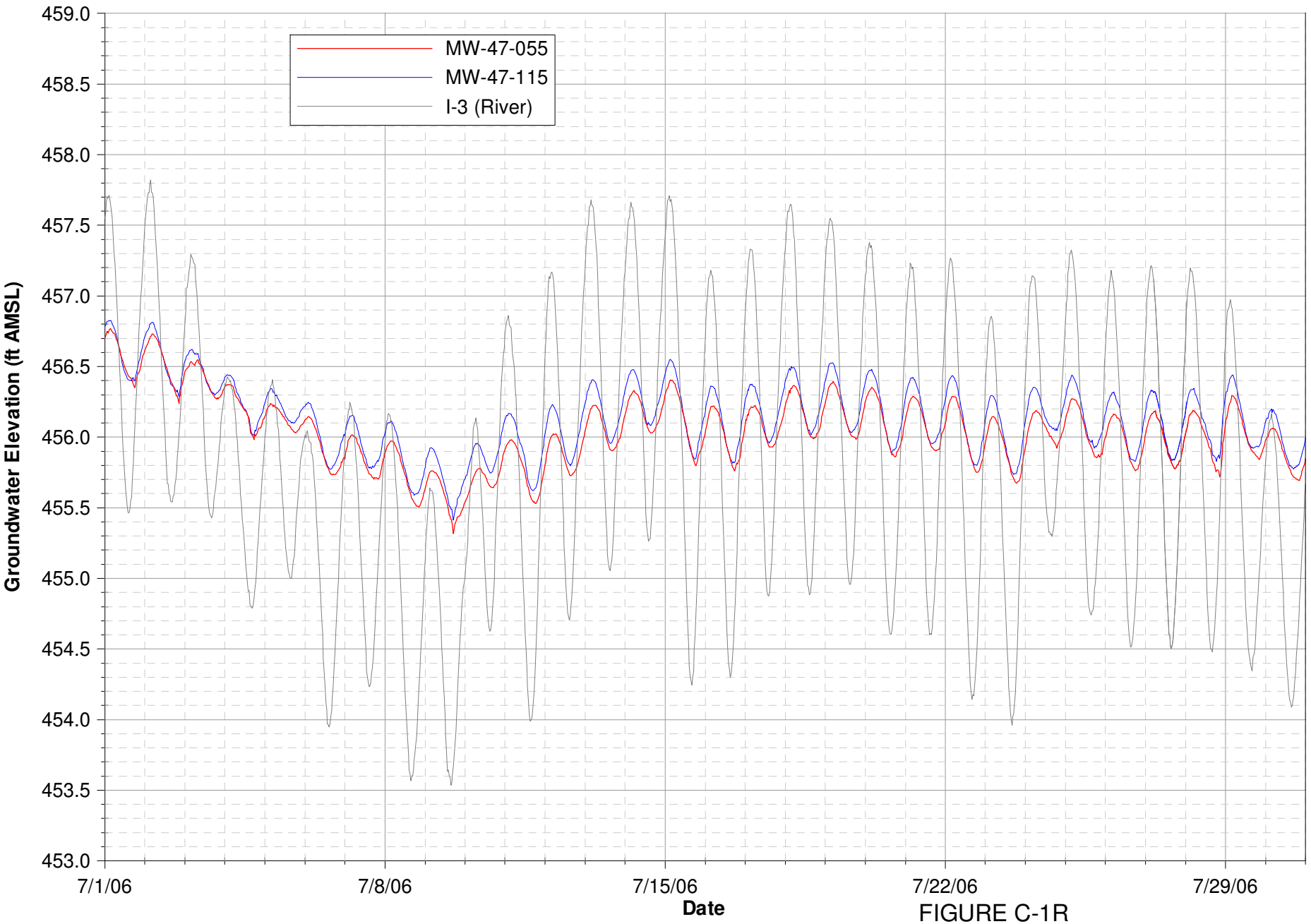
Note: Data subject to review.

FIGURE C-1Q

MW-46 CLUSTER HYDROGRAPHS

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

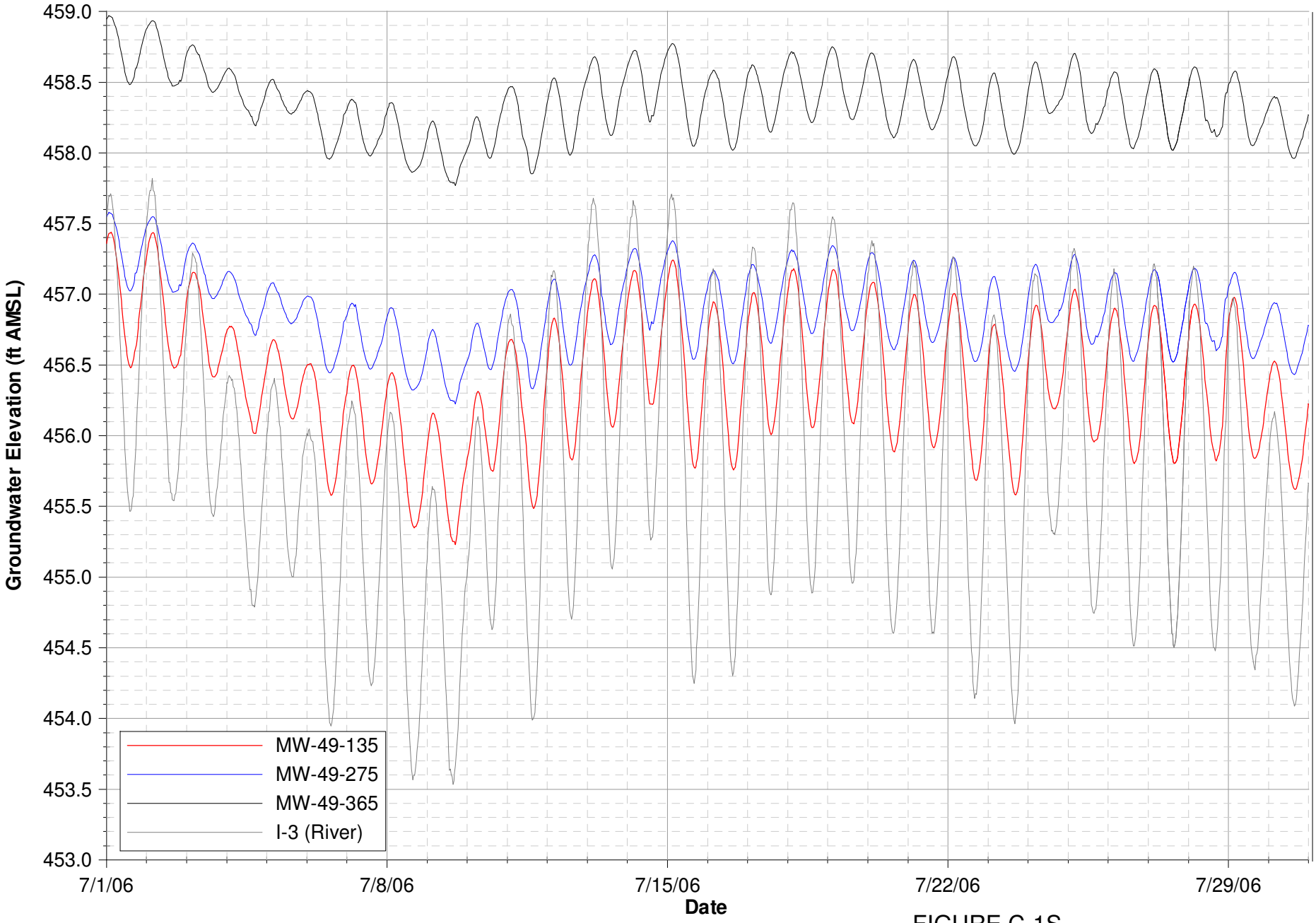
CH2MHILL



Note: Data subject to review.

FIGURE C-1R
MW-47 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

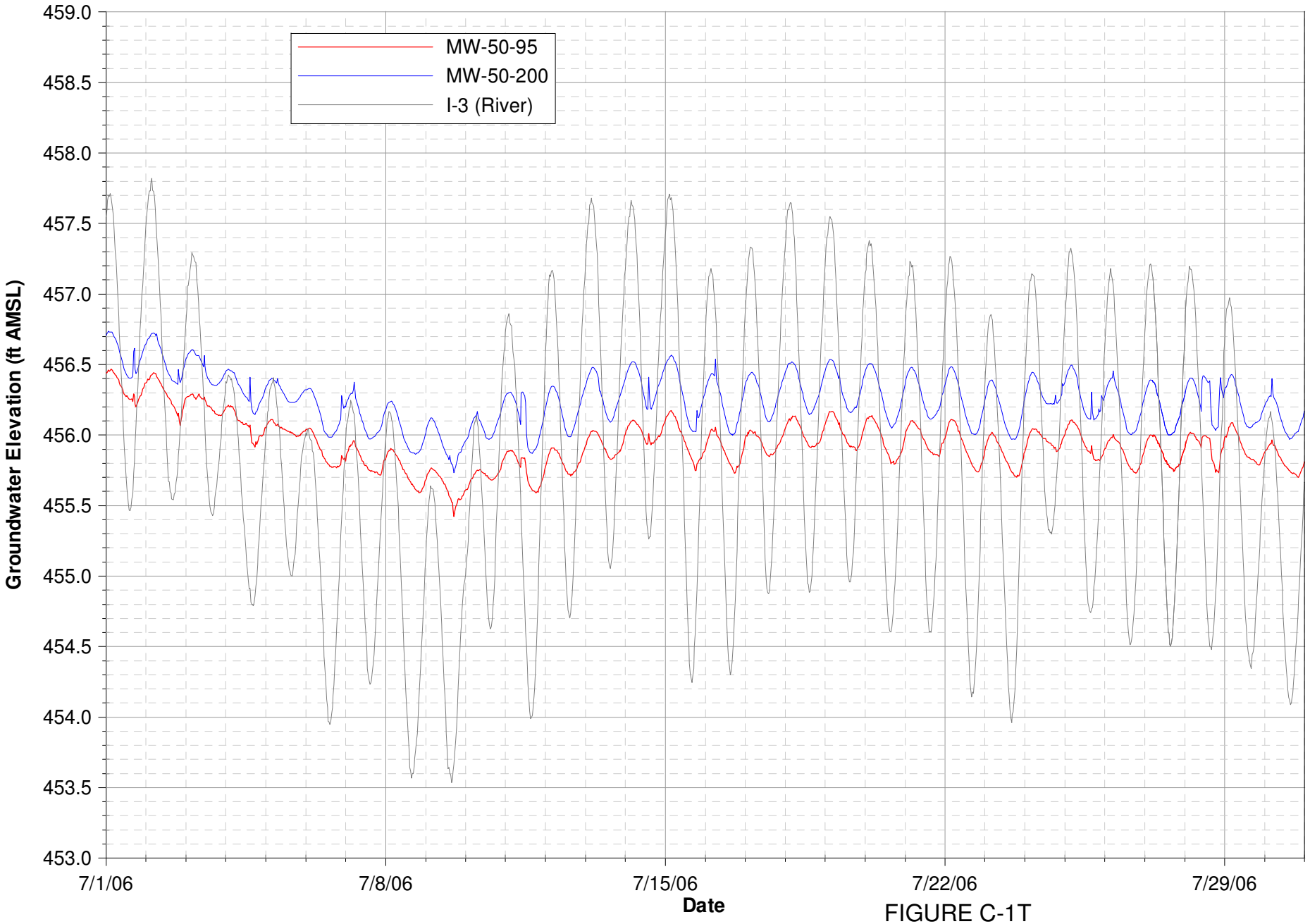
CH2MHILL



Note: Data subject to review.

FIGURE C-1S
MW-49 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

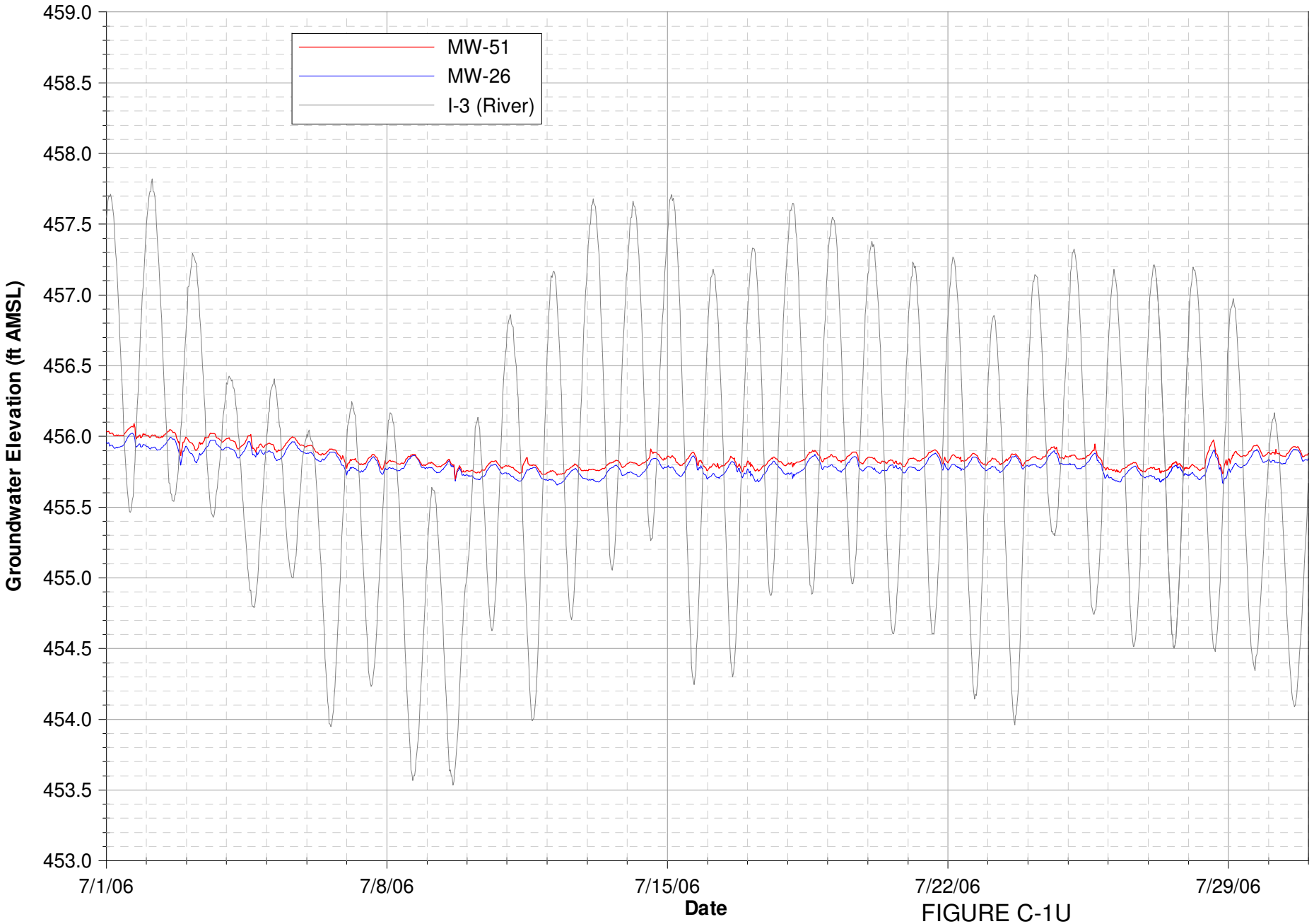
CH2MHILL



Note: Data subject to review.

FIGURE C-1T
MW-50 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL



Note: Data subject to review.

FIGURE C-1U
MW-51& MW-26 HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG & E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

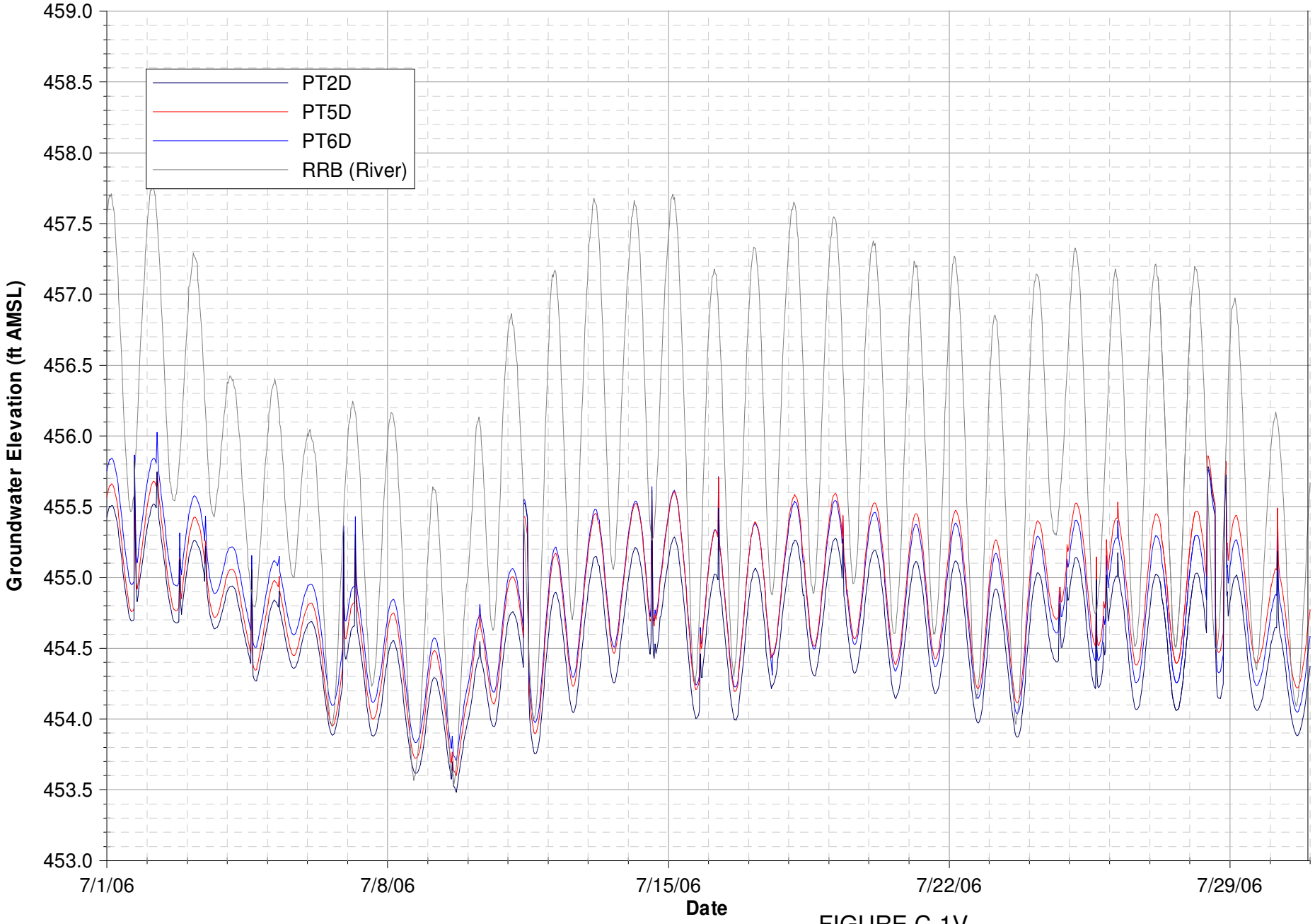


FIGURE C-1V
INSITU PILOT STUDY WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

CH2MHILL

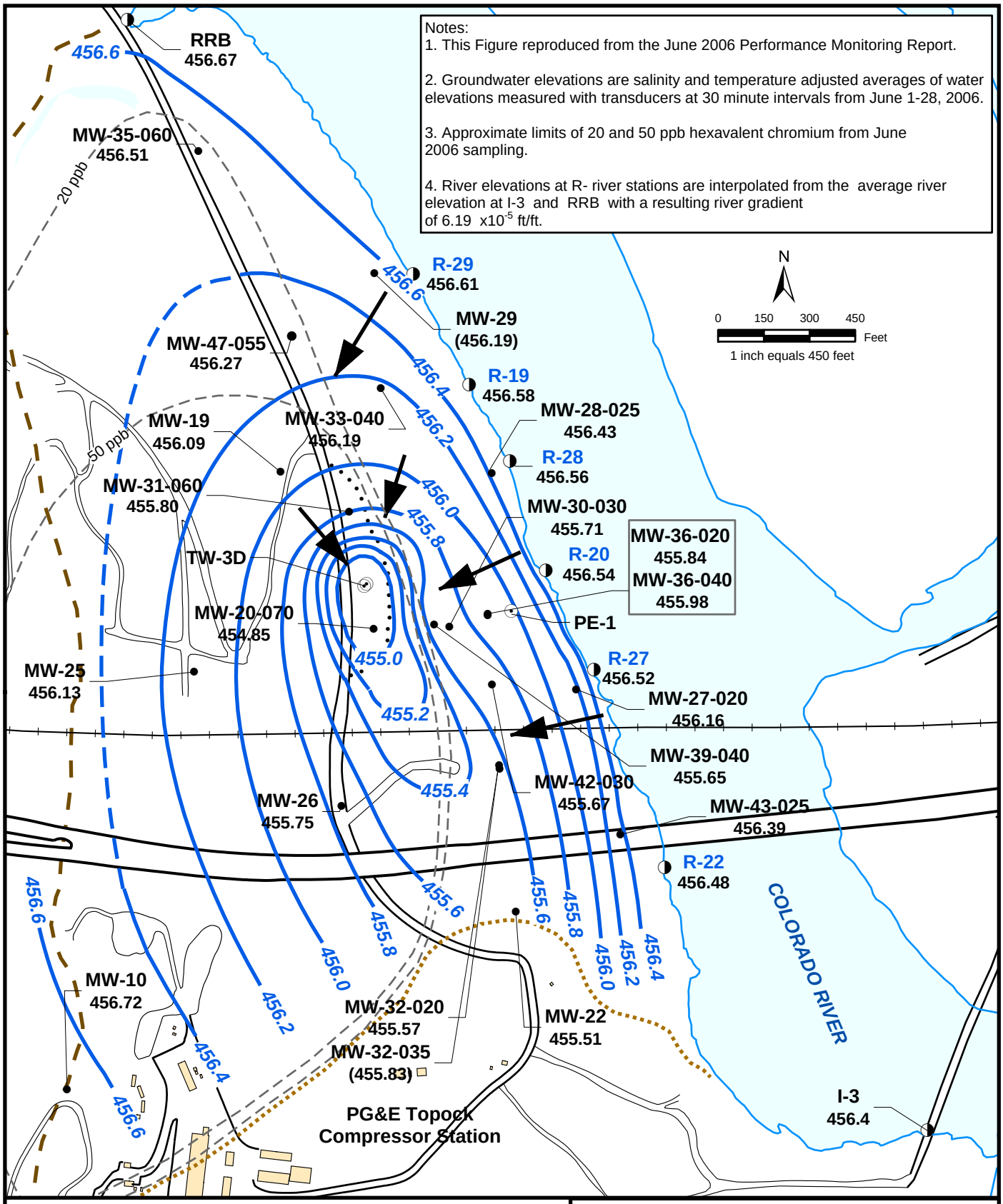


FIGURE C-2A
AVERAGE GROUNDWATER ELEVATIONS SHALLOW WELLS AND RIVER JUNE 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

\\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\2006\GW\IM_AVERAGE_GROUNDWATER_UA_JUNE06.MXD

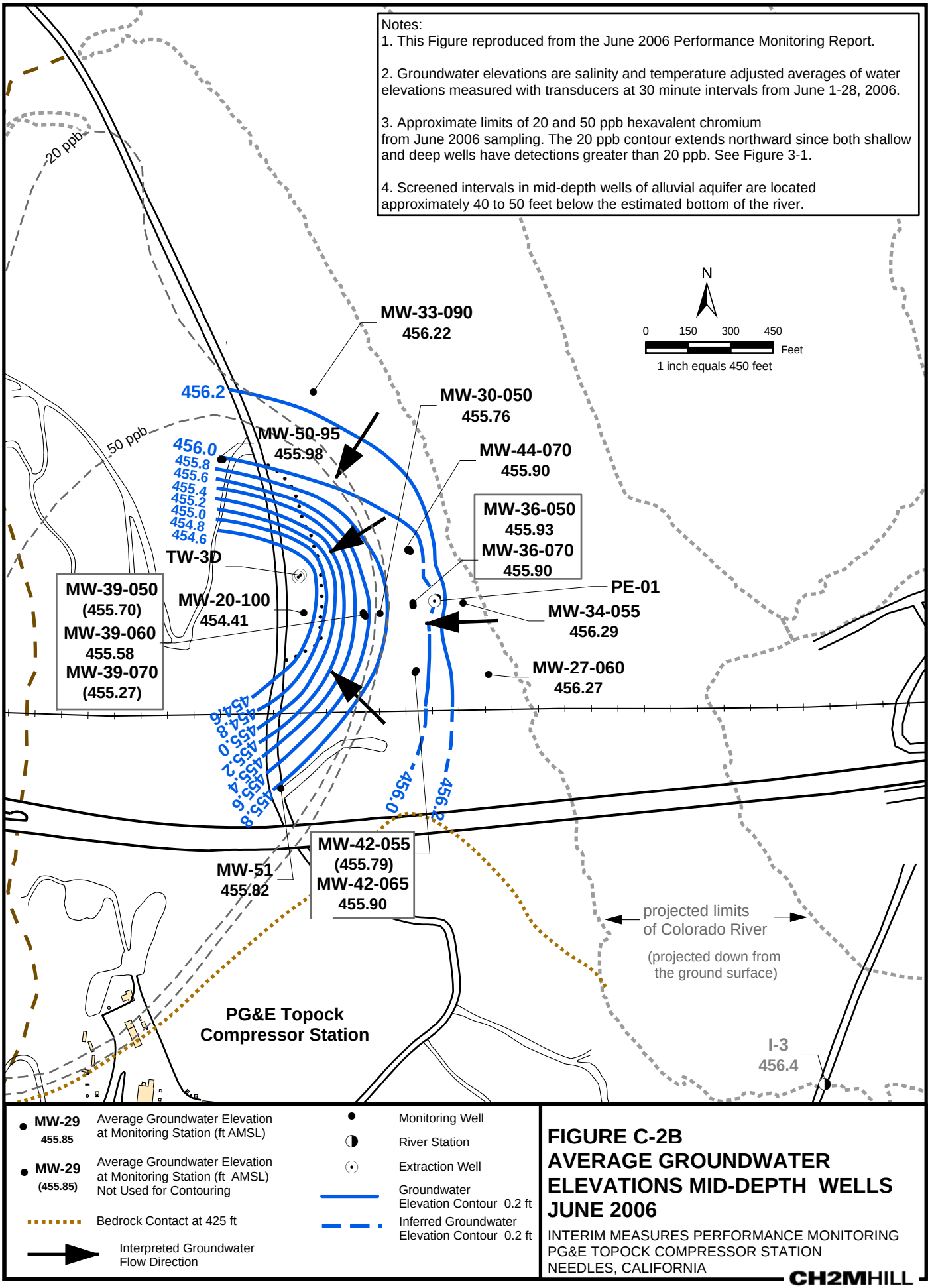


FIGURE C-2B
AVERAGE GROUNDWATER ELEVATIONS MID-DEPTH WELLS JUNE 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

SFO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\2006\GW\IM_AVERAGE_GROUNDWATER_MA_MAY06.MXD

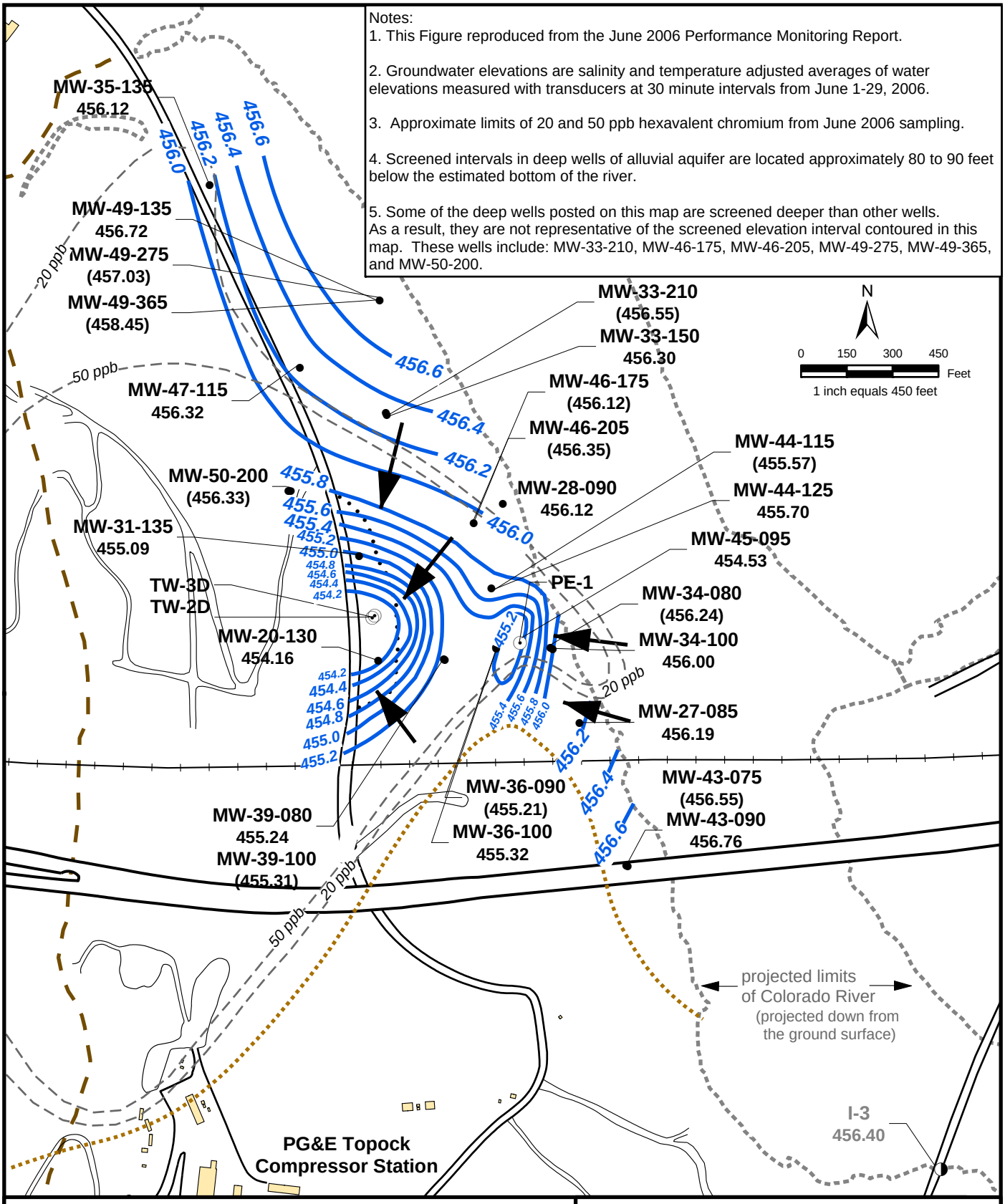


FIGURE C-2C
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS JUNE 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\2006\GW\IM_Average_groundwater_LA_June_06.mxd

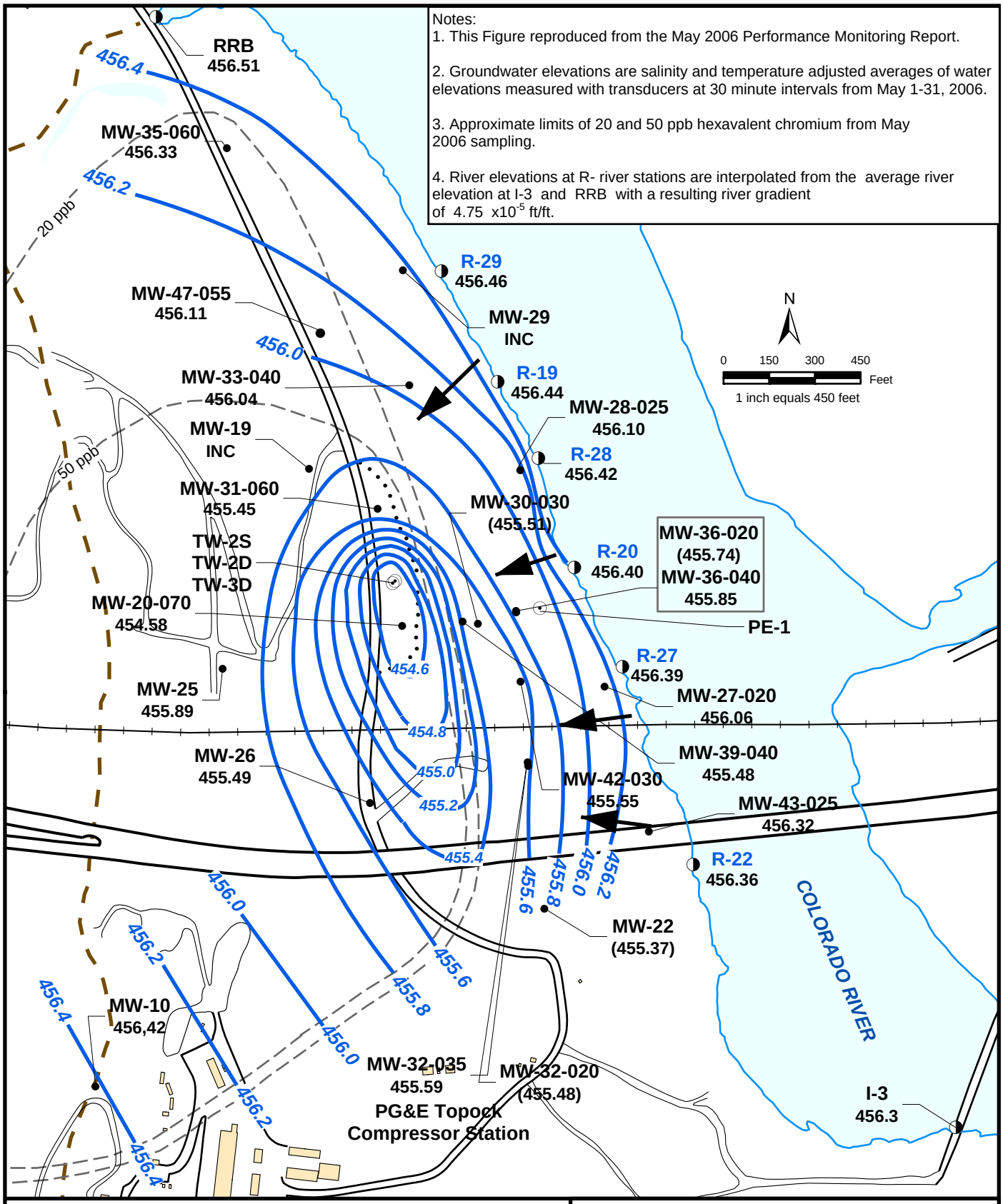


FIGURE C-2D
AVERAGE GROUNDWATER SHALLOW WELLS AND RIVER MAY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

\\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\2006\GW\IM_AVERAGE_GROUNDWATER_UA_MAY06.MXD

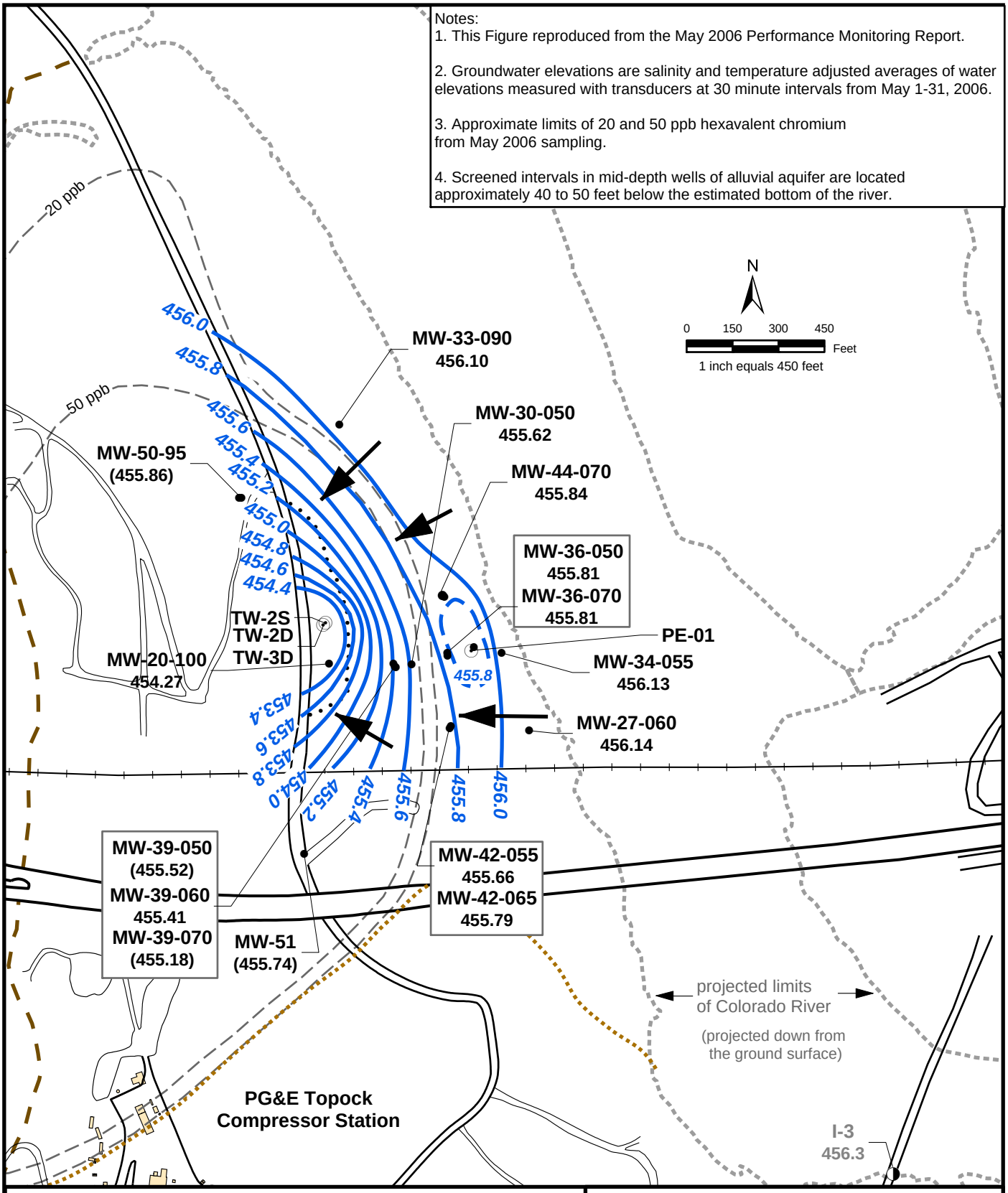


FIGURE C-2E
AVERAGE GROUNDWATER ELEVATIONS MID-DEPTH WELLS MAY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

SFO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\2006\GW\IM_AVERAGE_GROUNDWATER_MA_MAY06.MXD

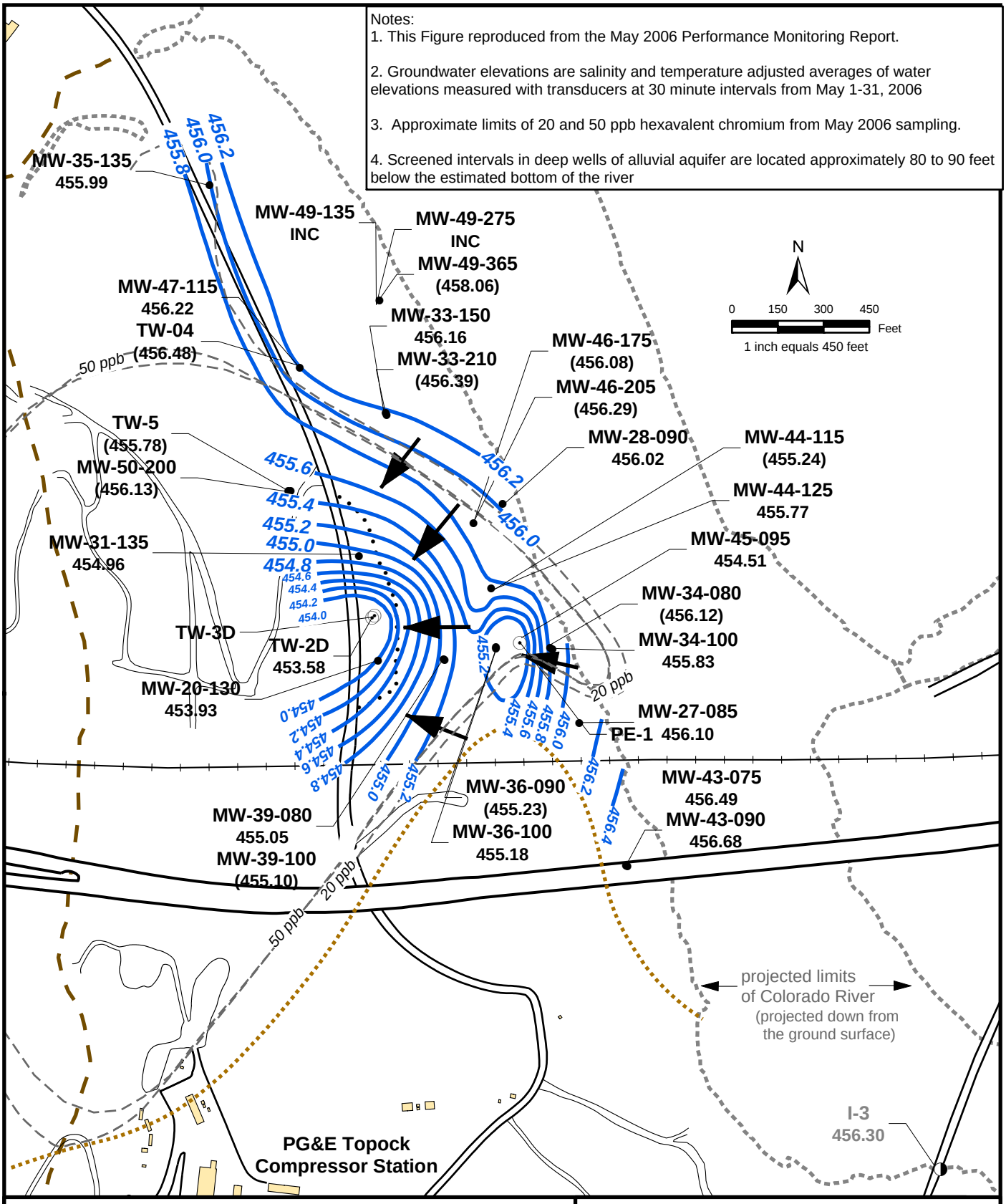


FIGURE C-2F
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS MAY 2006

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\2006\GW\IM_Average_groundwater_LA_May_06.mxd

Appendix D
Chemical Performance Monitoring Analytical Results

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-20-70	03-Mar-04	2300	-6.5	-39.0	890	440	9.7	0.6	230	52	11	480	0.3	75
	03-Mar-04 FD	2300	-6.5	-53.0	890	440	9.7	0.6	220	51	11	460	0.3	72
	11-May-04	2100	-5.5	-53.0	800	450	10	ND (0.5)	210	48	9.7	490	0.4	76
	24-Sep-04	2200	-6.5	-57.0	824	402	9.7	ND (1)	180	58.5	12	430	0.2	74
	16-Dec-04	2080	-7.3	-60.0	753	374	9.68	0.604	177 J	52.5	9.05	410	0.497	70
	10-Mar-05	1940	-7.1	-59.0	740	378	9.98	ND (1)	198	55.4	9.89	431	0.412	81.7
	15-Jun-05	1980	-7	-60.0	749	388	9.79	ND (1)	189	55.4	10.5	433	0.414	73.8
	15-Jun-05 FD	2050	-8.3	-57.0	760	392	9.81	ND (1)	204	60.7	11.4	468	0.445	71.3
	11-Oct-05	1950	-7.2	-57.0	737	359	9.48	0.641	198	49.9	14.6	323	0.402	69.9
	15-Dec-05	1830	-7.1	-49.0	645	326	9.9	ND (1)	138	42.3	14.5	267	0.441	77.8
	10-Mar-06	1940	-7.2	-54.0	679	358	10.5	ND (0.5)	161	48.6	9.22	424	0.427	82.2
	05-May-06	1750	-8.2	-55.9	696	376	9.86	0.574	162	49.2	9.55	461	0.476	74.5
MW-20-100	03-Mar-04	3400	-4.2	-38.0	1300	740	9.6	0.7	170	20	11	1100	1	82
	11-May-04	3600	-2.7	-37.0	1300	700	9.6	0.5	150	18	10	1100	1	81
	24-Sep-04	3000	-4.8	-44.0	1180	621	8.85	ND (1)	140	23	13	860	0.8	100
	16-Dec-04	2840	-5	-47.0	1050	562	8.5	0.654	152	23.4	16.6	772	0.971	90
	10-Mar-05	2490	-5.2	-49.0	466	511	9.98	ND (1)	133	19.8	8.98	712	0.859	84.2
	15-Jun-05	2500	-4.7	-46.0	921	506	9.02	ND (1)	137	21.3	9.06	592	0.713	84
	11-Oct-05	2400	-5.3	-48.0	887	484	8.87	0.731	170	23.7	15.2	500	0.718	82.3
	15-Dec-05	2340	-5.4	-40.0	813	404	9.65	ND (1)	136	21.4	14.8	406	0.709	82.7
	10-Mar-06	2500	-5.6	-50.3	861	475	9.94	ND (0.5)	171	27	7.75	597	0.803	92.5
	05-May-06	2260	-5.1	-46.4	927	522	9.99	ND (1)	193	32	10.8	577	0.716	82.5
MW-20-130	03-Mar-04	11000	-6.6	-60.0	6200	960	6.2	ND (2.5)	400	19	35	3500	1.7	45
	11-May-04	8300	-5	-49.0	3300	1000	9.8	ND (0.5)	280	14	26	2500	1.7	62
	24-Sep-04	7800	-4.4	-45.0	7240	2280	9.8	ND (4)	240	15	33	2400	1.9	66
	27-Jan-05	7350	-5.7	-48.0	3790	1140	10.4	3.16	313	16.1	43.5	2260	2.03	66
	09-Mar-05	5520	-5.8	-56.0	3120	1080	10.9	ND (1)	219	12.1	24.7	2250	1.9	68.9
	09-Mar-05 FD	6200	-5.4	-51.0	3080	1080	10.9	ND (1)	231	12.8	25.4	2390	1.99	68.9
	15-Jun-05	7790	-5	-48.0	3410	1230	11.1	ND (1)	352	23.2	31.3	2980	2.75	68.7
	07-Oct-05	7330	-5	-47.0	3010	1210	10.9	1.04 J	349	13.9	38.4	2070	2.41	72.4
	16-Dec-05	7860	-5.8	-43.0	3260	1000	10.7	ND (2.5)	324	16.3	44.4	1780	1.98	63.2

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-20-130	10-Mar-06	8610	-5.5	-48.8	3370	1250	10.6	ND (0.5)	312	18.9	27.7	2730	2.03	74.5
	05-May-06	7700	-5.3	-47.2	3900	1280	8.95	ND (1)	349	20.3	27.7	2810	2.4	69.2
MW-25	03-Mar-04	970	-7.7	-56.0	300	220	4.2	ND (0.5)	92	18	7.8	230	0.4	140
	14-May-04	1000	-8.9	-59.0	310	210	4.2	ND (0.5)	89	19	8	230	0.4	130
	09-Jun-04	---	---	---	---	---	---	---	108	17.1	---	---	0.376	---
	22-Sep-04	1000	-7.6	-58.0	296	196	3.93	0.42	81	16.6	7.4	230	ND (0.2)	140
	09-Mar-05	877	-8.4	-62.0	247	169	3.64	ND (0.5)	77.6	16.1	6.24	211	0.441	158
	14-Jun-05	942	-8.6	-61.0	289	183	3.89	ND (0.5)	93.5	20	8.91	253	0.464	137
	14-Jun-05 FD	980	-7.2	-59.0	294	185	3.94	ND (0.5)	100	20.9	9.06	268	0.475	137
	04-Oct-05	950	-8.2	-68.0	252	171	3.77	ND (0.5)	83.3	14.9	9.93	164	0.362	141
	04-Oct-05 FD	910	-8.3	-60.0	251	171	3.75	ND (0.5)	94.6	15.3	10.2	185	0.371	146
	14-Dec-05	838	-8.4	-55.0	224	158	3.74	ND (0.5)	75.5	14.5	9.8	143	0.396	153
	14-Dec-05 FD	896	-8.4	-50.0	219	155	3.75	ND (0.5)	73	14.1	9.71	151	0.382	156
	09-Mar-06	910	-8.4	-64.1	245	164	3.83	ND (0.5)	76.4	15.6	6.97	210	0.39	170
	03-May-06	907	-9	-59.4	272	172	3.95	ND (0.5)	78	17.3	7.38	222	0.418	150
	03-May-06 FD	924	-9	-61.0	274	173	3.94	ND (0.5)	79.7	17.8	7.53	245	0.431	155
MW-26	03-Mar-04	1900	-6.7	-54.0	770	400	4.6	ND (0.5)	170	40	12	470	0.5	110
	14-May-04	9300 R	-8.4	-60.0	850	480	5.1	ND (0.5)	190	50	14	490	0.6	110
	22-Sep-04	2300	-6.7	-59.0	821	472	5.65	ND (1)	170	46	13	390	0.4	98
	16-Dec-04	2130	-8.6	-64.0	835	388	5	0.578	176	45.7	17.8	466	0.662	100
	08-Mar-05	1840	-8.8	-70.0	756	370	4.48	ND (0.5)	166	41.6	10.7	439	0.557	98.7
	08-Mar-05 FD	1800	-8.7	-70.0	708	338	4.45	ND (0.5)	166	40.9	11.4	438	0.559	96.1
	13-Jun-05	2130	-8.2	-65.0	847	371	4.9	ND (0.5)	178	44.6	14	511	0.663	103
	04-Oct-05	2120	-7.8	-68.0	779	372	4.88	0.601	166	40.4	19.8	352	0.526	109
	12-Dec-05	2610	-8.5	-55.0	788	372	4.88	0.546	162	39.9	20.3	349	0.613	99.7
	08-Mar-06	2070	-8.6	-60.4	772	324	4.9	ND (0.5)	155	38.1	11.7	434 J	0.621	121
	01-May-06	2130	-8.9	-62.7	927	382	4.87	ND (0.5)	165	42	12.8	555	0.723	121
MW-27-20	03-Mar-04	640	-11.7	-100.0	74	200	ND (0.4)	ND (0.5)	79	26	4	84	ND (0.2)	180
	12-May-04	570	-11.3	-98.0	72	200	ND (0.4)	ND (0.5)	77	25	3.7	87	ND (0.2)	170
	21-Sep-04	670	-12.3	-92.0	77.2	212	ND (0.2)	ND (0.2)	76	26	5	82	ND (0.2)	160

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-27-20	15-Dec-04	692	-11.9	-101.0	87.2	236	ND (0.5)	ND (0.5)	91.5	32.6	4.61	88.4	ND (0.2)	169
	08-Mar-05	1250	-12	-102.0	190	432	ND (0.5)	ND (0.5)	137	56.6	4.89	195	ND (0.2)	215
	18-Jul-05	---	-11.9	-98.0	81.9	228	ND (0.5)	ND (0.5)	96.1	30.1	4.27	94.8	ND (0.2)	160
	05-Oct-05	742	-11.8	-102.0	91.1	252	ND (0.5)	ND (0.5)	88.6	31.4	5.48	81	ND (0.2)	175
	14-Dec-05	1020	-11.7	-91.0	118	347	ND (0.5)	ND (0.5)	116	41.8	6.96	116	ND (0.2)	216
	06-Mar-06	664	-12.1	-90.9	89.7	231	ND (0.2)	ND (0.2)	89.1	28.8	4.9	103	ND (0.2)	385
	14-Jun-06	730	-12	-89.8	98.3	272	ND (0.5)	ND (0.5)	91.1	28.5	2.79 J	96.9	ND (0.2)	195
MW-28-25	04-Mar-04	1000	-11.3	-95.0	220	290	ND (0.4)	ND (0.5)	120	33	3.8	210	0.2	260
	11-May-04	800	-11.3	-95.0	110	270	ND (0.4)	ND (0.5)	110	29	3.9	120	ND (0.2)	240
	07-Jun-04	890	-12.5	-100.0	150	220	ND (0.4)	---	---	---	---	---	---	---
	20-Sep-04	850 J	-11.7	-89.0	99.1	286	ND (0.4)	ND (0.2)	110	30	4.6	120	ND (0.2)	210
	14-Dec-04	810	-12	-99.0	110	310	ND (0.5)	ND (0.5)	122	35.7	4.78	103	ND (0.2) J	202
	10-Mar-05	880	-12.2	-95.0	112	302	ND (0.5)	ND (0.5)	129	36.3	3.5	122	ND (0.2)	204
	15-Jun-05	974	-11.6	-91.0	108	359	ND (0.5)	ND (0.5)	133	38.9	6.54	117	ND (0.2)	221
	06-Oct-05	884	-11.7	-95.0	99.8	300	ND (0.5)	ND (0.5)	123	37	6.61	88.7	ND (0.2)	197
	16-Dec-05	1010	-11.4	-90.0	128	348	ND (0.5)	ND (0.5)	134	41.5	6.46	107	ND (0.2)	212
	09-Mar-06	746	-11.5	-93.9	84.4	225	ND (0.5)	ND (0.5)	98.5	27.5	4.15 J	88.5	ND (0.2)	244
	05-May-06	741	-11.4	-90.3	110	302	ND (0.5)	ND (0.5)	117	35.7	5.77	118	ND (0.2)	216
MW-30-30	04-Mar-04	36000	-9	-76.0	19000	4100	ND (4)	5.2	1000	1000	50	9600	3.6	570
	12-May-04	30000	-7.8	-71.0	14000	3000	ND (4)	ND (50)	1300	800	47	8300	2.8	610
	23-Sep-04	42000	-9.5	-73.0	22000	4500	ND (200)	ND (100)	900	890	76	11000	4.1	570
	15-Dec-04	45500	-9.5	-79.0	19900	4730	ND (5)	8.14	1300	1400	118	6110	7.84	458
	10-Mar-05	38800	-9.8	-79.0	16000	4270	ND (5)	7.91	1590	1600	95.4	13600	4.97	421
	07-Oct-05	36400	-8.5	-75.0	17600	4000	ND (0.5)	ND (10)	1020	842	93.6	7650	5.2	521
	15-Dec-05	35700	-8.7	-59.0	19700	4070	ND (1)	3.13	1060	894	110	8540	6.14	504
	13-Mar-06	39700 J	-8.8	-70.5	18600	4530	ND (0.5)	ND (50)	1050	892	77.2	11300	4.62	650
	02-May-06	32400	-10.3	-70.7	15400	3300	ND (0.5)	ND (5)	882	828	59.4	10280	3.95	756
MW-30-50	05-Mar-04	6100	-6.4	-58.0	3000	750	1.2	ND (5)	280	120	16	1600	0.9	280
	05-Mar-04 FD	5900	-6.6	-56.0	2900	730	1.2	ND (5)	290	120	15	1600	0.9	280
	14-May-04	6300	-7.7	-54.0	2700	800	3.5	ND (5)	270	100	15	1700	1.2	180

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Chemical Performance Monitoring Results, March 2004 through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-30-50	14-May-04 FD	6500	-7.5	-54.0	2600	800	3.5	ND (5)	270	110	16	1700	1.1	180
	23-Sep-04	6600	-7.3	-58.0	3330	742	1.58	ND (10)	290	100	18	1800	0.9	240
	23-Sep-04 FD	6800	-6.7	-58.0	3220	694	1.64	ND (10)	310	110	19	1900	0.9	240
	15-Dec-04	6750	-7.9	-63.0	3040	716	ND (0.5)	1.14	378	117	36.5	1720	1.39	249
	15-Dec-04 FD	6690	-7.8	-64.0	2920	725	ND (0.5)	1.13	372	114	37.8	1700	1.43	249
	10-Mar-05	6470 J	-8.3	-68.0	4660	672	ND (0.5)	1.03	335	107	16.5	2040	1.15	324
	07-Oct-05	6860	-9.4	-79.0	3060	857	ND (0.5)	0.899 J	438	101	37	1780	1.27	252
	16-Dec-05	5850	-10.5	-65.0	2360	578	ND (0.5)	0.645	265	77.9	32.9	1260	1.19	212
	09-Mar-06	5380	-9.8	-83.5	2420	651	ND (0.5)	ND (0.5)	226	66.2	14.6	1640	1.18	275
	02-May-06	5420	-10.4	-73.6	2380	612	ND (0.5)	3.41	243	70.3	16.4	1750	1.22	261
MW-31-60	03-Mar-04	1700	-8.1	-60.0	750	280	6.2	ND (0.5)	160	22	7.9	420	0.4	72
	14-May-04	1900	-9	-59.0	750	260	5.5	ND (0.5)	150	22	7.5	420	0.4	74
	22-Sep-04	1700	-8	-61.0	691	236	5.45	0.46	130	19	7.9	430	ND (0.2)	79
	16-Dec-04	1640	-8.7	-64.0	691	246	5.36	ND (0.5)	118	18.5	9.67	421	0.44	80
	09-Mar-05	1540	-8.6	-63.0	649	210	4.94	ND (0.5)	108	17.3	5.97	424	0.401	76.6
	13-Jun-05	1660	-8.2	-65.0	745	207	4.12	ND (0.5)	121	18.9	6.57	403	0.388	70
	06-Oct-05	1660	-8.6	-65.0	691	206	4.01	ND (0.5)	109	16.5	9.75	308	0.462	77.3
	13-Dec-05	1620	-8.7	-54.0	669	199	4.14	ND (0.5)	87	15.4	9.32	275	0.359	73
	15-Mar-06	1560 J	-8.6	-65.6	661	191	4.37	ND (0.5)	106	17.5	7.3	403	0.393	89.3
	15-Mar-06 FD	1640 J	-8.6	-64.9	662	192	4.34	ND (0.5)	101	16.8	6.94	391	0.383	81.9
	01-May-06	1630	-9.6	-63.2	691	209	4.58	ND (0.5)	118	20.1	7.78	467	0.449	79.6
MW-32-20	04-Mar-04	6200	-8	-64.0	2900	540	ND (0.4)	ND (5)	520	180	13	1500	1.1	570
	12-May-04	5000	-7.1	-70.0	2100	130	ND (0.4)	ND (5)	510	180	16	1100	0.8	600
	20-Sep-04	21000 J	-7.3	-63.0	10200	3800	ND (0.4)	ND (100)	1100	420	45	4900	3	920
	14-Dec-04	16100	-8.2	-66.0	8890	1990	ND (5)	ND (5)	1140	400	46.8	3500	4.22 J	784
	09-Mar-05	12500	-7.2	-65.0	6930	1660	ND (0.5)	3.51	838	302	36.9	4000	2.76	123
	17-Jun-05	10200	-9	-67.0	4810	690	ND (0.5)	ND (2.5)	566	231	23.3	2620	1.75	676
	04-Oct-05	28800	-7.8	-65.0	14200	2420	ND (5)	6.19	1380 J	613 J	91.1 J	5400 J	4.75 J	733
	16-Dec-05	24600	-7.8	-61.0	12200	2140	ND (1)	3.48	1470	552	90.4	4950	4.16	861
	10-Mar-06	20900	-8.3	-65.5	10600	1970	ND (0.5)	ND (0.5)	1350	530	56.1	6440	3.54	432
	04-May-06	16900	-8.1	-64.9	9430	1380	ND (0.5)	2.35	937	445	46	4780	2.87	218

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Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-32-35	04-Mar-04	4200	-8	-65.0	1900	470	ND (0.4)	ND (5)	340	99	13	1100	1	310
	12-May-04	4500	-6.9	-64.0	1900	460	ND (0.4)	ND (5)	330	94	12	1100	0.9	320
	21-Sep-04	4500	-8.7	-63.0	2150	422	ND (0.2)	ND (10)	320	89	14	990	0.9	310
	15-Dec-04	4120	-8.5	-67.0	1760	524	ND (0.5)	0.89	351	96.3	24.7 J	954	1.28	276
	09-Mar-05	3560	-8.2	-68.0	1770	465	ND (0.5)	0.845	312	85.5	13	944	1.07	260
	17-Jun-05	7550	-9.5	-72.0	3520	787	ND (0.5)	ND (2.5)	506	120	14.8	2110	1.18	223
	04-Oct-05	8340	-8.3	-70.0	3840	765	ND (0.5)	ND (5)	567	134	29.3	1530	1.26	208
	16-Dec-05	7660	-8.8	-63.0	3510	710	ND (1)	1.02	606	128	30	1580	1.25	219
	10-Mar-06	9230	-8.6	-74.0	4210	1010	ND (0.5)	ND (0.5)	654	129	19.2	2360	1.13	234
	04-May-06	9840	-9.1	-67.8	4960	1130	ND (0.5)	ND (0.5)	693	148	19.5	2800	1.38	218
MW-34-55	04-Mar-04	6700	-9.6	-77.0	3200	850	ND (0.4)	ND (5)	360	97	13	2000	1.2	270
	13-May-04	5700	-10.3	-77.0	2700	770	ND (0.4)	ND (5)	310	77	15	1900	1	270
	08-Jun-04	---	---	---	---	---	---	---	246	68.3	---	---	1.18	---
	22-Sep-04	5800	-11	-82.0	2700	732	ND (0.2)	ND (10)	260	85.2	17	1800	0.9	250
	15-Dec-04	5860	-10.9	-83.0	2390	743	ND (0.5)	0.743	288	69.9	33	1540	1.34	234
	10-Mar-05	6230	-10.8	-82.0	2620	739	ND (0.5)	0.654	366	71.3	29.1	1900	1.19	240
	15-Jul-05	---	-10.3	-84.0	2250	607	ND (0.5)	ND (0.5)	247	52	16.5	1420	1.02	242
	05-Oct-05	5150	-10.6	-88.0	2170	619	ND (0.5)	ND (0.5)	272	59.1	25.8	1230	1.2	232
	14-Dec-05	5100	-10.8	-74.0	2150	552	ND (0.5)	0.588	217	45	27.2	965	0.937	236
	08-Mar-06	4850	-10.8	-86.8	2080	593	ND (0.5)	ND (0.5)	256	54.2	13.5	1640	0.956	272
	03-May-06	4320	-11.5	-84.3	2070	500	ND (0.5)	ND (0.5)	198	44.8	11.1	1360	0.846	302
MW-34-80	05-Mar-04	8800	-8.9	-75.0	4700	1000	ND (0.4)	ND (5)	280	24	25	2600	1.7	180
	13-May-04	8800	-10.2	-77.0	3900	1000	ND (4)	ND (5)	390	54	27	2800	1.4	270
	13-May-04 FD	9100	-10.2	-76.0	4000	1000	ND (4)	ND (5)	390	53	27	2700	1.5	280
	08-Jun-04	---	---	---	---	---	---	---	396	56.6	---	---	1.72	---
	23-Sep-04	8900	-9.9	-79.0	4050	997	ND (10)	ND (10)	410	76	32	2800	1.4	290
	23-Sep-04 FD	9900	-9.6	-78.0	4170	998	ND (10)	ND (10)	410	84.3	35	2800	1.5	290
	13-Dec-04	---	---	---	---	---	---	---	455	55	40.4	2220	1.63	---
	08-Mar-05	6940	-10.4	-83.0	4180	1040	ND (0.5)	1.01	439	68.1	28	2750	1.65	304
	15-Mar-05	8980	---	---	3920	ND (5)	ND (1)	---	445	65.7	29.7	2990	---	288

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through July 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-34-80	30-Jun-05	7840	-8.4	-82.0	3910	979	ND (0.5)	ND (0.5)	497	76.5	27.7	2670	1.66	302
	05-Oct-05	10200	-10.1	-85.0	3880	1060	ND (0.5)	ND (0.5)	429	72.5	47.4	1660	1.57	302
	14-Dec-05	8800	-10.2	-71.0	3700	880	ND (0.5)	0.854	432	68.3	54.9	1710	1.54	297
	09-Mar-06	7830	-9.9	-86.8	3520	986	ND (0.5)	ND (0.5)	383	65.8	24	2420	1.49	313
	03-May-06	7950	-11.7	-77.6	3700	921	ND (0.5)	ND (0.5)	425	70.3	23.9	2480	1.38	297
Surface Water Stations														
R-27	03-Mar-04	630	-11.4	-86.0	87	250	ND (0.4)	ND (0.5)	77	28	4.4	94	ND (0.2)	140
	12-May-04	590	-11.4	-96.0	84	240	ND (0.4)	ND (0.5)	74	27	4.8	96	ND (0.2)	140
	22-Sep-04	680	-12.1	-98.0	88.4	237	0.38	ND (0.2)	77	29	4.8	99	ND (0.2)	130
	13-Dec-04	632	-11.4	-95.0	84.4	235	ND (0.5) R	ND (0.5)	79.6	31.4	4.95	86.5	ND (0.2) J	125
	07-Mar-05	669	-12.3	-102.0	92.7	244	ND (0.5)	ND (0.5)	82.8	31.3	4.72	108	ND (0.2)	136
	14-Jun-05	686	-11.4	-92.0	90.9	266	ND (0.5)	ND (0.5)	81.9	29.8	6.04	98.9	ND (0.2)	127
	05-Oct-05	678	-11.6	-94.0	85.1	255	ND (0.5)	ND (0.5)	101	36.2	6.56	91.2	ND (0.2)	130
	16-Dec-05	718	-11.7	-87.0	87.9	253	ND (0.5)	ND (0.5)	85.5	29.5	5.99	75.6	ND (0.2)	126
	06-Mar-06	656	-11.8	-92.1	90.6	268	ND (0.5)	ND (0.5)	83.5	29.4	5.44 J	101	ND (0.2)	144
	03-May-06	567	-12.8	-93.9	93.1	267	ND (0.5)	ND (0.5)	87	31.1	3.12 J	106	ND (0.2)	139
R-28	03-Mar-04	670	-11.3	-90.0	87	250	0.5	ND (0.5)	78	28	4.4	93	ND (0.2)	140
	12-May-04	580	-11.5	-98.0	84	240	ND (0.4)	ND (0.5)	72	26	4.2	92	ND (0.2)	140
	22-Sep-04	680	-12.1	-99.0	104	240	0.38	ND (0.2)	79	30	4.9	99	ND (0.2)	130
	13-Dec-04	652	-11.1	-95.0	84.8	236	ND (0.5) R	ND (0.5)	79.9	31.5	4.93	86	ND (0.2) J	133
	08-Mar-05	651	-12.5	-102.0	90.4	231	ND (12.5)	ND (0.5)	83.7	31.4	5.02	107	ND (0.2)	132
	14-Jun-05	680	-11.6	-95.0	91.2	268	ND (0.5)	ND (0.5)	78.5	28.5	5.08	94.5	ND (0.2)	127
	05-Oct-05	672	-11.6	-94.0	85.5	255	ND (0.5)	ND (0.5)	85.7	30.4	6.3	77	ND (0.2)	122
	16-Dec-05	710	-11.5	-83.0	88.1	254	ND (0.5)	ND (0.5)	87.2	29.8	6.11	76.8	ND (0.2)	126
	06-Mar-06	675	-12.3	-93.4	91	270	ND (0.5)	ND (0.5)	76.6	26.6	5.22 J	91.5	ND (0.2)	146
	03-May-06	586	-13	-92.1	93.4	270	ND (0.5)	ND (0.5)	88.1	31.4	4.04 J	107	ND (0.2)	136

NOTES:

FD = field duplicate sample
ND =parameter not detected at the listed reporting limit.
J = concentration or reporting estimated by laboratory or data validation
R = result exceeded analytical criteria for precision and accuracy; should not be used for project decision-making
(---) = data not collected or available

Results in milligrams per liter (mg/L), except Oxygen-18 and Deuterium, which are expressed as differences from global standards in parts per thousand.

Alkalinity reported as carbonate (CaCO3). Nitrate reported as Nitrogen (N).

Monitoring wells MW-30-30 and MW-30-50 were not sampled during the June 2005 monitoring event due to floodplain inaccessibility.