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November 30, 2006

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

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

Dear Mr. Yue:

Enclosed is the *Performance Monitoring Report for October 2006 and Quarterly Performance Evaluation, August through October 2006* for PG&E's Interim Measures (IM) performance monitoring program for the Topock project. This report presents the October 2006 performance monitoring results for the IM and summarizes the operations and performance evaluation for the third 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 Bettinger for Yvonne Meeks

Enclosure

Performance Monitoring Report for October 2006 and Quarterly Performance Evaluation, August through October 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

November 30, 2006

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Performance Monitoring Report for October 2006
and
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November 30, 2006

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

Paul Bertucci

Paul Bertucci, C.E.G. No. 1977
Project Hydrogeologist

Contents

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	California 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 August 1 through October 31, 2006. The next monthly report for the November 2006 reporting period will be submitted on December 15, 2006. The next quarterly performance monitoring report will be submitted with the annual performance monitoring report on March 15, 2007.

1.1 Report Organization

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

- Monthly performance monitoring results for October 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 August through October 2006 (Section 3.0).
- Conclusions (Section 4.0).

2.0 Performance Monitoring Report for October 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 October 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 October 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. Extraction Well TW-2D was put into temporary service on October 4 and 5, 2006, when extraction well PE-1 was offline due to power supply issues.

The October 2006 monthly average pumping rate was 132.3 gpm. A total of 5,907,823 gallons of groundwater was extracted and treated by the IM No. 3 treatment plant during October 2006. The operational run time for the IM extraction system was 99 percent during this reporting period. An operations log for the extraction system during October 2006, including downtime, is included in Appendix A. The IM No. 3 treatment facility also treated approximately 6,850 gallons of water from monitoring well development and groundwater monitoring activities and 11,000 gallons of groundwater from injection well IW-02 redevelopment during October 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 US Filter Corporation in Los Angeles, California for treatment and disposal. One container of solids from the IM No. 3 facility was disposed of at the Kettleman Hills Chemical Waste Management facility during October 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 October 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 October 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 semiannual, 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, Second 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 October 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 aquifer depth intervals, well screens, and October 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 October 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).

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 May through October 2006. Table B-2 presents the groundwater sampling data for the other wells monitored in the PMP area from May through October 2006.

2.4 Hydraulic Gradient Results

During October 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 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 October reporting period (October 1 to 31, 2006) and are summarized in Appendix C, Table C-1. Due to the variation in groundwater salinity at the site, the water level measurements need to be adjusted (density-corrected) to equivalent freshwater 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 October 2006) for all wells with transducers are included in Appendix C. The Colorado River elevation (I-3 gage station) during October 2006 is also shown on the hydrographs.

The October 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. A review of the groundwater elevation contours indicates very strong landward hydraulic gradients within the IM capture zone throughout the floodplain. The landward gradients measured during October 2006 were similar to those of September 2006. This was the result of a continued high extraction rate for the IM system during the reporting period (average 132 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 IM monitoring wells during October 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 deep monitoring wells, installed in spring 2006, 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 for several of the monitoring well clusters in the floodplain are presented and contoured in cross-section on Figure 2-7 (location of cross-section shown on Figure 2-1). The groundwater elevation contours on this cross-section show the strong downward and landward hydraulic gradients produced by the combined pumping from 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 October 2006 release (11,150 cubic feet per second [cfs]) was similar to the United States Bureau of Reclamation (USBR) projected release for the October reporting period (11,400 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 November 2006 (8,300 cfs) will be less than in October 2006 (11,150 cfs). Based on November 6, 2006 USBR projections, it is anticipated that the Colorado River level at the I-3 gage location in November 2006 will decrease an average of 1.5 feet compared to the average level in October 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 October 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 (0.0024, 0.0032, and 0.0036, respectively). Data for the southern well pair were limited to the first few days of the month in October due to transducer malfunction; however, the average monthly gradient between well MW-20-130/MW-42-55 (screened 10 feet higher than MW-42-65) was three times the target value, or 0.003, over the full-month reporting period. The October gradients were slightly greater than the average gradients for these well pairs measured in September 2006 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 November 2006 will be submitted by December 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 November 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. R7-2006-0060. 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 August through October 2006

3.1 Extraction System Operations

During third quarter IM operations from August through October 2006, a total of 17,560,188 gallons of groundwater was extracted. The average extraction rate, including system downtime, for the IM system during the quarter was 132.5 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 October 2006 is shown in plan view and cross-section on Figure 2-2. The Cr(VI) concentrations and distribution in the floodplain for October 2006 are similar to the August and September 2006 monitoring results and Cr(VI) contour maps presented in the prior monthly performance monitoring reports (CH2M HILL 2006b-c). Figure 2-2 also presents the October 2006 results for the intermediate and interior wells in the performance monitoring area that are sampled on the quarterly groundwater monitoring schedule. Relative to May 2006, increasing Cr(VI) concentrations were observed in the October samples at shallow well MW-47-55 (56.9 µg/L) and deep well MW-50-200 (9,660 µg/L) (see Table B-2 for prior sampling results). The Cr(VI) concentration contours shown on the Alluvial Aquifer maps on Figure 2-2 reflect the most current sampling results for over 60 monitoring wells sampled in the IM performance monitoring area.

Figure 3-1 presents Cr(VI) concentration trend graphs for six selected deep monitoring wells in the floodplain area through October 2006 sampling. Sampling data since April 2005 (installation date of MW-34-100) are plotted for wells MW-34-100, MW-36-90, MW-36-100, MW-44-115, MW-44-125, and MW-46-175. The locations of the deep wells selected for performance evaluation are shown on Figure 2-1.

The effects of PE-1 pumping are evident in the sampling data from wells MW 36-90, and MW-36-100 (Figure 3-1). Since the initiation of PE-1 pumping, the Cr(VI) concentrations at MW-36-90 have consistently 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 decreasing Cr(VI) concentrations observed at MW-36-90 appear to be related to a gradual influx of more reducing groundwater resulting from the downward vertical gradients produced by PE-1 pumping (see oxidation-reduction data for MW-36-90, Table B-1, along with Figure 2-7, which shows downward gradient). The concentration trend for MW-34-100 (Figure 3-1) has shown both short-term declines and increasing concentrations since PE-1 pumping commenced. However, since June 2006, concentrations at this well have started to trend downwards. Landward gradients

have been present at this location since IM pumping began; therefore, the concentrations measured at MW-34-100 do not indicate any movement of the plume toward the river.

Monitoring well clusters MW-44 and MW-46, installed in spring 2006, are located within the Cr(VI) plume (approximately 190 feet and 400 feet north of PE-1). The sampling data from the MW-44 cluster wells show overall gradually declining concentrations, while MW-46-175 concentrations have been relatively stable since April 2006 sampling. The MW-44 and MW-46 well clusters are well within the hydraulic capture of 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-to-stable Cr(VI) concentrations over the past 6 months have been observed at the four deep wells at the MW-39 cluster (Figures B-8 to B-11, Appendix B), reflecting the pumping influence from TW-3D. Low concentrations (<20 µg/L) present in MW-33 cluster wells remained consistent with previous results over the reporting period.

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 May through October 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 (Fetter 1994).

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 October 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.

Groundwater concentrations for water quality constituents have remained consistent and stable in most wells since the 2004-2006 monitoring of these wells began. However, there are some wells where significant changes in water quality have occurred in response to the hydraulic gradients created by IM pumping. Concentrations of TDS, chloride, sulfate and other water quality parameters, have decreased in wells MW-30-50 and MW-34-55 since IM pumping began (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). Initiation of pumping from PE-1, in January 2006, has increased downward hydraulic gradients near MW-34-55 resulting in an increasing river influence (lower TDS) at this location. TDS and associated water quality parameters

have decreased at the MW-20 cluster wells since IM pumping began, due to the strong downward hydraulic gradients created by IM pumping at the MW-20 bench.

Chemical performance monitoring data at shallow floodplain wells MW-32-20 and MW-32-35 show overall increasing concentrations of TDS, reflecting an influx of more saline groundwater at this location over the monitoring period. Elevated TDS in the shallow aquifer zone near MW-32 is thought to be related to evaporative concentration of salts around former shallow ponds and marshy areas on the floodplain prior to the deposition of the dredge spoils. These salts are visible on the ground surface near MW-32.

Little change in general chemistry concentrations was observed in shallow interior wells MW-25 and MW-26, which are not influenced by IM pumping. 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 August, September, and October 2006 are included in this report as follows:

- October 2006: Figures 2-4 through 2-6 presented in this report
- September 2006: Appendix C, Figures C-2A through C-2C
- August 2006: Appendix C, Figures C-2D through C-2F

A review of the groundwater elevation contours indicates very strong landward hydraulic gradients within the IM capture zone throughout the floodplain. 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 within the IM capture zone.

Average quarterly groundwater elevations (August through October 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 third quarter August

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

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 to moderate during August through October 2006, and IM pumping rates were consistently very close to the IM system target goal of 135 gpm, resulting in strong landward gradients for each of the well pairs during third quarter 2006 performance monitoring period.

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 late fall-winter (November and December). 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 August, September, and October 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 gradients during August, September, and October 2006 were two to four times the required minimum magnitude in all well pairs. The IM pumping was sufficient to meet the minimum gradient targets during each of the three months of the third 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 these wells 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-34-080. 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 17,560,188 gallons of groundwater was extracted and treated from the IM system during the third quarter August through October 2006 reporting period. The average pumping rate for the IM extraction system during the quarterly period, including system downtime, was 132.5 gpm.

Overall, the Cr(VI) concentrations observed in the floodplain monitoring wells are stable or decreasing. For the current quarter, Cr(VI) concentrations at wells MW-36-90, the MW-39 cluster, and the MW-44 cluster declined relative to the previous quarter. Concentrations of Cr(VI) increased slightly at MW-36-100 after the onset of PE-1 pumping (February 2006) but have since stabilized in the third quarter. Concentrations at well MW-46-175 have also remained stable over the third quarter. All of these wells are within the IM extraction system capture zone. Although strong landward gradients are present at the MW-34 cluster, concentrations in MW-34-100 were trending upward for the first part of 2006, with the exception of a few shorter-term declines. However, concentrations at this well have been trending downwards since June 2006. 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.

Based on the hydraulic and chemical performance monitoring data and evaluation presented in this report, the IM performance standard has been met for the third quarter, August through October 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

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Tables

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

Extraction Well	October 2006 Period[a]		Quarterly Period[b]		Project To Date[c]
	Average Pumping Rate[d,e] (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	1.4	64,096	1.1	139,645	53,015,001
TW-3D	98.9	4,416,804	97.3	12,896,417	43,427,595
PE-1	32.0	1,426,923	34.1	4,524,126	13,891,238
Total	132.3	5,907,823	132.5	17,560,188	111,328,272
				Volume Pumped from the MW-20 Well Cluster	1,527,724
				Total Volume Pumped (gal)	112,855,996
				Total Volume Pumped (ac-ft)	346.4

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

[a] Pumping results during the monthly period are based on readings collected between October 1, 2006 at 12:00 a.m. and October 31, 2006 at 11:59 p.m. (31 days).
[b] Pumping results during the quarterly period are based on readings collected between August 1, 2006 at 12:00 a.m. and October 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.
[e] Extraction well TW-2D was put into temporary service on October 4 and 5 when extraction well PE-1 was offline due to power supply issues

TABLE 2-2
Analytical Results for Extraction Wells, May through October 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	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
TW-3D	09-Aug-06	3.06	2.66	5860
TW-3D	07-Sep-06	2.44	2.38	5700
TW-3D	04-Oct-06	2.46	2.47	5350 J
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
PE-1	09-Aug-06	0.0834	0.0959	5270
PE-1	07-Sep-06	0.0905	0.0854	5920
PE-1	04-Oct-06	0.0839	0.0901	5950 J

NOTES:
mg/L = concentration in milligrams per liter (mg/L)

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

Groundwater samples from active extraction wells are taken at sample taps in Valve Vault 1 on the MW-20 Bench.

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	12,871	29	454.9	455.1	0.1
September 2006	12,100	12,409	-309	454.7	454.7	0.0
October 2006	11,400	11,150	250	454.1	454.4	0.3
November 2006	8,300	----	----	452.9	----	----

NOTES:

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

I-3 elevation for the month of October 2006 limited to average of data from 10/4/2006 through 10/31/2006.

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, October 2006
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well Pair	Mean Landward Hydraulic Gradient (feet/foot)	Measurement Dates 2006
Northern Gradient Pair		
MW-31-135 / MW-33-150	0.0024	October 1 through 31
Central Gradient Pair		
MW-20-130 / MW-34-80	0.0032	October 1 through 31
Southern Gradient Pair		
MW-20-130 / MW-42-65	0.0036	October 1 through 3

Notes:

1) Refer to Figure 1-2 for location of well pairs

2) For IM pumping, the target landward gradient for the selected well pairs is 0.001 feet/foot

3) Extraction well PE-1 began pumping on 1/26/06. As a result, the gradient reported for the central well pair is affected by having an additional pumping well between wells used for gradient calculation.

4) The transducer in MW-42-65 malfunctioned on 10/4/2006, so data for the remainder of the month is unavailable. The mean landward hydraulic gradient between MW-20-130 and MW-42-55 was 0.0030 for the month of October 2006

TABLE 3-1

Average Hydraulic Gradients Measured at Well Pairs, August through October 2006

Interim Measures Performance Monitoring

PG&E Topock Compressor Station

Well Pair[1]	Reporting Period	Mean Landward Hydraulic Gradient[2] (feet/foot)	Measurement Dates[3] 2006
Northern Gradient Pair			
MW-31-135 / MW-33-150	August	0.0018	August 1-7
	September	0.0024	September 1-30
	October	0.0024	October 1-31
Central Gradient Pair			
MW-20-130 / MW-34-80	August	0.0027	August 1-30
	September	0.0027	September 1-30
	October	0.0032	October 1-31
Southern Gradient Pair			
MW-20-130 / MW-42-65	August	0.0032	August 1-30
	September	0.0032	September 1-30
	October	0.0036	October 1-3

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
3. Refer to Section 2.4 and prior monitoring reports (CH2M HILL 2006b-c) for discussion of monthly gradients.

Figures

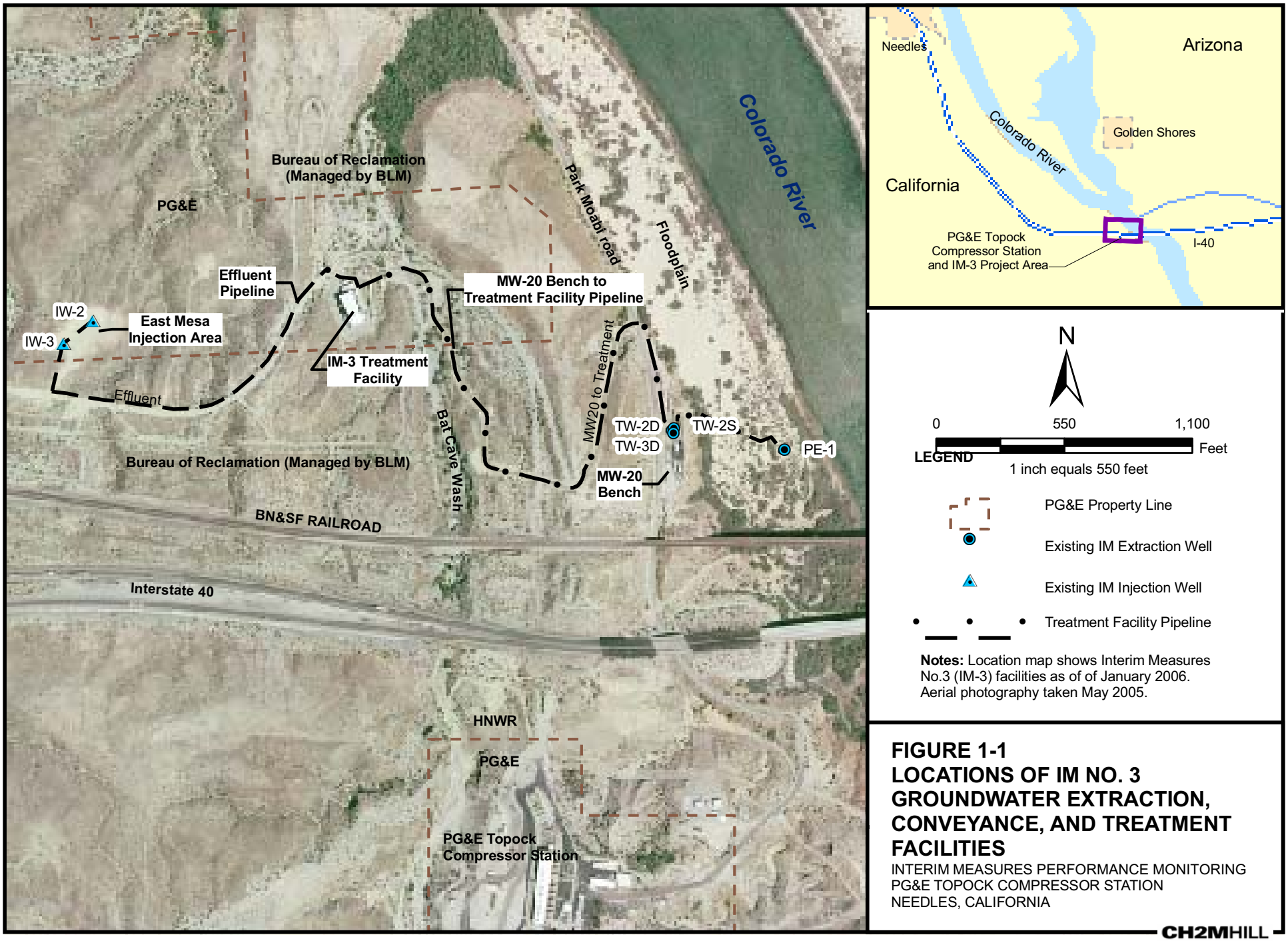

FIGURE 1-1
LOCATIONS OF IM NO. 3 GROUNDWATER EXTRACTION, CONVEYANCE, AND TREATMENT FACILITIES
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

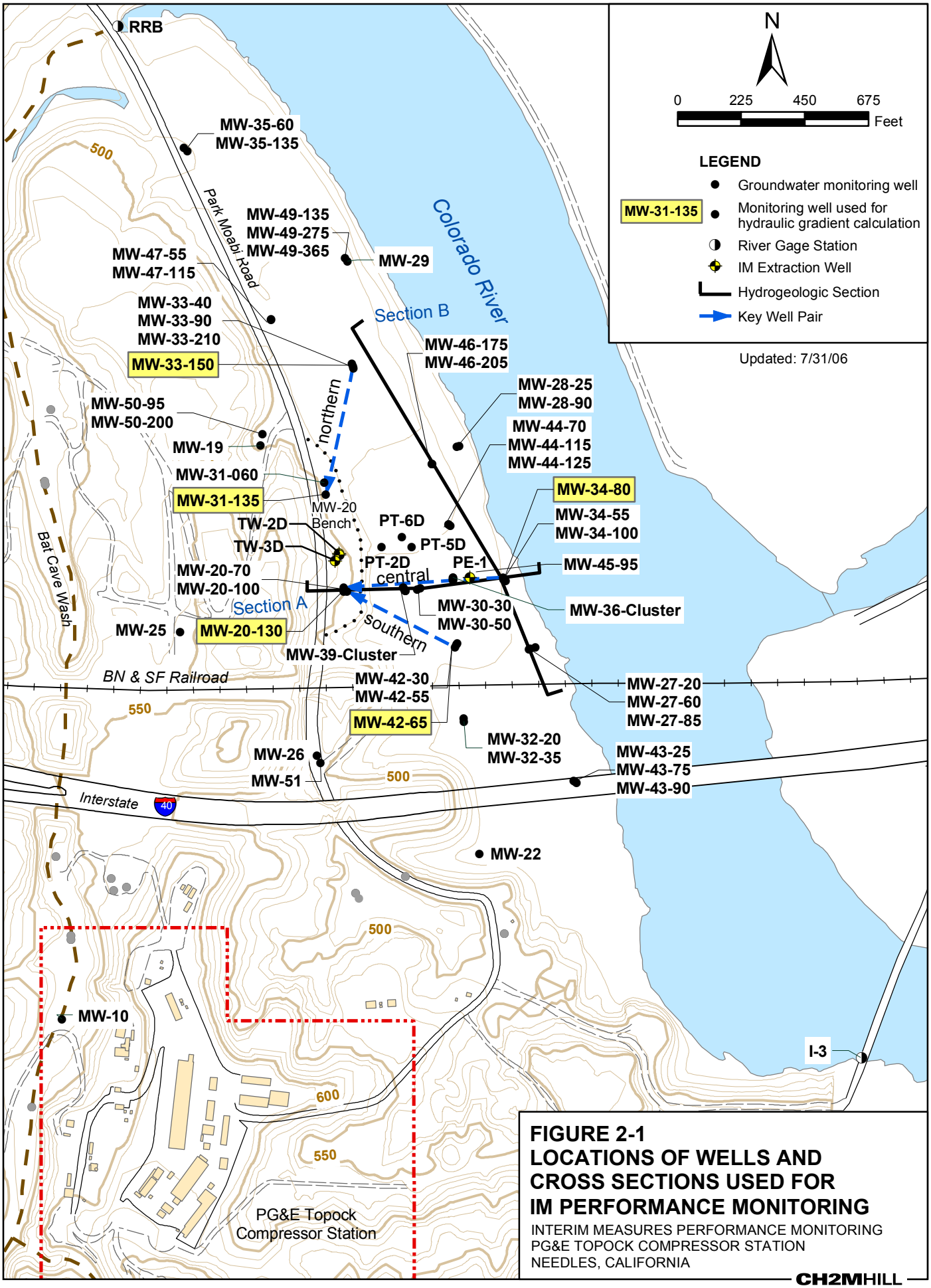

FIGURE 2-1
LOCATIONS OF WELLS AND CROSS SECTIONS USED FOR IM PERFORMANCE MONITORING
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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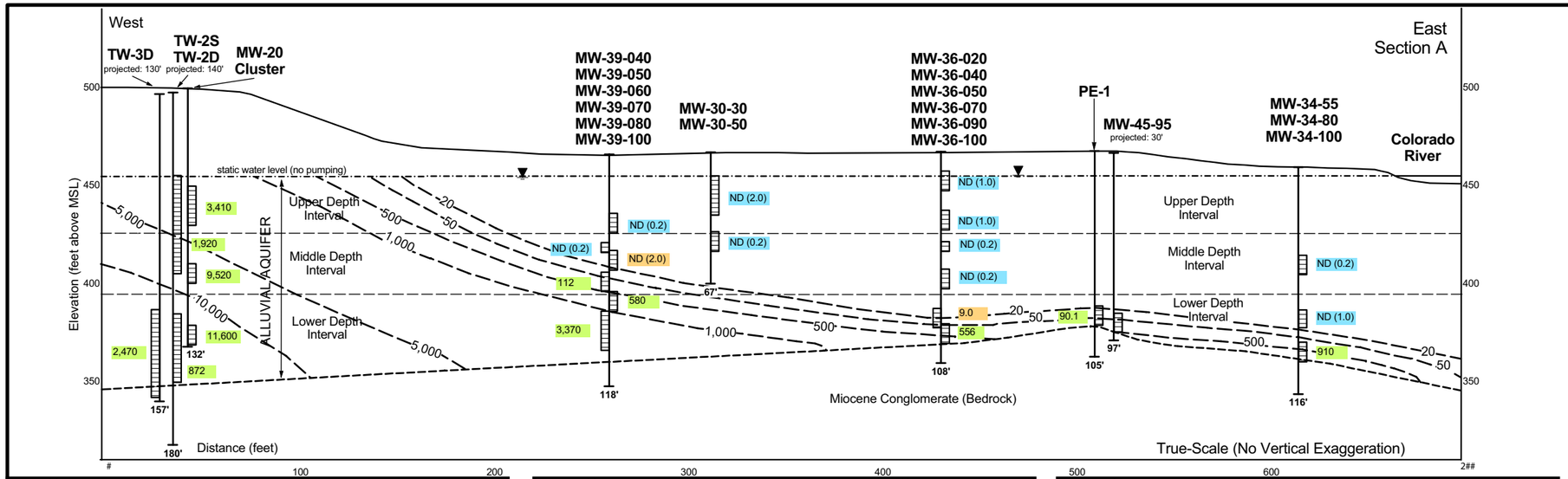
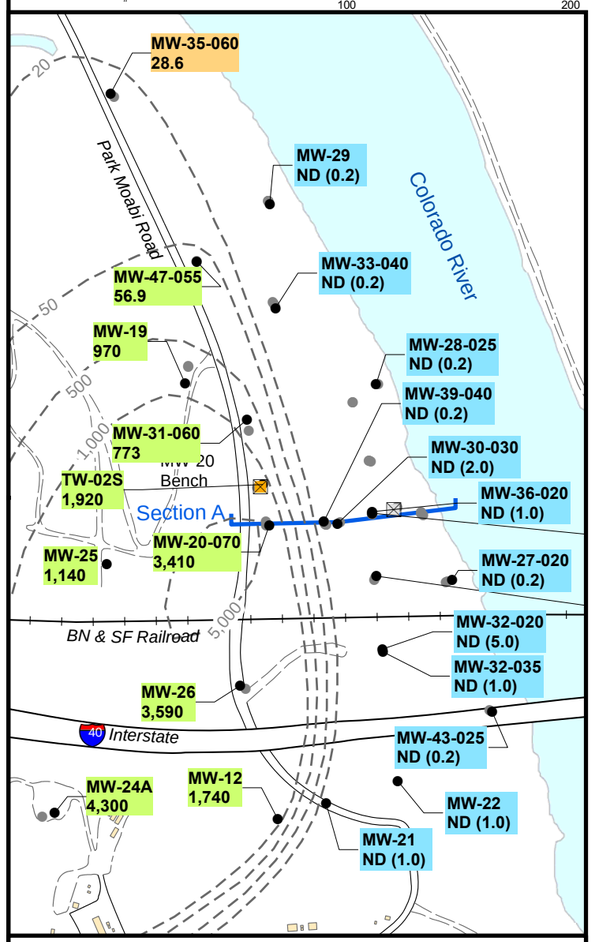
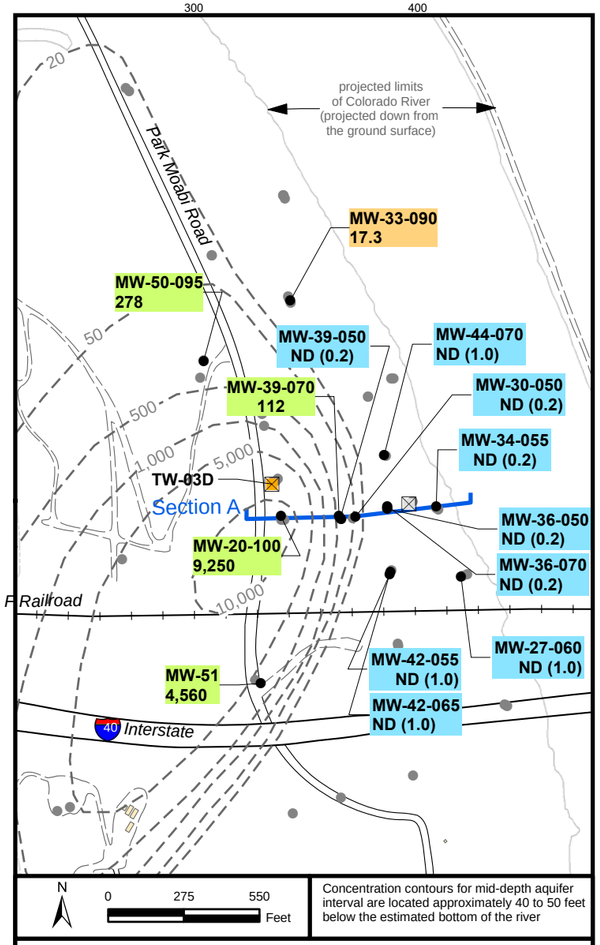


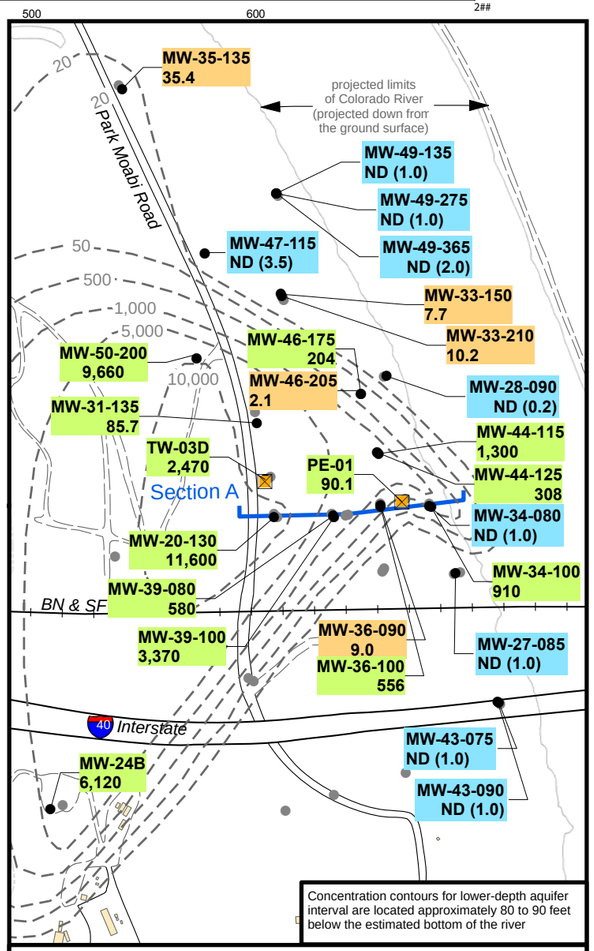


Shallow Wells (Upper Depth Interval)



Concentration contours for mid-depth aquifer interval are located approximately 40 to 50 feet below the estimated bottom of the river

Intermediate Wells (Middle Depth Interval)



Concentration contours for lower-depth aquifer interval are located approximately 80 to 90 feet below the estimated bottom of the river

Deep Wells (Lower Depth Interval)

LEGEND

Maximum Hexavalent Chromium [Cr(VI)] Concentrations in Groundwater, October 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 are from October 2006 sampling.
Results posted are maximum concentrations from primary and duplicate samples.
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 Colorado 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 are no data confirming the existence of Cr(VI) under the Colorado River.

FIGURE 2-2
MAXIMUM Cr(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER, OCTOBER 2006

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

CH2MHILL

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)

ALLUVIAL AQUIFER

Oldest Alluvium

Fluvial Deposits

Upper Depth Interval

Middle Depth Interval

Lower Depth Interval

Approximate geologic contact between alluvial fan and fluvial deposits

ND (0.2)
17.3
7.7
10.2
237'

ND (0.2)
ND (0.2)
204
2.1
148'
216'

ND (1.0)
1,300
308
134'

ND (0.2)
ND (1.0)
910
116'

ND (0.2)
ND (1.0)
ND (1.0)
107'

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:

Results posted are maximum concentrations from primary and duplicate samples from October 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 [Cr(VI)] 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
OCTOBER 2006

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

CH2MHILL

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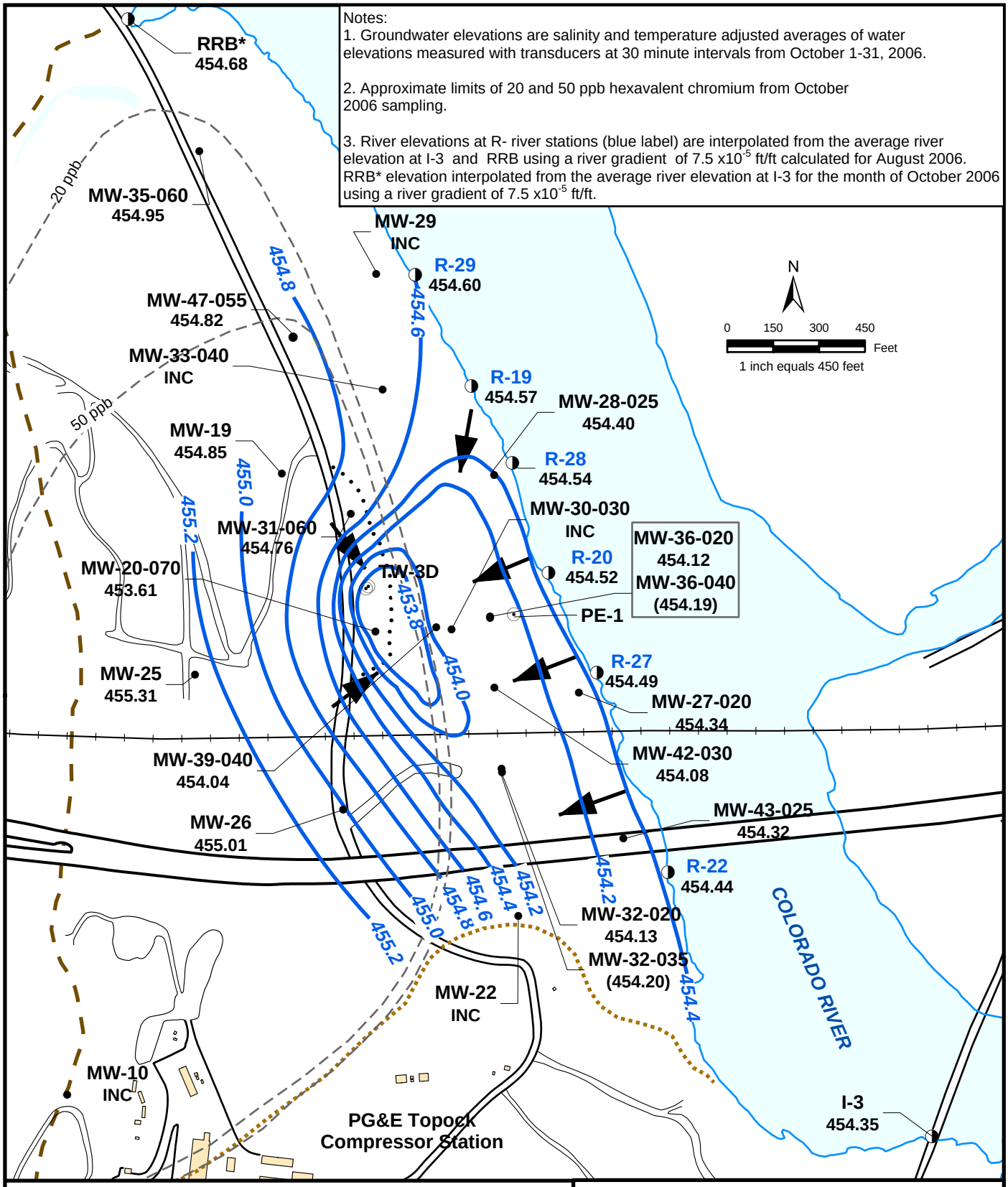

FIGURE 2-4
AVERAGE GROUNDWATER ELEVATIONS SHALLOW WELLS AND RIVER ELEVATIONS, OCTOBER 2006

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

CH2MHILL

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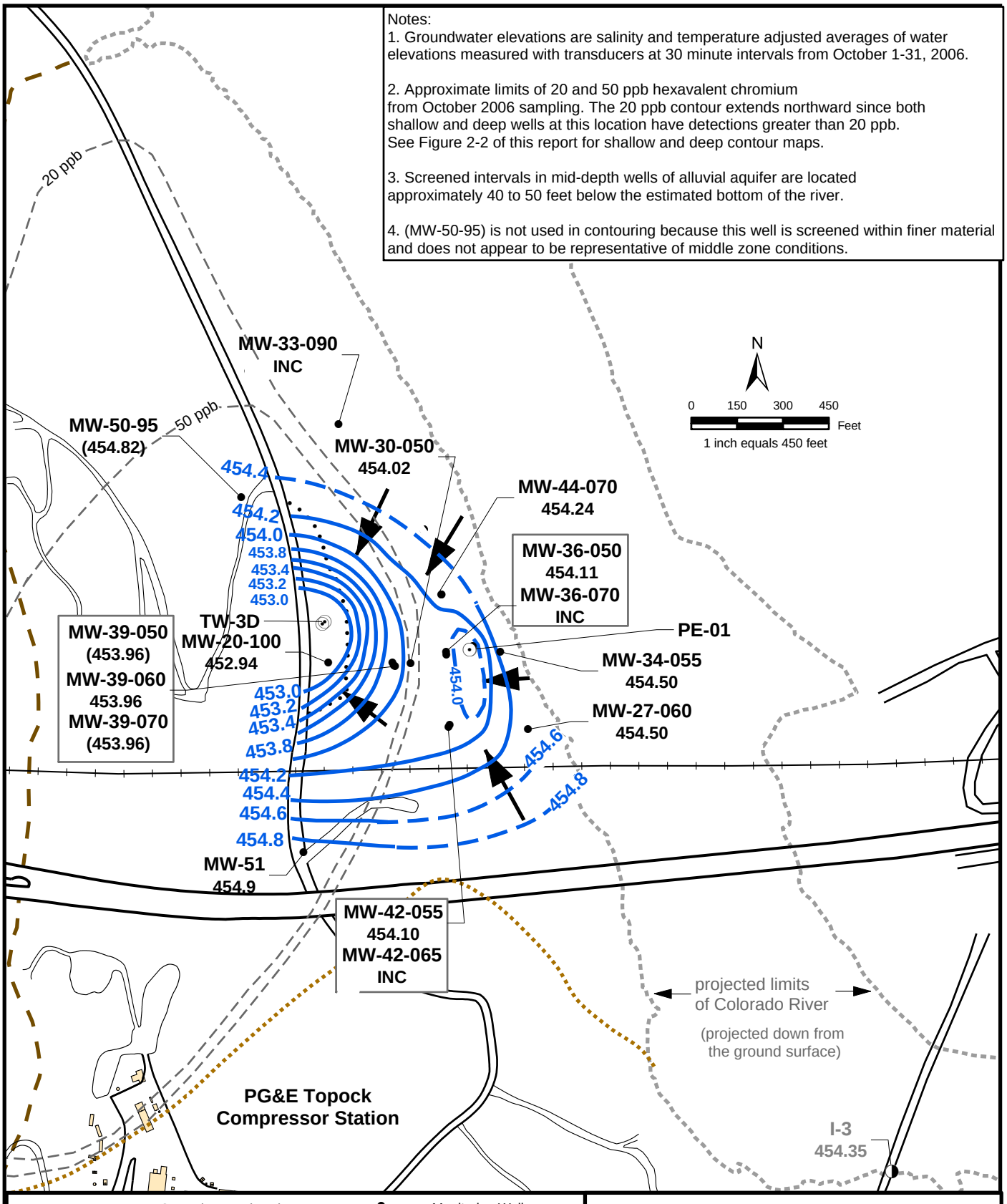

FIGURE 2-5
AVERAGE GROUNDWATER ELEVATIONS MID-DEPTH WELLS OCTOBER 2006

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

CH2MHILL

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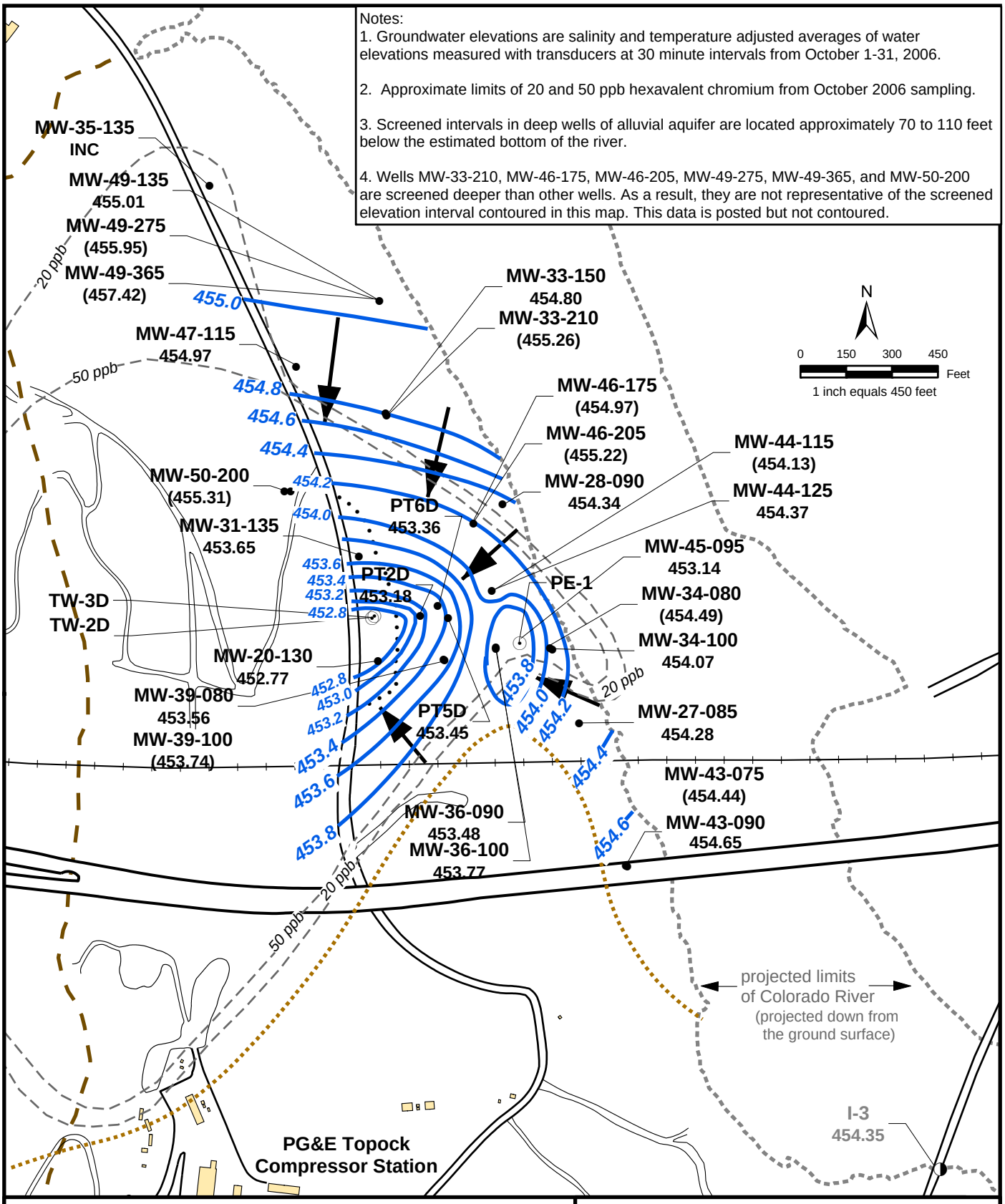

FIGURE 2-6
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS OCTOBER 2006

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_Oct_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
454.52

Elevation (feet above MSL)

550
500
450
400
350
300
250

453.6
453.4
453.2
453.0
452.8

453.61
453.11
452.77

454.04
453.96
453.96
453.95
453.56
453.74

INC
454.02

454.12
454.19
454.11
INC
453.48
453.77

454.50
454.58
453.14
454.07

50
20
453.8
454.0
454.4
454.2
453.6
453.4
453.2

Groundwater Divide

157'
180'
132'
118'
67'
108'
105'
97'
116'

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
October 1 through October 31, 2006
measured with transducers at 30 minute intervals.
Groundwater elevations adjusted for salinity and temperature.

Well MW-36-90* excluded from contouring.
INC = wells MW-30-30 and MW-36-70 data incomplete over reporting period.

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.

Legend:

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

20 — Inferred hexavalent chromium contour (ppb) October 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
OCTOBER 2006

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

CH2MHILL

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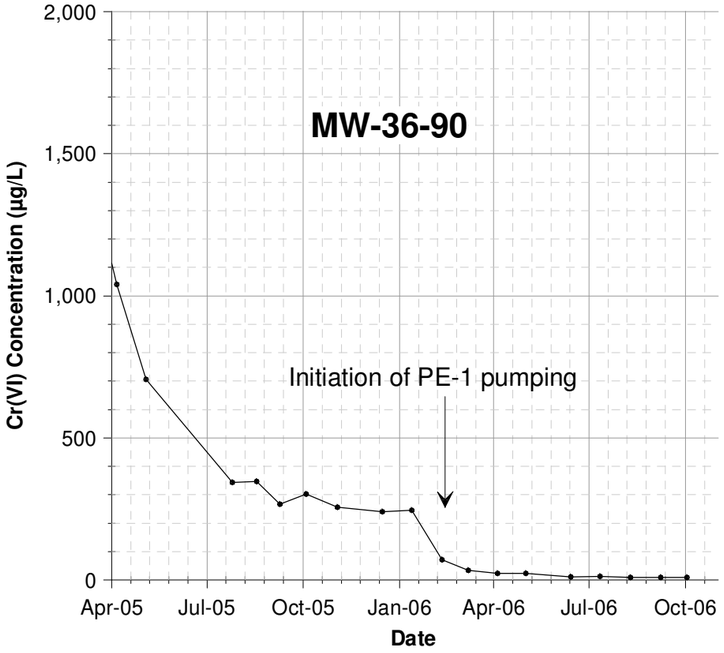

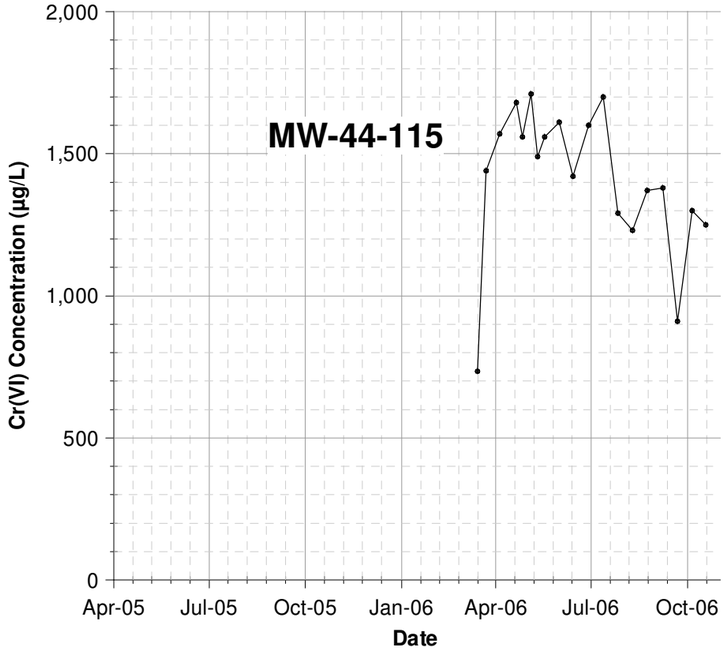

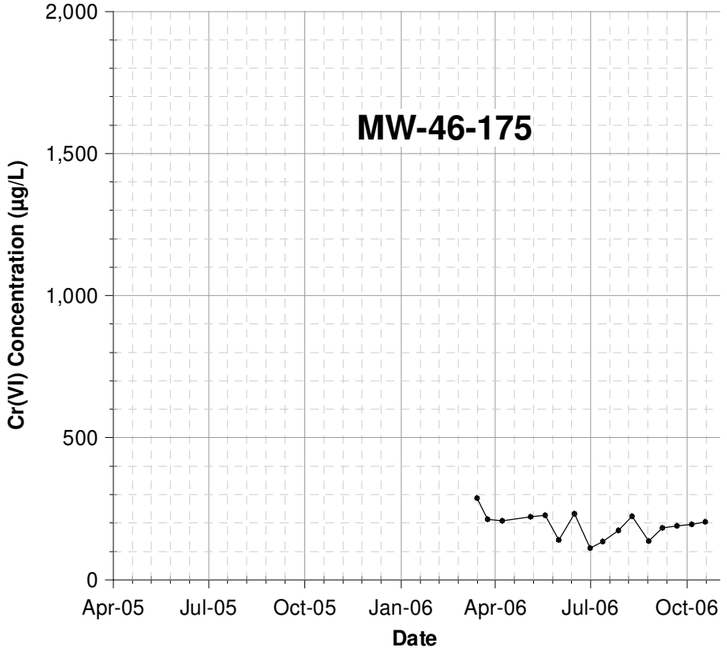

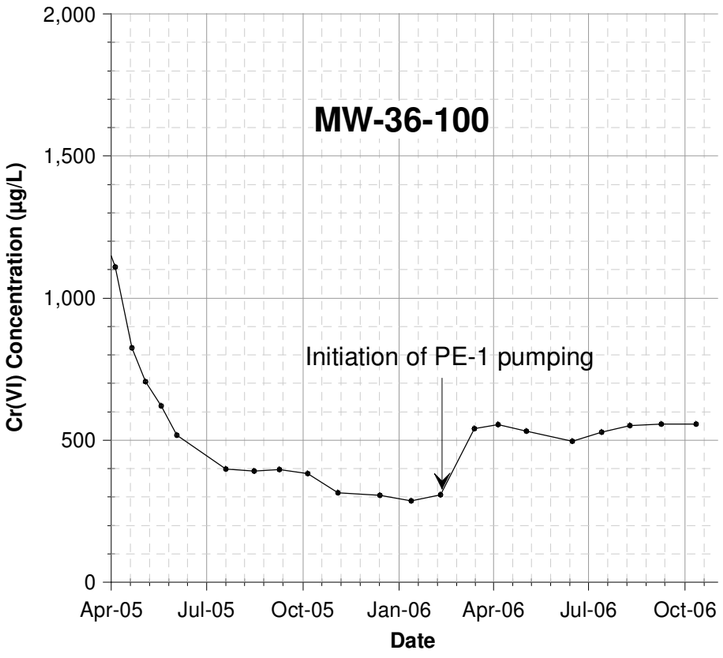

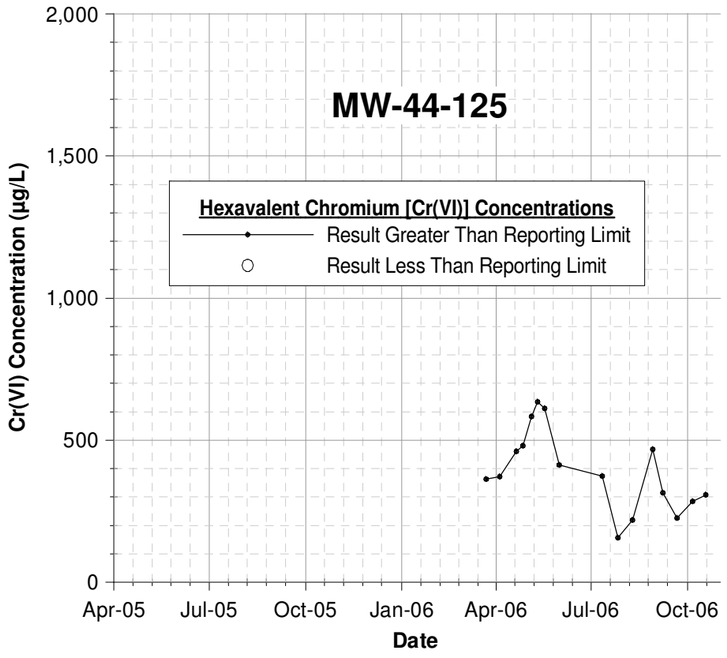

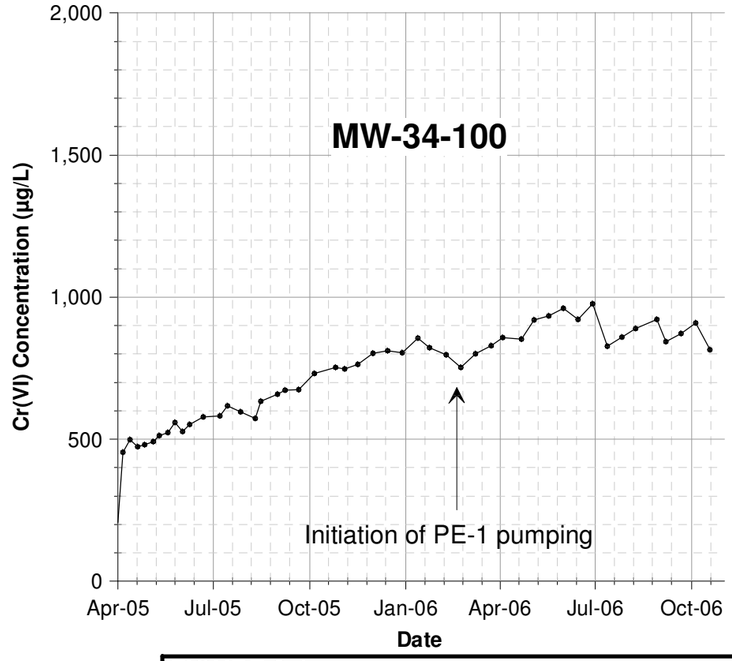

Notes
1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping on plume west of PE-1. MW-44 wells, MW-46-175, and MW-34-100 selected to monitor concentrations within the plume.

FIGURE 3-1
Cr(VI) CONCENTRATION TRENDS IN SELECTED PERFORMANCE MONITORING WELLS APRIL 2005 TO OCTOBER 2006
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

\\zinfandel\proj\PacificGasElectricCo\TopockProgram\Project_GMP\GMP_Reports\Chemplots\PMR_Figure_3-1

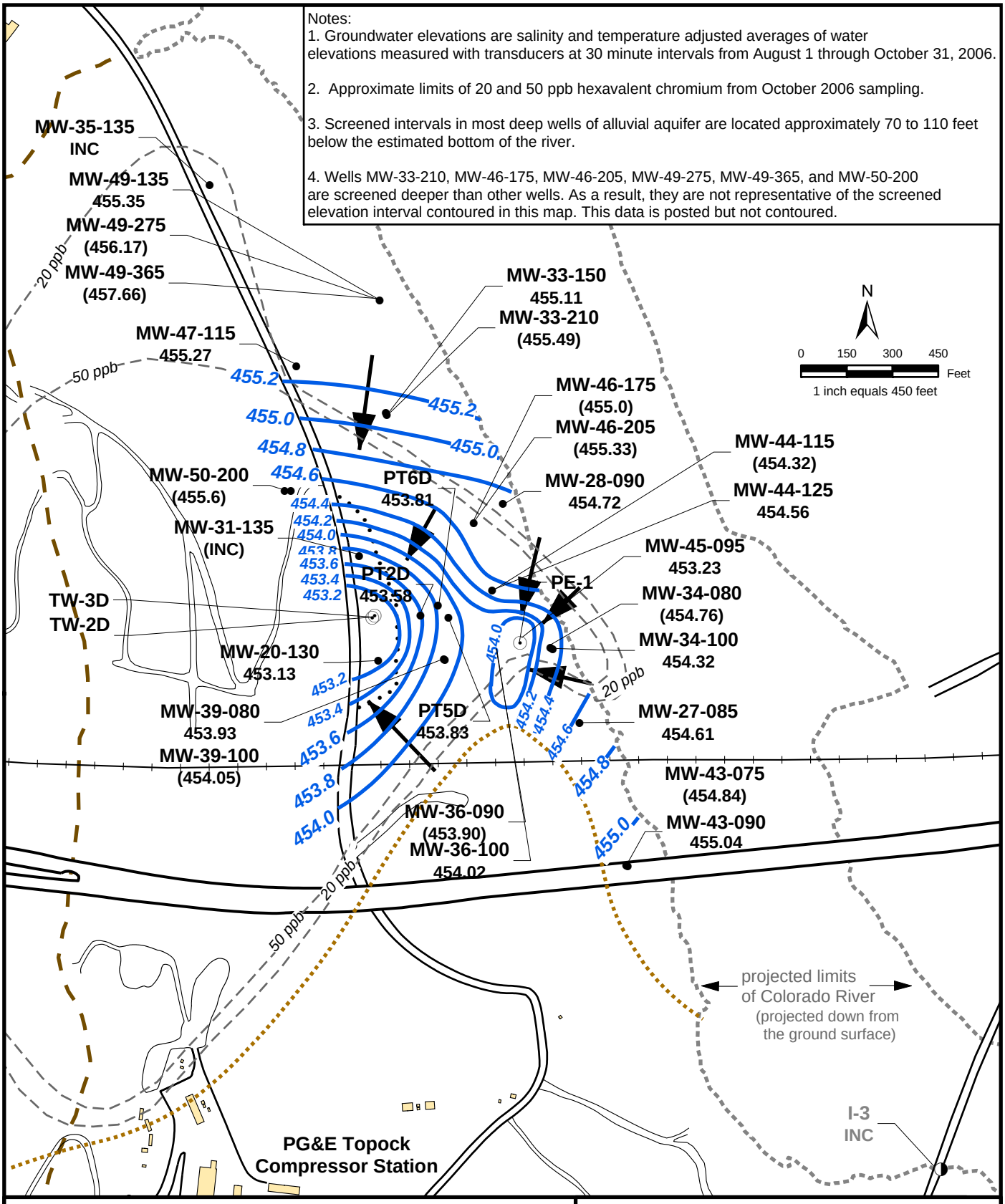

FIGURE 3-2
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS AUGUST THROUGH OCTOBER 2006

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_Aug-Oct_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
454.88

Elevation (feet above MSL)

550
500
450
400
350
300
250

453.94
453.52
453.13
132'
157'
180'

454.33
454.33
454.24
454.21
453.93
454.05
118'

INC
454.36
67'

Groundwater Divide

454.44
454.53
454.48
INC
453.90
454.02
108'

454.23
97'
105'

454.76
454.76
454.32
116'

454.0
454.2
454.6
454.4
454.8
453.8
453.6
453.4
20
50

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
August 1 through October 31, 2006
measured with transducers at 30 minute intervals.
Groundwater elevations adjusted for salinity and temperature.

Wells MW-36-90 excluded from contouring.
INC = wells MW-30-30 and MW-36-70 data incomplete over reporting period.

River elevation (R-20) is the interpolated average river level
based upon the river gradient between RRB and I-3.

Legend:

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

20 Inferred hexavalent chromium contour (ppb) October 2006

Monthly 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 AUGUST THROUGH OCTOBER 2006

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

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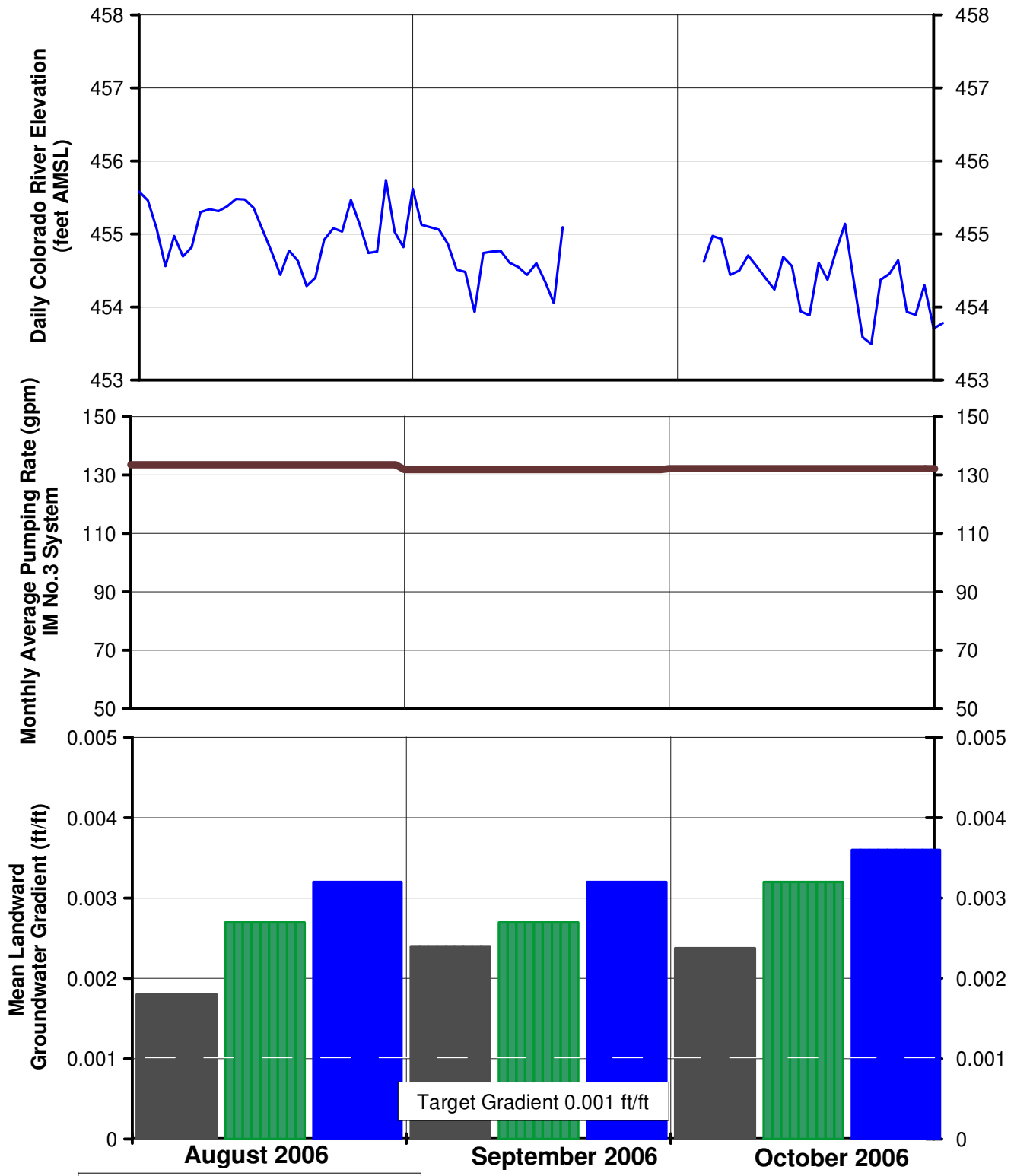

Notes:

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.
5) I-3 Data unavailable between 9/19/06 and 10/4/06.

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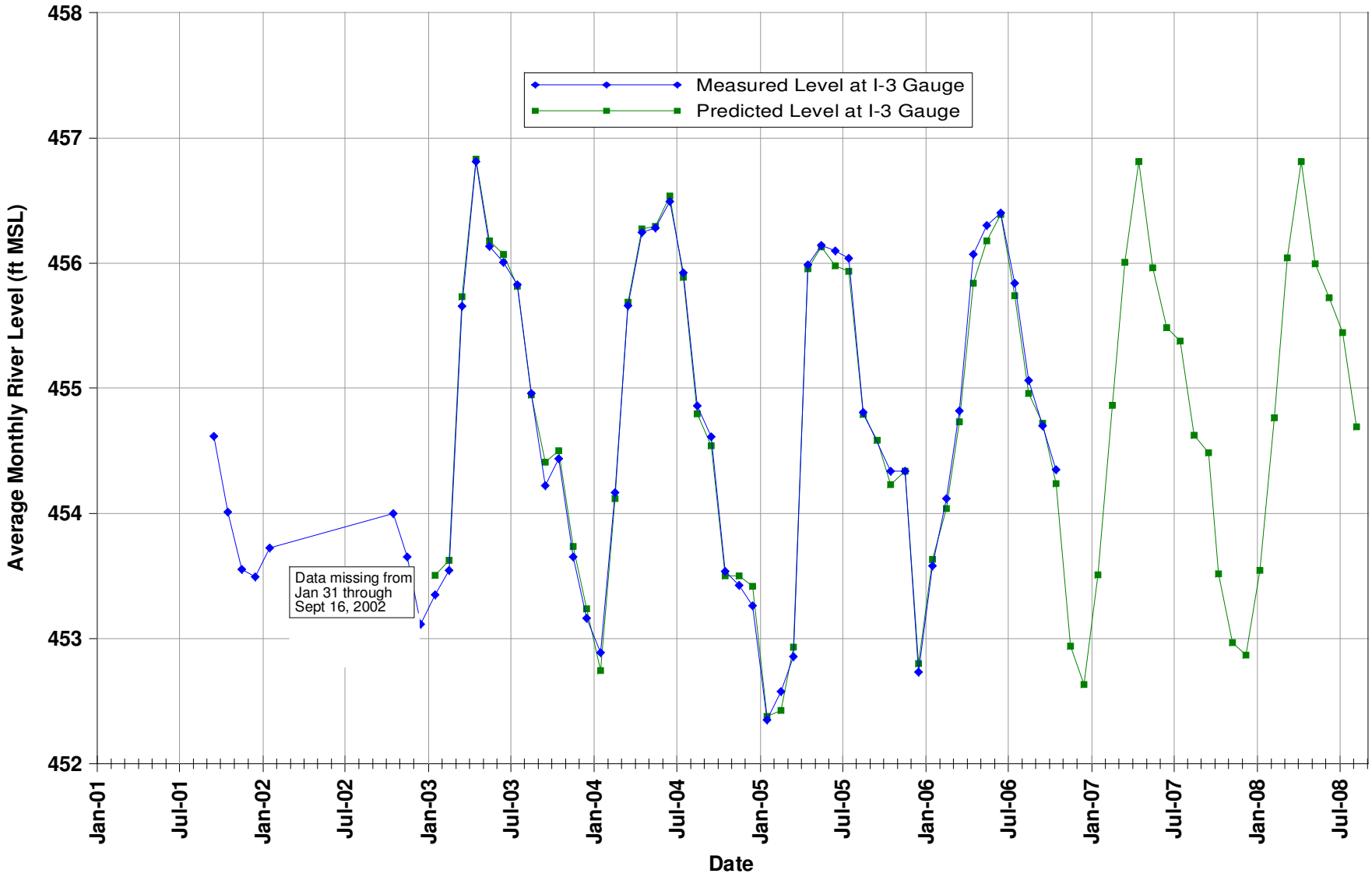

Note:
Projected river level is calculated based on monthly averages of Davis Dam release and stage in Lake Havasu as of November 3, 2006.
Measured data through October 31, 2006.
I-3 data unavailable from 9/19/06 to 10/4/06

FIGURE 3-5
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
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Appendix A
Extraction System Operations Log for October 2006

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

During October 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. Extraction well TW-2D was put into temporary service on October 4 and 5 when extraction well PE-1 was offline to address power supply issues. The operational run time for the IM groundwater extraction system (combined or individual pumping) was approximately 99 percent during the October 2006 reporting period.

The IM No. 3 facility also treated approximately 6,850 gallons of water generated from the groundwater monitoring program and 11,000 gallons from injection well IW-02 re-development during October 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. One container of solids (approximately 12 cubic yards) from the IM No. 3 facility was transported to the Chemical Waste Management at the Kettleman Hills facility during October 2006.

Periods of planned and unplanned extraction system down time (that resulted in 99 percent runtime during October 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.

- **October 2, 2006 (unplanned):** The extraction well system was shut down from 6:52 a.m. to 7:02 a.m. and from 11:29 a.m. until 11:37 a.m. due to City of Needles Electric Department working on power lines in the area. Extraction system downtime was 18 minutes.
- **October 3, 2006 (unplanned):** The extraction well system was shut down from 12:00 p.m. to 12:08 p.m. and from 12:26 p.m. until 12:30 p.m. while troubleshooting a re-start of the Reverse Osmosis Unit. Extraction system downtime was 12 minutes.
- **October 4, 2006 (unplanned):** The extraction well system was shut down from 10:45 a.m. until 10:48 a.m. due to a power imbalance from Needles Power. Extraction system downtime was 3 minutes.
- **October 5, 2006 (unplanned):** The extraction well system was automatically shut down due to a high water level alarm in Tank T-100. The extraction wells were temporarily operated in manual mode after the shutdown. Extraction system downtime was 1 minute.
- **October 9, 2006 (unplanned):** The extraction well system was shut down from 2:50 a.m. to 3:20 a.m. and from 7:12 a.m. until 7:28 a.m. due to a high water level alarm in Tank T-100. Extraction system downtime was 46 minutes.
- **October 11, 2006 (unplanned):** The extraction well system was shut down from 8:19 a.m. until 8:26 a.m., from 8:38 a.m. until 8:41 a.m., and from 1:04 p.m. until 1:35 p.m. due

to troubleshooting power imbalance issues caused by the City Of Needles electric system. Extraction system downtime was 41 minutes.

- **October 13, 2006 (unplanned):** The extraction well system was shut down from 9:41 a.m. until 9:44 a.m. and from 10:19 a.m. until 10:22 a.m. due to address a power imbalance caused by the City Of Needles Electric system. Extraction system downtime was 6 minutes.
- **October 19, 2006 (unplanned):** The extraction well system was shut down from 6:37 a.m. until 6:46 a.m. to address a power imbalance caused by the City Of Needles Electric system. Extraction system downtime was 9 minutes.
- **October 26, 2006 (planned)**: The extraction well system was shut down from 11:53 a.m. until 3:35 p.m. to clean out solids that accumulated in the piping between iron oxidation Tanks T-300A and T-301A. Extraction System downtime was 3 hours 42 minutes.

Appendix B
Chromium Sampling Results for Monitoring Wells in Floodplain Area

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, May through October 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	01-May-06	ND (0.2)	ND (1.0)	---	2.5	1,510	455.4	454.7
	03-Oct-06	ND (0.2)	ND (1.0)	-176	0.5	1,240	455.0	M
MW-28-025	05-May-06	ND (0.2)	ND (1.0)	-126	0.8	1,260	456.3	455.8
	11-Oct-06	ND (0.2)	ND (1.0)	-111	1.5	1,860	454.4	453.7
MW-29	05-May-06	ND (0.2)	ND (1.0)	-128	1.3	4,430	456.0	455.4
	13-Oct-06	ND (0.2)	ND (1.0)	-56	5.3	4,770	454.9	455.0
MW-30-030	02-May-06	ND (2.0)	ND (1.0)	-104	2.4	54,600	455.4	455.7
	10-Oct-06	ND (2.0)	ND (1.0)	-129	1.4	56,500	454.3	453.6
MW-32-020	04-May-06	ND (1.0)	ND (1.0)	-120	0.4	25,500	455.2	454.9
	02-Oct-06	ND (5.0)	ND (1.0)	-122	0.9	59,800	454.3	M
MW-32-035	04-May-06	ND (1.0)	ND (1.0)	-171	0.3	16,500	455.5	455.1
	02-Oct-06	ND (1.0)	ND (1.0)	-162	0.7	20,000	454.4	M
MW-33-040	04-May-06	ND (0.2)	ND (1.0) LF	12	5.3	4,580	455.5	454.8
	06-Oct-06	ND (0.2)	ND (1.0)	167	---	6,710	455.2	455.0
MW-36-020	01-May-06	ND (1.0)	ND (1.0)	-180	5.3	20,100	455.5	456.0
	02-Oct-06	ND (1.0)	ND (1.0)	-177	1.8	24,000	454.6	M
MW-36-040	01-May-06	ND (1.0)	ND (1.0)	-179	5.1	13,500	455.4	455.0
	05-Oct-06	ND (1.0)	ND (1.0)	-194	1.4	16,000	454.2	455.0
MW-39-040	02-May-06	ND (1.0)	ND (1.0)	-188	0.1	8,150	455.6	456.4
	05-Oct-06	ND (0.2)	ND (1.0)	-198	1.4	---	454.0	454.0
MW-42-030	02-May-06	ND (1.0)	ND (1.0)	-160	2.3	18,500	455.2	455.2
	03-Oct-06	ND (1.0)	ND (1.0)	-160	0.9	19,700	454.4	M
MW-43-025	04-May-06	ND (0.2)	ND (1.0)	-176	0.4	1,280	456.2	455.4
	02-Oct-06	ND (0.2)	ND (1.0)	-172	0.6	1,310	454.8	M
Middle-Depth Wells								
MW-27-060	01-May-06	ND (1.0)	ND (1.0)	-140	1.0	12,100	455.7	455.1
	03-Oct-06	ND (1.0)	ND (1.0)	-122	0.8	14,300	455.0	M
MW-30-050	02-May-06	ND (1.0)	ND (1.0)	-102	2.8	14,300	455.6	456.1
	11-Oct-06	ND (0.2)	ND (1.0)	-113	0.8	8,280	454.5	454.6
	11-Oct-06 FD	ND (0.2)	ND (1.0)	FD	FD	FD	FD	FD
MW-33-090	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
	06-Oct-06	17.3	20.9	---	0.9	12,500	455.2	454.5
MW-34-055	03-May-06	ND (0.2)	ND (1.0)	-117	0.3	7,580	456.3	456.0
	04-Oct-06	ND (0.2)	ND (1.0)	-178	2.2	3,080	455.0	453.9
MW-36-050	01-May-06	ND (0.2)	ND (1.0)	-162	3.6	6,810	454.8	454.7
	05-Oct-06	ND (0.2)	ND (1.0)	-165	1.4	4,200	454.9	455.1
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

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, May through October 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	11-Jul-06	ND (1.0)	ND (1.0)	-108	0.6	7,320	455.4	454.8
	09-Aug-06	ND (0.2)	ND (1.0)	-149	0.7	6,920	455.3	455.4
	07-Sep-06	ND (0.2)	ND (1.0)	-105	1.7	5,930	455.1	455.5
	02-Oct-06	ND (0.2)	ND (1.0)	-122	1.4	5,220	454.5	M
MW-39-050	02-May-06	ND (1.0)	ND (1.0)	-45	0.2	9,380	455.4	455.3
	05-Oct-06	ND (0.2)	ND (1.0)	-77	1.4	11,200	454.2	454.2
MW-39-060	02-May-06	1.10	1.40	-39	0.2	12,000	455.3	454.8
	05-Oct-06	ND (1.0)	ND (1.0)	-54	1.2	11,300	454.2	454.5
	05-Oct-06 FD	ND (2.0)	ND (1.0)	FD	FD	FD	FD	FD
MW-39-070	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
	10-Aug-06	89.6	86.2	67	0.6	---	454.7	456.0
	07-Sep-06	155	153	21	1.7	9,760	455.0	454.7
	05-Oct-06	112	103	-1	1.2	12,200	453.6	453.9
MW-42-055	02-May-06	ND (1.0)	ND (1.0)	-138	2.2	21,400	456.1	455.0
	03-Oct-06	ND (1.0)	ND (1.0)	-126	0.8	19,100	454.4	M
MW-42-065	02-May-06	ND (1.0)	ND (1.0)	-76	2.2	25,400	455.3	454.6
	03-Oct-06	ND (1.0)	ND (1.0)	-50	0.7	20,400	454.5	M
MW-44-070	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
	04-Oct-06	ND (1.0)	ND (1.0)	-181	2.3	8,910	454.0	453.8
Deep Wells								
MW-27-085	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
	08-Aug-06	ND (1.0)	ND (1.0)	-33	2.7	22,900	454.8	456.2
	06-Sep-06	ND (1.0)	ND (1.0)	-87	2.4	23,200	454.7	454.4
	13-Oct-06	ND (1.0)	ND (1.0)	-78	1.1	24,100	454.0	454.2
MW-28-090	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
	11-Aug-06	ND (0.2)	ND (1.0)	-159	0.6	12,300	456.1	456.5
	08-Sep-06	ND (0.2)	ND (1.0)	-133	3.2	7,830	454.1	454.1
	13-Oct-06	ND (0.2)	ND (1.0)	-156	1.0	9,700	454.9	454.9
MW-33-150	03-May-06	6.60	5.50	-23	1.0	17,100	455.4	454.5
	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
	11-Aug-06	9.30	8.10	-19	1.8	20,200	456.0	456.4
	08-Sep-06	7.40	4.10	28	1.8	17,900	454.8	454.3

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, May through October 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	06-Oct-06	7.70	5.70	15	0.9	20,500	454.9	454.0
MW-33-210	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
	08-Aug-06	9.80	8.70	70	3.1	23,900	455.8	454.8
	08-Sep-06	9.20	4.90	59	1.7	21,000	455.2	454.4
	06-Oct-06	10.2	10.0	28	0.9	24,000	455.3	454.2
MW-34-080	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
	08-Aug-06	ND (1.0)	ND (1.0)	-33	0.6	16,200	455.5	455.4
	06-Sep-06	ND (1.0)	ND (1.0)	-84	0.9	16,000	454.8	454.7
	04-Oct-06	ND (1.0)	ND (1.0)	-111	2.1	14,400	453.7	453.9
MW-34-100	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
	08-Aug-06	889	982	64	0.5	20,600	455.5	455.9
	28-Aug-06	922	945	69	1.3	28,900	453.6	453.6
	06-Sep-06	844	963	117	1.9	22,500	454.8	454.9
	06-Sep-06 FD	797	907	FD	FD	FD	FD	FD
	20-Sep-06	872	984	181	1.5	19,600	454.3	M
	04-Oct-06	910	889	0	2.0	20,700	454.6	453.9
	18-Oct-06	815	920	52	0.8	21,700	454.0	453.9
MW-36-090	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
	09-Aug-06	9.00	8.20	-96	0.8	9,190	454.9	455.9
	07-Sep-06	8.80	7.70	-55	1.7	8,400	454.9	455.4
	02-Oct-06	9.00	8.50	-20	1.0	8,270	453.6	M
	02-Oct-06 FD	8.90	10.8	FD	FD	FD	FD	FD
MW-36-100	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
	09-Aug-06	551	474	67	1.6	14,600	455.1	456.3
	08-Sep-06	556	561	-10	2.6	16,200	453.4	454.0

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, May through October 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	11-Oct-06	556	629	17	0.9	16,500	453.7	453.8
MW-39-080	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
	10-Aug-06	481	447	78	0.6	15,800	454.5	455.4
	07-Sep-06	1160	1160	47	1.6	17,500	455.2	454.5
	05-Oct-06	580	594	76	1.2	19,500	454.2	454.3
MW-39-100	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
	10-Aug-06	3230	3440	141	1.6	23,000	454.9	456.0
	10-Aug-06 FD	3170	3410	FD	FD	FD	FD	FD
	08-Sep-06	3290	3780	46	2.8	20,700	453.6	453.9
	11-Oct-06	3370	3500	87	1.2	23,100	454.4	454.4
MW-43-075	04-May-06	ND (1.0)	ND (1.0)	-167	0.3	15,400	456.6	456.1
	02-Oct-06	ND (1.0)	ND (1.0)	-128	1.2	17,900	454.2	M
MW-43-090	04-May-06	ND (1.0)	ND (1.0)	-124	0.4	22,400	456.6	455.9
	02-Oct-06	ND (1.0)	ND (1.0)	-108	0.4	23,600	455.2	M
MW-44-115	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
	09-Aug-06	1230	1460 LF	63	2.9	17,700	455.0	455.3
	23-Aug-06	1370	1440	93	0.6	16,800	454.6	455.0
	07-Sep-06	1380	1340	139	1.7	15,600	454.7	455.5
	21-Sep-06	911	1180	57	2.7	14,600	454.4	M
	05-Oct-06	1300	1310	3	2.9	18,400	454.7	454.4
	18-Oct-06	1250	1380	23	0.8	18,300	454.1	454.5
MW-44-125	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
	28-Jun-06	---	---	-186	4.3	13,000	455.9	456.5
	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
	09-Aug-06	218	227 LF	-93	0.6	16,800	455.4	455.7

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, May through October 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	28-Aug-06	468	486	-188	1.1	17,700	454.4	454.2
	28-Aug-06 FD	462	540	FD	FD	FD	FD	FD
	07-Sep-06	314	297	-39	4.1	14,600	454.6	455.2
	07-Sep-06 FD	311	275	FD	FD	FD	FD	FD
	20-Sep-06	224	262	-130	0.4	16,700	453.8	M
	20-Sep-06 FD	226	261	FD	FD	FD	FD	FD
	05-Oct-06	284	280	-97	2.6	18,000	455.1	454.5
	18-Oct-06	304	327	-112	0.8	18,900	454.7	454.6
	18-Oct-06 FD	308	272	FD	FD	FD	FD	FD
MW-45-095a	13-Jul-06	197	202	45	1.4	22,200	454.4	456.1
MW-46-175	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
	09-Aug-06	210	186	65	0.7	21,900	455.3	454.8
	09-Aug-06 FD	223	214	FD	FD	FD	FD	FD
	25-Aug-06	137	136	-24	1.1	19,800	455.2	454.9
	07-Sep-06	183	170	90	2.2	26,400	454.8	454.7
	21-Sep-06	190	244	43	2.3	18,300	455.4	M
	05-Oct-06	194	192	0	2.8	22,200	454.9	453.9
	05-Oct-06 FD	195	187	FD	FD	FD	FD	FD
	18-Oct-06	204	253	15	0.9	21,900	454.8	454.0
MW-46-205	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
	10-Aug-06	ND (1.0)	ND (1.0)	-88	1.3	22,900	455.9	455.4
	07-Sep-06	2.00	2.30	-37	1.6	26,000	455.2	454.5
	05-Oct-06	2.10	2.30	-96	2.4	27,500	455.2	453.9
MW-49-135	18-May-06	ND (1.0)	ND (1.0)	-178	2.3	17,100	456.6	455.8
	12-Oct-06	ND (1.0)	ND (1.0)	-200	1.9	21,200	455.3	453.9
MW-49-275	18-May-06	ND (1.0)	ND (1.0)	-214	2.2	26,700	456.4	455.1
	12-Oct-06	ND (1.0)	ND (1.0)	-252	1.8	31,100	455.9	453.5
MW-49-365	16-May-06	ND (2.0)	ND (1.0)	-192	1.8	44,900	458.3	455.5
	12-Oct-06	ND (2.0)	ND (1.0)	-275	1.4	47,700	457.3	453.0

Refer to table footnotes for data qualifier explanation.

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

NOTES:

ND = not detected at listed reporting limit (RL)
FD = field duplicate
LF = lab filtered
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, May through October 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	01-May-06	1250	1280	---	---	3840
	04-Oct-06	1740	1790	128	5.22	---
MW-19	02-May-06	1130	1120	38.0	3.30	2450
	02-Oct-06	970	1300	44.0	---	2450
MW-20-070	05-May-06	4100	4440	97.0	7.21	3050
	03-Oct-06	3290	3390	117	7.47	3460
	03-Oct-06 FD	3410	3330	FD	FD	FD
MW-21	02-May-06	ND (1.0)	ND (1.0)	-77	---	11500
	03-Oct-06	ND (1.0)	ND (1.0)	-67	6.90	15900
MW-22	03-May-06	ND (1.0) J	ND (1.0)	-88	4.14	34200
	13-Oct-06	ND (1.0)	ND (1.0)	-105	0.97	42200
MW-24A	03-Oct-06	4300	4260	101	2.87	3910
MW-25	03-May-06	1390	1310	98.0	7.72	2110
	03-May-06 FD	1280	1310	FD	FD	FD
	03-Oct-06	1140	1150	81.0	6.88	1720
MW-26	01-May-06	3210	3110	---	---	3290
	03-Oct-06	3590	3850	104	---	4140
MW-31-060	01-May-06	952	959	---	---	2740
	05-Oct-06	773	849	82.0	7.77	3440
MW-35-060	01-May-06	25.7	26.4	-37	---	6770
	12-Oct-06	28.6	29.1	112	1.26	12200
MW-47-055	16-May-06	24.0	27.3	22.0	2.89	4430
	10-Oct-06	56.9	56.8	6.00	2.83	5300
TW-02S	03-May-06	2400	2600	80.0	6.75	3150
	04-Oct-06	1920	2130	224	6.70	3470
Middle-Depth Wells						
MW-20-100	05-May-06	10400	12100	98.0	5.20	3760
	03-Oct-06	9520	10300	106	3.46	4340
MW-50-095	09-May-06	199	194	30.0	3.00	5480
	24-May-06	218	221	50.0	3.42	---
	10-Oct-06	278	277	24.0	2.85	7120
MW-51	12-May-06	4370	4630	92.0	2.51	12100
	30-May-06	4130	4530	17.0	1.53	10600
	06-Oct-06	4560	4590	119	3.79	13800
Deep Wells						
MW-20-130	05-May-06	12000	13700	97.0	2.21	12400
	18-Oct-06	11600	16400	78.0	2.68	19500
MW-24B	03-Oct-06	6120	5830	85.0	2.72	18700
MW-31-135	09-May-06	154	146 LF	82.0	2.75	15900
	05-Oct-06	85.7	81.7	65.0	2.91	13600

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

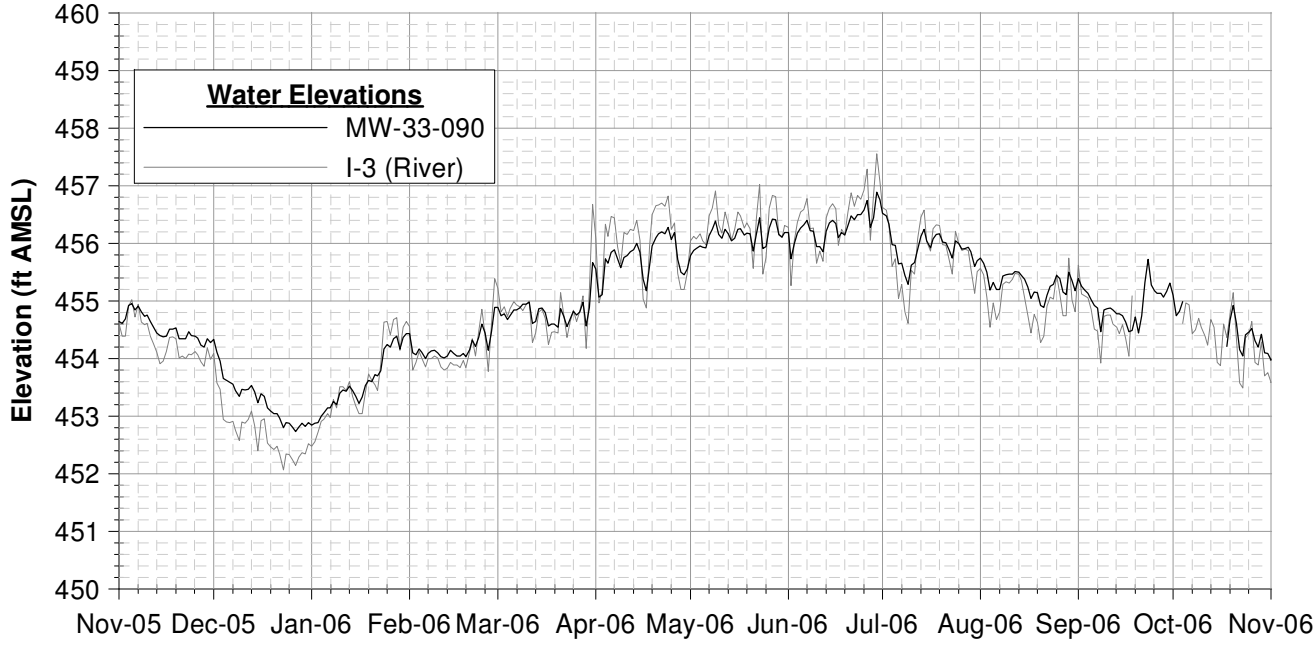
Well ID	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters		
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm
MW-35-135	02-May-06	21.0	20.7	0.00	2.70	13000
	12-Oct-06	35.4	34.6	113	1.20	14400
	12-Oct-06 FD	34.0	30.8	FD	FD	FD
MW-47-115	16-May-06	1.40	5.10	-67	1.93	18400
	10-Oct-06	ND (3.5)	6.90	-80	1.13	16800
MW-50-200	09-May-06	7750	7360	-11	1.91	20200
	24-May-06	5810	5910	60.0	4.11	37000
	10-Oct-06	9660	11800	93.0	2.99	28100
TW-02D	03-May-06	1120	1120	82.0	6.10	8490
	04-Oct-06	872	910	162	4.91	11900
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
	09-Oct-06	28.5	26.6	12.0	1.11	24700
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
	09-Oct-06	3.60	3.20	60.0	1.12	15800

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.



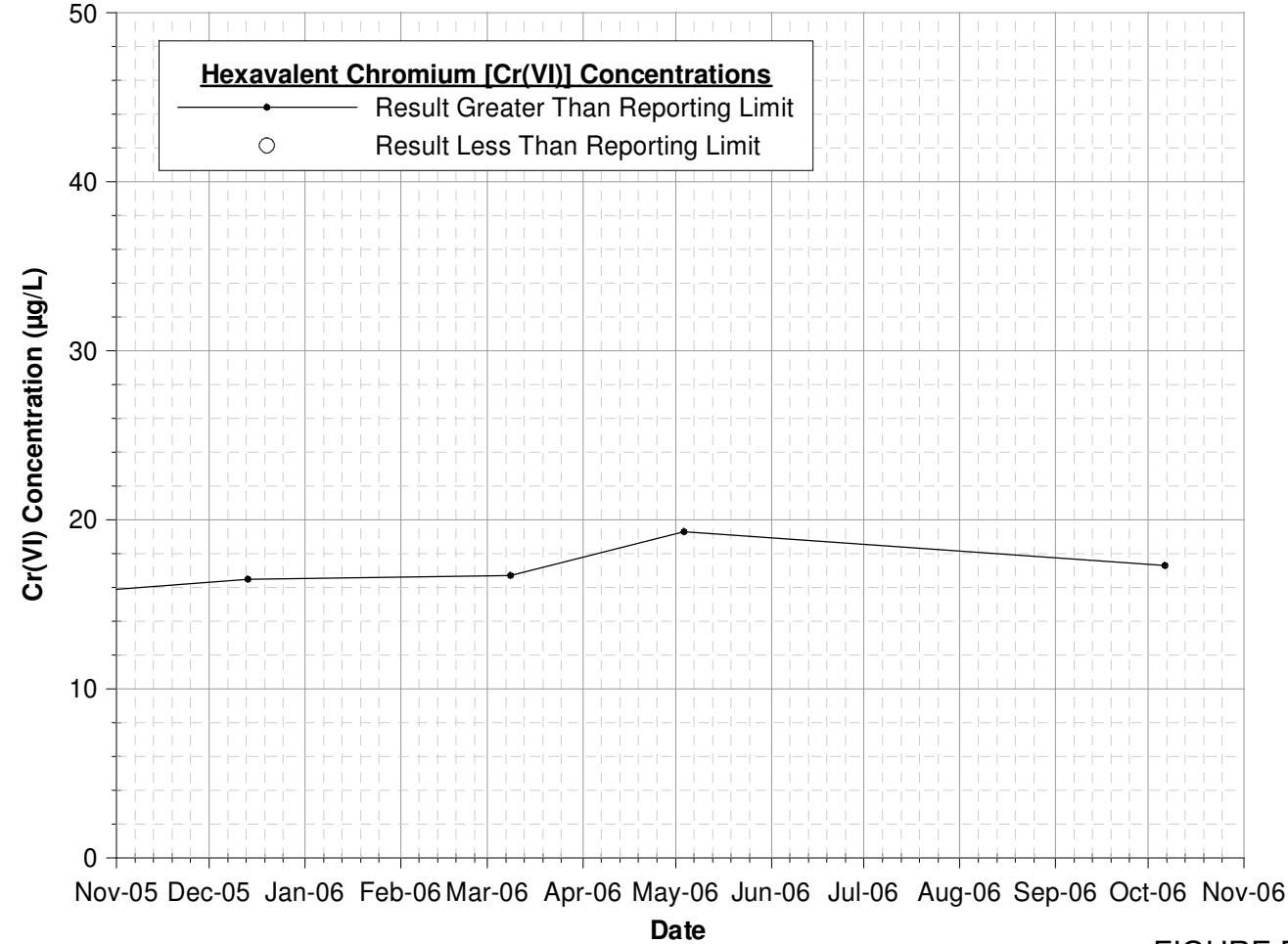


FIGURE B-1
MW-33-90 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 10/6/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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 is unavailable from 9/18/2006 through 10/4/2006.

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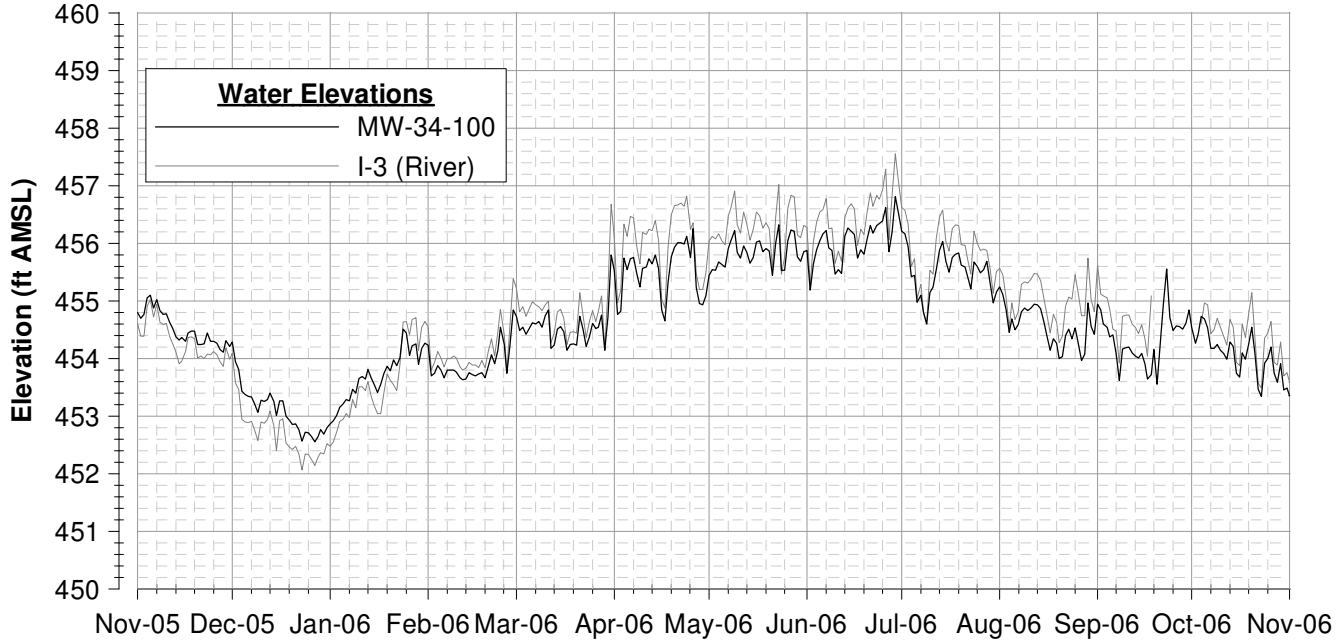

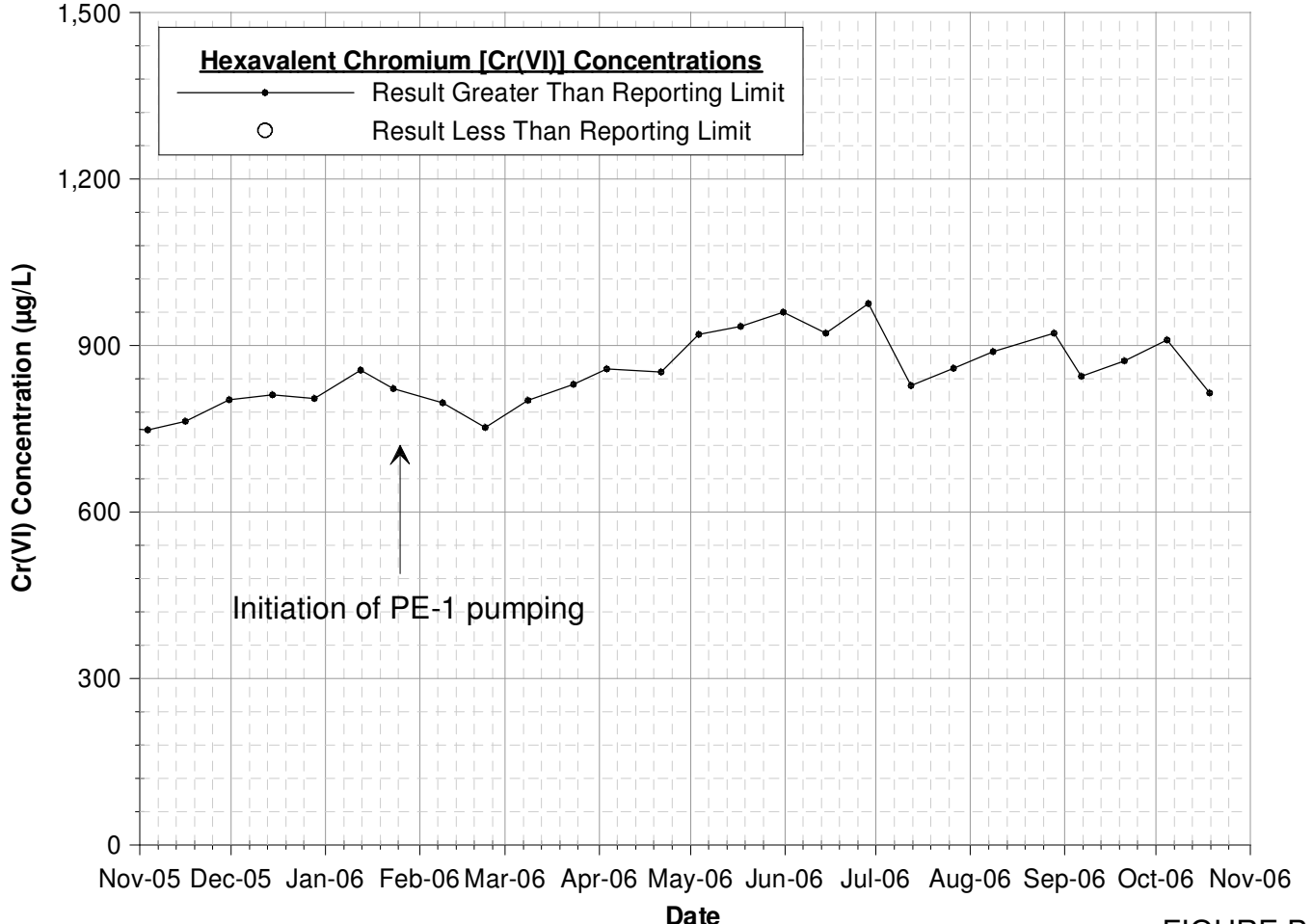

FIGURE B-2
MW-34-100 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 10/18/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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 is unavailable from 9/18/2006 through 10/4/2006.

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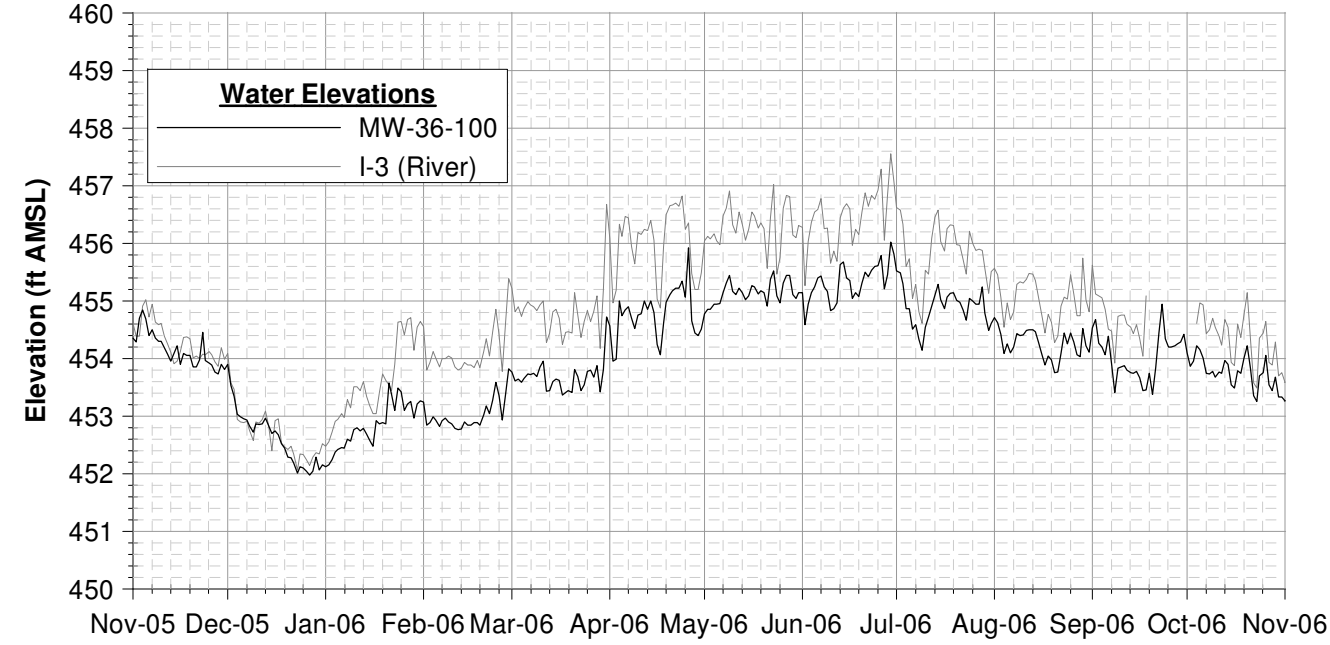

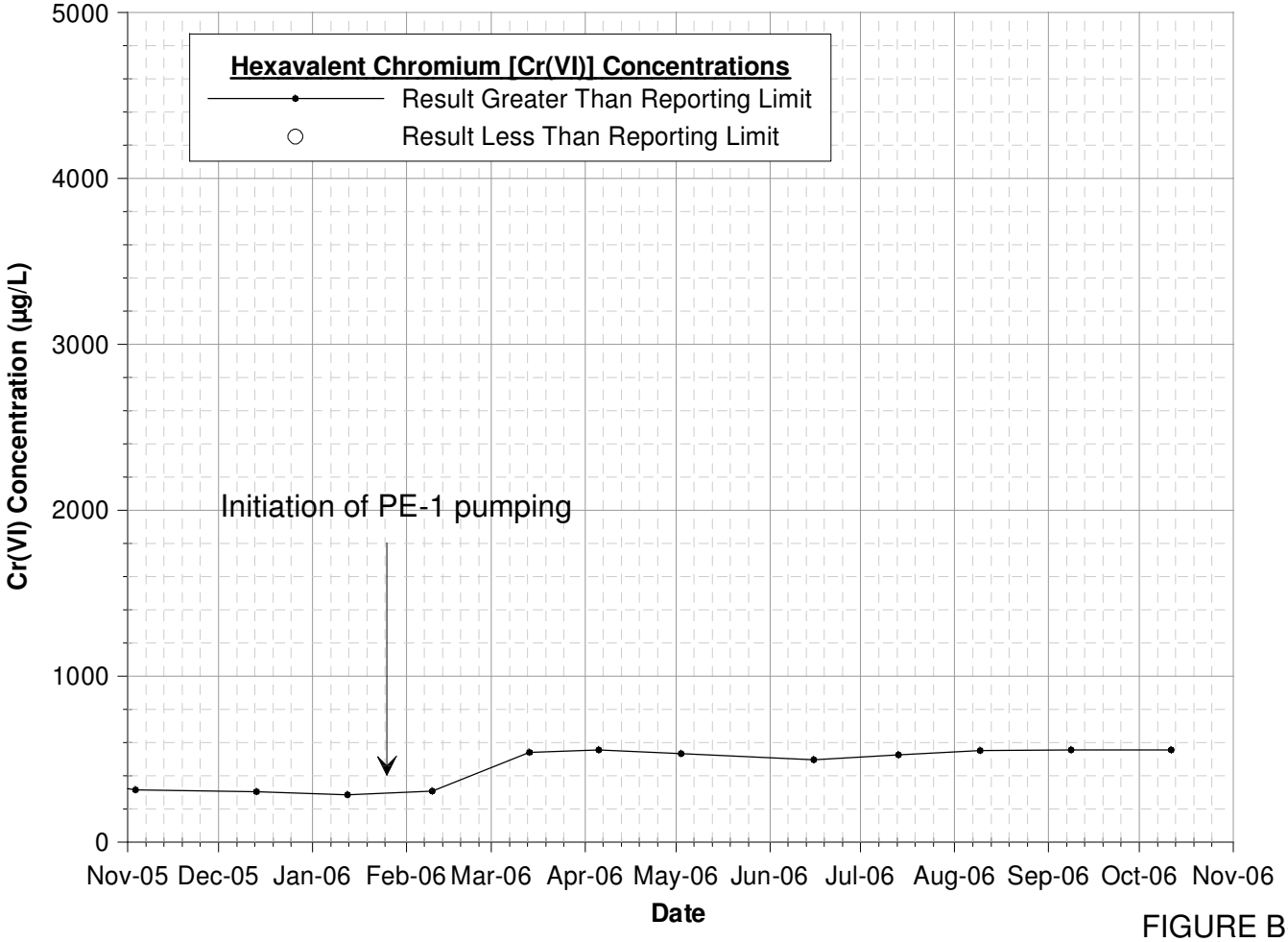

FIGURE B-3
MW-36-100 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 10/11/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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 is unavailable from 9/18/2006 through 10/4/2006.

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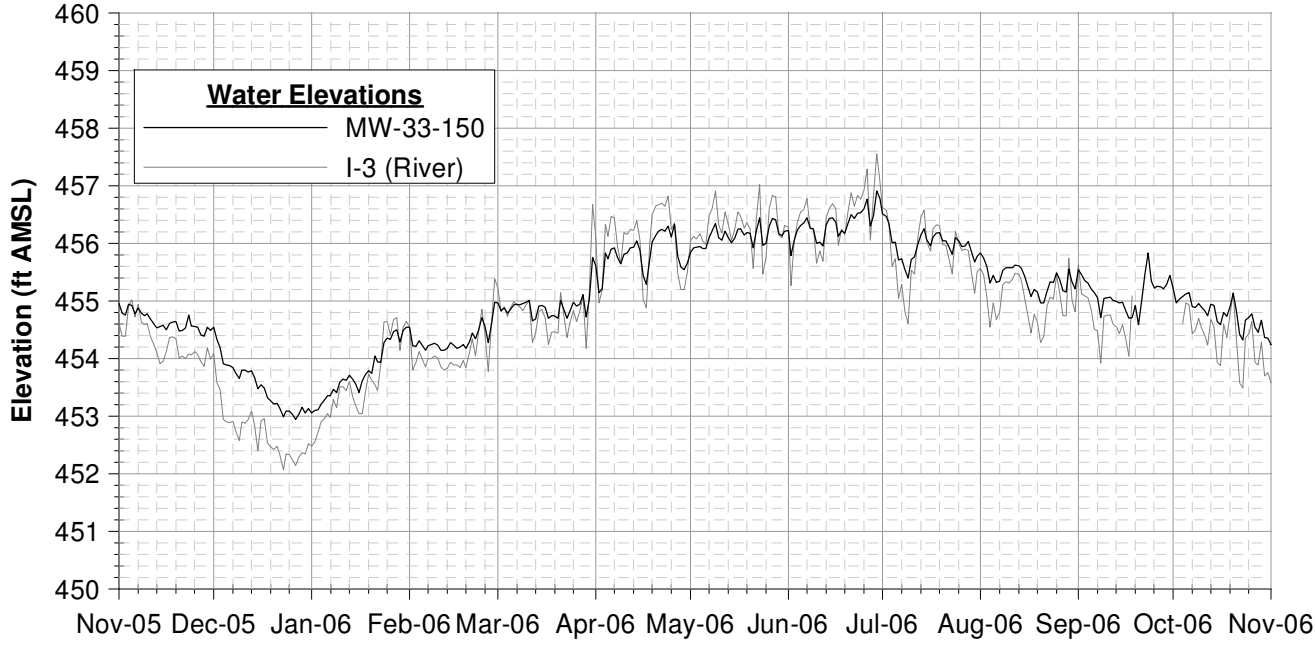

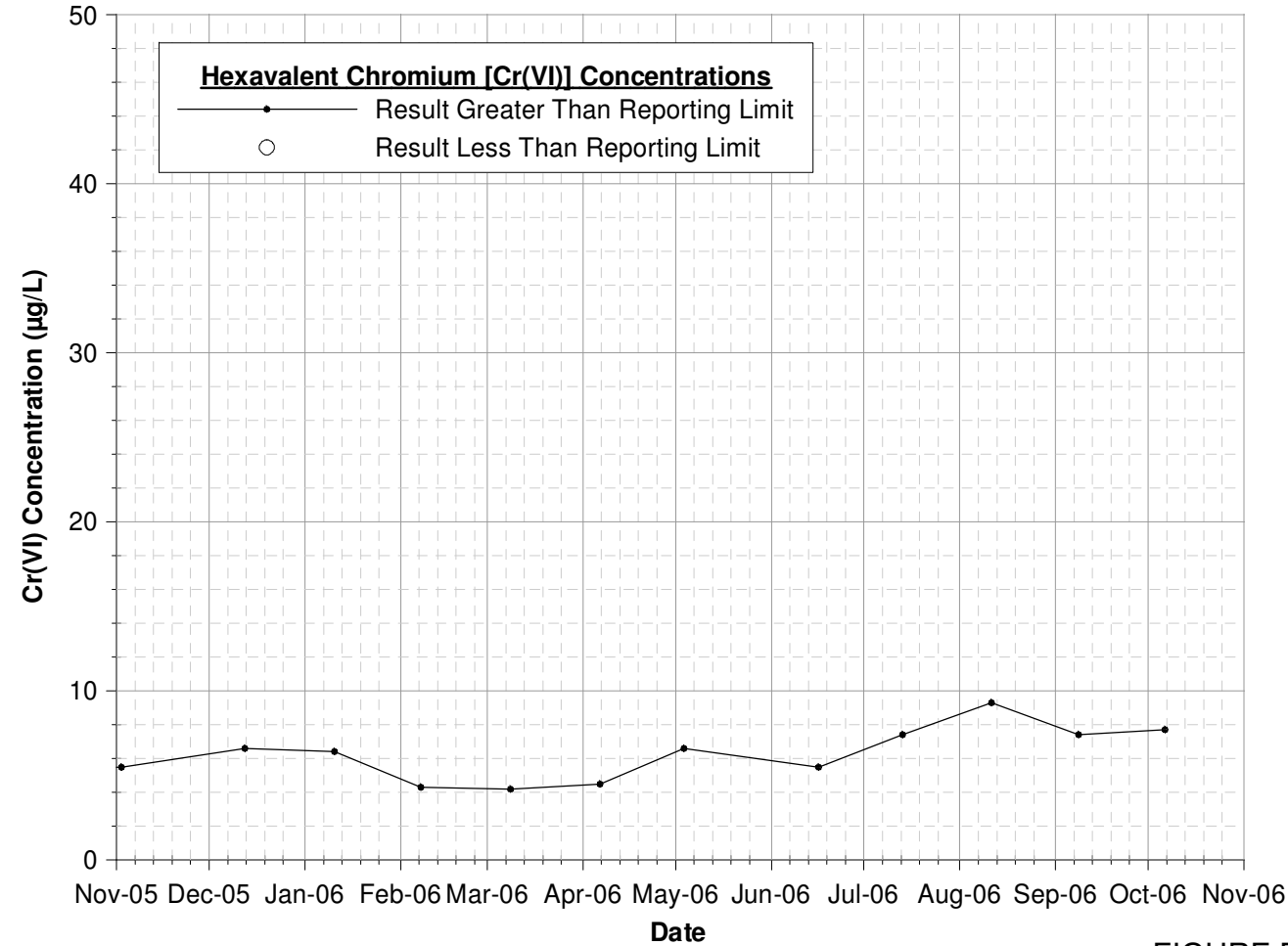

FIGURE B-4
MW-33-150 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 10/6/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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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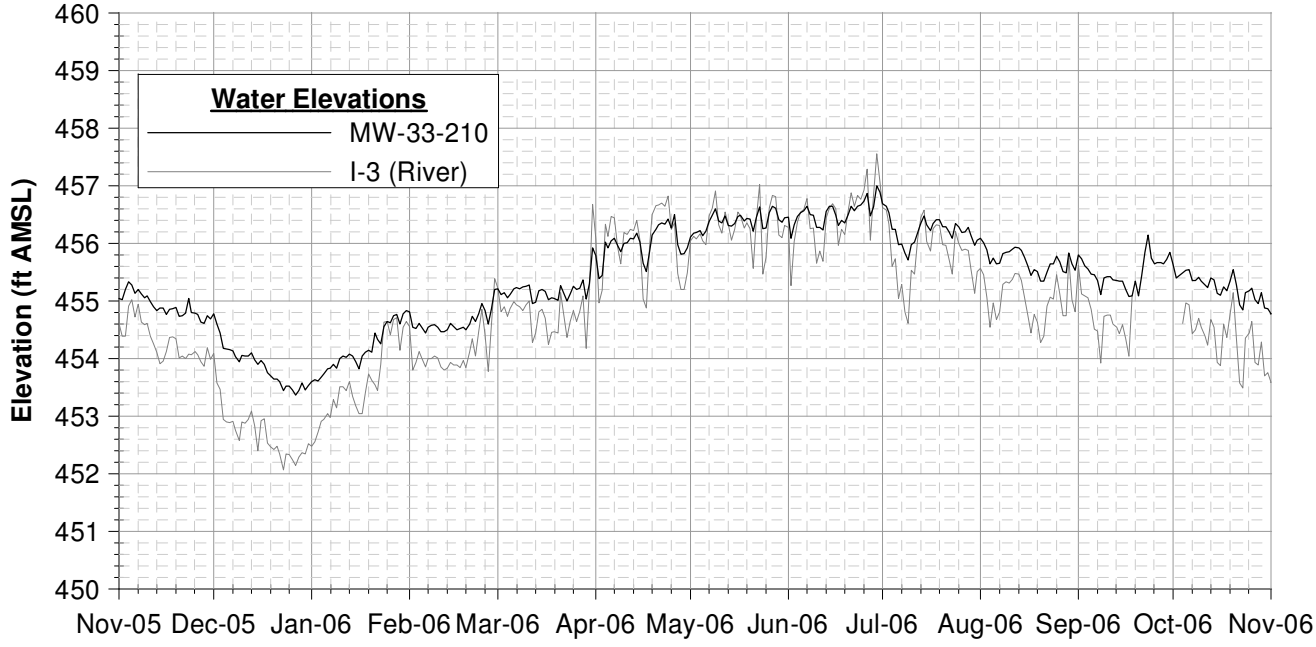

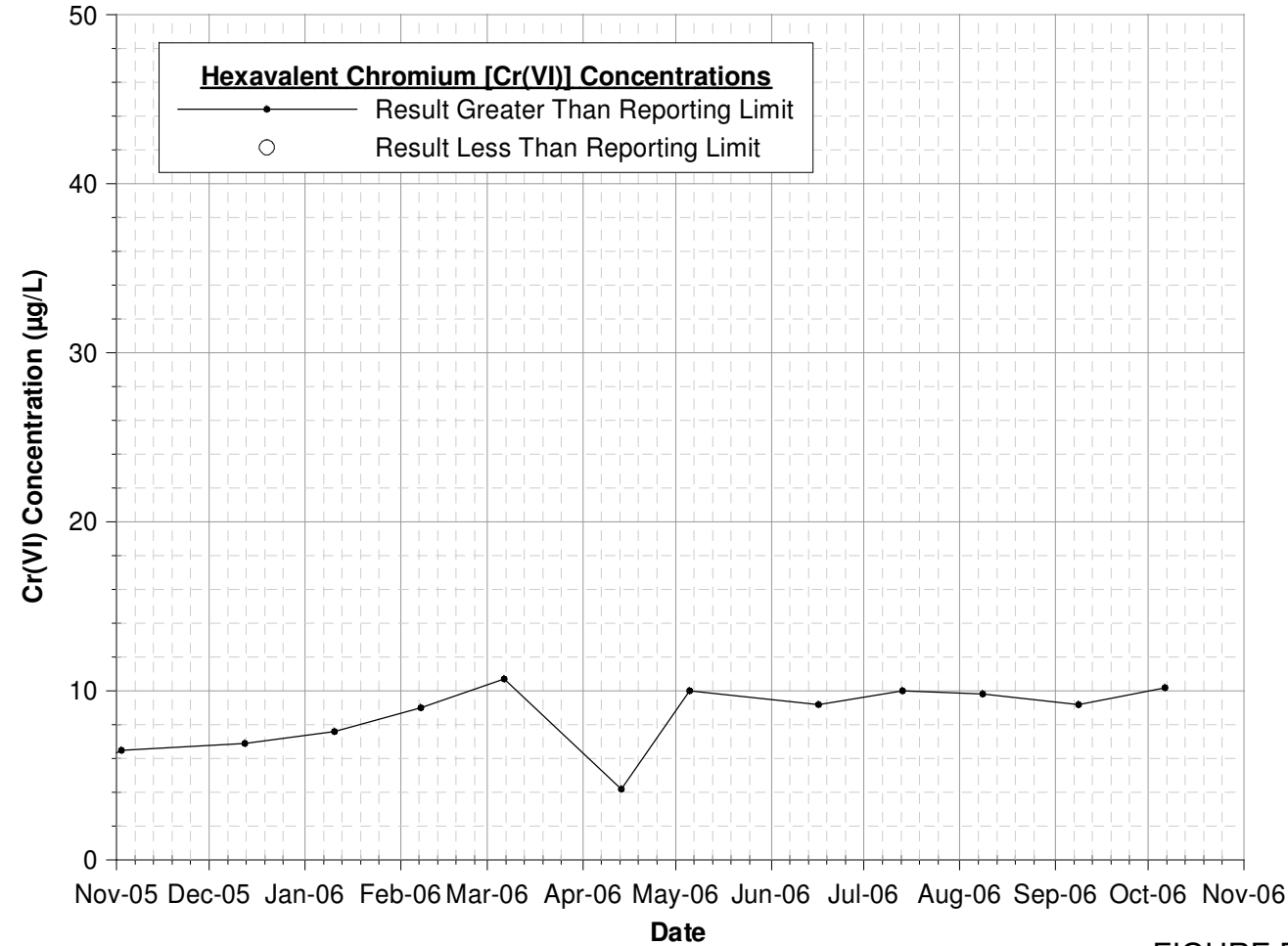

FIGURE B-5
MW-33-210 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 10/6/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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.

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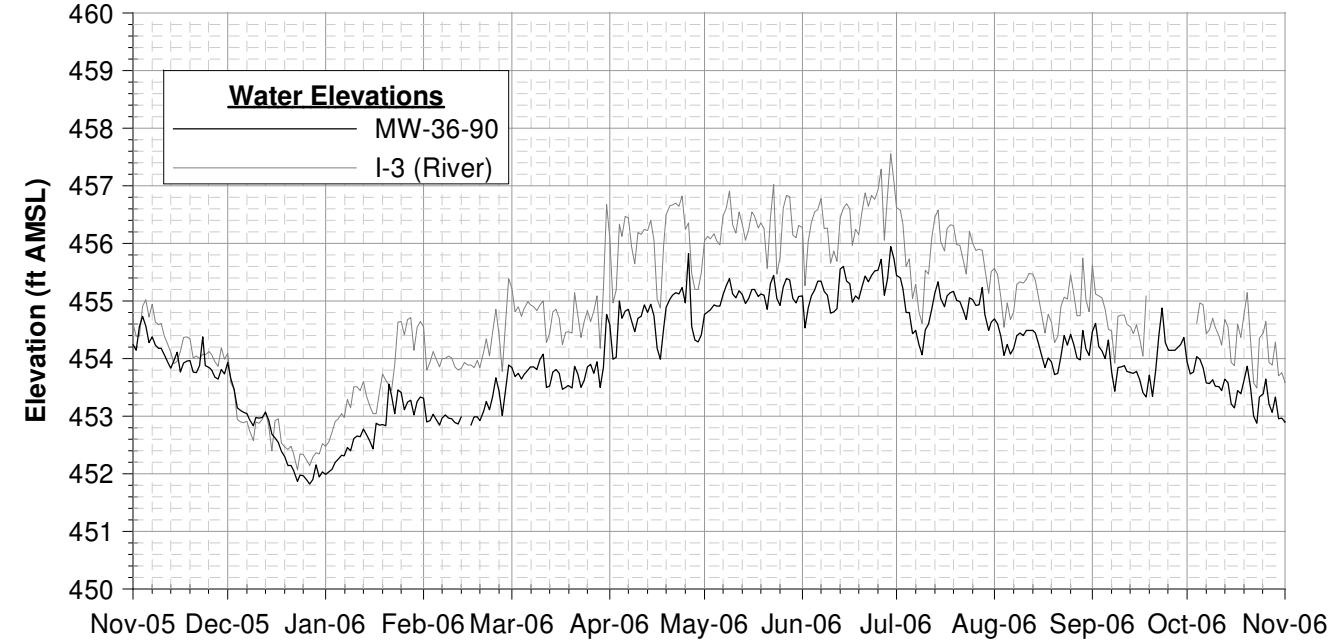

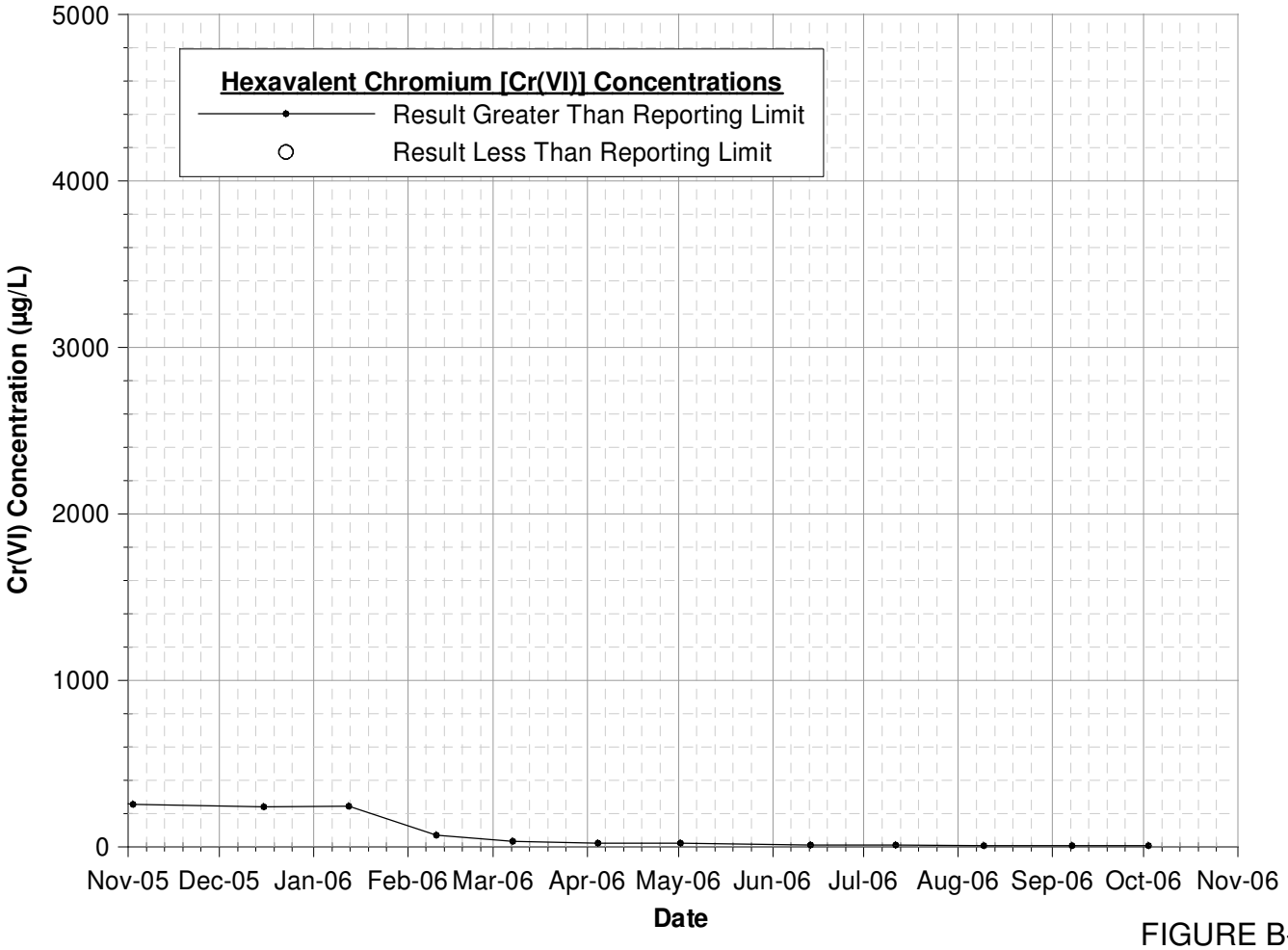

FIGURE B-6
MW-36-90 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 10/2/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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.

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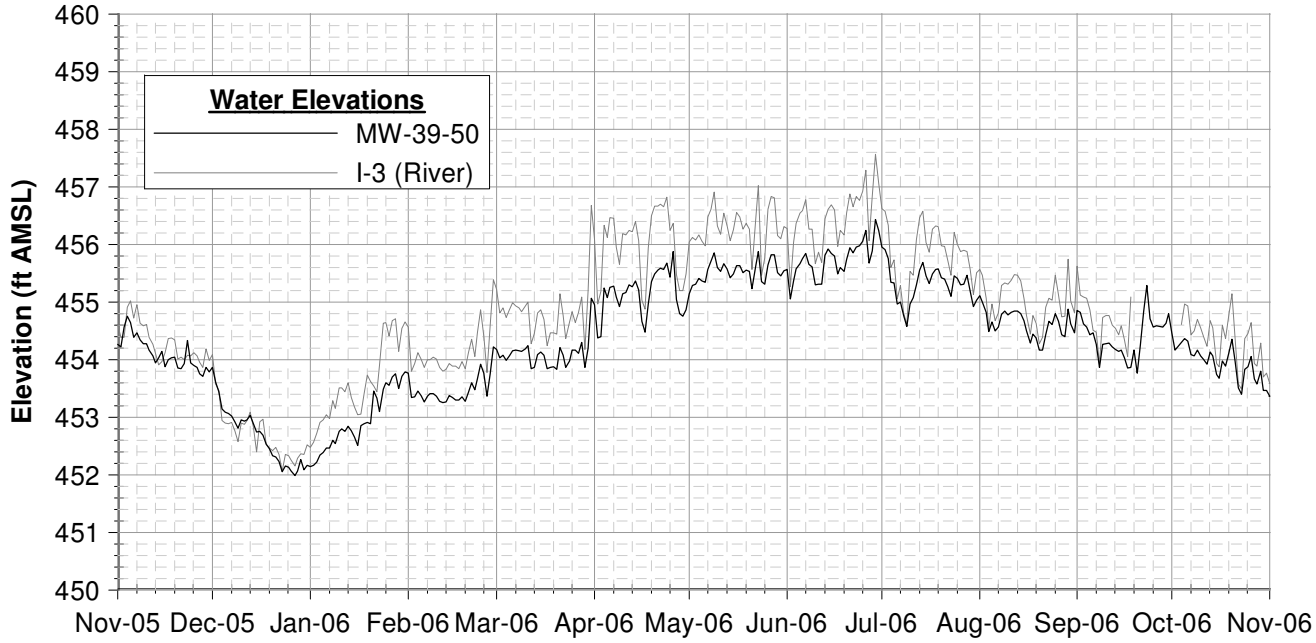

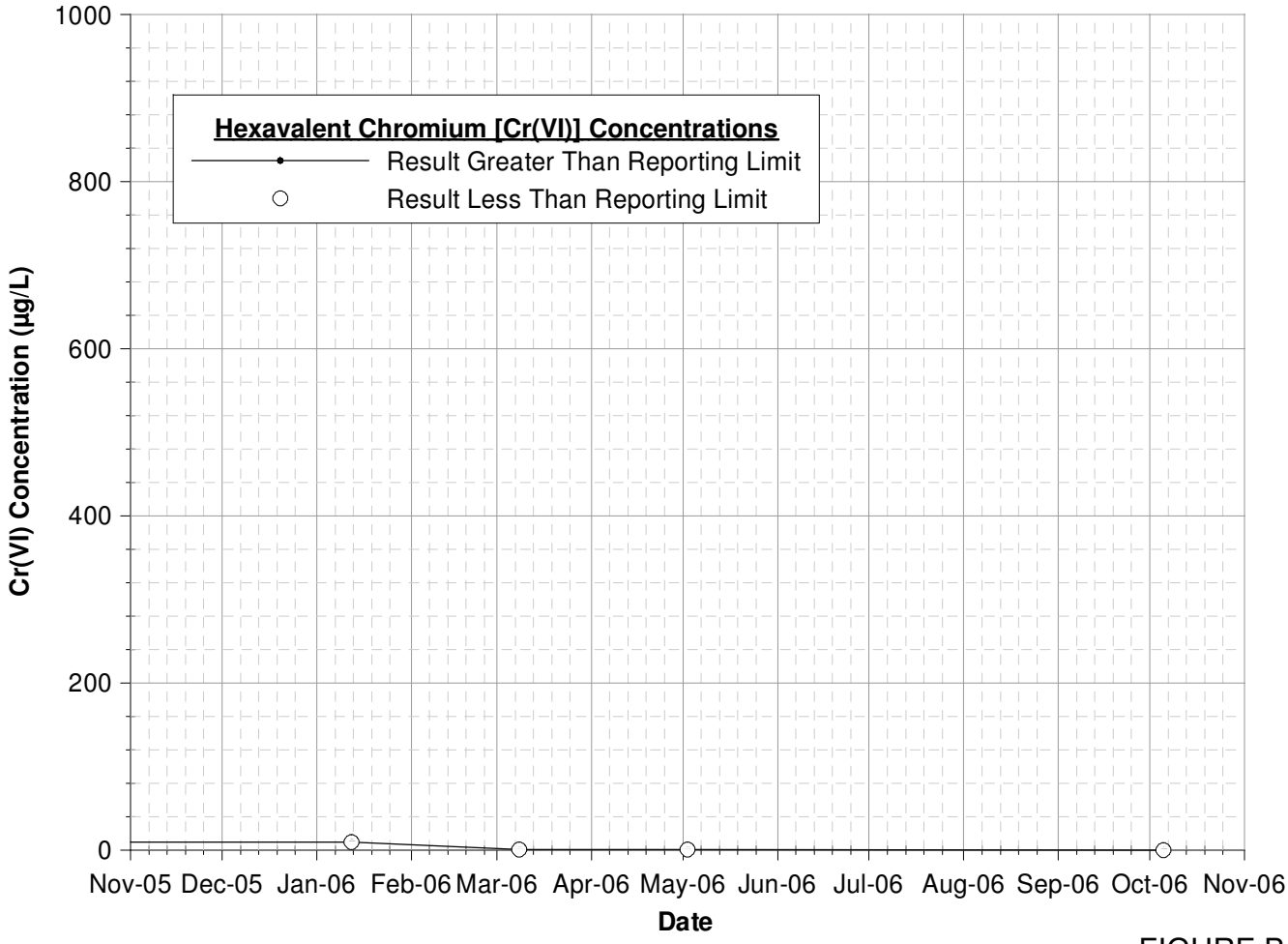

FIGURE B-7
MW-39-50 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 10/5/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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.

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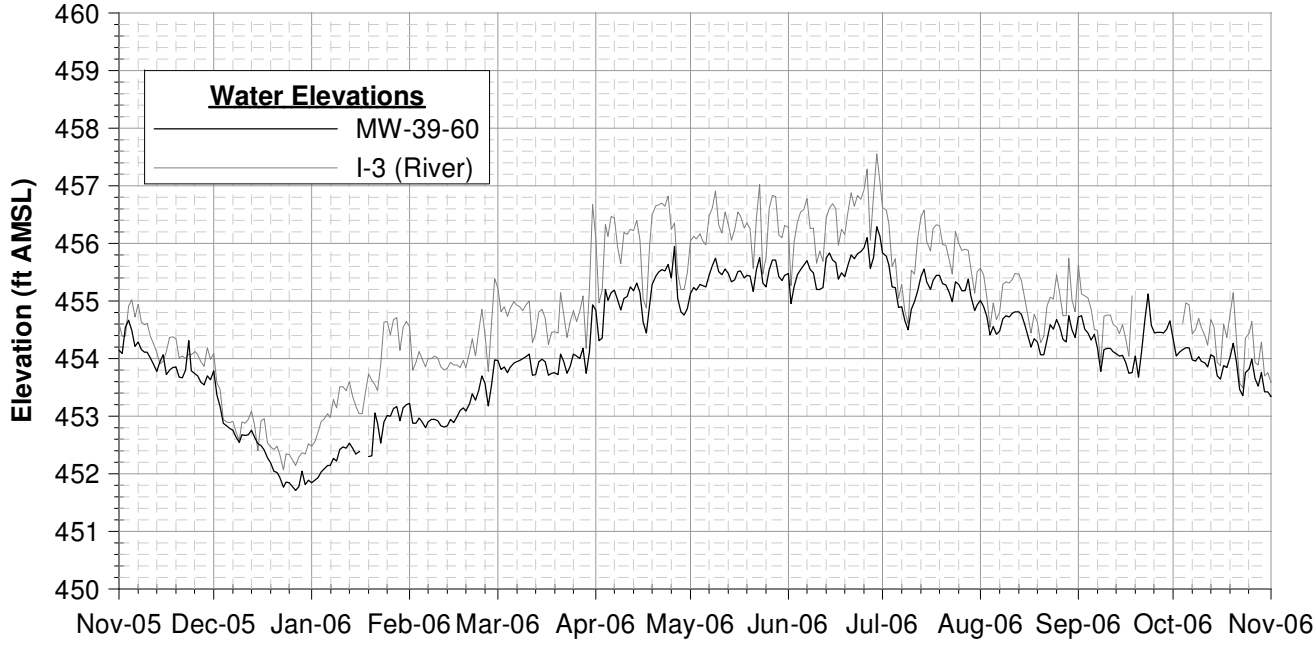

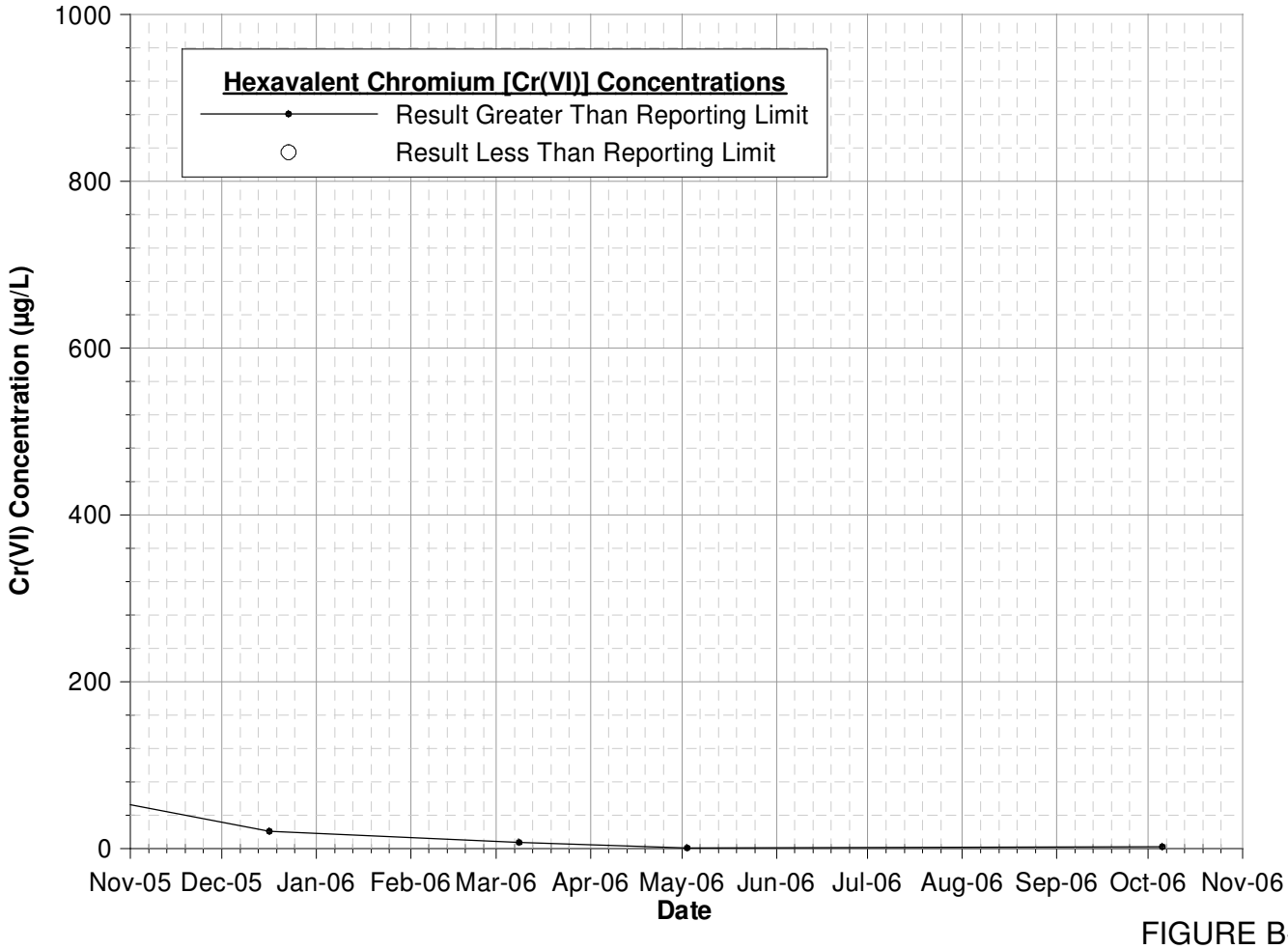

FIGURE B-8
MW-39-60 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 10/5/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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.

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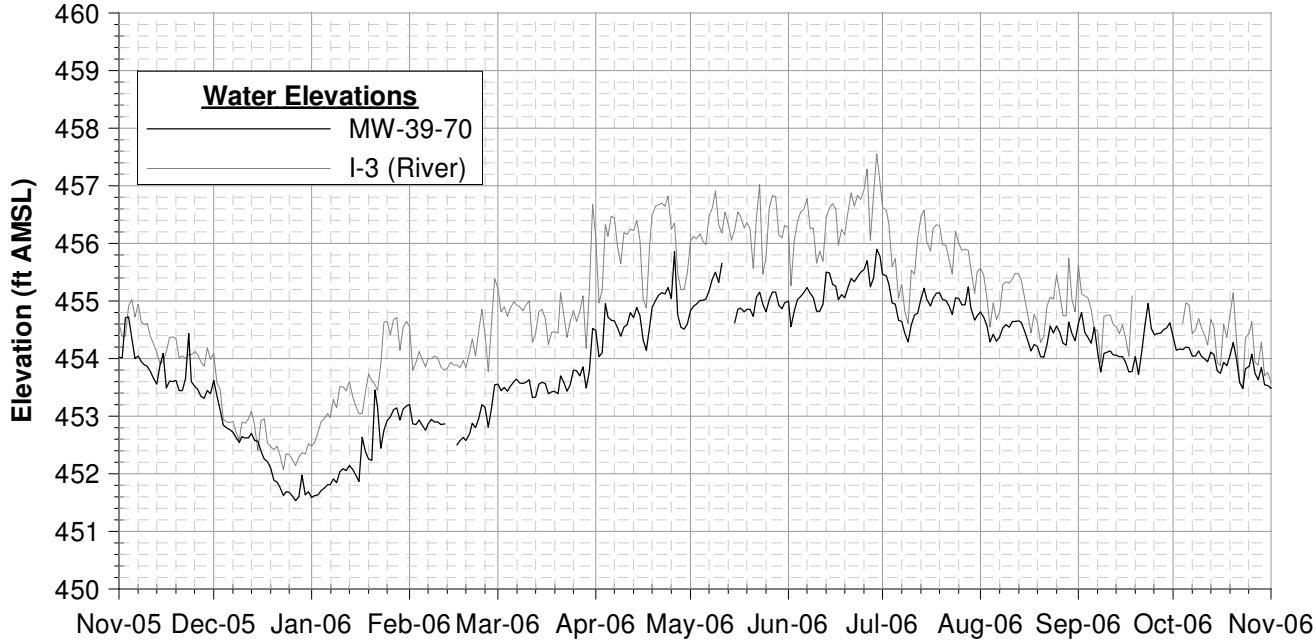

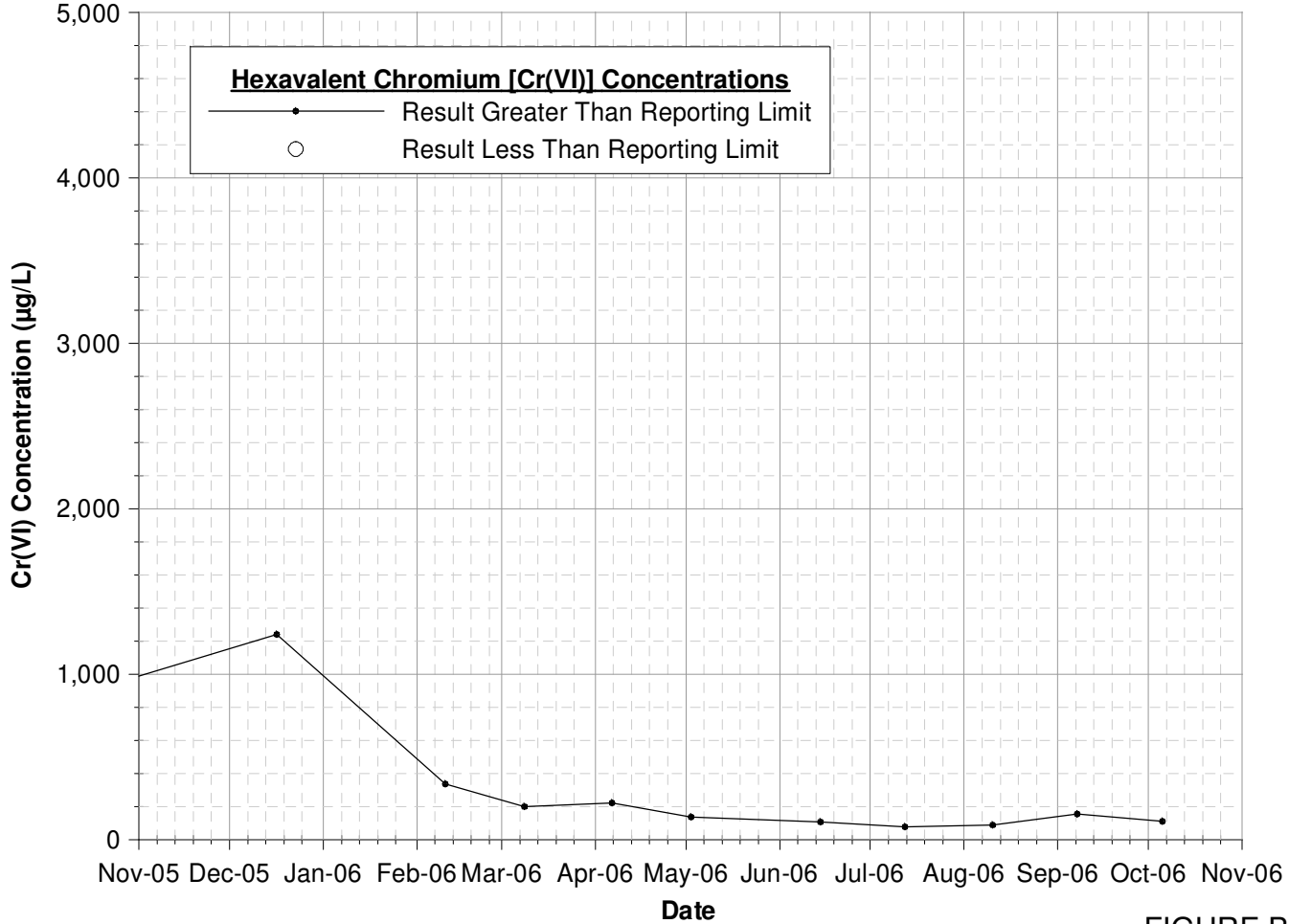

FIGURE B-9
MW-39-70 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 10/5/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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.

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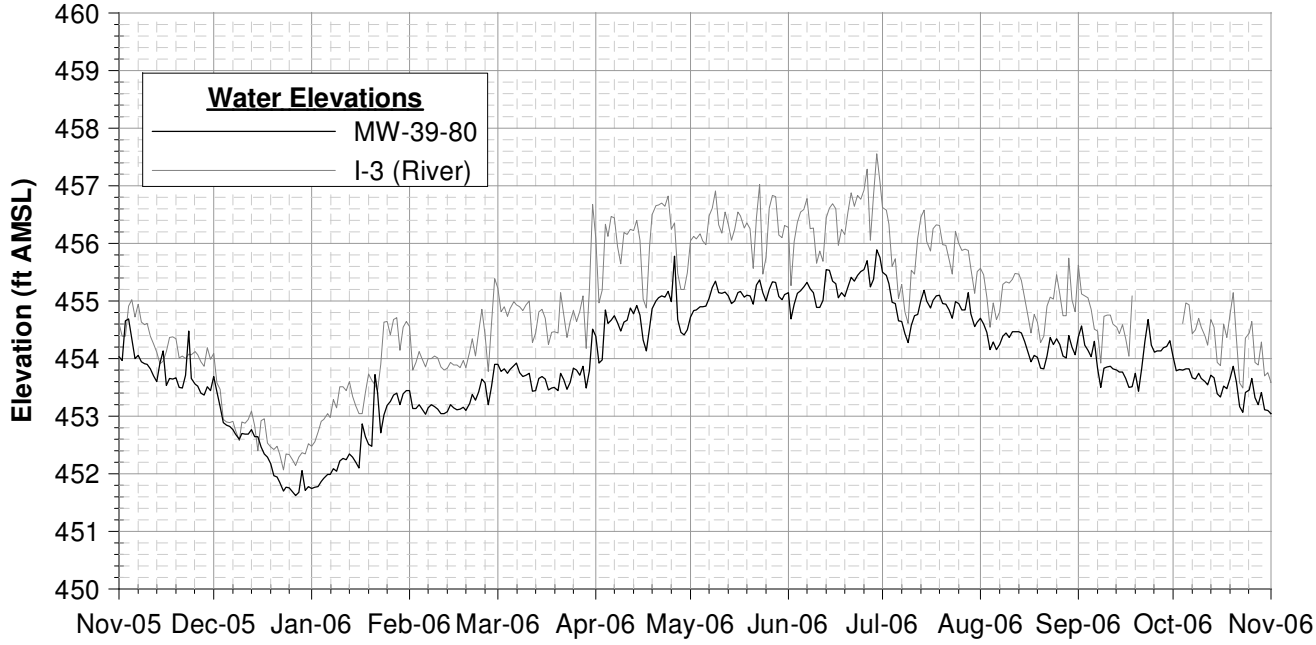

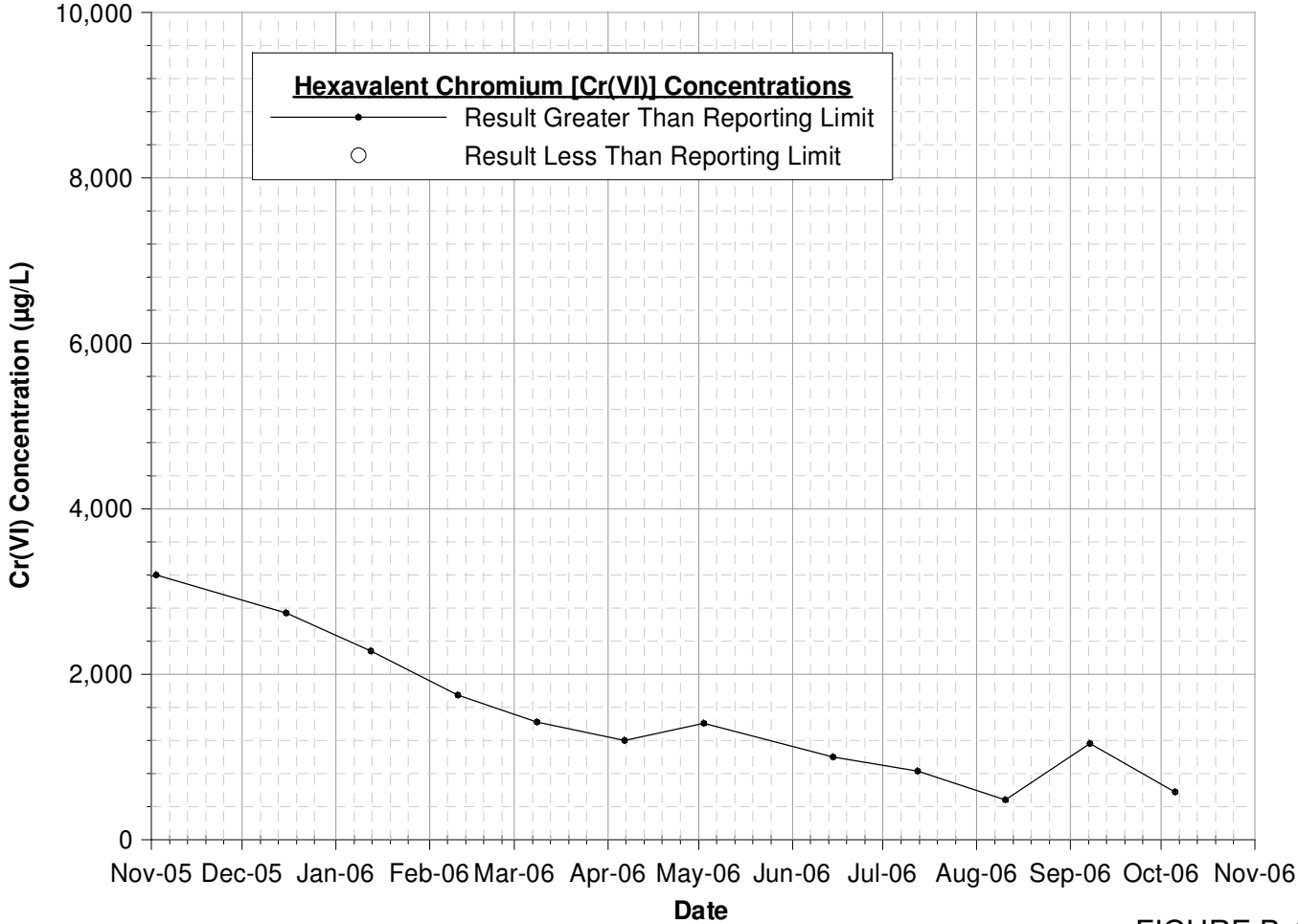

FIGURE B-10
MW-39-80 CR(VI) CONCENTRATION &
HYDROGRAPH - THROUGH 10/5/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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.

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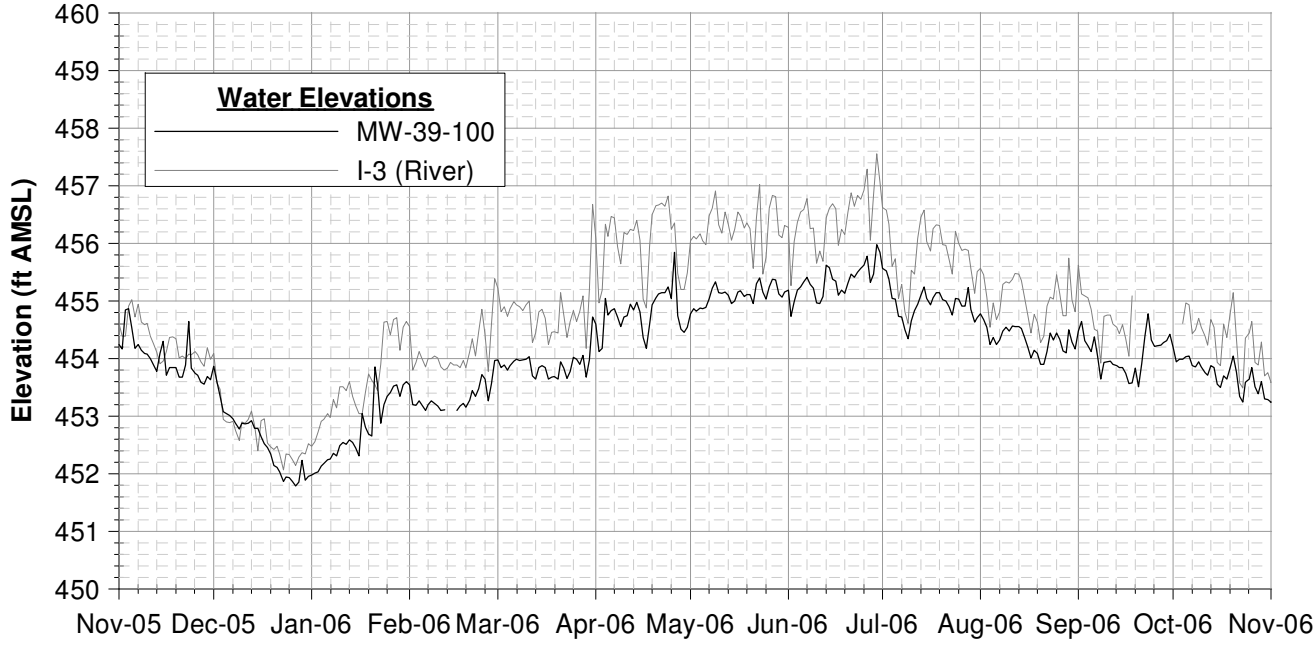
\\zinfandel\proj\PacificGasElectricCo\TopockProgram\Project_GMP\GMP_Reports\Chemplots\



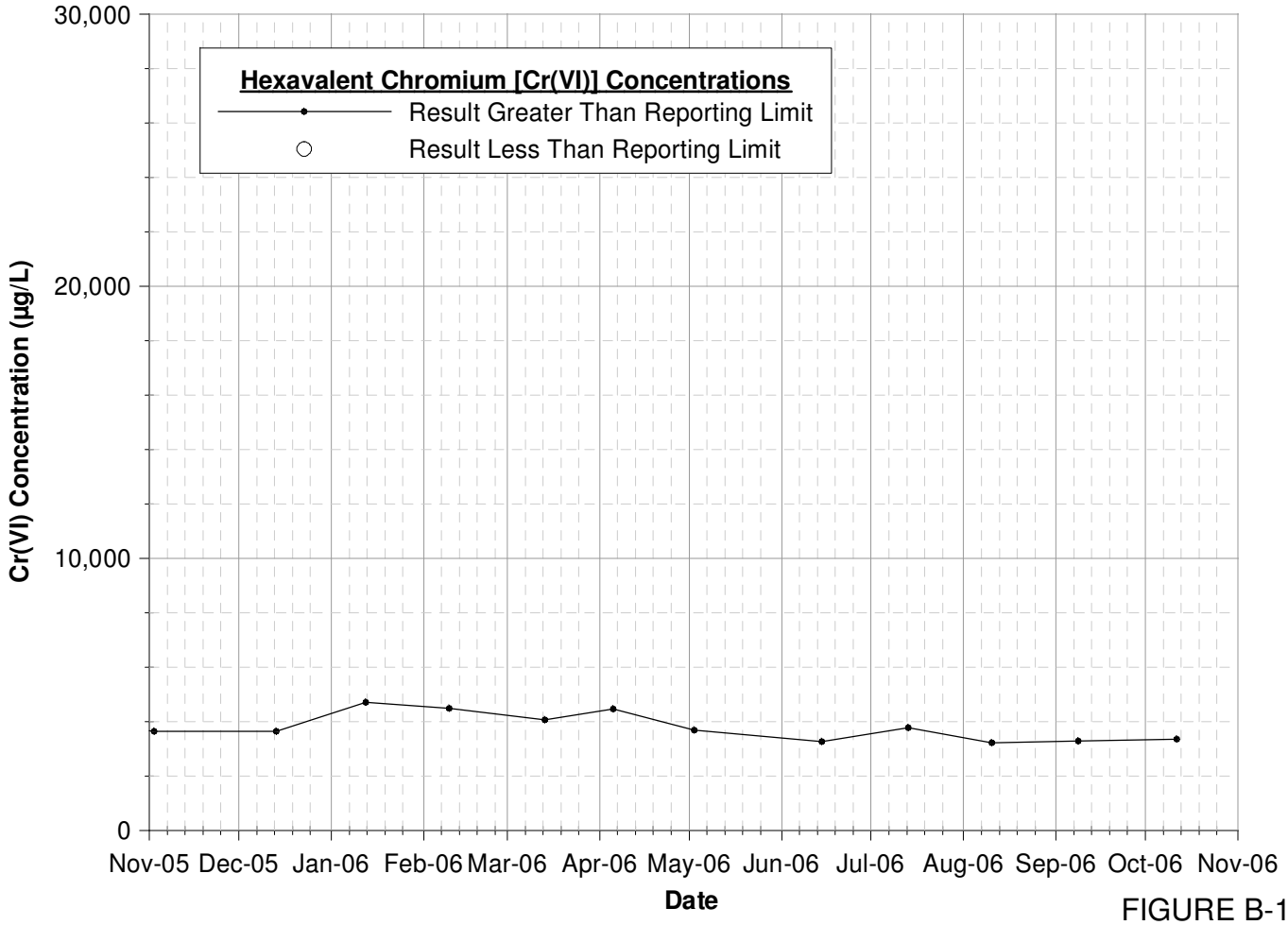


FIGURE B-11
MW-39-100 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 10/11/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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.

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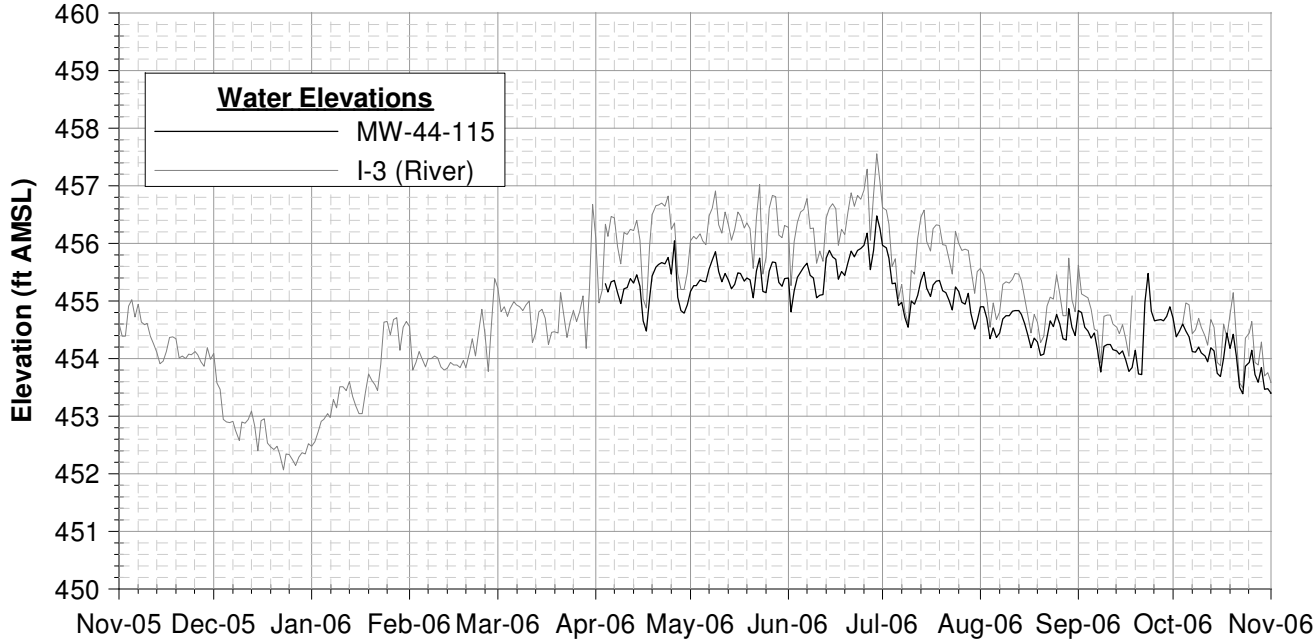

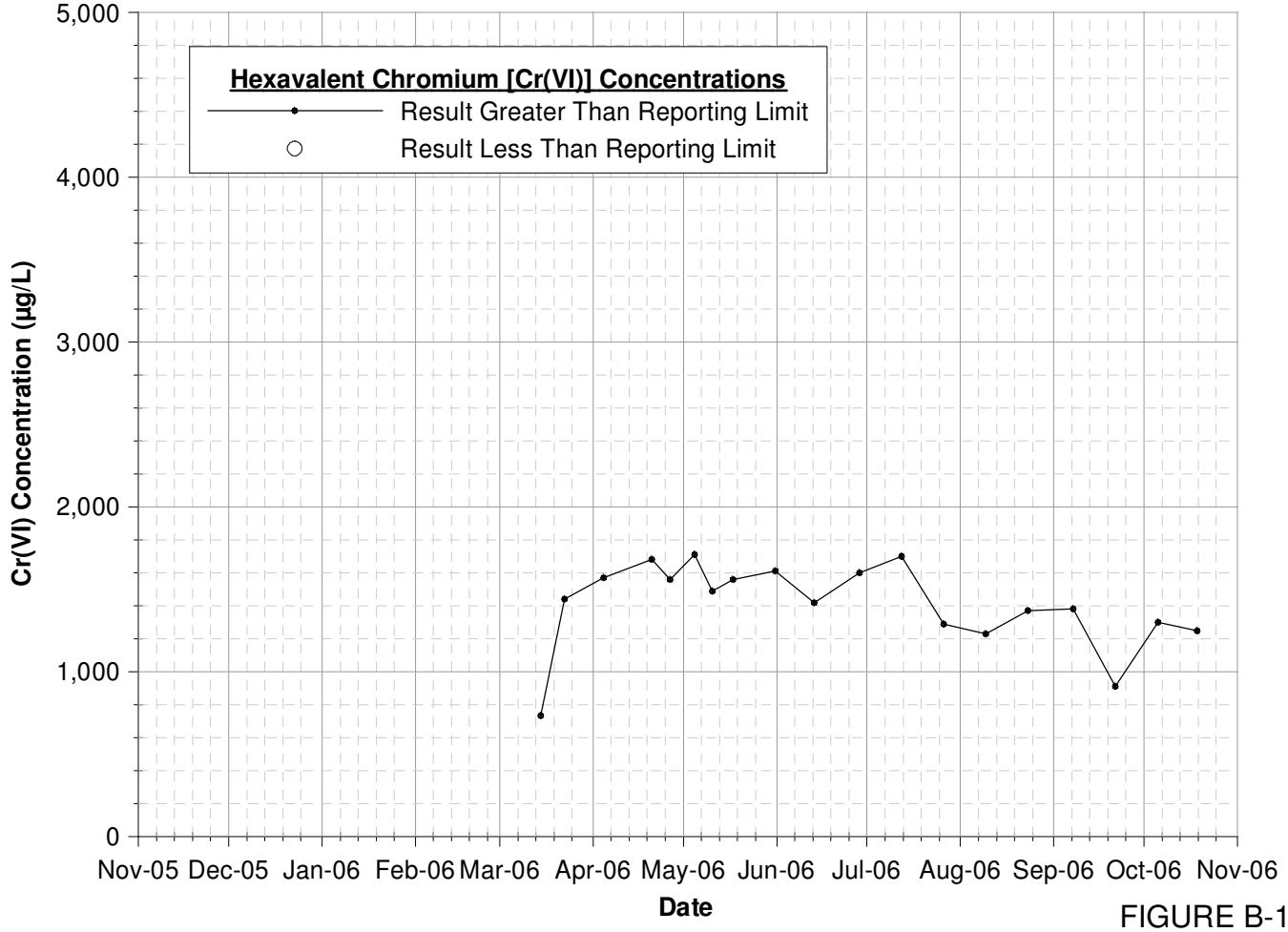

FIGURE B-12
MW-44-115 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 10/18/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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.

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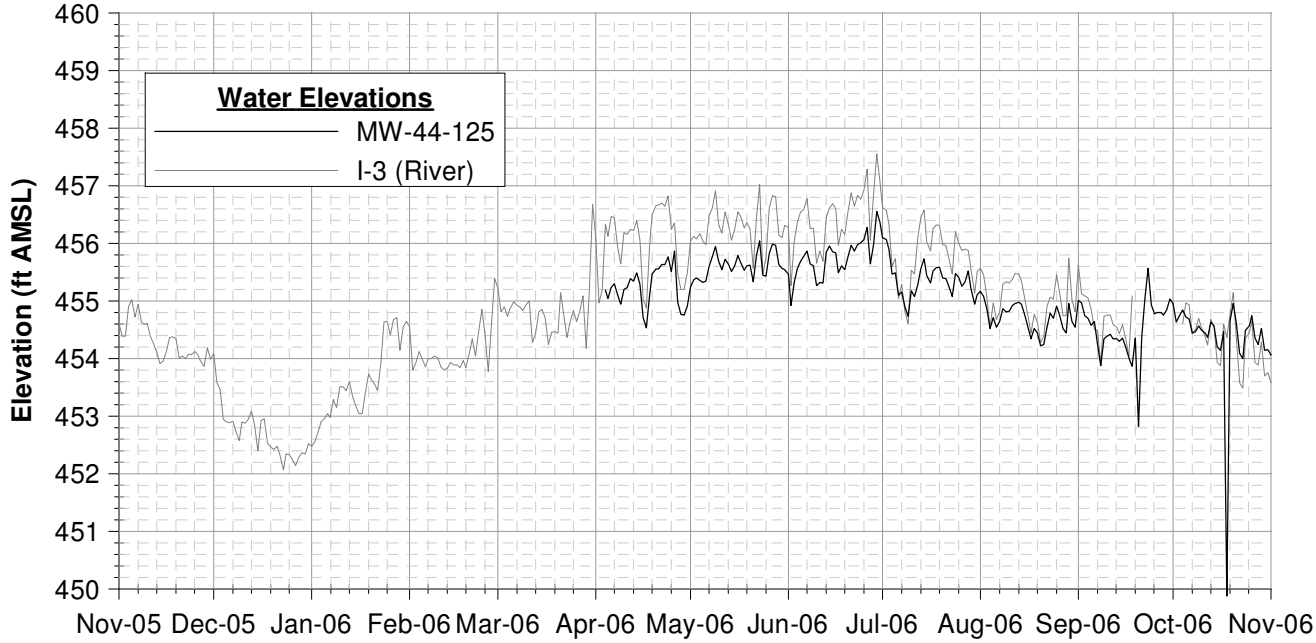

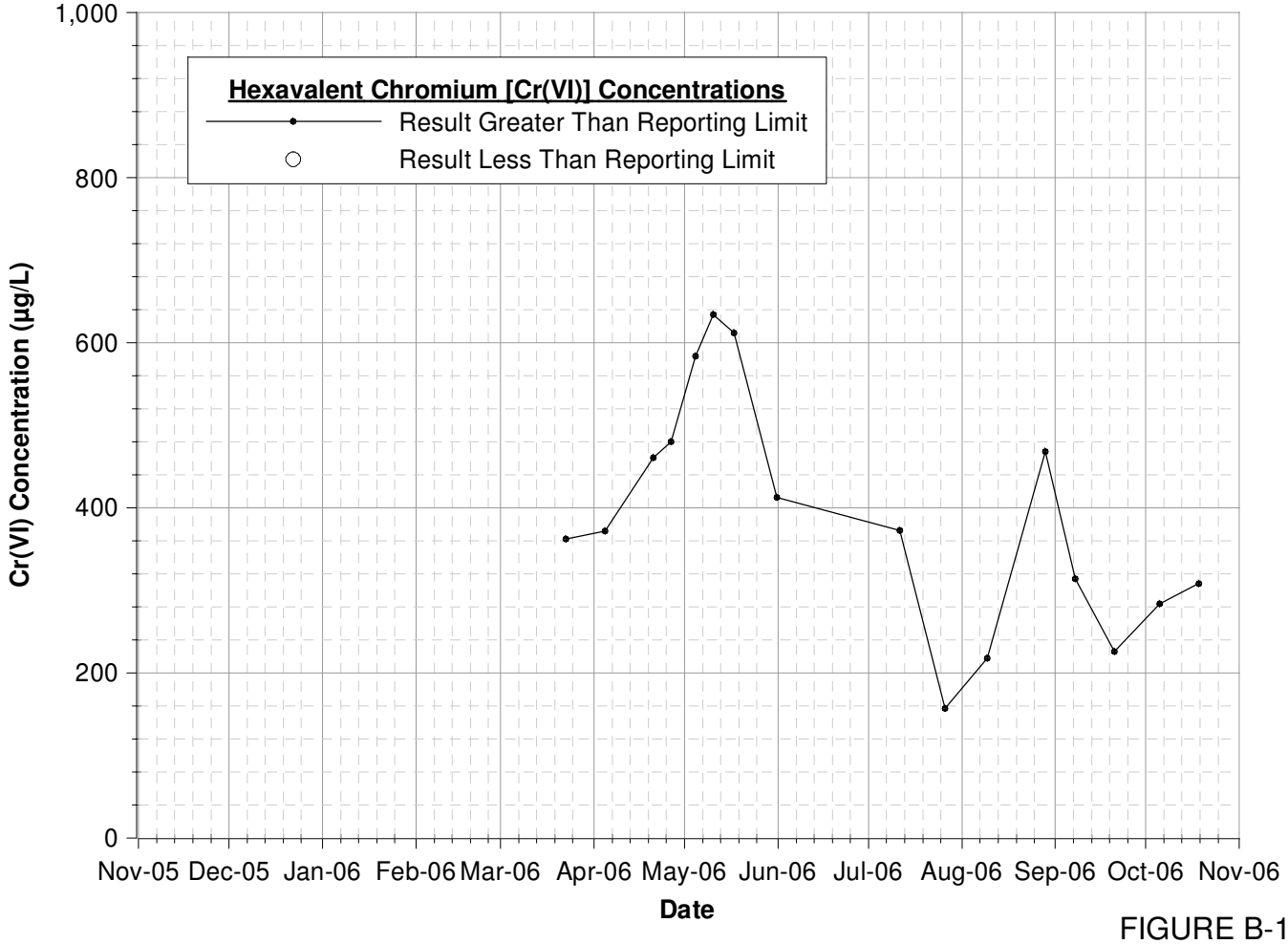

FIGURE B-13
MW-44-125 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 10/18/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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. Initial sampling results from 3/9/06 are not plotted because the well was not fully developed at this time.
5. 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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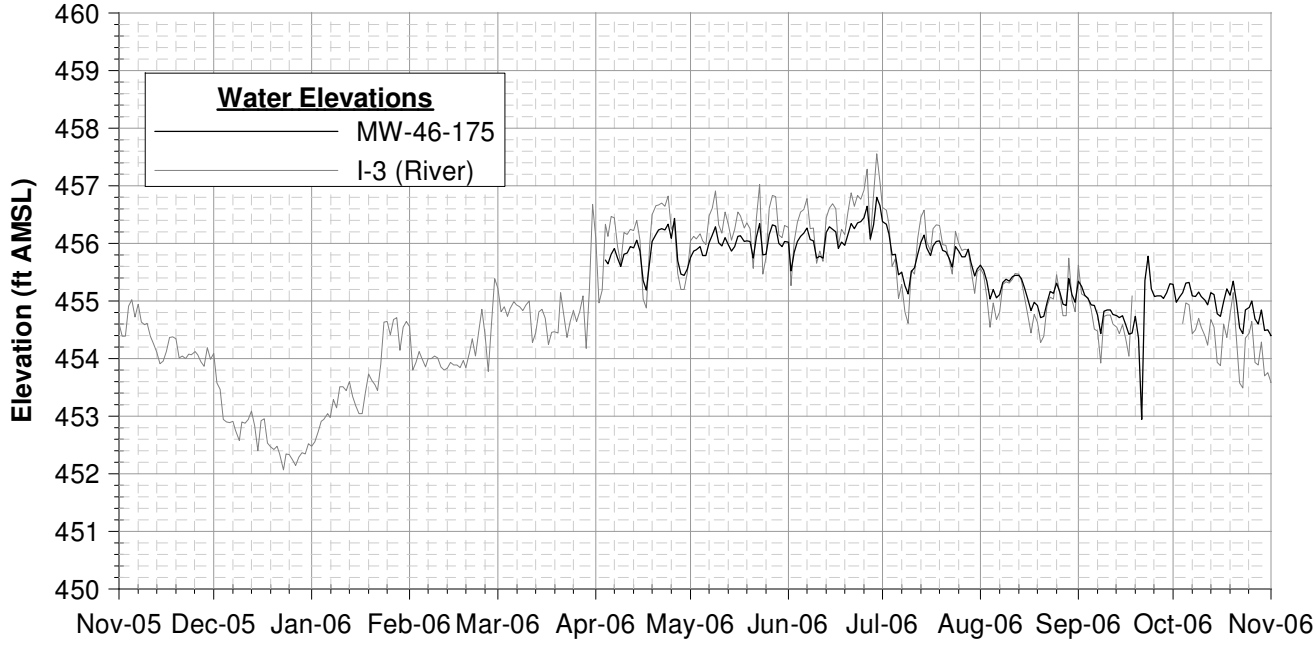

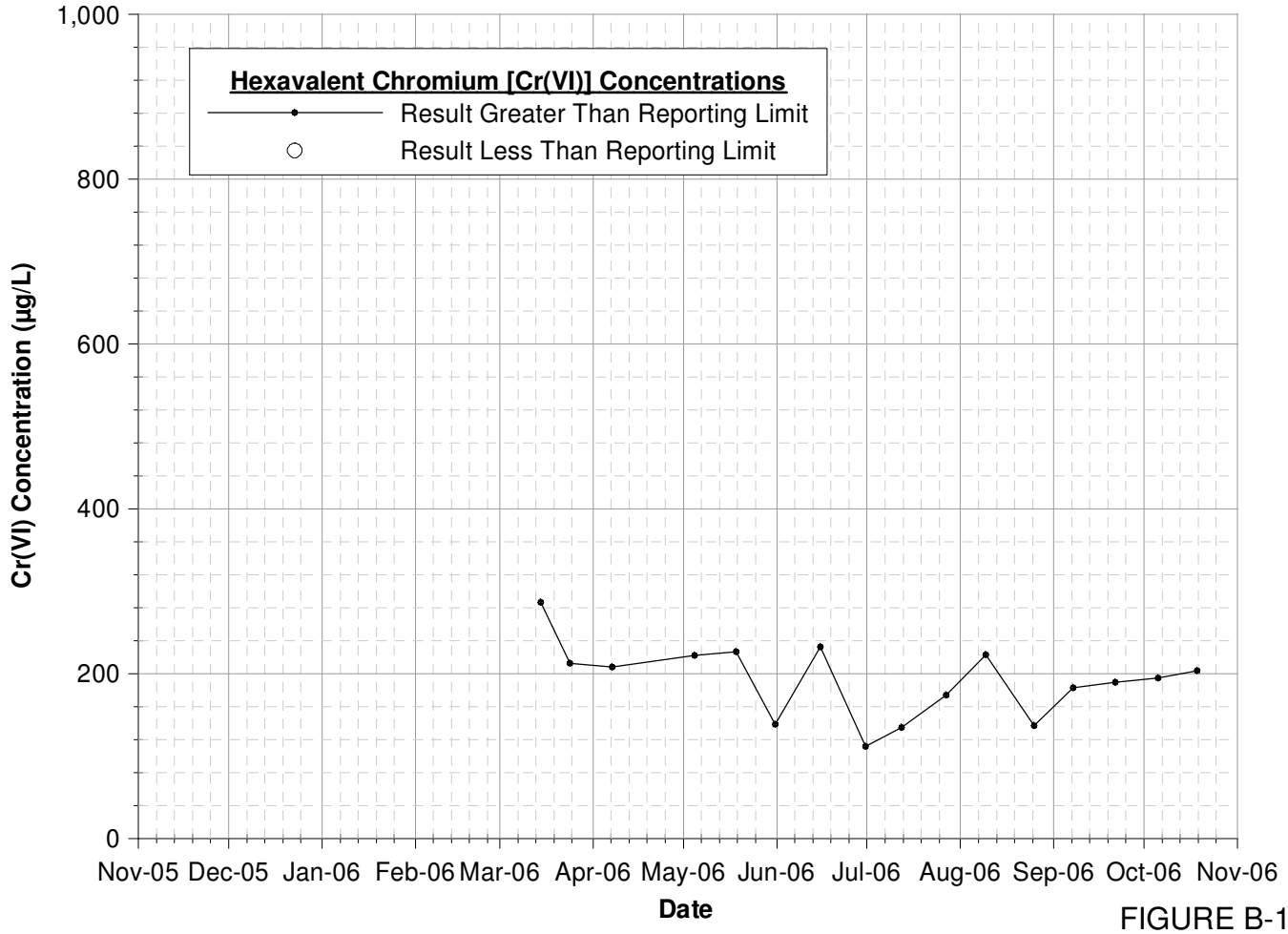

FIGURE B-14
MW-46-175 CR(VI) CONCENTRATION & HYDROGRAPH - THROUGH 10/28/06
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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.

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Appendix C
Hydrographs and Hydraulic Gradient Maps for Reporting Period

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

Well	**Average** (ft AMSL)	**Minimum** (ft AMSL)	**Maximum** (ft AMSL)	Aquifer Depth
I-3	454.35	453.28	455.48	River Station
MW-10	456.08	456.02	456.14	Shallow
MW-19	454.85	454.74	454.94	Shallow
MW-20-070	453.61	453.48	453.73	Shallow
MW-20-100	453.13	452.92	453.45	Mid-Depth
MW-20-130	452.77	451.74	453.27	Deep
MW-22	INC	INC	INC	Shallow
MW-26	455.31	455.27	455.35	Shallow
MW-25	455.01	454.94	455.07	Shallow
MW-27-020	454.34	454.02	454.62	Shallow
MW-27-060	454.39	453.77	455.01	Mid-Depth
MW-27-085	454.28	453.66	454.91	Deep
MW-28-025	454.40	453.92	454.89	Shallow
MW-28-090	454.34	453.59	455.10	Deep
MW-29	INC	INC	INC	Shallow
MW-30-030	INC	INC	INC	Shallow
MW-30-050	454.02	453.49	454.55	Mid-Depth
MW-31-060	454.44	454.28	454.58	Shallow
MW-31-135	453.65	453.39	453.97	Deep
MW-32-020	454.13	453.99	454.26	Shallow
MW-32-035	454.20	453.86	454.52	Shallow
MW-33-040	454.88	454.54	455.21	Shallow
MW-33-090	454.49	454.09	454.88	Mid-Depth
MW-33-150	454.80	454.39	455.21	Deep
MW-33-210	455.26	454.93	455.60	Deep
MW-34-055	454.50	453.74	455.28	Mid-Depth
MW-34-080	454.58	453.84	455.34	Deep
MW-34-100	454.07	453.38	454.79	Deep
MW-35-060	454.95	454.62	455.25	Shallow
MW-35-135	454.67	454.48	454.85	Deep
MW-36-020	454.12	453.61	454.63	Shallow
MW-36-040	454.19	453.29	454.77	Shallow
MW-36-050	454.11	453.51	454.72	Mid-Depth
MW-36-070	453.81	453.24	454.39	Mid-Depth
MW-36-090	453.48	452.96	454.07	Deep
MW-36-100	453.77	453.25	454.36	Deep
MW-39-040	454.04	453.54	454.56	Shallow
MW-39-050	453.96	453.47	454.47	Mid-Depth
MW-39-060	453.89	453.42	454.36	Mid-Depth
MW-39-070	453.95	453.57	454.39	Mid-Depth
MW-39-080	453.56	453.16	454.00	Deep
MW-39-100	453.74	453.34	454.19	Deep
MW-42-030	454.07	453.67	454.46	Shallow

TABLE C-1
Monthly Average, Minimum, and Maximum Groundwater Elevations, October 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	454.10	453.69	454.50	Mid-Depth
MW-42-065	631.12	553.98	675.22	Mid-Depth
MW-43-025	454.32	453.73	454.92	Shallow
MW-43-075	454.44	453.80	455.08	Deep
MW-43-090	454.65	454.00	455.29	Deep
MW-44-070	454.24	453.51	454.93	Mid-Depth
MW-44-115	454.05	453.38	454.64	Deep
MW-44-125	454.47	453.53	455.08	Deep
MW-45-095	453.14	452.41	454.48	Deep
MW-46-175	454.97	454.50	455.44	Deep
MW-46-205	455.23	454.83	455.61	Deep
MW-47-055	454.82	454.62	455.00	Shallow
MW-47-115	454.97	454.74	455.19	Deep
MW-49-135	455.01	454.63	455.37	Deep
MW-49-275	455.95	455.69	456.22	Deep
MW-49-365	457.42	457.20	457.66	Deep
MW-50-095	454.82	454.68	454.95	Mid-Depth
MW-50-200	455.31	455.14	455.50	Deep
MW-51	454.90	454.85	454.96	Mid-Depth
RRB	455.07	453.86	456.22	River Station
PT2D	453.18	452.76	453.70	Deep
PT5D	453.45	452.99	453.96	Deep
PT6D	453.36	452.91	453.86	Deep
TW-02D	445.47	445.08	446.69	Deep

INC= Data incomplete over reporting period

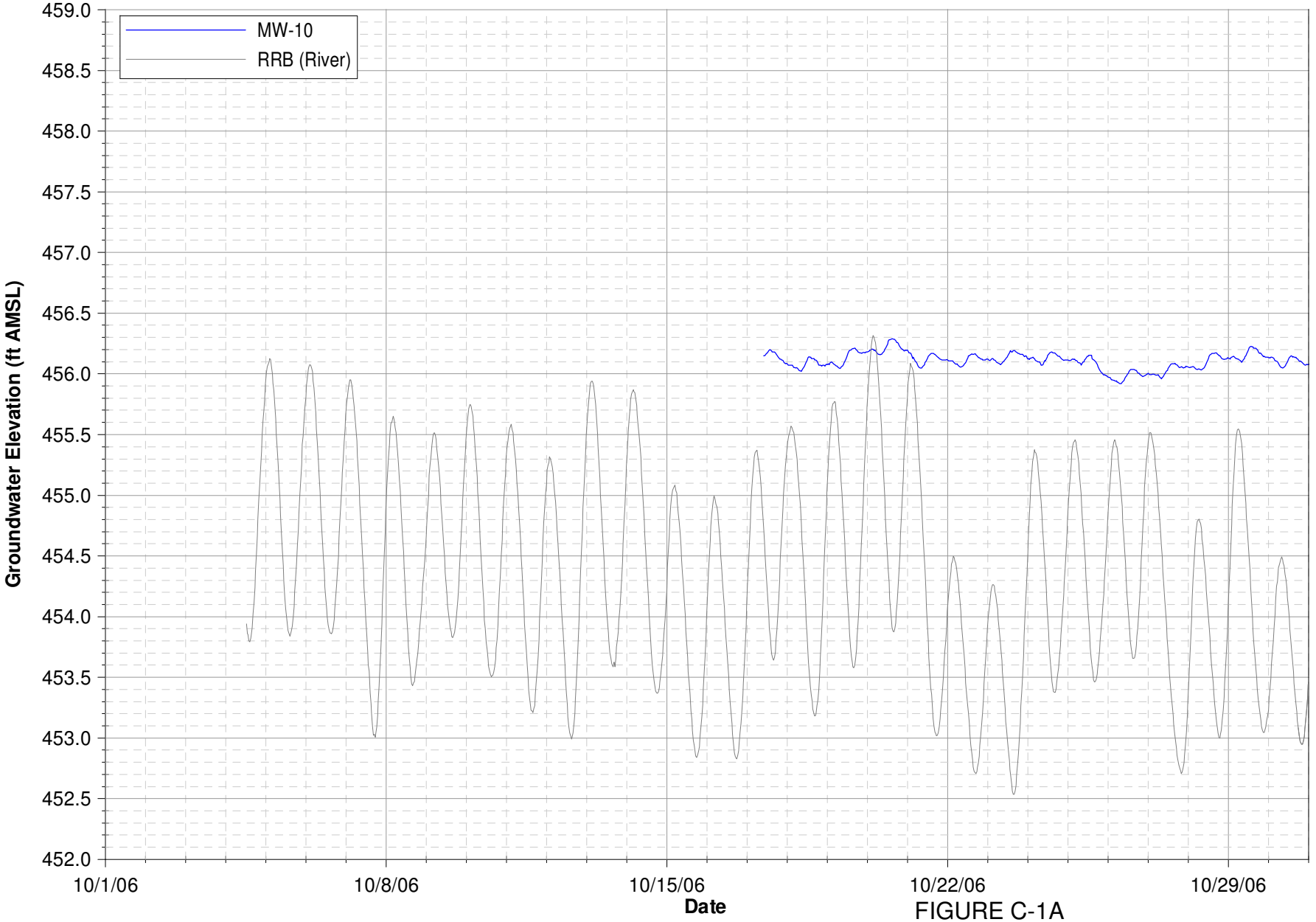

FIGURE C-1A
MW-10 HYDROGRAPH
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.
I-3 data is unavailable from 10/01/2006 through 10/04/2006.
MW-10 data is unavailable from 10/01/2006 through 10/17/2006.

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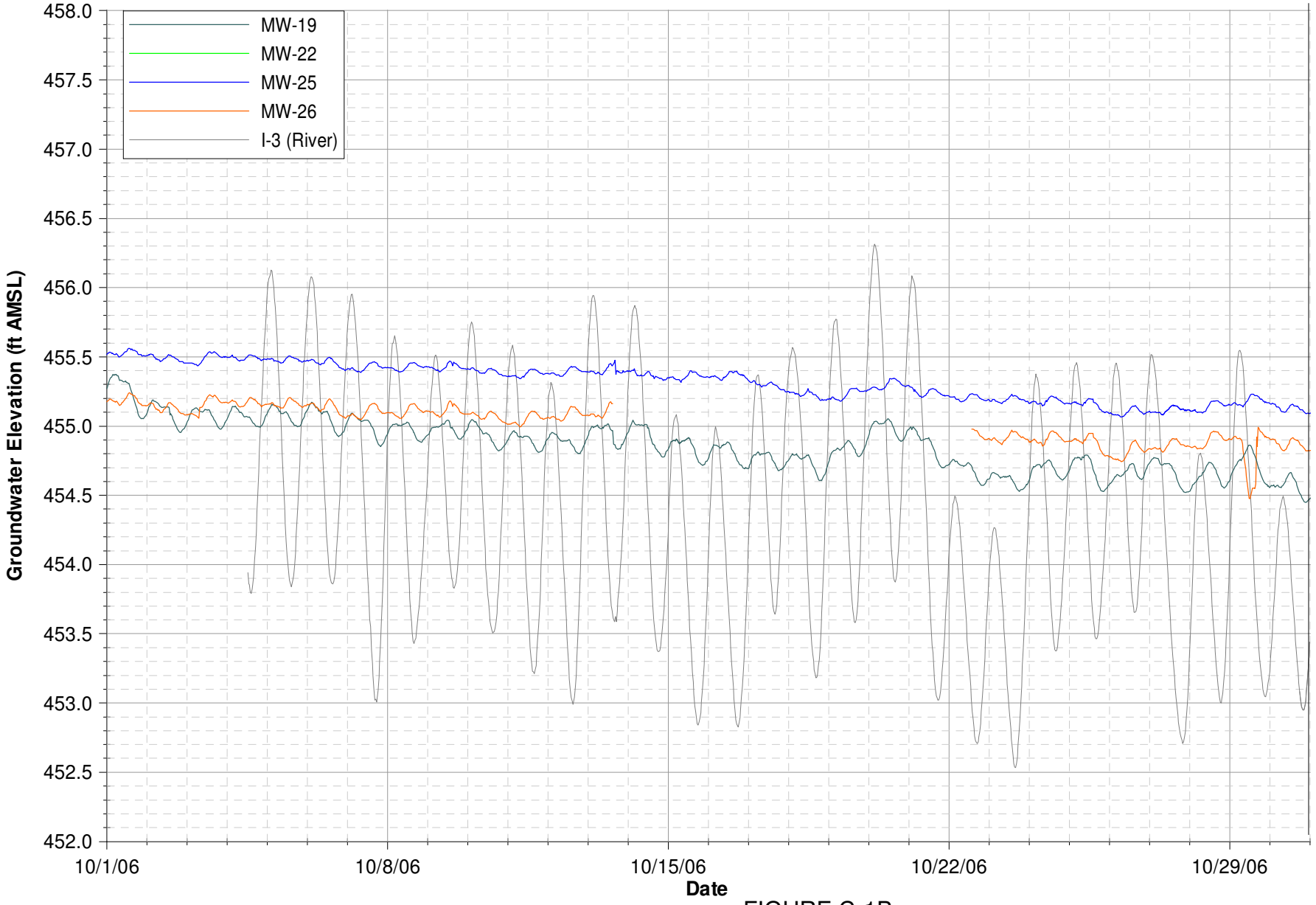

Notes:
Data subject to review.
I-3 data is unavailable from 10/1/2006 through 10/4/2006.
MW-22 data unavailable after 9/19/06.
MW-26 data unavailable from 10/13/06 through 10/22/06.

FIGURE C-1B
MW-19, MW-22, MW-25, AND MW-26 HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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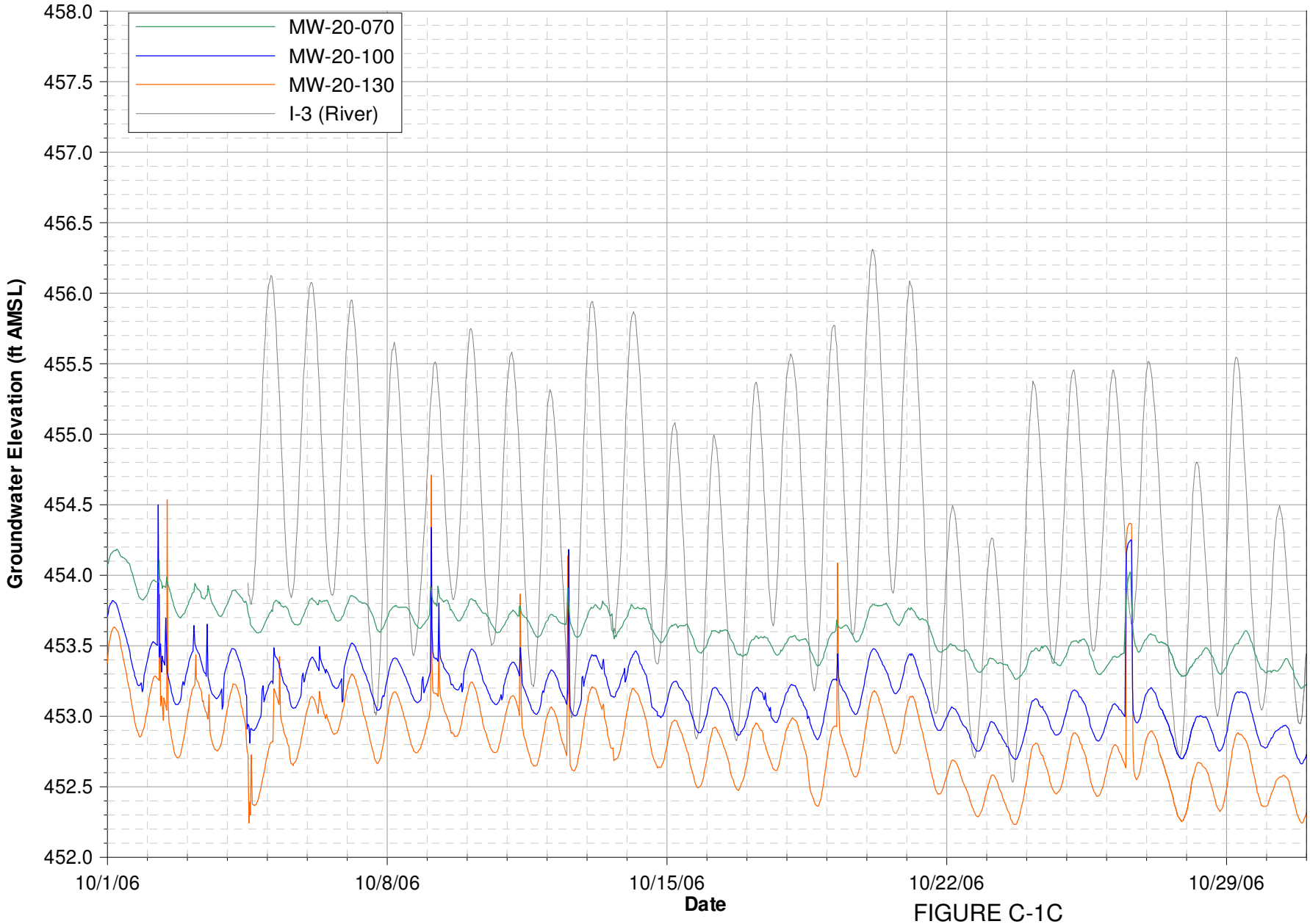
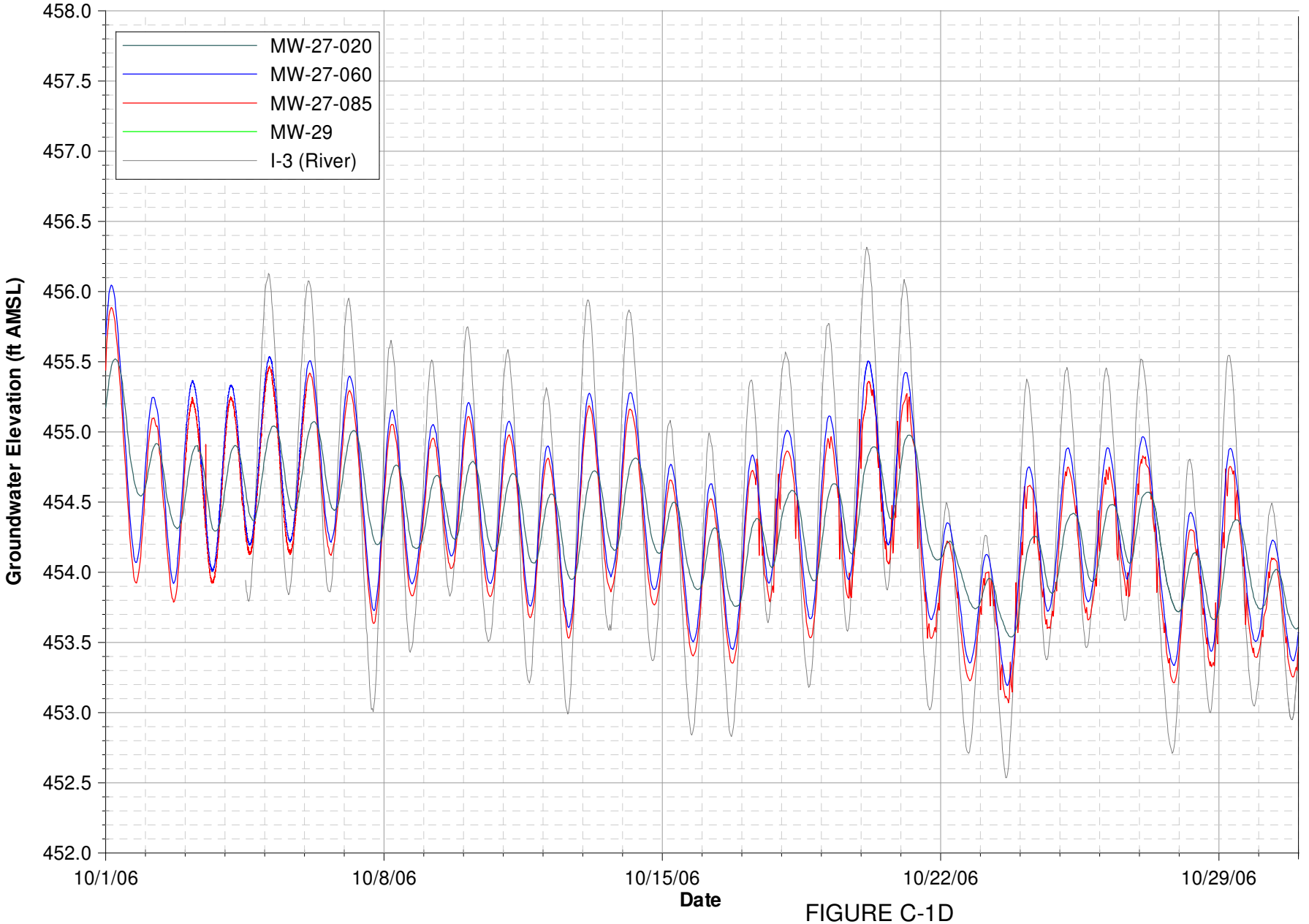


FIGURE C-1C
MW-20 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG& E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/1/2006 through 10/4/2006.

CH2MHILL



Notes:
Data subject to review.
I-3 data is unavailable from 10/01/2006 through 10/04/2006.
MW-29 data unavailable after 10/01/06.

FIGURE C-1D
MW-27 CLUSTER AND MW-29 HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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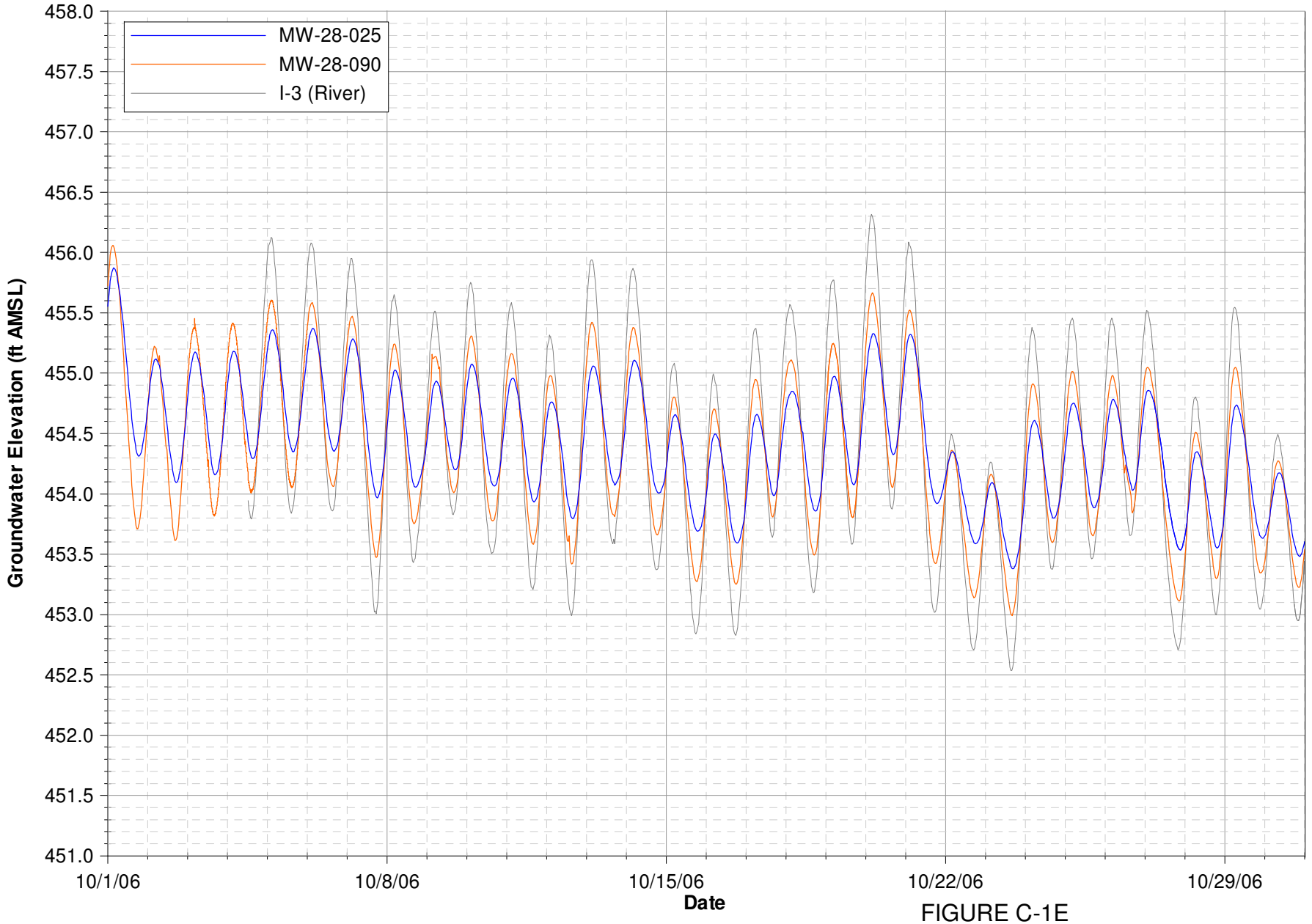


FIGURE C-1E
MW-28 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/1/2006 through 10/4/2006.

CH2MHILL

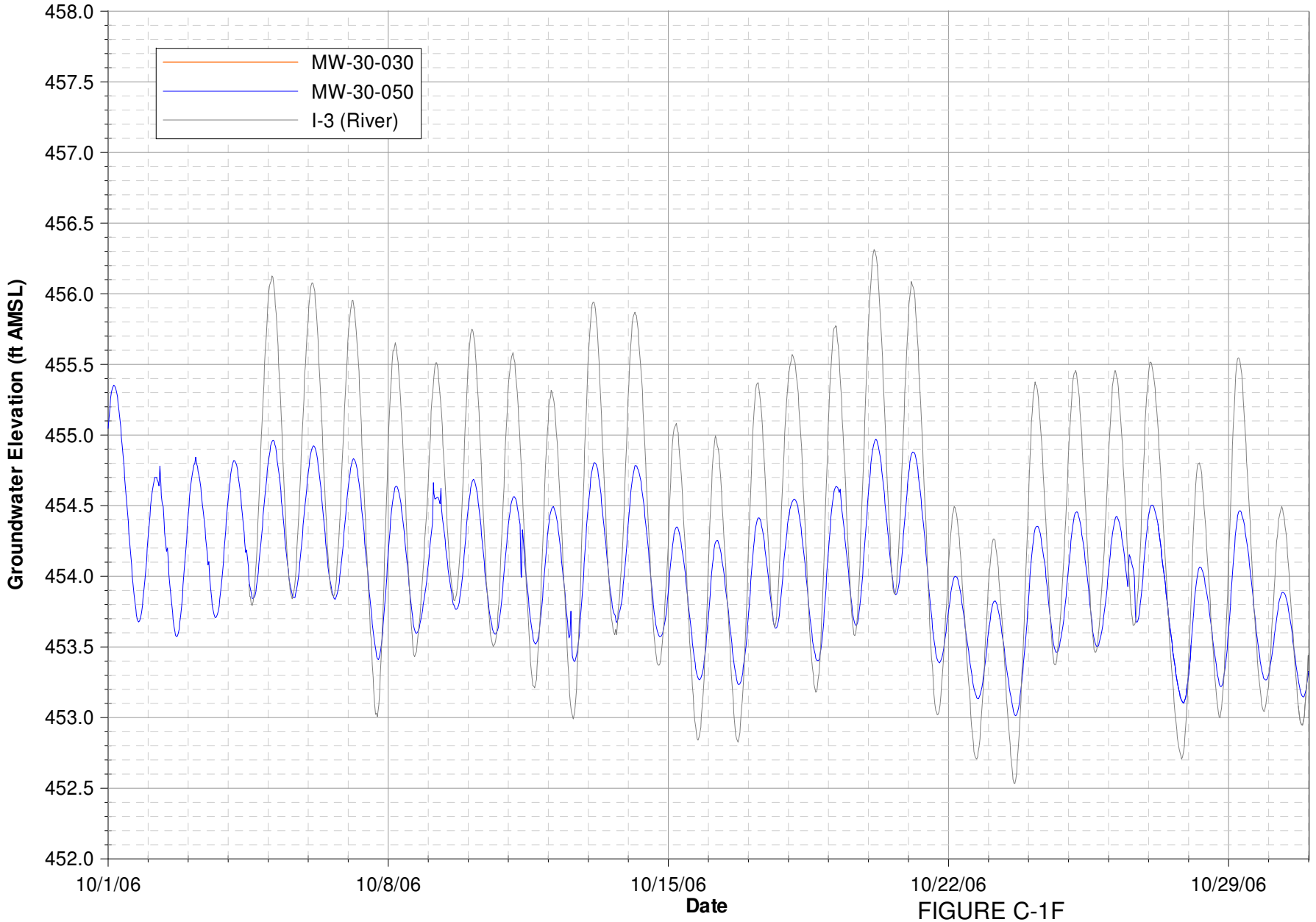


FIGURE C-1F
MW-30 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/1/2006 through 10/4/2006.
MW-30-30 data unavailable from 10/1/06 through 10/31/06.

CH2MHILL

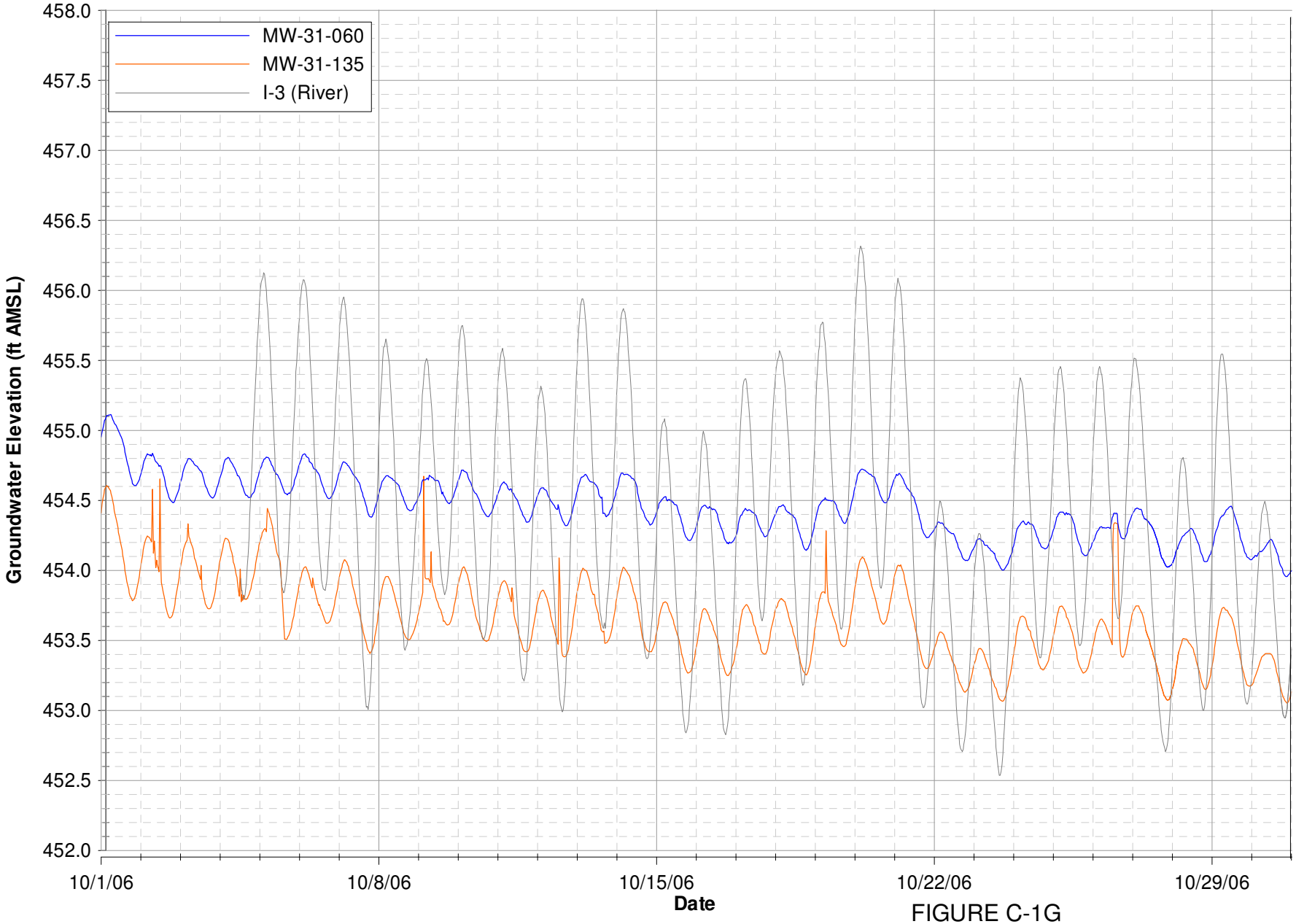


FIGURE C-1G
MW-31 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/01/2006 through 10/04/2006.

CH2MHILL

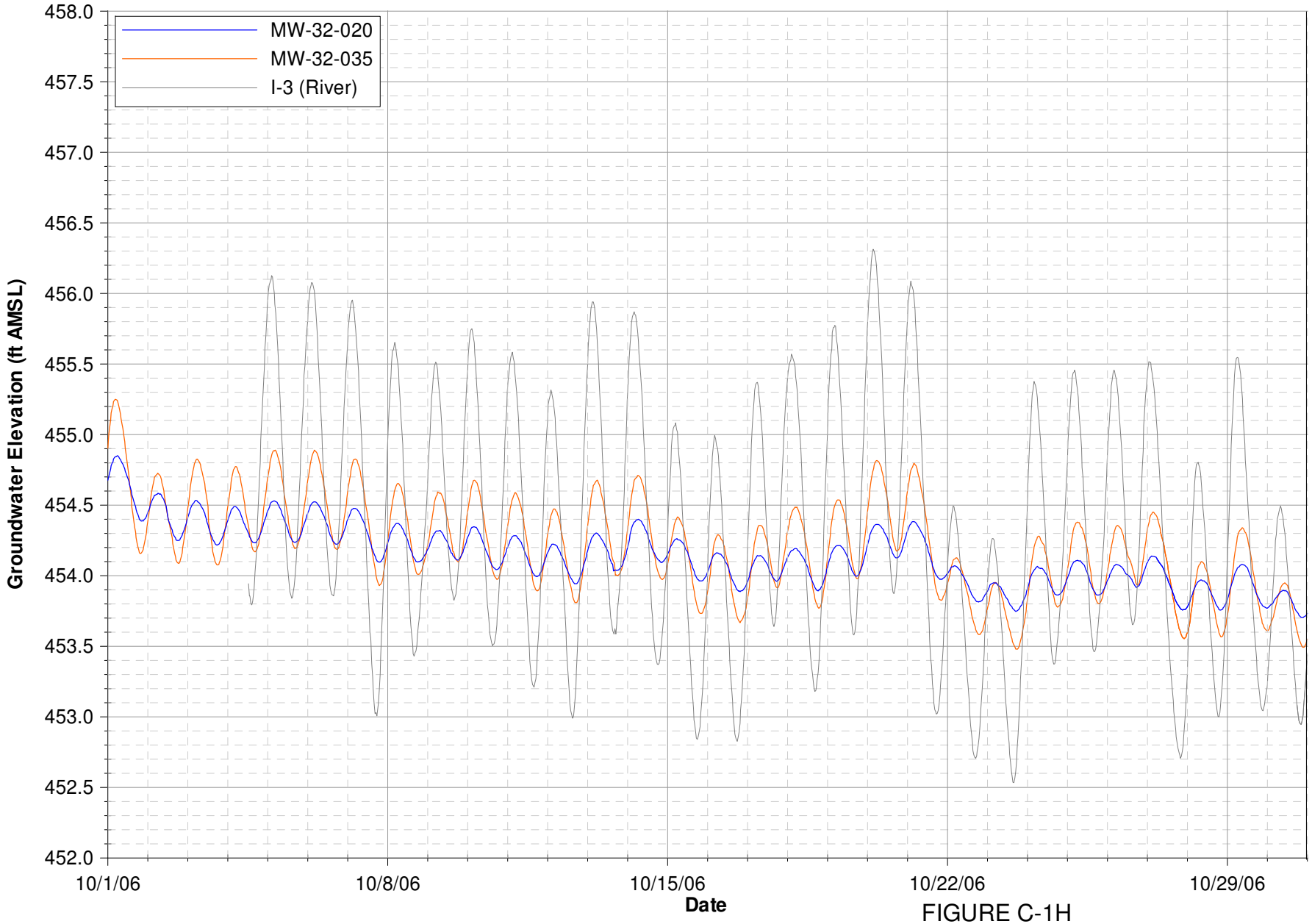
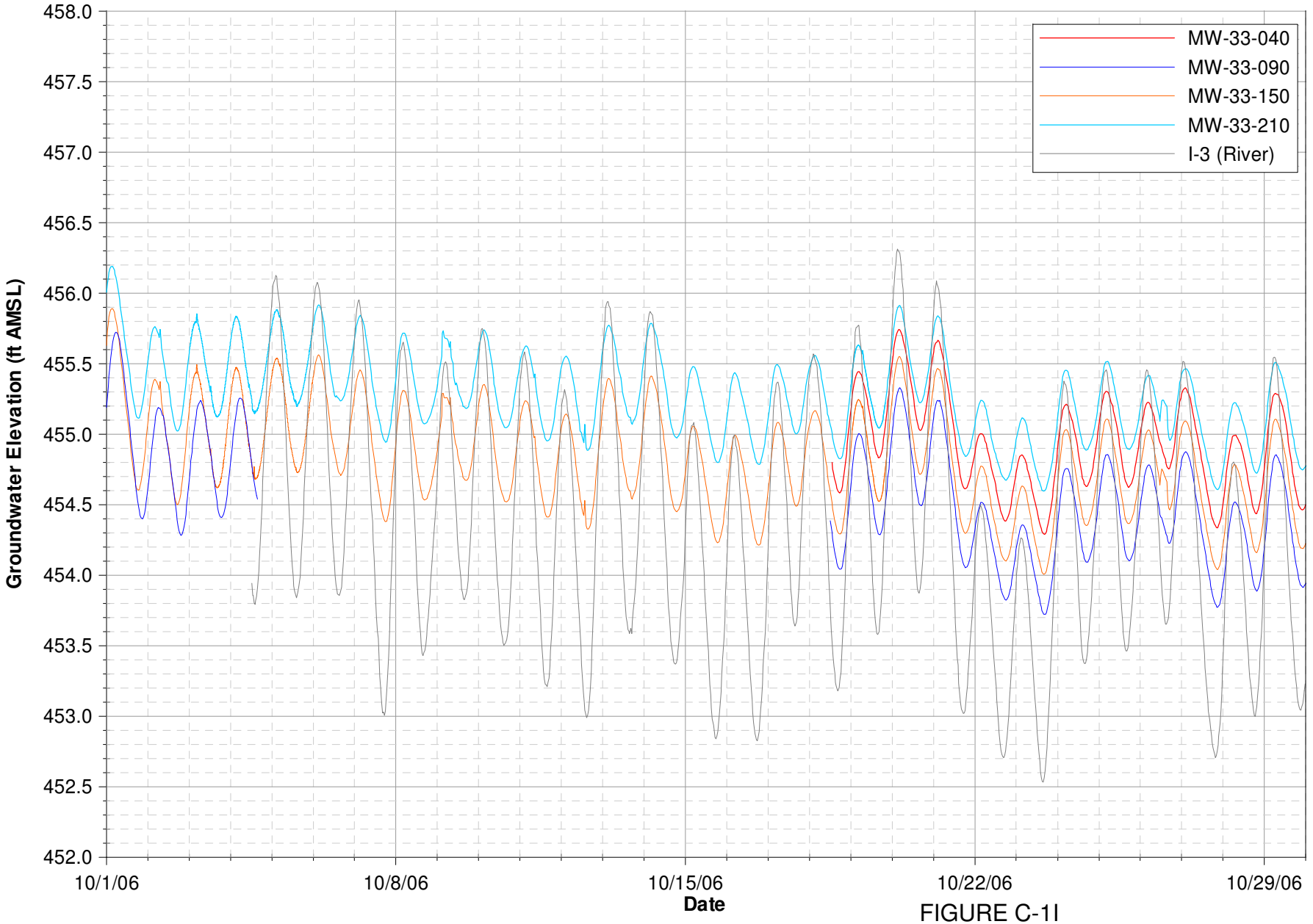


FIGURE C-1H
MW-32 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/01/2006 through 10/04/2006.

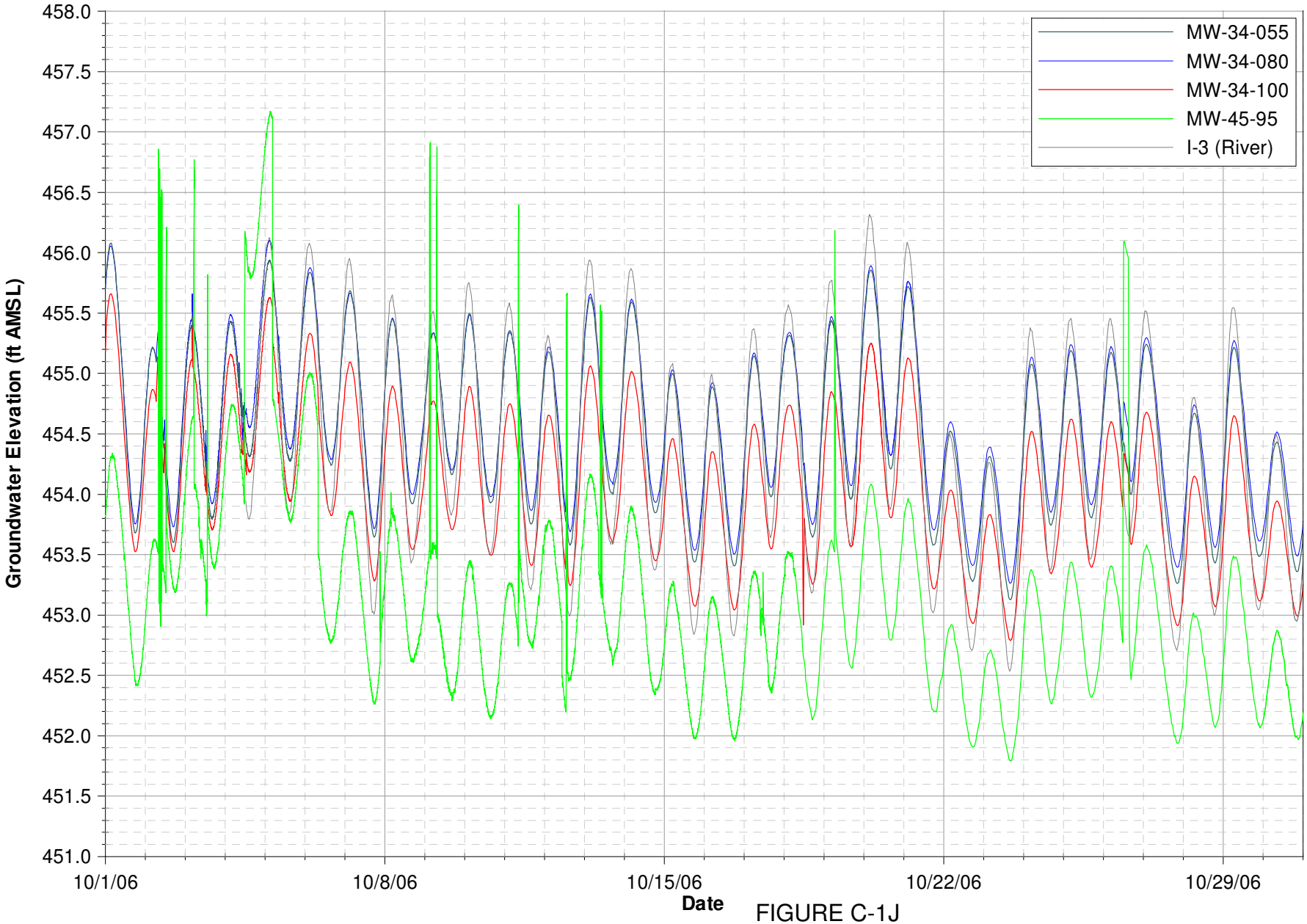
CH2MHILL



Notes:
Data subject to review.
MW-33-90 data is unavailable from 10/4/06 through 10/18/06.
I-3 data is unavailable from 10/01/2006 through 10/04/2006.

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

CH2MHILL



Notes:
Data subject to review.
I-3 data is unavailable from 10/01/2006 through 10/04/2006.

FIGURE C-1J
MW-34 CLUSTER AND MW-45-95 HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

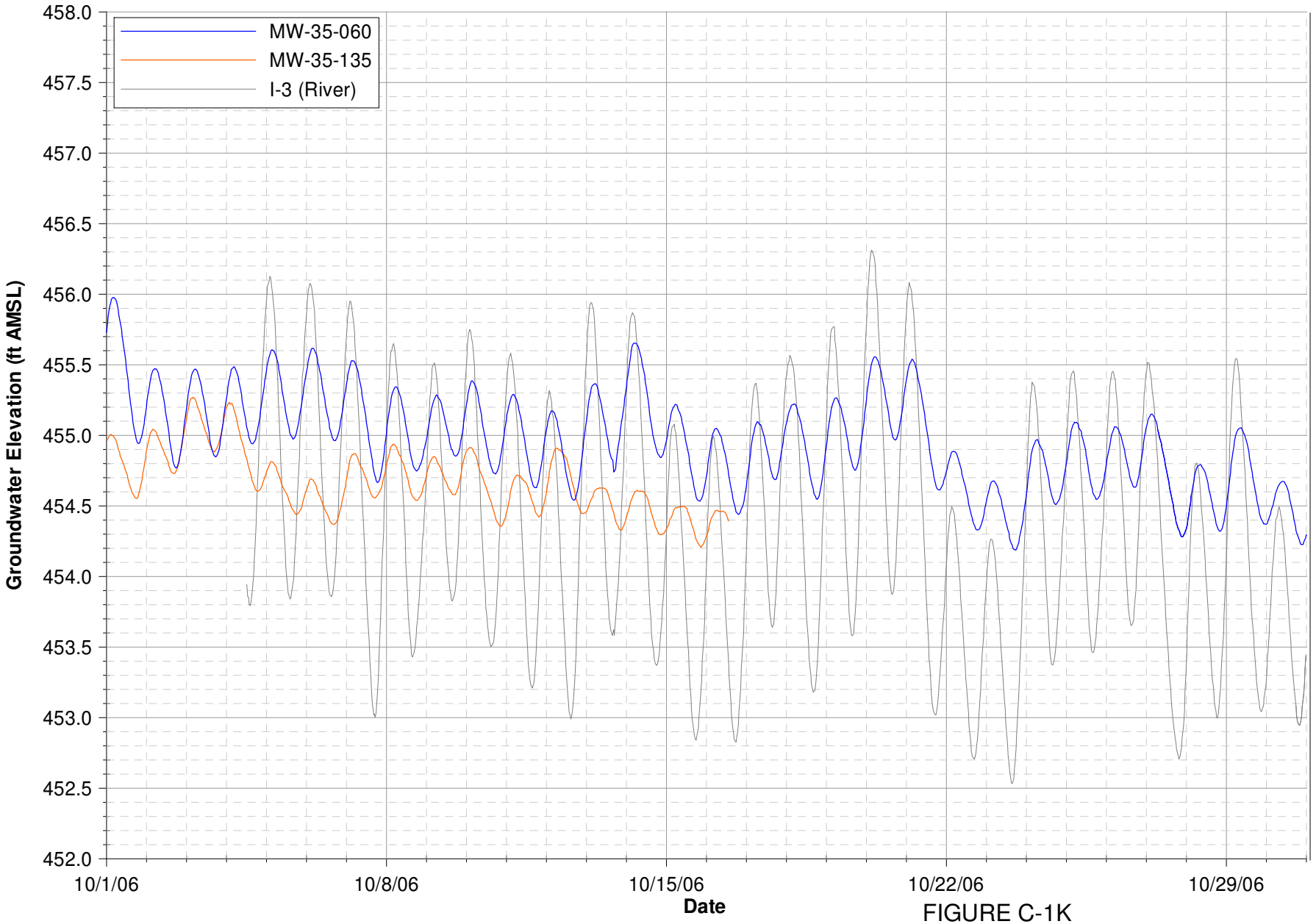


FIGURE C-1K
MW-35 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/01/2006 through 10/04/2006.
MW-35-135 Data Unavailable from 10/16/06 - 10/31/06.

CH2MHILL

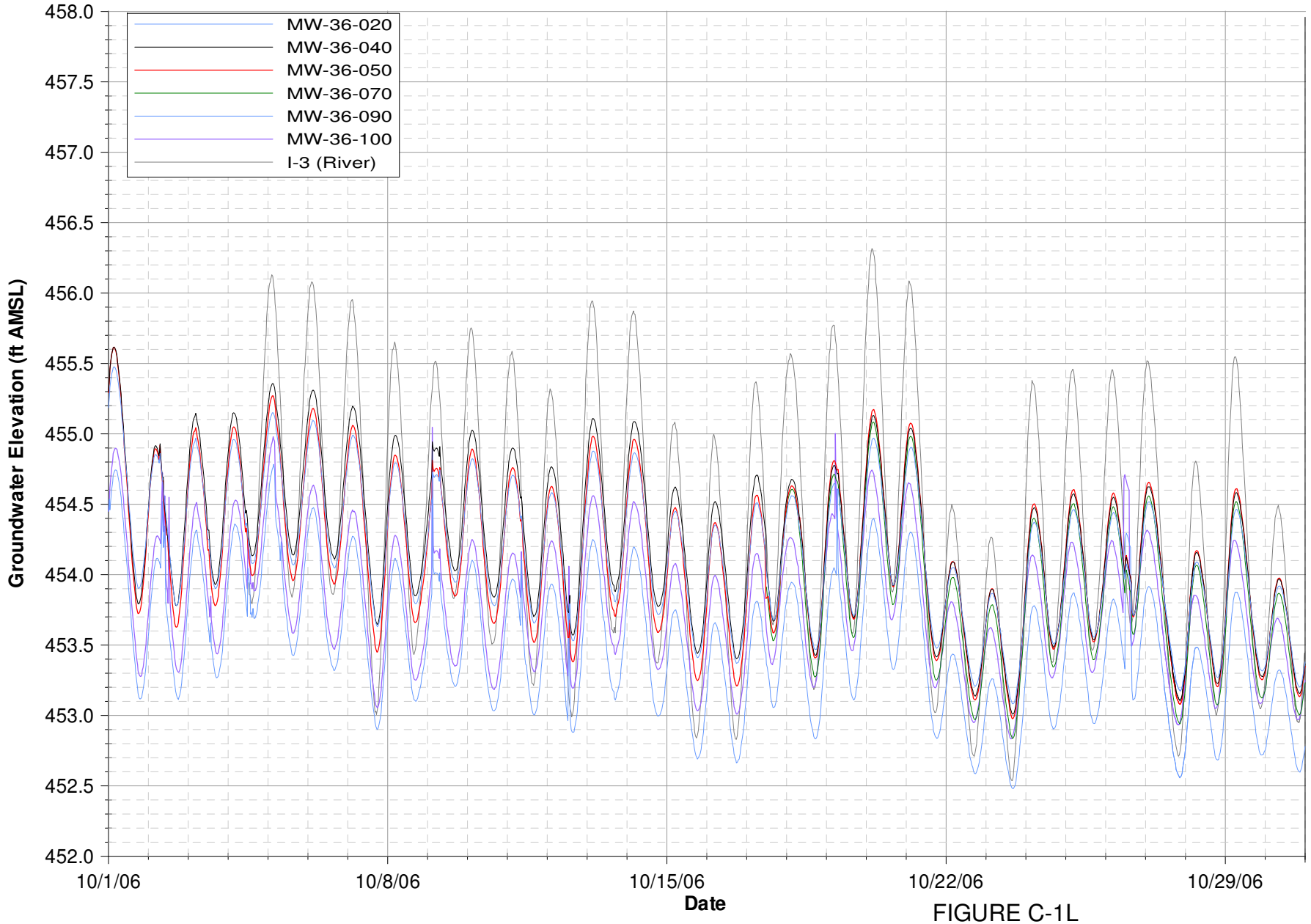


FIGURE C-1L
MW-36 CLUSTER
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/01/2006 through 10/04/2006.
MW-36-070 data unavailable from 10/1/06 through 10/17/06.

CH2MHILL

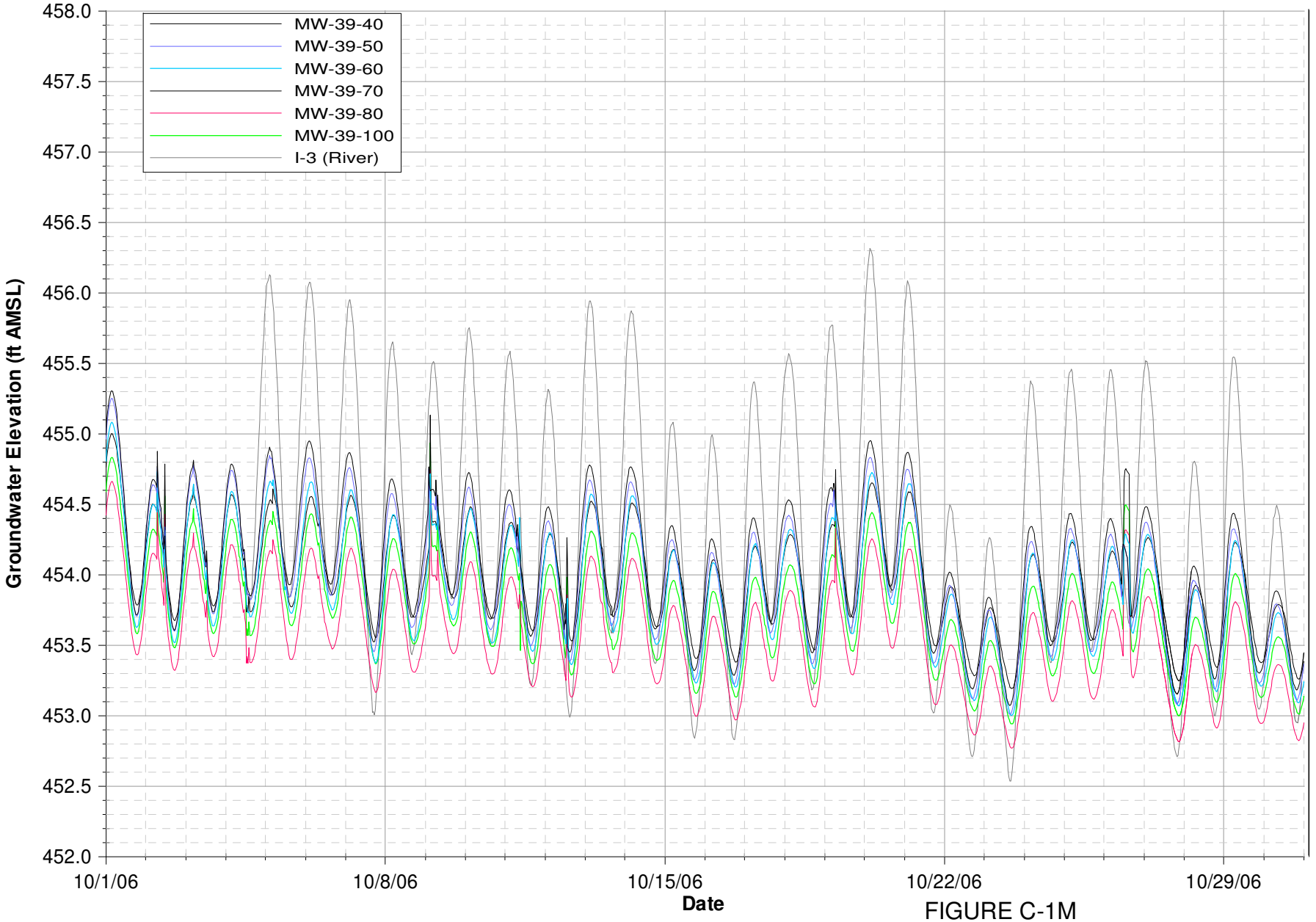


FIGURE C-1M
MW-39 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG & E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/12006 through 10/4/2006.

CH2MHILL

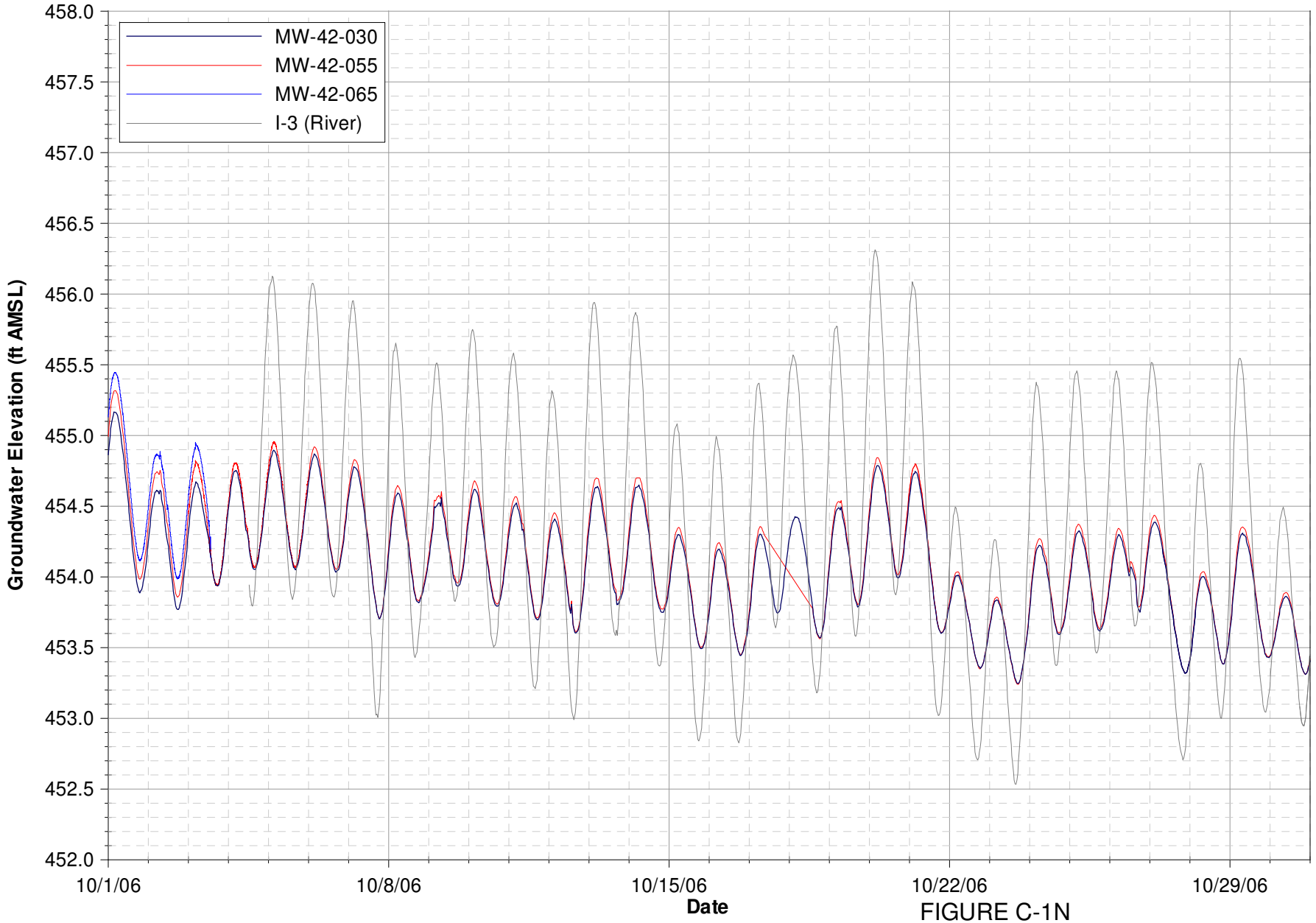


FIGURE C-1N
MW-42 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/12006 through 10/4/2006.
MW-42-65 data unavailable after 10/3/06.

CH2MHILL

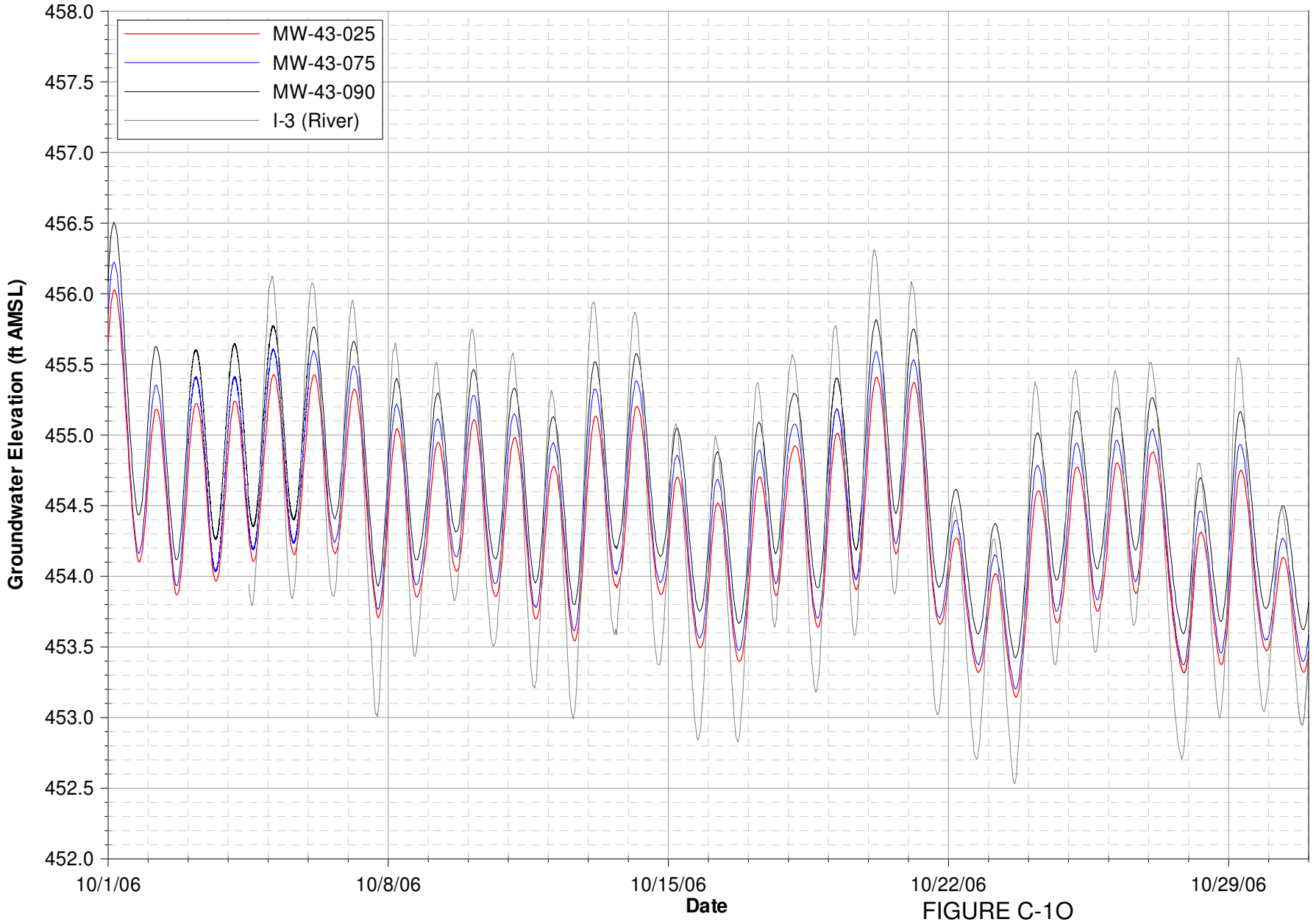


FIGURE C-1O
MW-43 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/12006 through 10/4/2006.

CH2MHILL

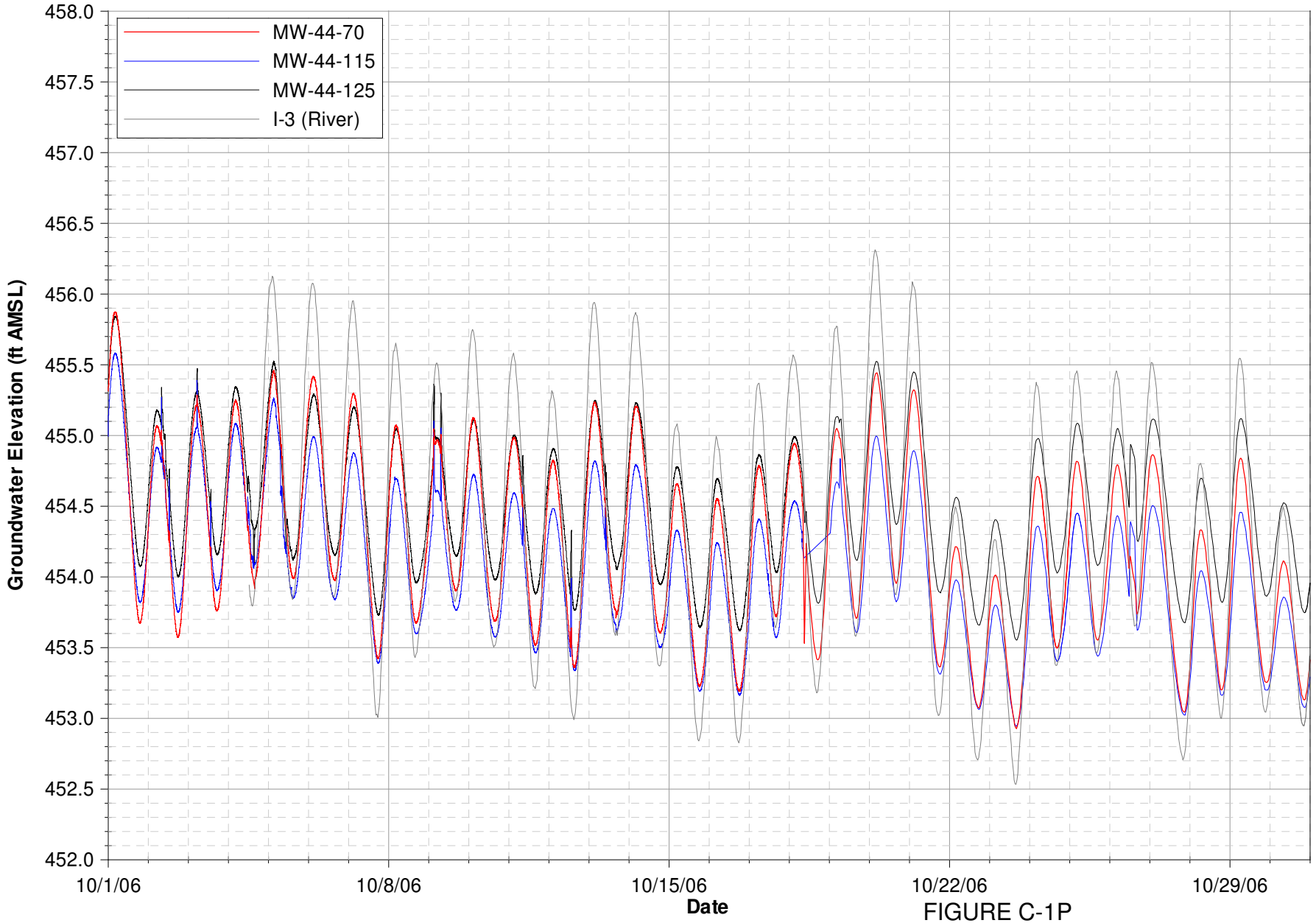


FIGURE C-1P
MW-44 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/12006 through 10/4/2006.

CH2MHILL

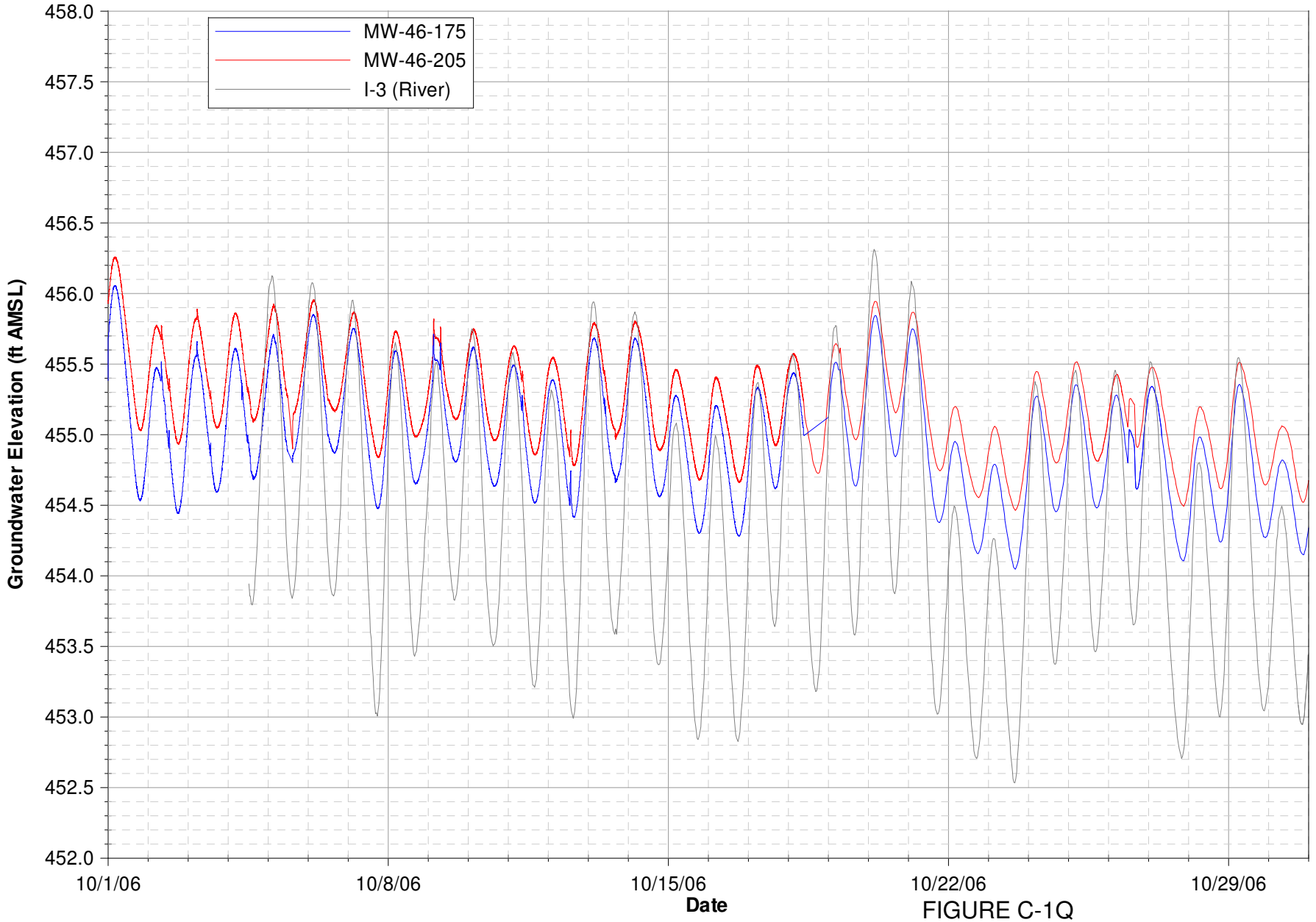


FIGURE C-1Q
MW-46 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/12006 through 10/4/2006.

CH2MHILL

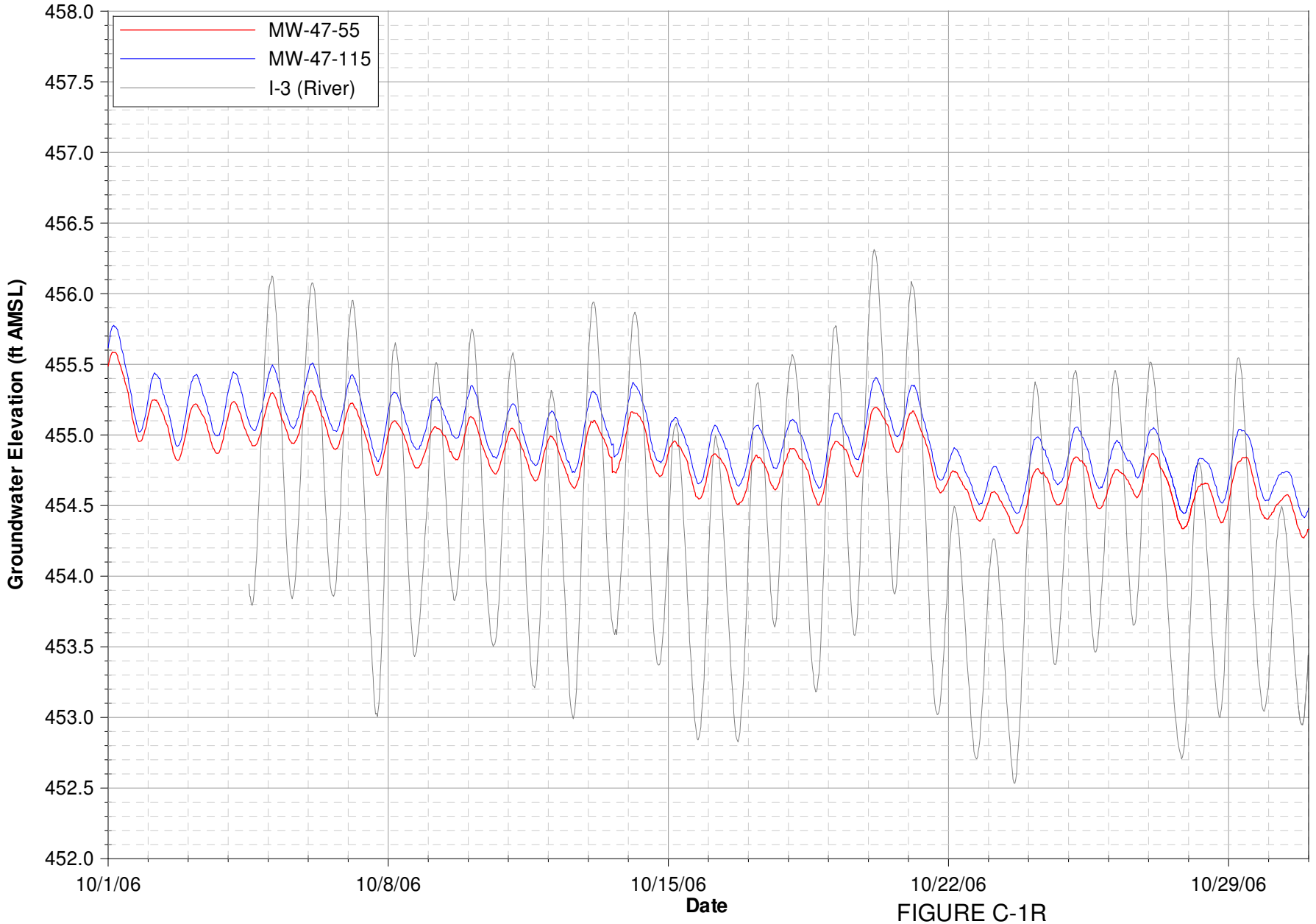
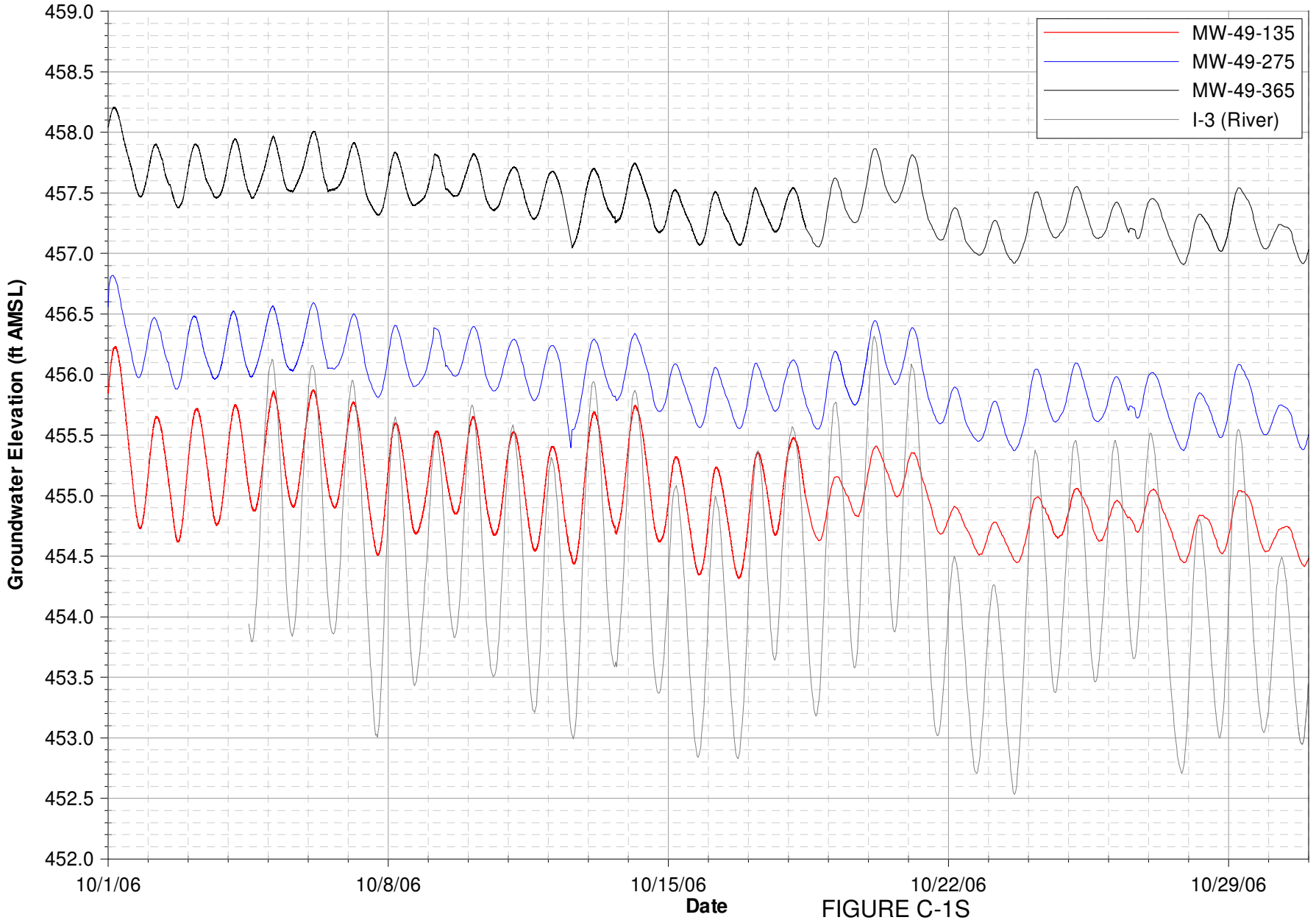


FIGURE C-1R
MW-47 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
I-3 data is unavailable from 10/12006 through 10/4/2006.

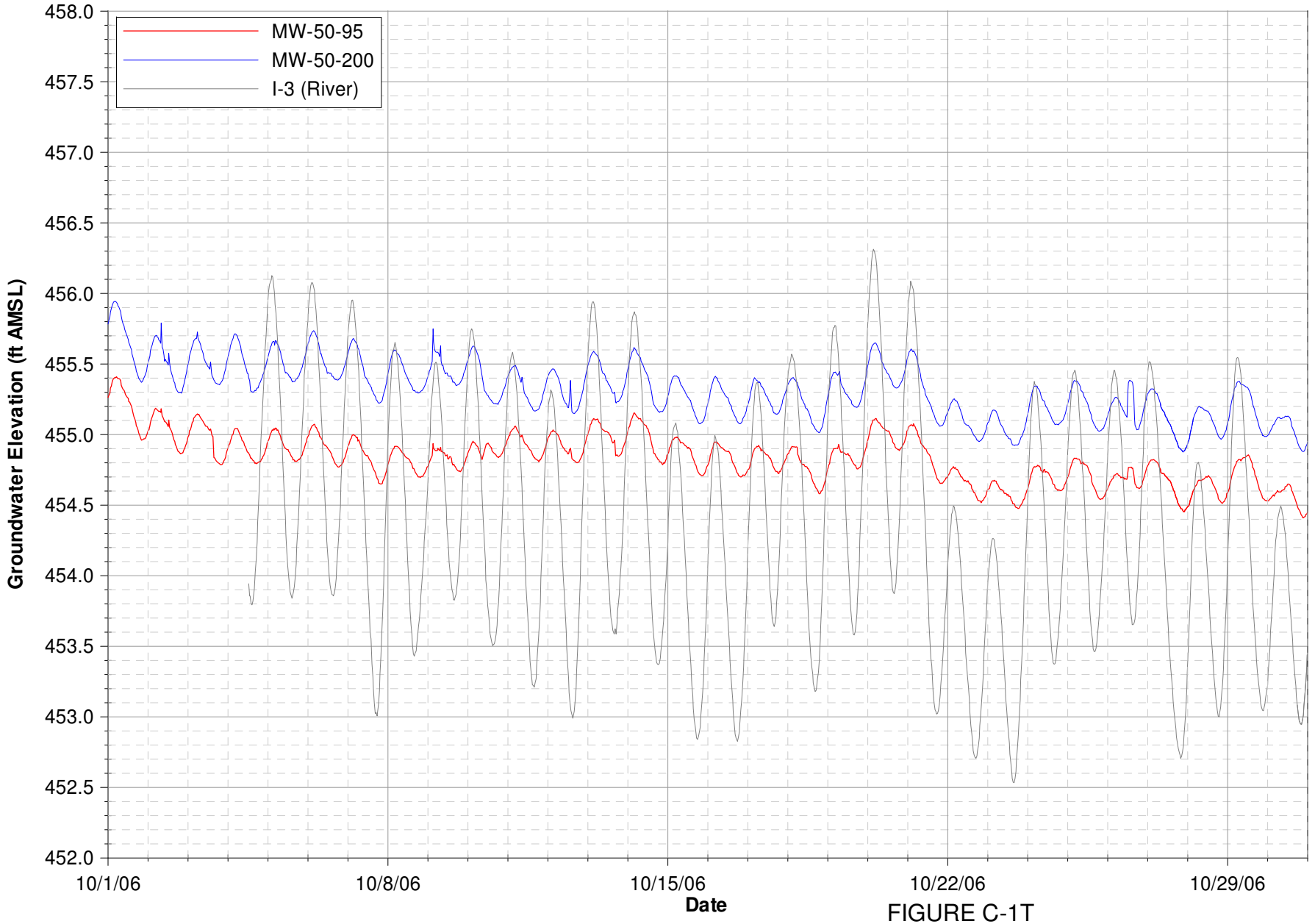
CH2MHILL



Notes:
Data subject to review.
I-3 data is unavailable from 10/12006 through 10/4/2006.

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

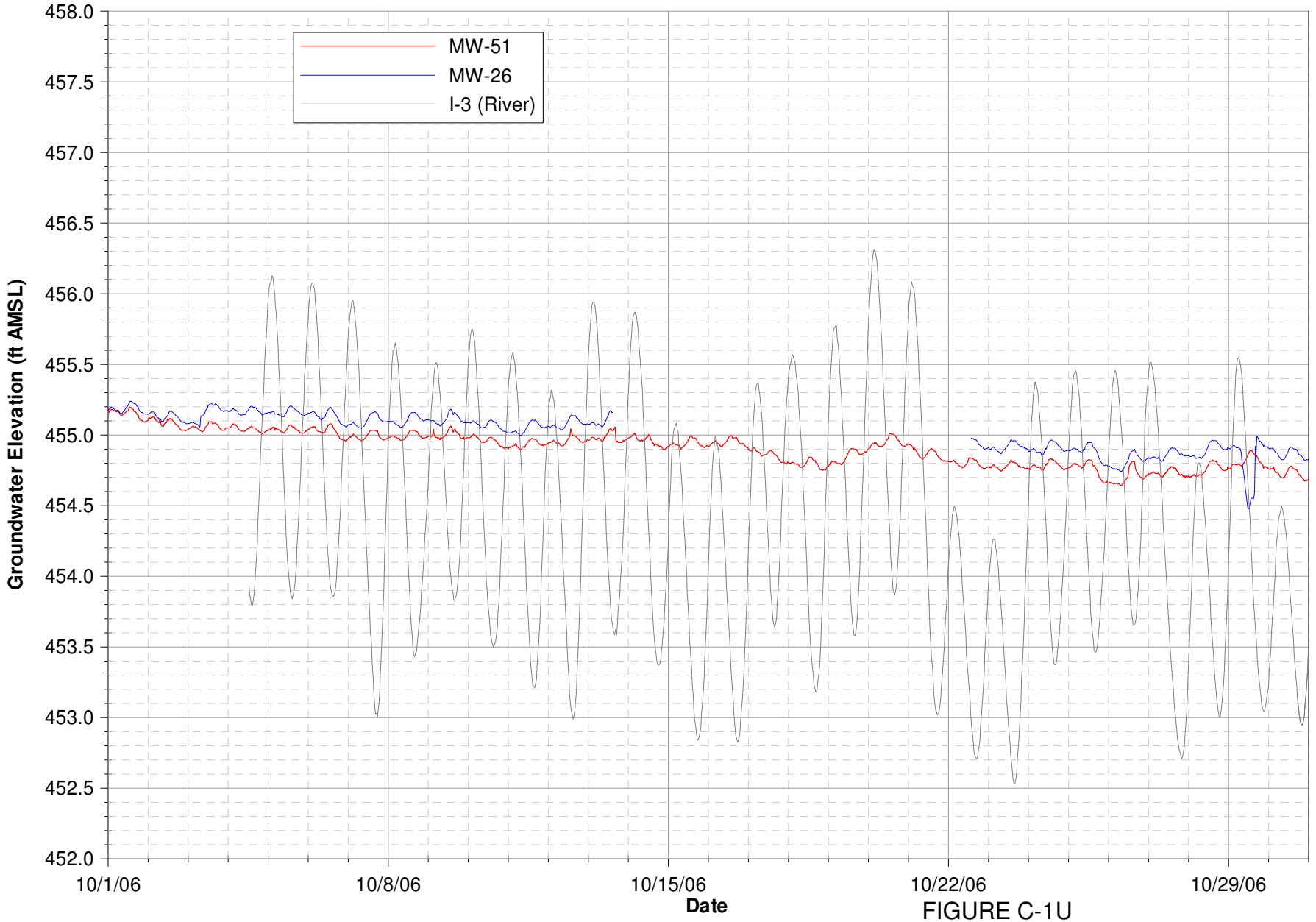
CH2MHILL



Notes:
Data subject to review.
I-3 data is unavailable from 10/12006 through 10/4/2006.

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

CH2MHILL



Notes:
Data subject to review.
MW-26 data not available between 10/13/06 -10/22/06.
I-3 data is unavailable from 10/12006 through 10/4/2006.

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

CH2MHILL

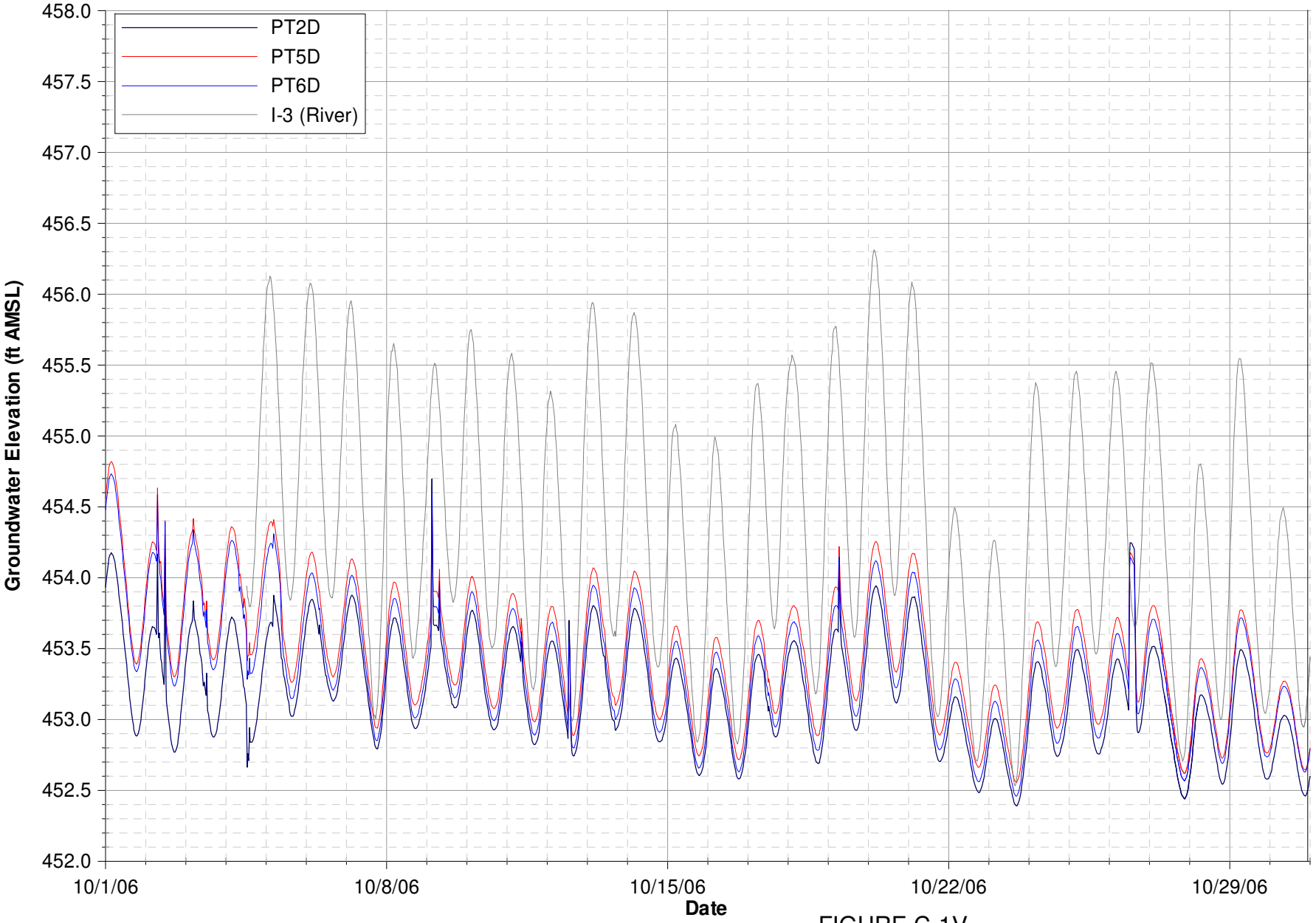


FIGURE C-1V
INSITU PILOT STUDY WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.
I-3 data is unavailable from 10/1/2006 through 10/4/2006.

CH2MHILL

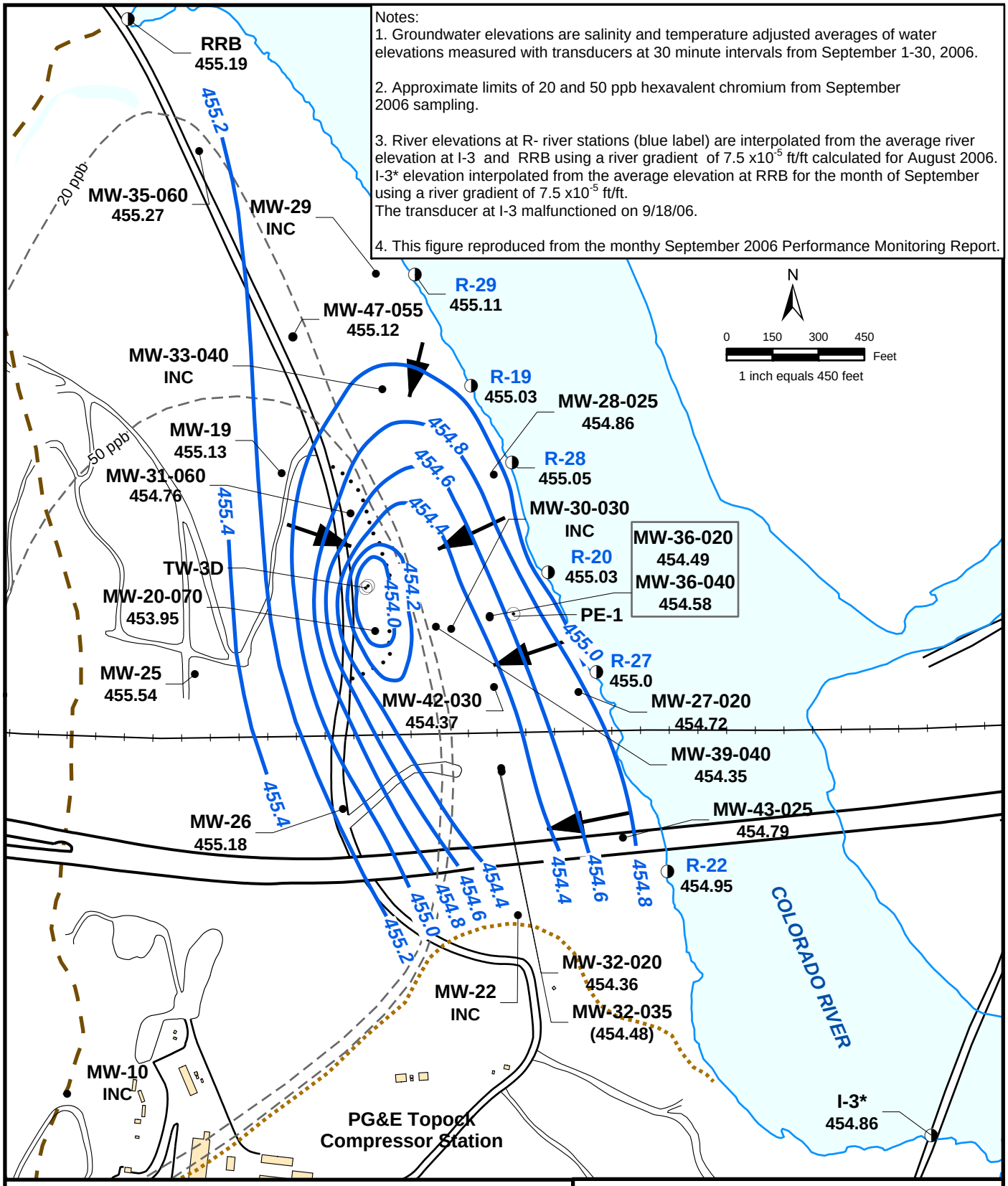


FIGURE C-2A
AVERAGE GROUNDWATER ELEVATIONS SHALLOW WELLS AND RIVER ELEVATIONS, SEPTEMBER 2006

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

CH2MHILL

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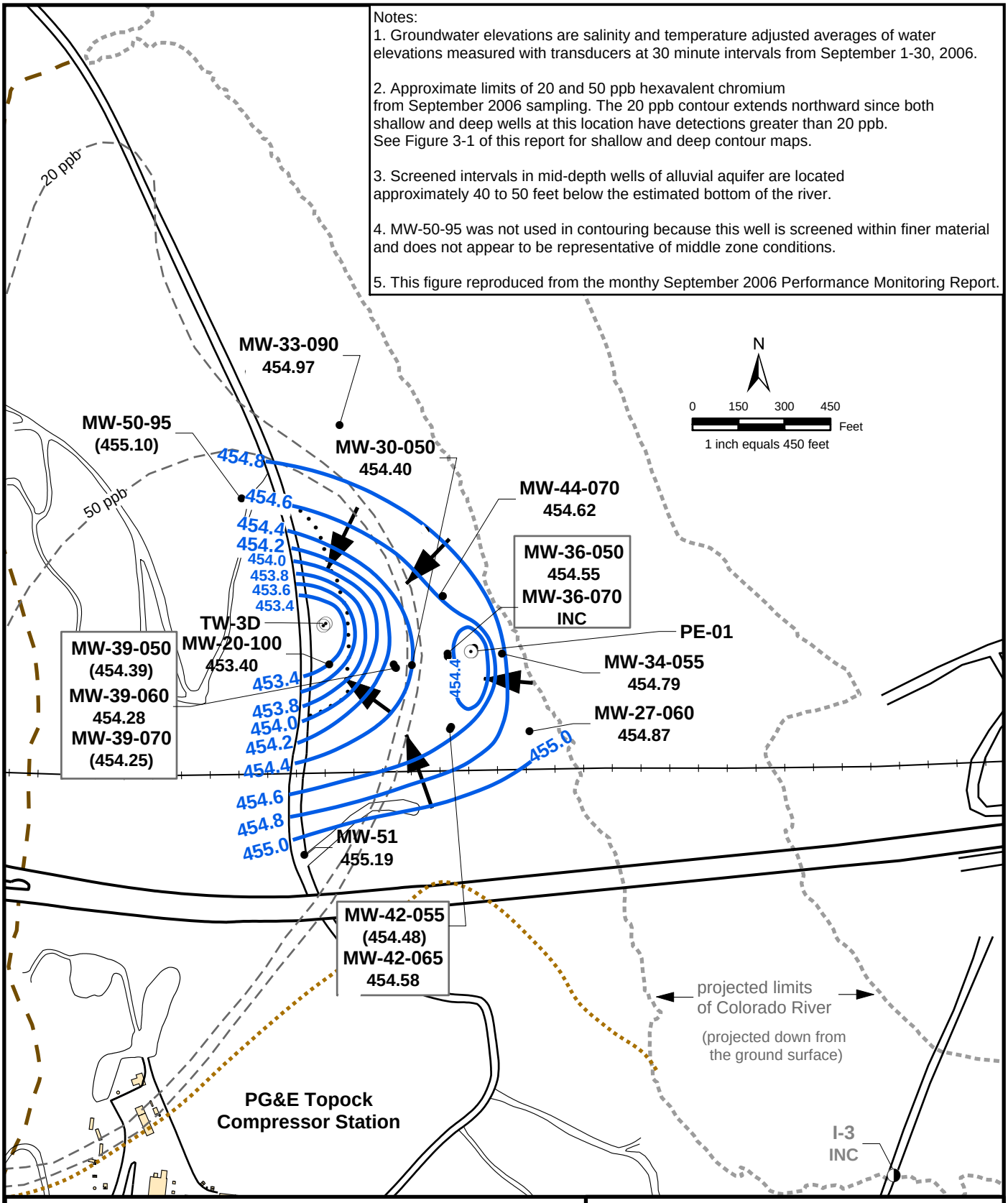

FIGURE C-2B
AVERAGE GROUNDWATER ELEVATIONS MID-DEPTH WELLS SEPTEMBER 2006

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_Sept06.MXD

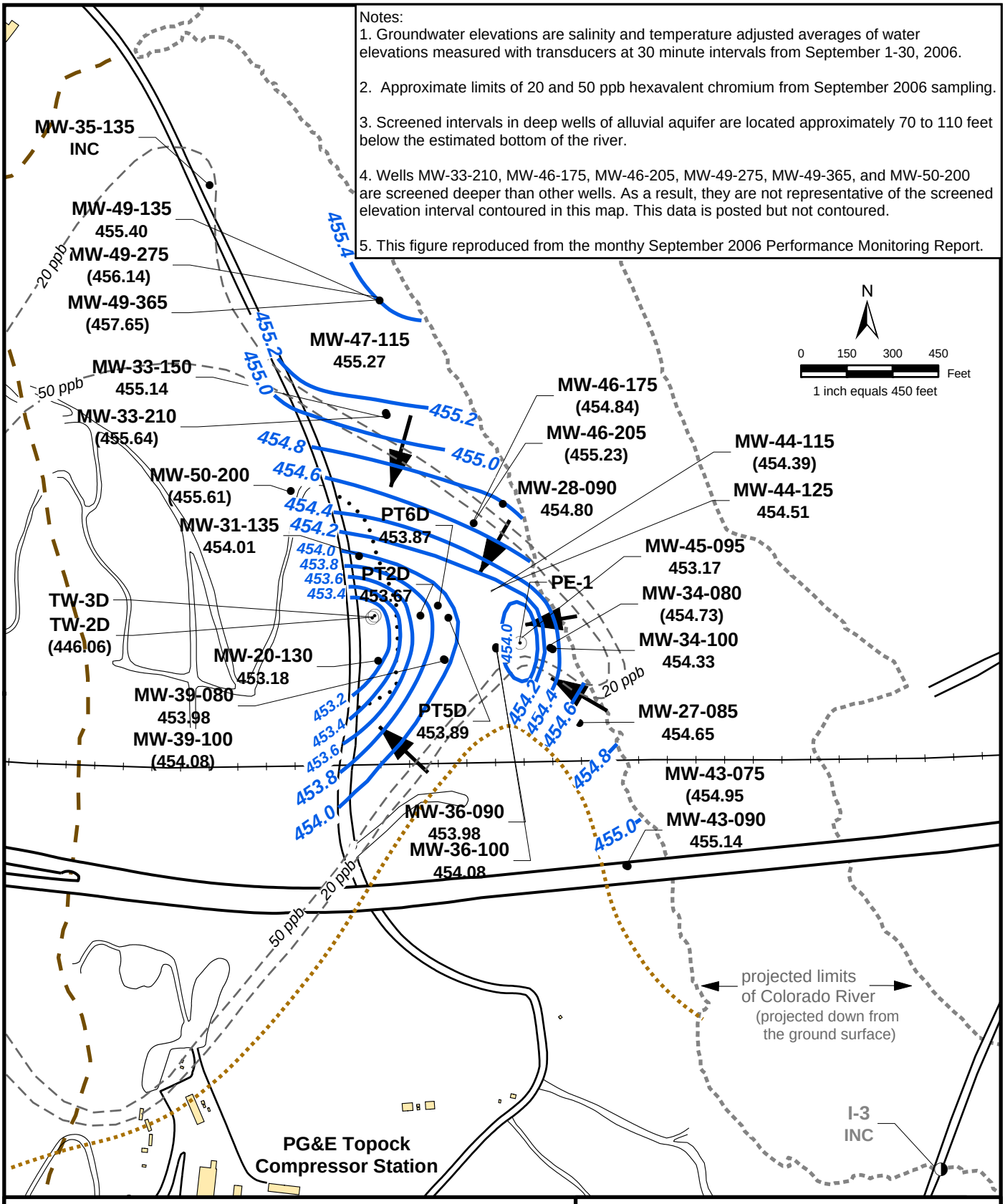

FIGURE C-2C
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS SEPTEMBER 2006

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_Sept_06.mxd

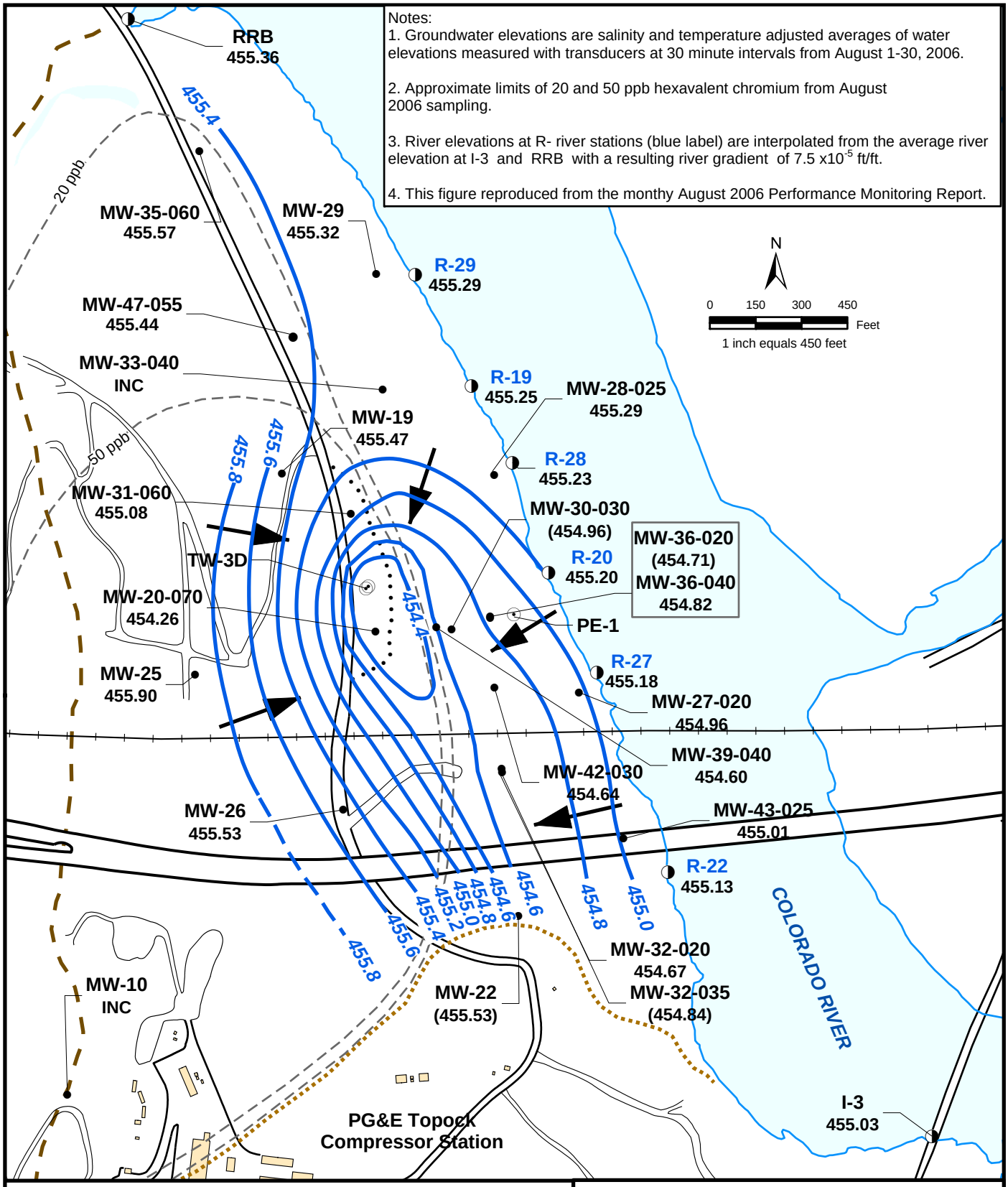

FIGURE C-2D
AVERAGE GROUNDWATER ELEVATIONS SHALLOW WELLS AND RIVER ELEVATIONS, AUGUST 2006

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

CH2MHILL

\\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\2006\GW\IM_AVERAGE_GROUNDWATER_UA_AUG06.MXD

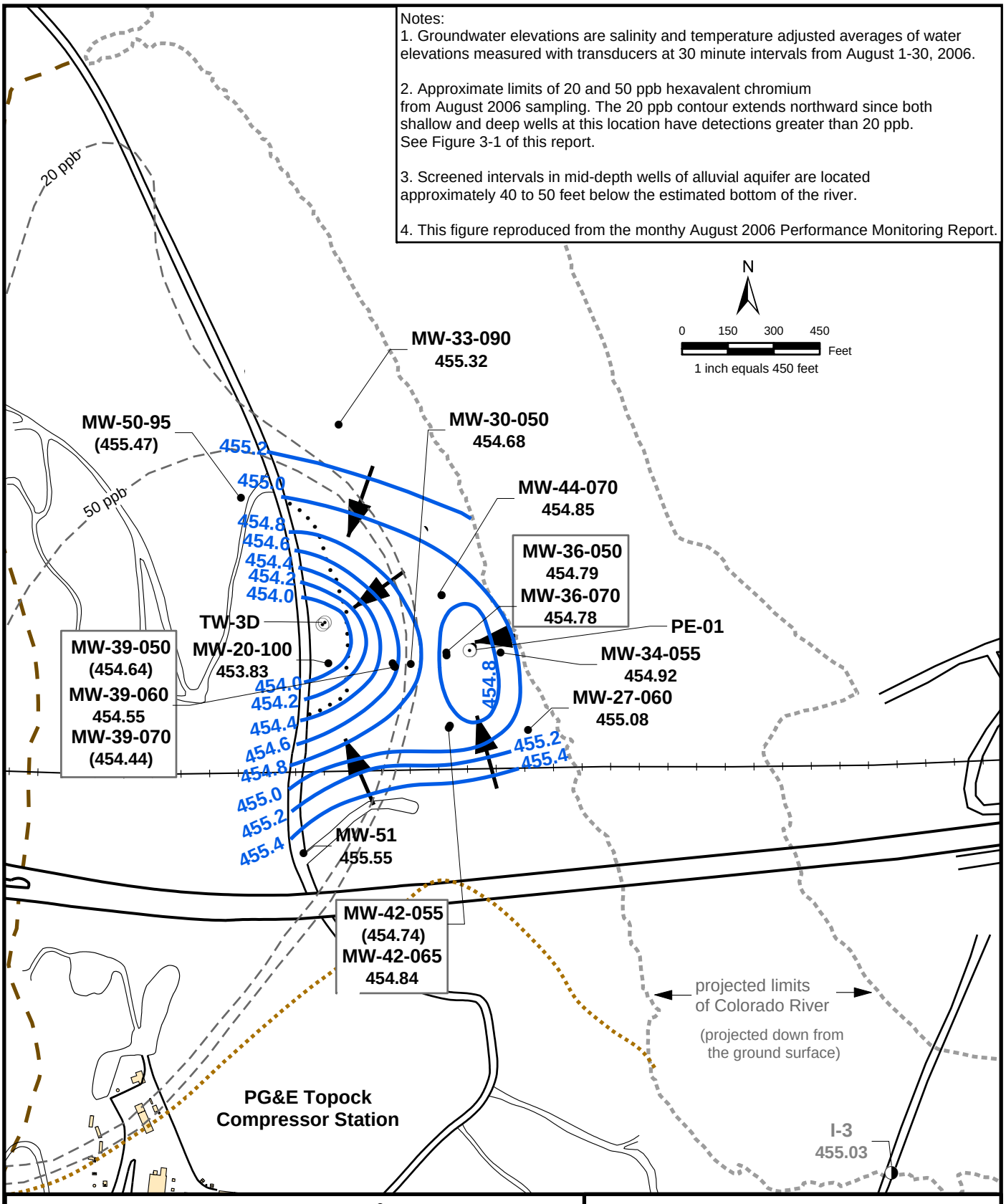

FIGURE C-2E
AVERAGE GROUNDWATER ELEVATIONS MID-DEPTH WELLS AUGUST 2006

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_AUG06.MXD

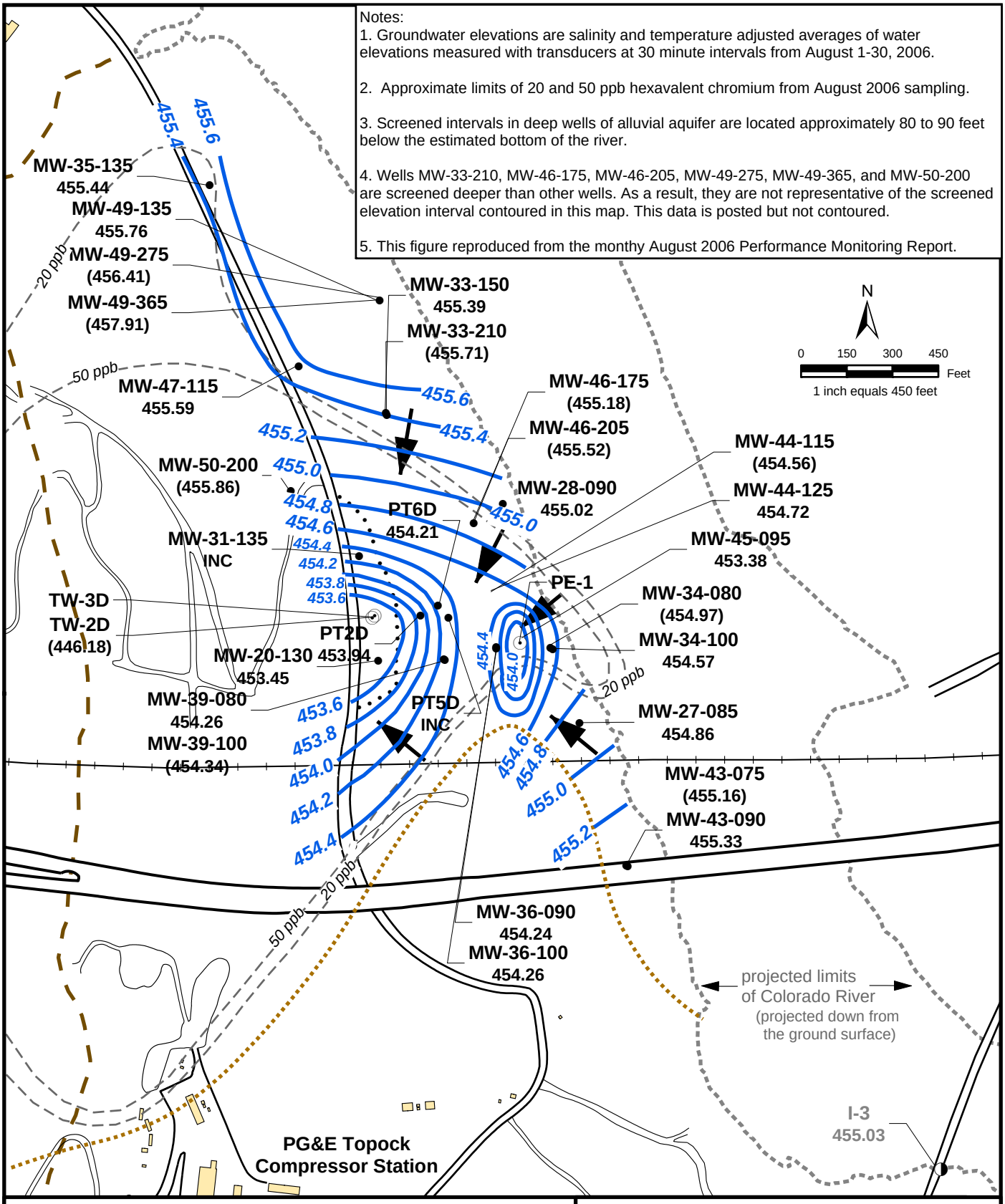

FIGURE C-2F
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS AUGUST 2006

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_Aug_06.mxd

Appendix D
Chemical Performance Monitoring Analytical Results

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through October 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
	03-Oct-06	1890	-8.1	-60.4	677	357	13	ND (5)	158	47.6	9.82	472	0.535	85
	03-Oct-06 FD	1840	-8.1	-60.5	669	352	12.9	ND (5)	154	45.9	9.51	466	0.515	80
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
	03-Oct-06	2320	-5.8	-51.5	863	456	13.4	ND (5)	202	34.4	10.9 J	568	0.874	90
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

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through October 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	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
	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
	18-Oct-06	8450	-6.3	-51.4	3680	1100	11.5	ND (5)	358	20.9	28	2870	2.28	70
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
	03-Oct-06	892	-8.9	-62.7	222	158	4.09	ND (0.5)	73.3	15	7.25	206	0.466	163
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

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through October 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-26	01-May-06	2130	-8.9	-62.7	927	382	4.87	ND (0.5)	165	42	12.8	555	0.723	121
	03-Oct-06	2220	-8.8	-63.0	894	370	6.22	ND (2.5)	170	43.9	12.8	510	0.692	105
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
	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
	03-Oct-06	600	-13.1	-96.6	90.8	261	ND (0.5)	ND (0.5)	102	34.5	6.45	113	ND (0.2)	160
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
	11-Oct-06	1050	-12.2	-95.0	86.3	247	ND (0.5)	ND (0.5)	133	40.8	5.47	132	ND (0.2)	225
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

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through October 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-30-30	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
	10-Oct-06	29400	-9.4	-68.7	17800	4400	ND (2.5)	ND (2.5)	729	653	55	10200	4.32	550
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
	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
	11-Oct-06	4170	-10.7	-82.2	1980	468	ND (0.5)	ND (0.5)	171	48.5	14	1370	1.11	290
	11-Oct-06 FD	3930	-11	-82.6	1810	462	ND (0.5)	ND (0.5)	163	46.1	14.1	1340	1.08	298
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

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through October 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-31-60	05-Oct-06	1620	-9.4	-66.3	687	205	5	ND (0.5)	113	20.6	9.6 J	325	0.464	80
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
	02-Oct-06	46200	-8.6	-67.1	20200	3190	ND (2.5)	7.3	1870	1070	87	11300	6.34	660
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
	02-Oct-06	11200	-9.4	-71.4	5430	1050	ND (2.5)	ND (2.5)	839	165	23.9	3260	1.48	290
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

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through October 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-34-55	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
	04-Oct-06	1680 J	-12.2	-94.8	443	230	ND (0.5)	ND (0.5)	37.6	8.08	4.59	536	0.54	368
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
	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
	04-Oct-06	7080	-11.3	-81.8	3210	786	ND (0.5)	0.737	341	65.4	21.1	2170	1.31	268
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

TABLE D-1
Chemical Performance Monitoring Results, March 2004 through October 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
Surface Water Stations														
R-27	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
	04-Oct-06	752 J	-12.2	-94.9	91.5	261	ND (0.5)	ND (0.5)	82.9	31.5	6.24 J	98.1	ND (0.2)	128
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
	04-Oct-06	644 J	-12.6	-95.3	90.9	259	ND (0.5)	ND (0.5)	84.2	32.1	6.17 J	96.5	ND (0.2)	133

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.