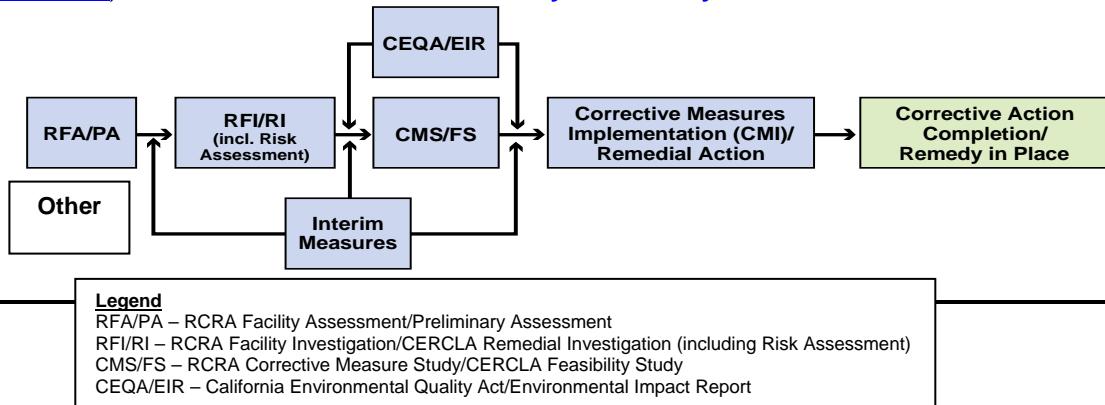


Topock Project Executive Abstract

<p>Document Title: Groundwater and Surface Water Monitoring Report, Second Quarter 2008, PG&E Topock Compressor Station, Needles, California</p> <p>Submitting Agency/Authored by: DTSC</p> <p>Final Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Date of Document: August 29, 2008</p> <p>Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) PG&E</p>
<p>Priority Status: HIGH <input type="checkbox"/> MED <input checked="" type="checkbox"/> LOW Is this time critical? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Type of Document: <input type="checkbox"/> Draft <input checked="" type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Memo <input type="checkbox"/> Other / Explain:</p>	<p>Action Required: <input checked="" type="checkbox"/> Information Only <input type="checkbox"/> Review & Comment Return to: _____ By Date: _____ <input type="checkbox"/> Other / Explain:</p>
<p>What does this information pertain to? <input type="checkbox"/> Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA) <input checked="" type="checkbox"/> RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment) <input type="checkbox"/> Corrective Measures Study (CMS)/Feasibility Study (FS) <input type="checkbox"/> Corrective Measures Implementation (CMI)/Remedial Action <input type="checkbox"/> California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR) <input type="checkbox"/> Interim Measures <input type="checkbox"/> Other / Explain:</p>	<p>Is this a Regulatory Requirement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, why is the document needed?</p>
<p>What is the consequence of NOT doing this item? What is the consequence of DOING this item? Data collected from the GMP supports the RFI/RI effort. This report is a requirement by DTSC.</p>	<p>Other Justification/s: <input type="checkbox"/> Permit <input type="checkbox"/> Other / Explain:</p>
<p>Brief Summary of attached document:</p> <p>The Groundwater and Surface Water Monitoring (GMP) Report presents results of groundwater and surface water monitoring activities conducted at the Topock site. During the second quarter 2008, the GMP monitoring activities include: 1) a quarterly sampling event from May 5 through May 9, 2) two monthly sampling events on April 7-8 and June 2-4, and 3) a quarterly river sampling event from June 17 through June 18. Key results are:</p> <ol style="list-style-type: none"> 1. Overall, the second quarter 2008 chromium results are in the range of concentrations observed during the prior 2007 and 2008 sampling events. 2. Cr(VI) and Cr(T) were not detected in any of the river water samples collected at the ten shoreline and nine in-channel surface water stations during the second quarter 2008. <p>Written by: PG&E</p> <p>Recommendations:</p> <p>Third quarter GMP activities will be conducted. This report is for information only.</p> <p>How is this information related to the Final Remedy or Regulatory Requirements:</p> <p>Data collected from the GMP support the RFI/RI effort, which in turn provides basic information for the CMS/FS.</p> <p>Other requirements of this information? None</p>	

Related Reports and Documents:

Click any boxes in the Regulatory Road Map (below) to be linked to the Documents Library on the DTSC Topock Web Site (www.dtsc-topock.com). The link to the Documents Library is currently UNDER CONSTRUCTION.



Version 9



**Pacific Gas and
Electric
Company**

Yvonne Meeks

Manager

Environmental Remediation
Gas T&D Department

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August 29, 2008

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

Subject: Groundwater and Surface Water Monitoring Report, Second Quarter 2008
PG&E Topock Compressor Station, Needles, California

Dear Mr. Yue:

Enclosed is the Groundwater and Surface Water Monitoring Report, Second Quarter 2008 for the Pacific Gas And Electric Company (PG&E) Topock Compressor Station. This report provides results for the quarterly monitoring event conducted from May 5 through May 8, 2008 at 54 groundwater monitoring wells, as well as results from monthly sampling events performed in April and June 2008. This report also presents results for the shoreline and in-channel Colorado River sampling conducted during June 2008.

In addition, this report presents a summary of water level data collected at MW-23 and surrounding wells during the first quarter 2008, and metals samples collected to support the background study at monitoring wells MW-16 and MW-17.

If you have any questions on the groundwater and surface water monitoring report, please call me at (805) 234-2257.

Sincerely,

A handwritten signature in blue ink that reads "Yvonne Meeks".

Enclosure

cc: Chris Guerre/DTSC
Karen Baker/DTSC
Susan Young/SLC

TECHNICAL MEMORANDUM

CH2MHILL

Groundwater and Surface Water Monitoring Report, Second Quarter 2008, PG&E Topock Compressor Station, Needles, California

PREPARED FOR: California Department of Toxic Substances Control
ON BEHALF OF: Pacific Gas and Electric Company
PREPARED BY: CH2M HILL Inc.
DATE: August 29, 2008

This technical memorandum (TM) presents the results of the second quarter 2008 groundwater and surface water monitoring activities conducted at the Pacific Gas and Electric Company (PG&E) Topock Compressor Station near Needles, California. The monitoring activities are conducted as part of PG&E's Groundwater and Surface Water Monitoring Program (GMP) for the Topock site.

Figure 1¹ shows the locations and sampling frequencies of the monitoring wells in the GMP as of June 2008, the location of the PG&E Topock Compressor Station, and other site features. The GMP schedule includes 108 groundwater monitoring wells, two groundwater extraction wells, and ten shoreline and nine in-channel Colorado River surface water sampling locations. For background and description of the current groundwater and surface water sampling, analyses, and monitoring program, refer to PG&E's *Groundwater and Surface Water Monitoring Report, Fourth Quarter 2007 and Annual Summary, PG&E Topock Compressor Station*, dated March 28, 2008.

Monitoring Summary

The following monitoring activities were conducted during second quarter 2008 (April through June) and are addressed in this TM:

- The second quarter GMP monitoring event was conducted from May 5 through May 9 2008, and included sampling 28 groundwater monitoring wells for some of the site constituents of potential concern (COPC): hexavalent chromium [Cr(VI)], total chromium [Cr(T)], specific conductance, and field pH. During this GMP event, 13 selected wells were also sampled for California Code of Regulations (CCR) Title 22 metals analyses. Monitoring wells (MW-) 11, MW-24A, MW-24B, MW-38D, and MW-38S are being monitored as part of the uplands in situ pilot study; therefore, they were not included in the GMP sampling.
- As stated in the Groundwater background Study, Steps 3 and 4: Final Report of Results (CH2M HILL, 2008), monitoring wells MW-16 and MW-17 will be sampled on a

¹ Figures can be found at the end of this TM.

semiannual basis to monitor for any trends in natural trace metal concentrations. These wells were sampled as part of the second quarter sampling event and the data is included as Attachment 1.

- Quarterly river sampling was conducted from June 17 through June 18, 2008, at ten shoreline and nine in-channel surface water locations. Samples were analyzed for Cr(VI), Cr(T), specific conductance, and pH.
- Monthly groundwater sampling events were conducted from April 7 through 8 and June 2 through June 4, and included sampling five monitoring wells (MW-34-80, MW-34-100, MW-44-115, MW-44-125, and MW-46-175) for Cr(VI) and Cr(T).

During the August 2, 2007, Technical Workgroup meeting, DTSC requested long-term transducer monitoring at MW-23 and the surrounding area. The groundwater elevation data from MW-23 and adjacent monitoring wells surrounding MW-23 are presented as Attachment 2 to this report.

Monitoring Activities and Results

The groundwater and surface water monitoring data presented in Tables 1 through 3 include the results from the first and second quarters 2008. Data from the 2007 Annual Monitoring Period is included as Attachment 3.

GMP Groundwater Monitoring

Figure 1 shows the locations of the GMP monitoring wells sampled during the reporting period. The analytical results for Cr(VI), Cr(T), specific conductance, and field pH in groundwater samples collected from GMP wells during January 2008 through June 2008 are presented in Table 1. Groundwater sampling forms and chain-of-custody forms are included in Attachment 4.

Figures 2 through 4 present the May 2008 Cr(VI) results for wells monitoring the upper, mid-depth, and deep intervals of the alluvial aquifer, respectively. Overall, the second quarter 2008 chromium results are in the range of concentrations observed during the prior 2007 and 2008 sampling events. In the second quarter 2008, the maximum detected Cr(VI) concentration was 10,500 µg/L at MW-50-200. Most wells exhibit either stable or decreasing concentrations of Cr(VI) and Cr(T). Refer to PG&E's *Topock Quarterly Performance Monitoring Report and Evaluation, May through July 2008*, dated August 29, 2008, for the recent concentration trends observed in wells in the area of active interim measure pumping. A review and discussion of the 2008 groundwater sampling results and concentration trends will be included in the annual GMP report.

GMP Surface Water Monitoring

Figure 1 shows the locations of the shoreline and in-channel surface water monitoring stations. Table 2 presents the sampling results of chromium and other analytes from surface water monitoring events (including in-channel locations and shoreline stations) performed from January through June 2008. The Cr(VI) sampling results for the shoreline surface water

samples collected during the first quarter 2008 are shown on Figure 2. Cr(VI) and Cr(T) were not detected in any of the water samples collected at the ten shoreline and nine in-channel surface water stations during the second quarter 2008.

Title 22 Metals Groundwater Analyses

Table 3 presents the CCR Title 22 metals results for the GMP monitoring wells sampled during the first and second quarter 2008. In addition to Cr(T), the trace metals detected during the May 2008 groundwater sampling were arsenic, barium, beryllium, copper, lead, molybdenum, selenium, vanadium, and zinc. Excluding Cr(T), arsenic (wells MW-12, MW-22, MW-24A, and MW-43-25), and selenium (TW-1), the dissolved concentrations of the trace metals detected during the May 2008 sampling are below their respective California drinking water standards.

Data Validation and Completeness

The laboratory analytical data from GMP sampling during the second quarter 2008 were independently reviewed by project chemists to assess data quality and to identify deviations from analytical requirements.

During data validation, anomalous metals data reporting from Advanced Technology Laboratories (ATL) was identified by the project chemists. As specified in the Project QAPP, corrective action was initiated. Because ATL was recently added as a backup laboratory for the Topock project, confirmation analysis of the initial samples was performed by both ATL and Truesdail Laboratories to clarify and evaluate the initial results.

The results of all confirmation analysis were consistent with the historical data. Final results were reported from the confirmation analyses performed by Truesdail Laboratories. The Truesdail data were used because they incorporated the lowest set of reporting levels and were from the established project laboratory. Upon resolution of this issue, completeness objectives were met for all method and analyte combinations. No additional analytical deficiencies were identified in the second quarter 2008 monitoring data. Additional detail is provided in the data validation reports, which are kept in the project file and are available upon request.

Schedule for Third Quarter 2008 GMP Activities

The following GMP activities are scheduled for the third quarter 2008 monitoring period:

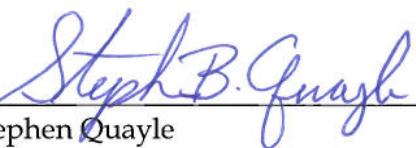
- The July and August monthly groundwater sampling events (five wells) were conducted on July 7 through 8 and August 18 and 19, 2008. The September monthly sampling event is scheduled for September 1 and 2, 2008.
- Quarterly surface water sampling at four shoreline and nine in-channel locations will be conducted on September 16 and 17, 2008.
- The third quarter groundwater monitoring event, which will be an annual event, is scheduled for the week of September 29, 2008 (100 wells). The October monitoring event will be the last monthly sampling of the monitoring wells in Arizona (MW-54, MW-55,

and MW-56 clusters). Their sampling frequencies will be re-assessed for inclusion in the GMP program.

The results of the quarterly groundwater and surface water monitoring events and the monthly sampling events will be reported in the Third Quarter 2008 GMP Monitoring Report, which will be submitted approximately 12 weeks after the September 2008 sampling event.

Certification

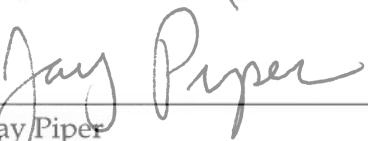
This report was prepared by CH2M HILL under the supervision of the professional whose seal and signature appears herein in accordance with currently accepted professional practices. No warranty, expressed or implied, is made.



Stephen Quayle
Professional Geologist, PG No. 7800



Report Reviewed by:



Jay Piper
CH2M HILL Project Manager

Tables

TABLE 1

Groundwater COPC Sampling Results, January through June 2008
PG&E Topock Groundwater and Surface Water Monitoring Program

Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S}/\text{cm}$)	Field pH
MW-10	03/11/2008	478	473	2,990	7.53
MW-12	03/10/2008	2,760	2,860	5,270	8.44
	05/05/2008	2,580	2,800	6,200	8.19
MW-18	03/11/2008	30.2	27.7	1,230	7.57
	03/11/2008 FD	30.0	27.2	1,320	---
MW-20-70	03/12/2008	2,580	2,260	2,880	7.53
MW-20-100	03/12/2008	9,690	7,910	3,420	7.39
MW-20-130	03/12/2008	13,300	11,300	12,200	7.42
MW-21	03/11/2008	ND (1.0)	1.80	12,900	7.00
	05/06/2008	ND (1.0)	3.01	13,000	6.76
MW-22	03/11/2008	ND (1.0)	ND (1.0)	27,200	6.66
MW-23	01/21/2008	ND (1.0)	3.40	---	---
	01/22/2008	2.10	36.5	---	---
	01/23/2008	34.3	40.0	---	---
	03/10/2008	ND (20)	24.3	15,700	---
	03/11/2008	43.7	39.6	---	7.30
	05/06/2008	22.2	22.0	17,000	7.00
	05/06/2008 FD	23.2	23.0	17,000	---
MW-24BR	03/11/2008	7.10	7.46	14,000	8.10
	05/08/2008	ND (1.0)	2.40	15,000	---
MW-26	03/12/2008	2,980	2,560	3,570	7.50
	03/12/2008 FD	2,720	2,640	3,570	---
MW-27-85	03/10/2008	ND (1.0)	ND (1.0)	15,900	7.26
	05/06/2008	ND (1.0)	ND (1.0)	17,000	6.95
MW-28-90	03/13/2008	ND (0.2)	ND (1.0)	7,420	7.15
	05/07/2008	ND (0.2)	ND (1.0)	7,600	7.34
MW-29	03/12/2008	ND (1.0)	ND (1.0)	3,840	6.84
MW-32-20	03/10/2008	ND (2.1)	ND (1.0)	38,800	6.65
MW-33-40	03/12/2008	ND (0.2)	ND (1.0)	5,380	7.76
	05/05/2008	ND (0.2)	ND (1.0)	5,100	8.31
MW-33-90	03/12/2008	23.7	22.5	10,300	7.22
	05/05/2008	21.1	20.2	10,000	7.48
MW-33-150	03/12/2008	7.87	8.06	16,300	7.29
	05/06/2008	8.83	9.21	16,000	7.62
MW-33-210	03/12/2008	11.7	11.5	18,900	7.13
	05/05/2008	10.6	9.93	18,000	7.15
MW-34-80	01/16/2008	ND (1.0)	ND (1.0)	---	7.27
	01/16/2008 FD	ND (1.0)	1.20	---	---
	02/13/2008	ND (0.2)	ND (1.0)	---	7.26
	03/12/2008	ND (0.2)	10.9	8,590	7.07
	04/08/2008	ND (1.0)	ND (1.0)	---	7.83
	05/06/2008	ND (0.2)	ND (1.0)	8,730	7.12
	06/04/2008	ND (1.0)	ND (1.0)	---	7.57

TABLE 1

Groundwater COPC Sampling Results, January through June 2008
PG&E Topock Groundwater and Surface Water Monitoring Program

Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S}/\text{cm}$)	Field pH
MW-34-100	01/16/2008	564	648	---	7.69
	02/13/2008	492	560	---	7.68
	03/12/2008	358	338	17,100	7.45
	04/08/2008	280	276	---	8.11
	04/08/2008 FD	292	274	---	---
	05/06/2008	234	228	17,000	7.32
	05/06/2008 FD	238	228	17,000	---
	06/04/2008	268	323	---	7.41
MW-35-60	03/11/2008	35.8	35.4	6,450	7.36
MW-36-90	03/11/2008	0.71	1.46	2,880	7.42
	03/11/2008 FD	0.703	1.24	2,780	---
MW-36-100	03/11/2008	146	145	14,200	6.72
MW-37D	03/13/2008	695	742	14,800	7.72
MW-39-80	03/14/2008	34.8	28.6	12,600	6.95
MW-39-100	03/14/2008	1,150	1,290	19,900	6.67
MW-40D	03/13/2008	115	108	15,300	7.49
MW-41D	03/12/2008	2.08	2.98	20,800	7.65
MW-41S	03/12/2008	19.1	18.3	4,820	7.78
MW-42-55	03/11/2008	ND (1.0)	ND (1.0)	15,400	6.71
	05/06/2008	ND (1.0)	ND (1.0)	14,000	7.14
MW-42-65	03/11/2008	ND (1.0)	ND (1.0)	17,200	6.72
	05/06/2008	ND (1.0)	ND (1.0)	15,000	6.91
MW-44-70	03/11/2008	ND (0.2)	ND (1.0)	4,490	7.07
	05/07/2008	ND (0.2)	ND (1.0)	4,200	7.53
MW-44-115	01/14/2008	746	652	---	7.64
	02/14/2008	744	668	---	7.59
	02/14/2008 FD	735	706	---	---
	03/11/2008	742	596	14,000	7.47
	04/07/2008	685	689	---	8.03
	05/08/2008	620	590	13,000	7.90
	06/02/2008	564	542	---	7.66
MW-44-125	01/14/2008	338	344	---	7.82
	02/14/2008	326	324	---	7.61
	03/14/2008	338	291	12,000	7.63
	04/07/2008	318	326	---	7.90
	05/08/2008	253	342	12,000	7.63
	06/24/2008	293	339	---	7.92
MW-46-175	01/14/2008	51.5	133	---	8.21
	02/13/2008	125	136	---	8.39
	03/13/2008	99.8	92.8	16,400	8.09
	04/07/2008	95.6	100	---	8.66
	05/07/2008	77.9	74.7	17,000	8.43
	06/02/2008	74.2	86.8	---	8.17
	06/02/2008 FD	73.6	87.0	---	---

TABLE 1

Groundwater COPC Sampling Results, January through June 2008
PG&E Topock Groundwater and Surface Water Monitoring Program

Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S}/\text{cm}$)	Field pH
MW-46-205	03/13/2008	5.21	5.20	20,100	8.17
	05/07/2008	4.52	4.25	19,000	8.38
MW-47-55	02/14/2008	37.1	39.0	---	7.43
	02/14/2008 FD	37.2	39.4	---	---
	03/14/2008	53.7	46.1	3,570	7.52
	03/14/2008 FD	48.4	42.6	3,590	---
	05/07/2008	34.8	32.7	4,100	7.65
MW-47-115	03/14/2008	18.0	16.5	12,400	7.59
	05/07/2008	18.2	18.3	13,000	7.76
MW-48	03/11/2008	ND (2.3)	2.93	18,800	7.21
	05/07/2008	ND (1.0)	1.40	17,000	7.00
MW-49-135	03/13/2008	ND (1.0)	1.43	13,400	7.64
MW-49-275	03/13/2008	ND (1.0)	1.27	23,400	7.84
MW-49-365	03/13/2008	ND (1.0)	ND (1.0)	35,700	7.79
MW-50-095	03/12/2008	150	160	4,680	7.77
	03/12/2008 FD	148	160	5,020	---
	05/07/2008	154	187	5,100	7.66
	05/07/2008 FD	164	192	5,200	---
MW-50-200	03/12/2008	10,900	11,800	20,500	7.51
	05/08/2008	10,500	11,000	19,000	7.67
MW-51	03/11/2008	4,940	4,590	12,300	7.39
MW-52D	03/13/2008	ND (1.0)	ND (1.0)	20,800	7.76
	05/07/2008	ND (1.0)	ND (1.0)	---	7.99
MW-52M	03/13/2008	ND (1.0)	ND (1.0)	16,400	7.60
	05/07/2008	ND (1.0)	ND (1.0)	16,000	8.09
MW-52S	03/13/2008	ND (1.0)	ND (1.0)	11,000	7.37
	05/07/2008	ND (1.0)	ND (1.0)	11,000	7.70
MW-53D	03/13/2008	ND (1.0)	ND (1.0)	25,500	8.55
	05/07/2008	ND (1.0)	ND (1.0)	27,000	8.44
MW-53M	03/13/2008	ND (1.0)	ND (1.0)	17,400	8.37
	05/07/2008	ND (1.0)	ND (1.0)	18,000	8.34
MW-54-85	04/15/2008	ND (0.2)	ND (1.0)	---	7.67
	06/03/2008	ND (0.2)	ND (1.0)	---	7.45
MW-54-140	04/14/2008	ND (0.2)	ND (1.0)	---	7.66
	06/03/2008	ND (0.2)	ND (1.0)	---	7.70
MW-54-195	04/14/2008	ND (1.0)	ND (1.0)	---	8.18
	06/03/2008	ND (1.0)	ND (1.0)	---	8.22
MW-55-45	04/15/2008	ND (0.2)	ND (1.0)	---	8.08
	06/03/2008	ND (0.2)	ND (1.0)	---	7.66
MW-55-120	04/15/2008	ND (0.2)	ND (1.0)	---	8.10
	06/03/2008	ND (0.2)	ND (1.0)	---	7.91
MW-56D	04/29/2008	ND (1.0)	ND (5.0)	---	8.00
	06/04/2008	ND (1.0)	ND (1.0)	---	7.91

TABLE 1

Groundwater COPC Sampling Results, January through June 2008
PG&E Topock Groundwater and Surface Water Monitoring Program

Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g}/\text{L}$)	Dissolved Total Chromium ($\mu\text{g}/\text{L}$)	Specific Conductance ($\mu\text{S}/\text{cm}$)	Field pH
MW-56M	04/29/2008	ND (0.2)	ND (1.0)	---	7.38
	06/04/2008	ND (0.2)	ND (1.0)	---	7.56
MW-56S	04/29/2008	ND (0.2)	ND (1.0)	---	7.39
	06/04/2008	ND (0.2)	ND (1.0)	---	7.95
PE-1	01/03/2008	48.4	56.9	6,590	7.63 J ^
	02/06/2008	42.8	44.1	6,510	7.54 J ^
	03/05/2008	39.5	40.8	6,380	7.60 J ^
	04/02/2008	29.0	37.1	6,460	7.66 J ^
	05/08/2008	26.4	29.3	6,580	7.69 J ^
	06/04/2008	16.0	33.4	6,320	7.63 J ^
PGE-7BR	03/12/2008	ND (1.0)	1.02	17,300	9.24
	05/08/2008	ND (1.0)	ND (1.0)	---	8.61
TW-3D	01/03/2008	1,830	2,210	8,390	7.37 J ^
	02/06/2008	1,760	1,600	8,490	7.31 J ^
	03/05/2008	1,810	1,740	8,320	7.36 J ^
	04/02/2008	1,550	2,010	8,580	7.39 J ^
	05/08/2008	1,540	1,740	8,690	7.69 J ^
	06/04/2008	1,460	1,700	8,440	7.35 J ^
TW-4	03/14/2008	27.4	28.4	19,900	7.65
	05/08/2008	22.6	23.2	19,000	7.47

Notes:

$\mu\text{g}/\text{L}$ micrograms per liter

$\mu\text{S}/\text{cm}$ microSiemens per centimeter

ND not detected at listed reporting limit

J concentration or reporting limit estimated by laboratory or data validation

(--) not collected or not available

FD field duplicate sample

^ Analytical pH results, Method SM4500-HB

Hexavalent chromium analytical methods: SM3500 (reporting limit 10 $\mu\text{g}/\text{L}$), EPA 218.6 (reporting limit 0.2 $\mu\text{g}/\text{L}$ for undiluted samples).

Other analytical methods: dissolved total chromium (Methods SW 6020A), specific conductance (EPA 120.1).

Wells TW-3D and PE-1 are active extraction wells for the IM hydraulic containment system.

TABLE 2

Surface Water COPC Sampling Results, January through June 2008
PG&E Topock Groundwater and Surface Water Monitoring Program

Location	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	Lab pH
In-channel Locations					
C-CON-S	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-CON-M	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-CON-D	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-CON-S	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-CON-M	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-CON-D	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-CON-S	04/02/2008	ND (0.2)	ND (1.0)	997	8.32 J
C-CON-M	04/02/2008	ND (0.2)	ND (1.0)	994	8.34 J
C-CON-D	04/01/2008	ND (0.2)	ND (1.0)	994	8.39 J
C-CON-S	06/18/2008	ND (0.2)	ND (1.0)	967	8.45 J
C-CON-M	06/18/2008	ND (0.2)	ND (1.0)	1040	8.47 J
C-CON-D	06/18/2008	ND (0.2)	ND (1.0)	1060	8.46 J
C-I-3-S	01/16/2008	ND (0.2)	ND (1.0)	---	---
C-I-3-M	01/16/2008	ND (0.2)	ND (1.0)	---	---
C-I-3-D	01/16/2008	ND (0.2)	ND (1.0)	---	---
C-I-3-S	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-I-3-M	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-I-3-D	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-I-3-S	04/01/2008	ND (0.2)	ND (1.0)	987	8.32 J
C-I-3-M	04/01/2008	ND (0.2)	ND (1.0)	988	8.27 J
C-I-3-D	04/01/2008	ND (0.2)	ND (1.0)	984	8.40 J
C-I-3-S	06/17/2008	ND (0.2)	ND (1.0)	977	8.43 J
C-I-3-M	06/17/2008	ND (0.2)	ND (1.0)	974	8.42 J
C-I-3-D	06/17/2008	ND (0.2)	ND (1.0)	973	8.41 J
C-MAR-S	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-MAR-D	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-MAR-S	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-MAR-D	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-MAR-S	04/02/2008	ND (0.2)	ND (1.0)	1000	8.23 J
C-MAR-M	04/02/2008	ND (0.2)	ND (1.0)	1000	8.14 J
C-MAR-D	04/01/2008	ND (0.2)	ND (1.0)	1010	8.05 J
C-MAR-S	06/17/2008	ND (0.2)	ND (1.0)	1030	7.82 J
C-MAR-D	06/17/2008	ND (0.2)	ND (1.0)	978	7.85 J
C-NR1-S	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-NR1-M	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-NR1-D	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-NR1-S	02/13/2008	ND (0.2)	ND (1.0)	---	---

TABLE 2

Surface Water COPC Sampling Results, January through June 2008
PG&&E Topock Groundwater and Surface Water Monitoring Program

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Total Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
C-NR1-M	02/13/2008	ND (0.2)	ND (1.0)	---	---
C-NR1-D	02/13/2008	ND (0.2)	ND (1.0)	---	---
C-NR1-S	04/02/2008	ND (0.2)	ND (1.0)	995	8.25 J
C-NR1-M	04/02/2008	ND (0.2)	ND (1.0)	999	8.33 J
C-NR1-D	04/01/2008	ND (0.2)	ND (1.0)	983	8.42 J
C-NR1-S	06/18/2008	ND (0.2)	ND (1.0)	975	8.45 J
C-NR1-M	06/18/2008	ND (0.2)	ND (1.0)	1050	8.47 J
C-NR1-D	06/18/2008	ND (0.2)	ND (1.0)	1040	8.44 J
C-NR3-S	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-NR3-M	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-NR3-D	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-NR3-S	02/13/2008	ND (0.2)	ND (1.0)	---	---
C-NR3-M	02/13/2008	ND (0.2)	ND (1.0)	---	---
C-NR3-D	02/13/2008	ND (0.2)	ND (1.0)	---	---
C-NR3-S	04/02/2008	ND (0.2)	ND (1.0)	998	8.29 J
C-NR3-M	04/02/2008	ND (0.2)	ND (1.0)	995	8.27 J
C-NR3-D	04/01/2008	ND (0.2)	ND (1.0)	991	8.38 J
C-NR3-S	06/18/2008	ND (0.2)	ND (1.0)	1060	8.35 J
C-NR3-M	06/18/2008	ND (0.2)	ND (1.0)	1070	8.34 J
C-NR3-D	06/18/2008	ND (0.2)	ND (1.0)	1070	8.26 J
C-NR4-S	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-NR4-M	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-NR4-D	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-NR4-S	02/13/2008	ND (0.2)	ND (1.0)	---	---
C-NR4-M	02/13/2008	ND (0.2)	ND (1.0)	---	---
C-NR4-D	02/13/2008	ND (0.2)	ND (1.0)	---	---
C-NR4-S	04/02/2008	ND (0.2)	ND (1.0)	987	8.31 J
C-NR4-M	04/02/2008	ND (0.2)	ND (1.0)	1010	8.30 J
C-NR4-D	04/01/2008	ND (0.2)	ND (1.0)	985	8.40 J
C-NR4-S	06/18/2008	ND (0.2)	ND (1.0)	1040	8.34 J
C-NR4-M	06/18/2008	ND (0.2)	ND (1.0)	1060	8.35 J
C-NR4-D	06/18/2008	ND (0.2)	ND (1.0)	987	8.33 J
C-R22-S	01/16/2008	ND (0.2)	ND (1.0)	---	---
C-R22-M	01/16/2008	ND (0.2)	ND (1.0)	---	---
C-R22-D	01/16/2008	ND (0.2)	ND (1.0)	---	---
C-R22-S	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-R22-M	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-R22-D	02/12/2008	ND (0.2)	ND (1.0)	---	---

TABLE 2

Surface Water COPC Sampling Results, January through June 2008
PG&&E Topock Groundwater and Surface Water Monitoring Program

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Total Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
C-R22-S	04/02/2008	ND (0.2)	ND (1.0)	995	8.38 J
C-R22-M	04/02/2008	ND (0.2)	ND (1.0)	992	8.25 J
C-R22-D	04/01/2008	ND (0.2)	ND (1.0)	991	8.42 J
C-R22-S	06/17/2008	ND (0.2)	ND (1.0)	1070	8.37 J
C-R22-M	06/17/2008	ND (0.2)	ND (1.0)	1070	8.37 J
C-R22-D	06/17/2008	ND (0.2)	ND (1.0)	1080	8.36 J
C-R27-S	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-R27-M	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-R27-D	01/17/2008	ND (0.2)	ND (1.0)	---	---
C-R27-S	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-R27-M	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-R27-D	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-R27-S	04/02/2008	ND (0.2)	ND (1.0)	996	8.32 J
C-R27-M	04/02/2008	ND (0.2)	ND (1.0)	999	8.38 J
C-R27-D	04/01/2008	ND (0.2)	ND (1.0)	987	8.41 J
C-R27-S	06/17/2008	ND (0.2)	ND (1.0)	976	8.33 J
C-R27-M	06/17/2008	ND (0.2)	ND (1.0)	962	8.31 J
C-R27-D	06/17/2008	ND (0.2)	ND (1.0)	979	8.34 J
C-TAZ-S	01/16/2008	ND (0.2)	ND (1.0)	---	---
C-TAZ-M	01/16/2008	ND (0.2)	ND (1.0)	---	---
C-TAZ-D	01/16/2008	ND (0.2)	ND (1.0)	---	---
C-TAZ-S	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-TAZ-M	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-TAZ-D	02/12/2008	ND (0.2)	ND (1.0)	---	---
C-TAZ-S	04/01/2008	ND (0.2)	ND (1.0)	986	8.34 J
C-TAZ-M	04/01/2008	ND (0.2)	ND (1.0)	982	8.36 J
C-TAZ-D	04/01/2008	ND (0.2)	ND (1.0)	988	8.38 J
C-TAZ-S	06/17/2008	ND (0.2)	ND (1.0)	1080	8.45 J
C-TAZ-M	06/17/2008	ND (0.2)	ND (1.0)	1090	8.43 J
C-TAZ-D	06/17/2008	ND (0.2)	ND (1.0)	1100	8.41 J
Shoreline Samples					
CON	01/17/2008	ND (0.2)	ND (1.0)	---	---
CON	02/12/2008	ND (0.2)	ND (1.0)	---	---
CON	04/02/2008	ND (0.2)	ND (1.0)	997	8.33 J
CON	06/18/2008	ND (0.2)	ND (1.0)	1030	8.48 J
I-3	01/16/2008	ND (0.2)	ND (1.0)	---	---
I-3	02/12/2008	ND (0.2)	ND (1.0)	---	---
I-3	04/02/2008	ND (0.2)	ND (1.0)	990	8.42 J

TABLE 2

Surface Water COPC Sampling Results, January through June 2008
PG&&E Topock Groundwater and Surface Water Monitoring Program

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Total Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
I-3	06/17/2008	ND (0.2)	ND (1.0)	1070	8.37 J
NR-1	01/17/2008	ND (0.2)	ND (1.0)	---	---
NR-1	02/13/2008	ND (0.2)	ND (1.0)	---	---
NR-1	04/02/2008	ND (0.2)	ND (1.0)	993	8.31 J
NR-1	06/18/2008	ND (0.2)	ND (1.0)	1060	8.43 J
NR-2	01/17/2008	ND (0.2)	ND (1.0)	---	---
NR-2	02/13/2008	ND (0.2)	ND (1.0)	---	---
NR-2	04/02/2008	ND (0.2)	ND (1.0)	992	8.30 J
NR-2	06/18/2008	ND (0.2)	ND (1.0)	977	8.37 J
NR-3	01/17/2008	ND (0.2)	ND (1.0)	---	---
NR-3	02/13/2008	ND (0.2)	ND (1.0)	---	---
NR-3	04/02/2008	ND (0.2)	ND (1.0)	1010	8.28 J
NR-3	06/18/2008	ND (0.2)	ND (1.0)	975	8.36 J
R-22	01/16/2008	ND (0.2)	ND (1.0)	---	---
R-22	02/12/2008	ND (0.2)	ND (1.0)	---	---
R-22	04/02/2008	ND (0.2)	ND (1.0)	1000	8.41 J
R-22	06/17/2008	ND (0.2) J	ND (1.0)	978	8.32 J
R-23	01/24/2008	ND (0.2)	ND (1.0)	---	---
R-23	02/14/2008	ND (0.2)	ND (1.0)	---	---
R-23	04/03/2008	ND (0.2)	ND (1.0)	1030	7.69 J
R-23	06/17/2008	ND (0.2)	ND (1.0)	1120	7.56 J
R-27	01/16/2008	ND (0.2)	ND (1.0)	---	---
R-27	02/12/2008	ND (0.2)	ND (1.0)	---	---
R-27	04/02/2008	ND (0.2)	ND (1.0)	983	8.36 J
R-27	06/17/2008	ND (0.2)	ND (1.0)	978	8.39 J
R-28	01/16/2008	ND (0.2)	ND (1.0)	---	---
R-28	02/12/2008	ND (0.2)	ND (1.0)	---	---
R-28	04/02/2008	ND (0.2)	ND (1.0)	998	8.32 J
R-28	06/18/2008	ND (0.2)	ND (1.0)	992	8.46 J
RRB	01/16/2008	ND (0.2)	ND (1.0)	---	---
RRB	02/12/2008	ND (0.2)	ND (1.0)	---	---
RRB	04/02/2008	ND (0.2)	ND (1.0)	1000	8.27 J
RRB	06/18/2008	ND (0.2)	ND (1.0)	1040	8.27 J

TABLE 2

Surface Water COPC Sampling Results, January through June 2008
PG&&E Topock Groundwater and Surface Water Monitoring Program

Notes:

µg/L micrograms per liter
ND not detected at listed reporting limit
J concentration or reporting limit estimated by laboratory or data validation
(--) data not collected or not available

Hexavalent chromium analytical method EPA 218.6 (reporting limit 0.2 µg/L for undiluted samples).

Other analytical methods: dissolved total chromium (Method SW 6020A), specific conductance (EPA 120.1), pH (EPA 150.1).

The first quarter river monitoring event was performed in April 2008 to coincide with drilling activities on the river floodplain.

TABLE 3

Title 22 Metals Results, January 2008 through June 2008
PG&E Topock Groundwater and Surface Water Monitoring Program

California MCL:		6	10 ^	1,000	4	5	NE	50	1,000*	15	2	NE	100	50	100*	2	NE	5,000*	
Well ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	
MW-10	03/11/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	473	ND (10)	ND (2.0)	ND (0.2)	68.3	ND (20)	5.17	ND (5.0)	ND (1.0)	29.8	ND (20)	
MW-12	03/10/2008	ND (3.0)	66.1	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	2,860	ND (10)	ND (2.0)	ND (0.2)	19.6	ND (20)	6.59	ND (5.0)	ND (1.0)	26.3	22.1	
	05/05/2008	ND (3.0)	62.0	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	2,800	ND (10)	ND (5.0)	ND (0.2)	19.0	ND (20)	6.02	ND (5.0)	ND (10)	17.0	34.4	
MW-21	03/11/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	1.80	ND (10)	ND (2.0)	ND (0.2)	39.6	ND (20)	38.0	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
	05/06/2008	ND (5.0)	ND (5.4)	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	3.01	ND (10)	ND (5.0)	ND (0.2)	52.0	ND (20)	12.0	ND (5.0)	ND (1.0)	6.20	ND (20)	
MW-22	03/11/2008	ND (3.0)	5.51	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	ND (1.0)	22.6	ND (2.0)	ND (0.2)	36.4	ND (20)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
	07/29/2008	ND (3.0)	13.8	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	ND (1.0)	ND (10)	ND (2.0)	0.40 J	48.2	ND (20)	ND (3.8)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
MW-23	03/10/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	24.3	ND (10)	ND (2.0)	ND (0.2)	6.01	ND (20)	5.44	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
	03/11/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	39.6	ND (10)	4.26	ND (0.2)	ND (5.0)	ND (20)	6.14	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
	05/06/2008	ND (5.0)	ND (5.0)	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	22.0	ND (10)	ND (5.0)	ND (0.2)	15.0	ND (20)	10.9	ND (5.0)	ND (2.0)	ND (5.0)	21.0	
FD	05/06/2008	ND (5.0)	ND (5.0)	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	23.0	ND (10)	ND (5.0)	ND (0.2)	14.0	ND (20)	7.68	ND (5.0)	ND (1.0)	ND (5.0)	23.0	
MW-24A	03/12/2008	ND (3.0)	10.8	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	2,000	ND (10)	ND (2.0)	ND (0.2)	29.6	ND (20)	50.7	ND (5.0)	ND (1.0)	7.18	ND (20)	
	05/08/2008	ND (5.0)	33.6	944	ND (1.0)	ND (2.0)	ND (5.0)	10.0	ND (10)	ND (5.0)	ND (0.2)	11.0	ND (20)	5.29	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
MW-26	03/12/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	2,560	ND (10)	ND (2.0)	ND (0.2)	28.8	ND (20)	14.8	ND (5.0)	ND (1.0)	6.14	21.3	
	FD	03/12/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	2,640	ND (10)	ND (2.0)	ND (0.2)	27.7	ND (20)	13.3	ND (5.0)	ND (1.0)	5.88	ND (20)
		05/05/2008	ND (3.0)	ND (5.0)	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	2,600	ND (10)	ND (5.0)	ND (0.2)	43.0	ND (20)	16.8	ND (5.0)	ND (1.0)	ND (5.0)	37.3
MW-32-35	03/10/2008	ND (3.0)	23.1	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	ND (1.0)	ND (10)	ND (2.0)	ND (0.2)	13.8	ND (20)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
	05/06/2008	ND (5.0)	ND (32)	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	1.90	ND (10)	ND (5.0)	ND (0.2)	19.0	ND (20)	7.10	ND (5.0)	ND (2.0)	ND (5.0)	ND (20)	
MW-43-25	03/10/2008	ND (3.0)	18.9	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	ND (1.0)	ND (10)	ND (2.0)	ND (0.2)	10.5	ND (20)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
	05/07/2008	ND (5.0)	24.4	ND (500)	1.10	ND (2.0)	ND (5.0)	ND (1.0)	ND (10)	5.90	ND (0.2)	15.0	ND (20)	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
MW-44-115	03/11/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	596	ND (10)	ND (2.0)	ND (0.2)	85.6	ND (20)	ND (5.0)	ND (5.0)	ND (1.0)	6.54	ND (20)	
	05/08/2008	ND (5.0)	6.93	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	590	ND (10)	ND (5.0)	ND (0.2)	83.0	ND (20)	ND (5.0)	ND (5.0)	ND (2.0)	6.50	38.3	
MW-48	03/11/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	2.93	ND (10)	ND (2.0)	ND (0.2)	14.3	ND (20)	ND (5.0)	ND (5.0)	ND (1.0)	7.52	ND (20)	
	05/07/2008	ND (5.0)	ND (5.0)	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	1.40	ND (10)	ND (5.0)	ND (0.2)	19.0	ND (20)	5.24	ND (5.0)	ND (2.0)	ND (5.0)	ND (20)	
MW-50-200	03/12/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	11,800	ND (10)	ND (2.0)	ND (0.2)	40.4	ND (20)	6.21	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
	05/08/2008	ND (3.0)	ND (5.0)	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	11,000	ND (10)	ND (5.0)	ND (0.2)	54.0	ND (20)	10.2	ND (5.0)	ND (2.0)	ND (5.0)	31.7	
MW-51	03/11/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	4,590	ND (10)	ND (2.0)	ND (0.2)	33.6	ND (20)	11.5	ND (5.0)	ND (1.0)	ND (5.0)	ND (20)	
	05/08/2008	ND (3.0)	ND (5.0)	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	4,600	ND (10)	5.80	ND (0.2)	40.0	ND (20)	16.4	ND (5.0)	ND (2.0)	ND (5.0)	34.4	
TW-1	03/11/2008	ND (3.0)	ND (5.0)	ND (300)	ND (1.0)	ND (2.0)	ND (5.0)	2,450	ND (10)	ND (2.0)	ND (0.2)	13.4	ND (20)	55.3	12.2	ND (1.0)	7.35	88.1	
	05/08/2008	ND (3.0)	ND (5.0)	ND (500)	ND (1.0)	ND (2.0)	ND (5.0)	3,900	ND (10)	5.10	ND (0.2)	22.0	ND (20)	87.8	ND (5.0)	ND (2.0)	ND (5.0)	110	

TABLE 3

Title 22 Metals Results, January 2008 through June 2008
PG&E Topock Groundwater and Surface Water Monitoring Program

Notes:

ND not detected at listed reporting limit

FD field duplicate sample

^ U.S. Environmental Protection Agency (USEPA) MCL as of January 23, 2006

NE not established

* Secondary USEPA MCL

Title 22 metals are the metals listed in California Code of Regulations, Title 22, Section 66261.24(a)(2)(A).

The maximum contaminant levels (MCLs) listed, in micrograms per liter ($\mu\text{g}/\text{L}$), are the California primary drinking water standards, except where noted.

The USEPA MCL for arsenic was lowered to 10 $\mu\text{g}/\text{L}$ in January 2006. The California MCL of 50 $\mu\text{g}/\text{L}$ is currently under review. California Division of Drinking Water and Environmental Management is proceeding with the regulatory and adoption process.

During the March 10, 2008 purge of monitoring well MW-23, the well did not purge dry as it typically does. An additional sample was collected on March 11 after the well recharged as normal.

All results are dissolved metals concentrations in $\mu\text{g}/\text{L}$ from field-filtered samples.

Metals analyzed by Methods SW6020A and SW7470A.

Analytes detected above MCL are in bold.

Figures

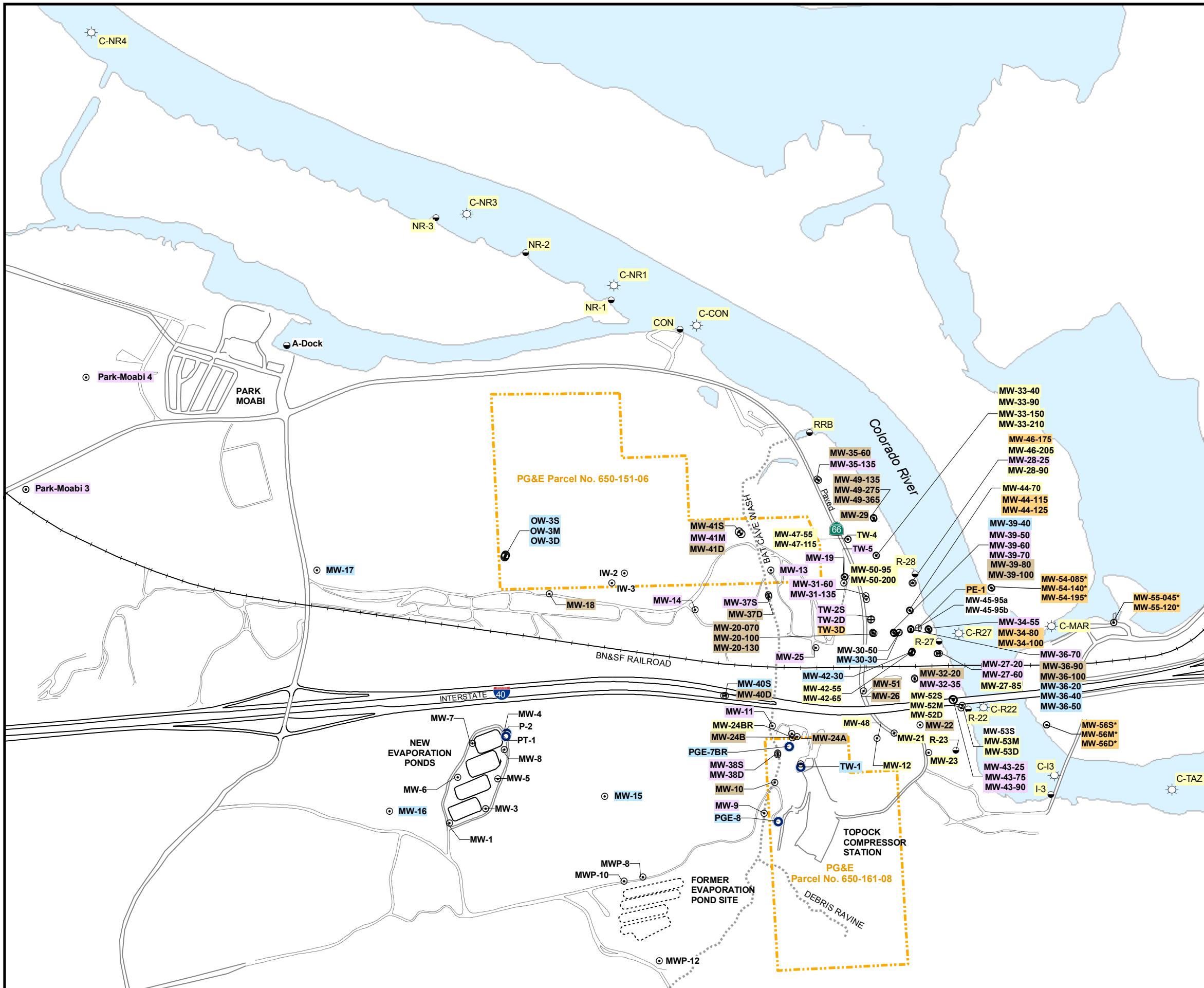
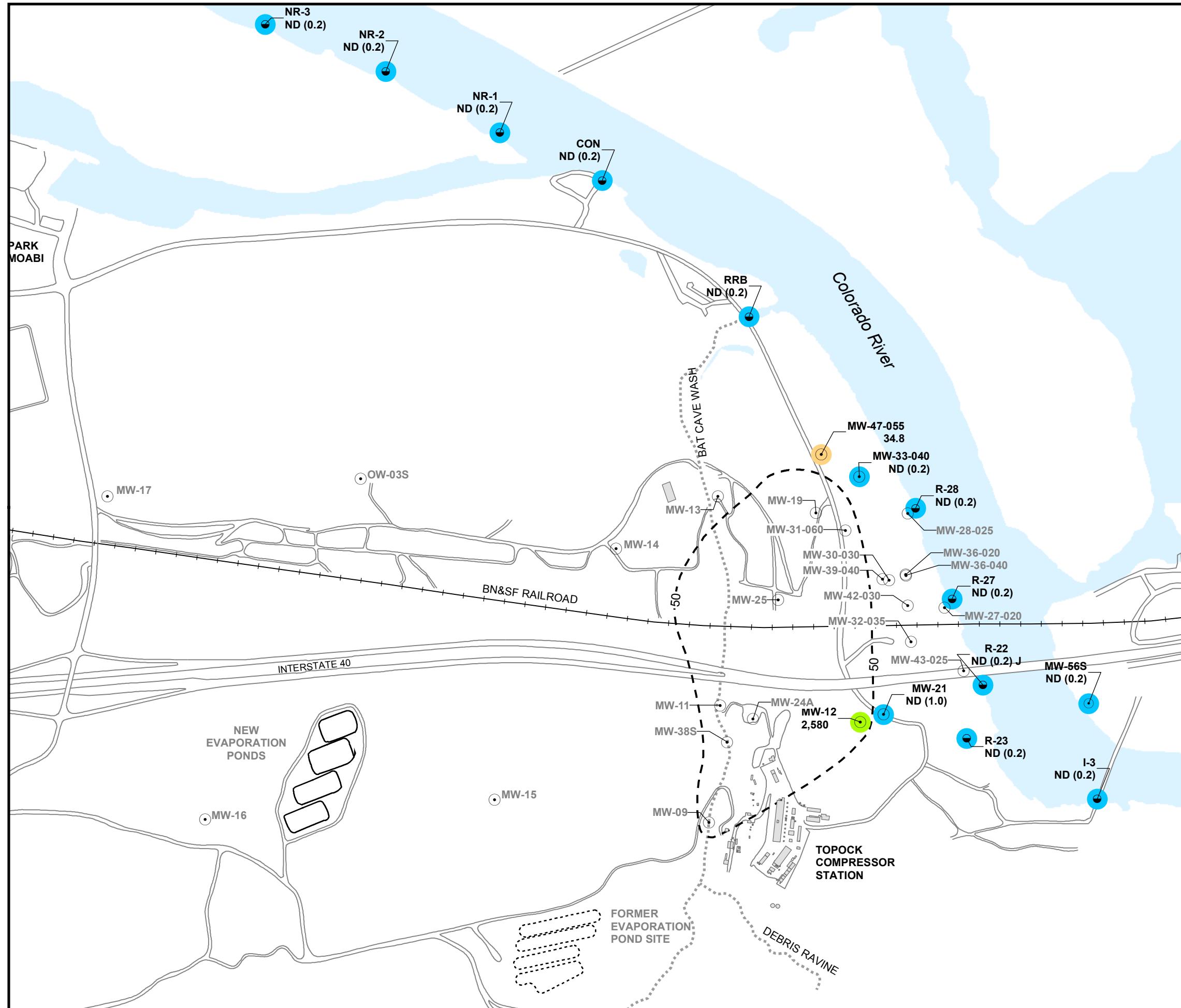


FIGURE 1
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR GMP MAY 2008
GROUNDWATER AND SURFACE WATER MONITORING PROGRAM PG&E TOPOCK COMPRESSOR STATION NEEDLES, CALIFORNIA



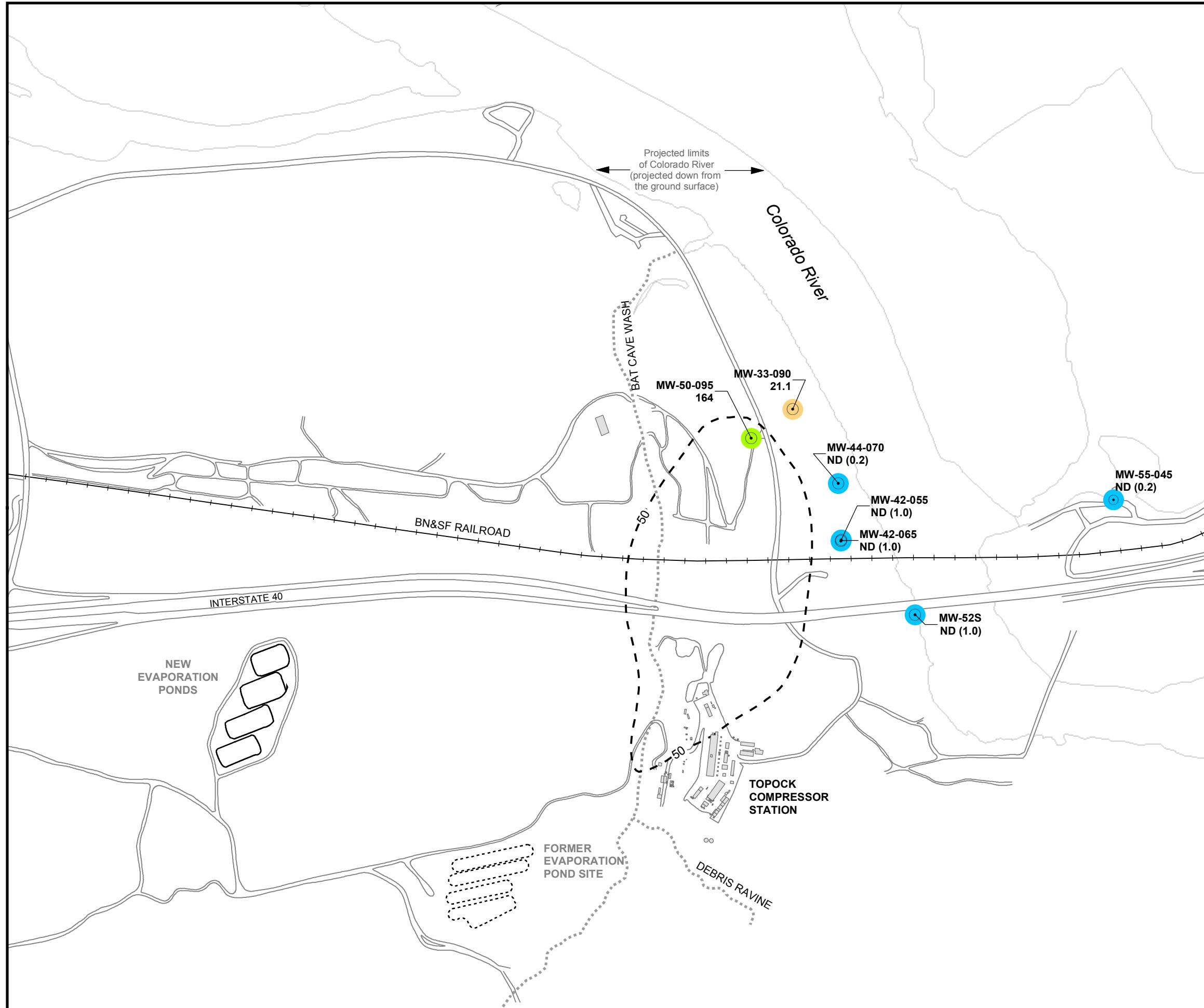


FIGURE 3
Cr(VI) SAMPLING RESULTS
MID-DEPTH WELLS IN ALLUVIAL AQUIFER
2ND QUARTER 2008 MONITORING
GROUNDWATER AND SURFACE WATER
MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

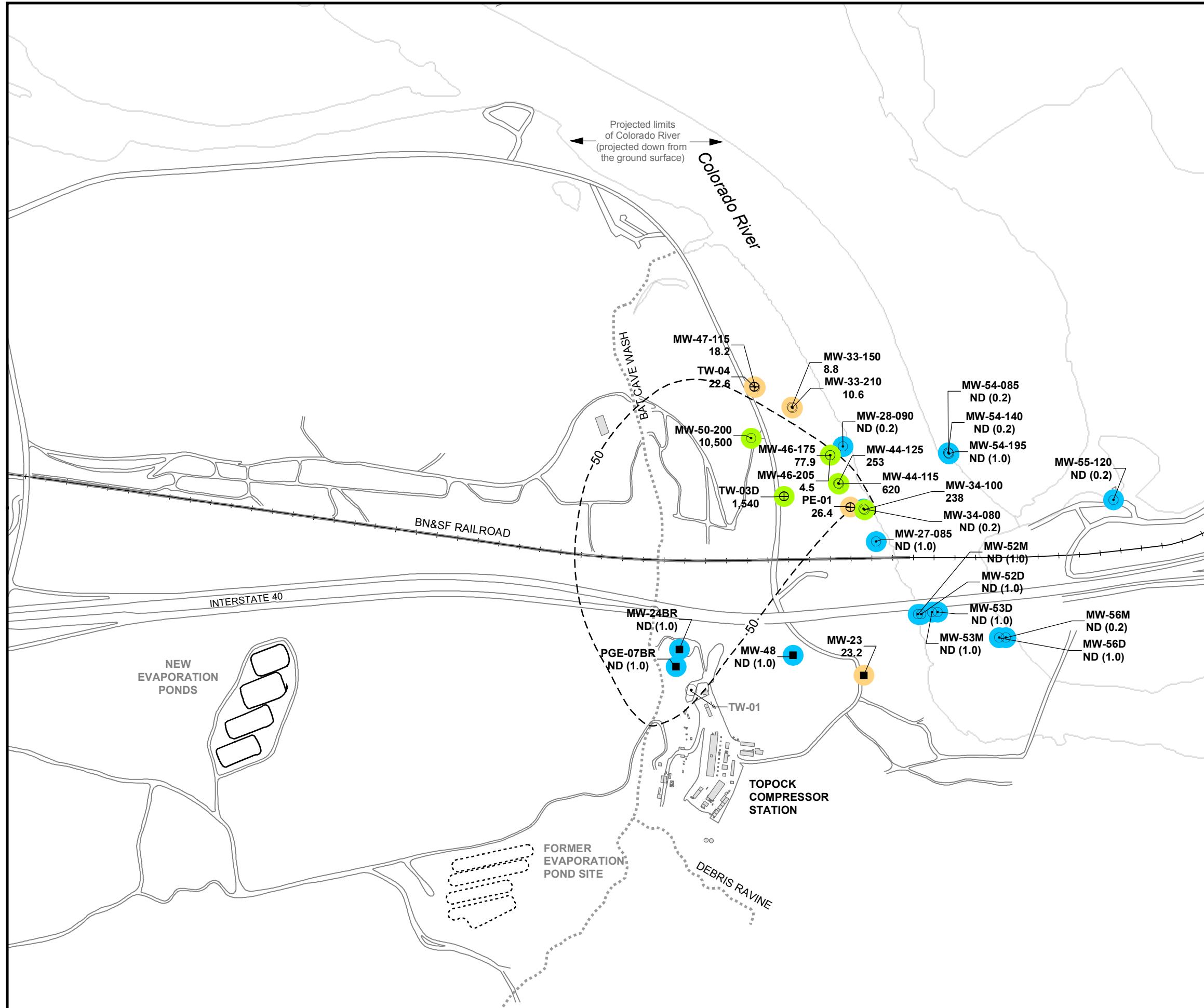


FIGURE 4
Cr(VI) SAMPLING RESULTS
DEEP WELLS IN ALLUVIAL AQUIFER
2ND QUARTER 2008 MONITORING

GROUNDWATER AND SURFACE WATER
MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

LEGEND

- ⊕ Extraction Well
- Bedrock Well
- ◎ Monitoring, Test or Supply Well

Results for May 2008 Monitoring Event

6.48 Concentration of hexavalent chromium [Cr(VI)] in micrograms per liter ($\mu\text{g/L}$)

Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Deep zone** of Alluvial Aquifer.

ND (0.2) Cr(VI) not detected at listed reporting limit

Cr(VI) Concentrations in Groundwater Samples May 2008 Monitoring Event

- Not detected at analytical reporting limit
- Concentration between reporting limit and 50 $\mu\text{g/L}$
- Concentration greater than 50 $\mu\text{g/L}$

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Attachment 1
Background Study Metals Results,
MW-16 and MW-17

Attachment 1

MW-16 and MW-17 Background Study Metals

PG&E Topock Groundwater and Surface Water Monitoring Program

Analyte	Units	MW-16 5/6/2008	MW-17 5/5/2008
Aluminum, dissolved	µg/L	ND (50)	ND (50)
Antimony, dissolved	µg/L	ND (5.0)	ND (5.0)
Arsenic, dissolved	µg/L	ND (5.0)	ND (5.0)
Barium, dissolved	µg/L	ND (500)	ND (500)
Beryllium, dissolved	µg/L	ND (1.0)	ND (1.0)
Boron, dissolved	µg/L	0.30	0.24
Cadmium, dissolved	µg/L	ND (2.0)	ND (2.0)
Calcium, dissolved	µg/L	142	99.0
Chromium, dissolved	µg/L	24.1	12.0
Cobalt, dissolved	µg/L	ND (5.0)	ND (5.0)
Copper, dissolved	µg/L	ND (10)	ND (10)
Iron, dissolved	µg/L	ND (0.5)	ND (0.5)
Lead, dissolved	µg/L	ND (5.0)	ND (5.0)
Magnesium, dissolved	µg/L	36.8	14.0
Manganese, dissolved	µg/L	ND (0.5)	ND (0.5)
Mercury, dissolved	µg/L	ND (0.2)	ND (0.2)
Molybdenum, dissolved	µg/L	16.0	21.0
Nickel, dissolved	µg/L	ND (20)	ND (20)
Selenium, dissolved	µg/L	ND (5.0)	11.9
Silver, dissolved	µg/L	ND (5.0)	ND (5.0)
Thallium, dissolved	µg/L	ND (1.0)	ND (1.0)
Vanadium, dissolved	µg/L	12.0	ND (5.0)
Zinc, dissolved	µg/L	ND (20)	ND (20)

ND parameter not detected at the listed reporting limit (listed in the adjacent parenthesis)

µg/L micrograms per liter

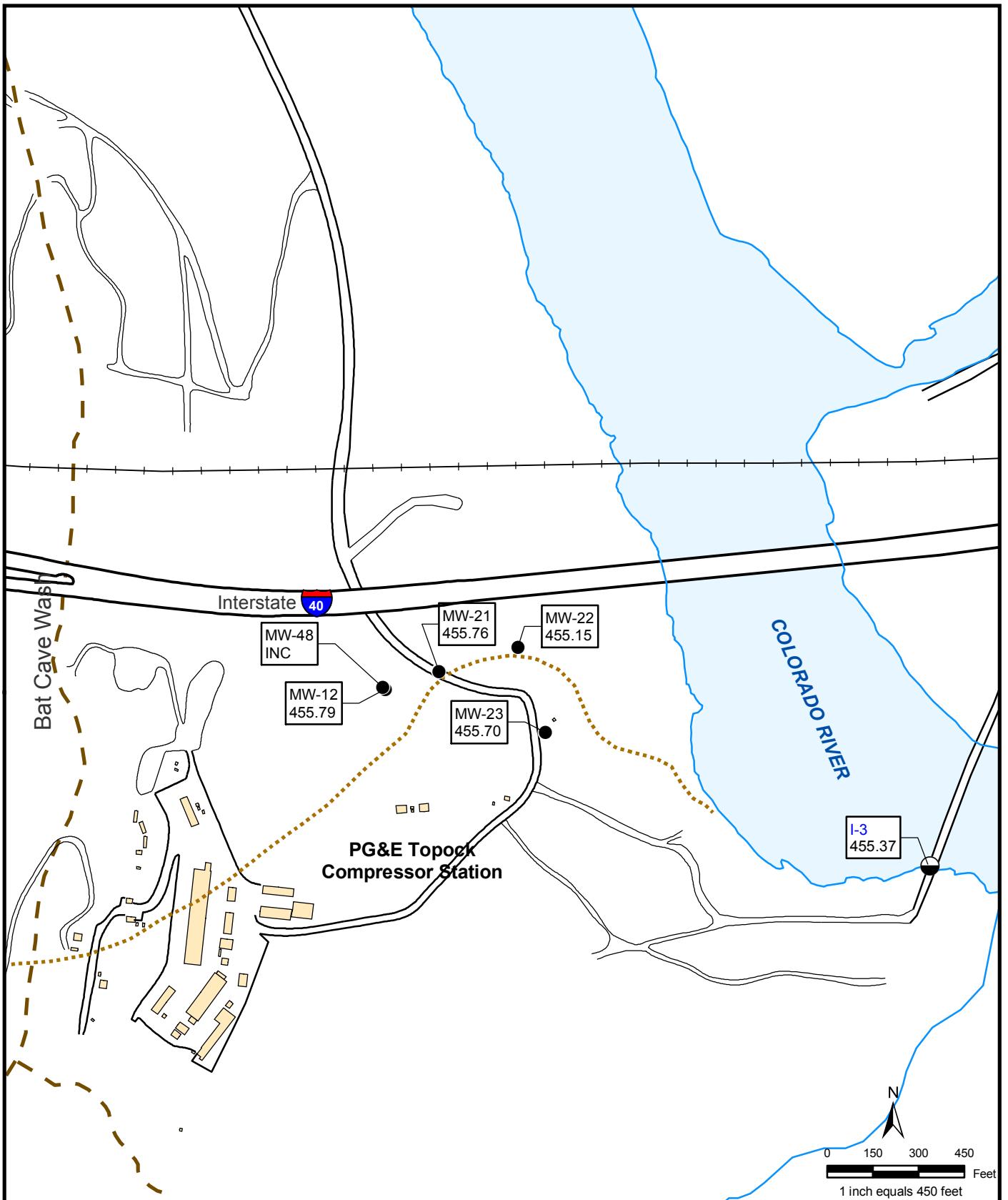
Attachment 2
Water Levels from Selected Wells in the Vicinity
of Bedrock Well MW-23

Water Levels from Selected Wells in the Vicinity of Bedrock Well MW-23

During the August 2, 2007, Technical Workgroup meeting, DTSC requested long-term transducer monitoring at MW-23 and the surrounding area. CH2M HILL is monitoring groundwater levels at wells near MW-23 on a monthly basis through third quarter 2008.

This attachment includes a summary of water level data from selected wells in the vicinity of MW-23. Figures 1 through 10 presents maps showing monthly average groundwater elevations for September 2007 through June 2008. Figure 11 presents a hydrograph of water levels along with the river level for the entire period from September 2007 through June 2008. The drawdown in water levels in March 2008 for MW-21, and MW-23 are from well purging and recovery.

The average groundwater elevations for well MW-48 are not shown on Figures 1 through 4 and 11 because the water levels in this well were affected by several episodes of pumping in conjunction with groundwater sample collection for bedrock aquifer testing during this time period. Historically, water levels in MW-48 require about two weeks to recover after the well is pumped and, therefore, most of the data from MW-48 during this period were not representative of ambient water levels. PG&E will continue water level monitoring in this group of wells as directed by DTSC.

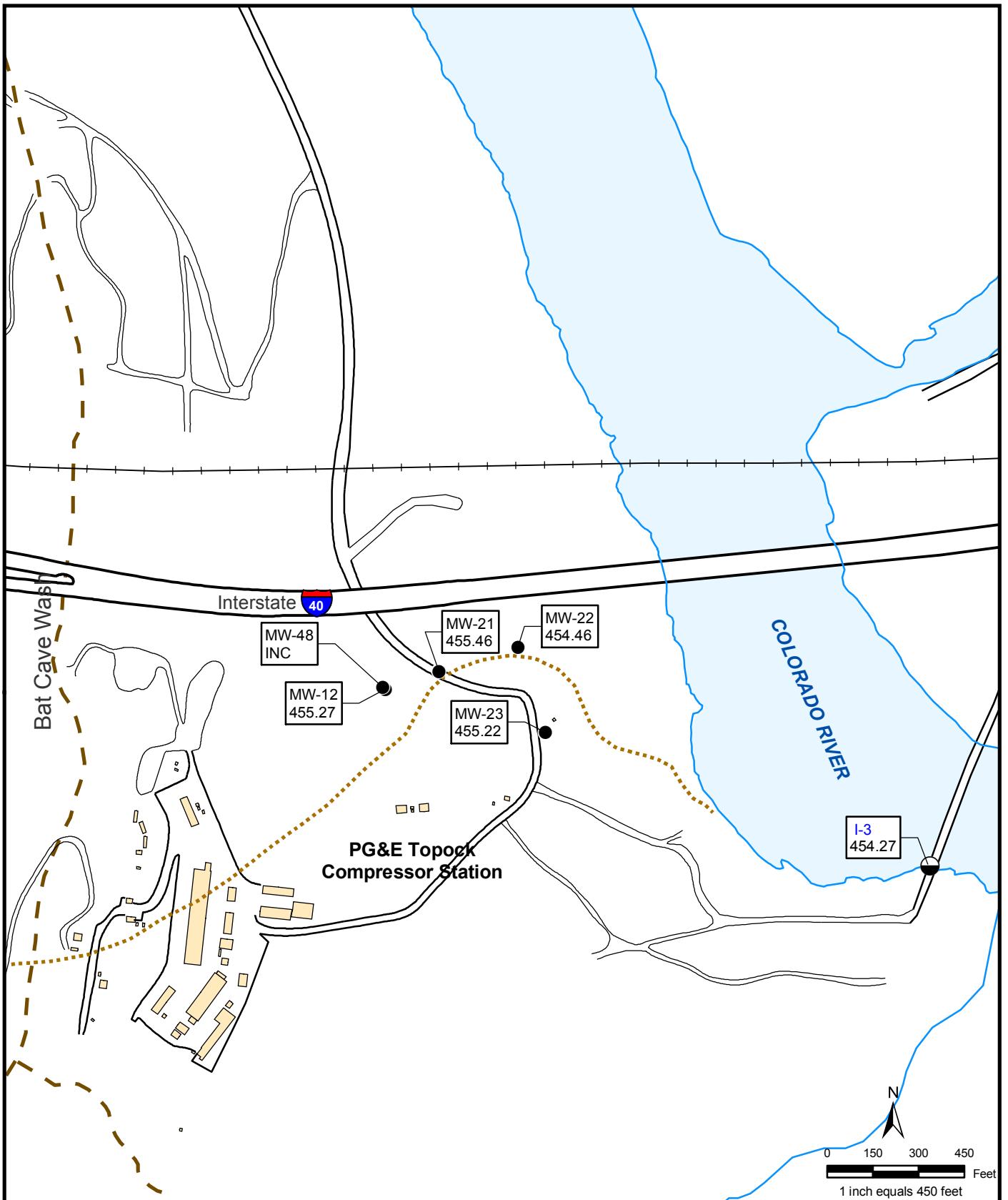


- | | | |
|--------------------------|--|--|
| ● MW-22
455.85 | Average Groundwater Elevation
at Monitoring Station (ft AMSL) | ● Monitoring Well |
| ● I-3
455.13 | River Elevation (ft AMSL)
Interpolated Average | ● River Station |
| — | Approximate Bedrock
Contact at 455 ft AMSL | |
| | | INC Data incomplete or unavailable
over reporting period |

FIGURE 1
AVERAGE GROUNDWATER ELEVATIONS
AT MW-23 AND ADJACENT WELLS
SEPTEMBER 2007

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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• MW-22
455.85 Average Groundwater Elevation
at Monitoring Station (ft AMSL)

● I-3
455.13 River Elevation (ft AMSL)
Interpolated Average

— Approximate Bedrock
Contact at 455 ft AMSL

● Monitoring Well

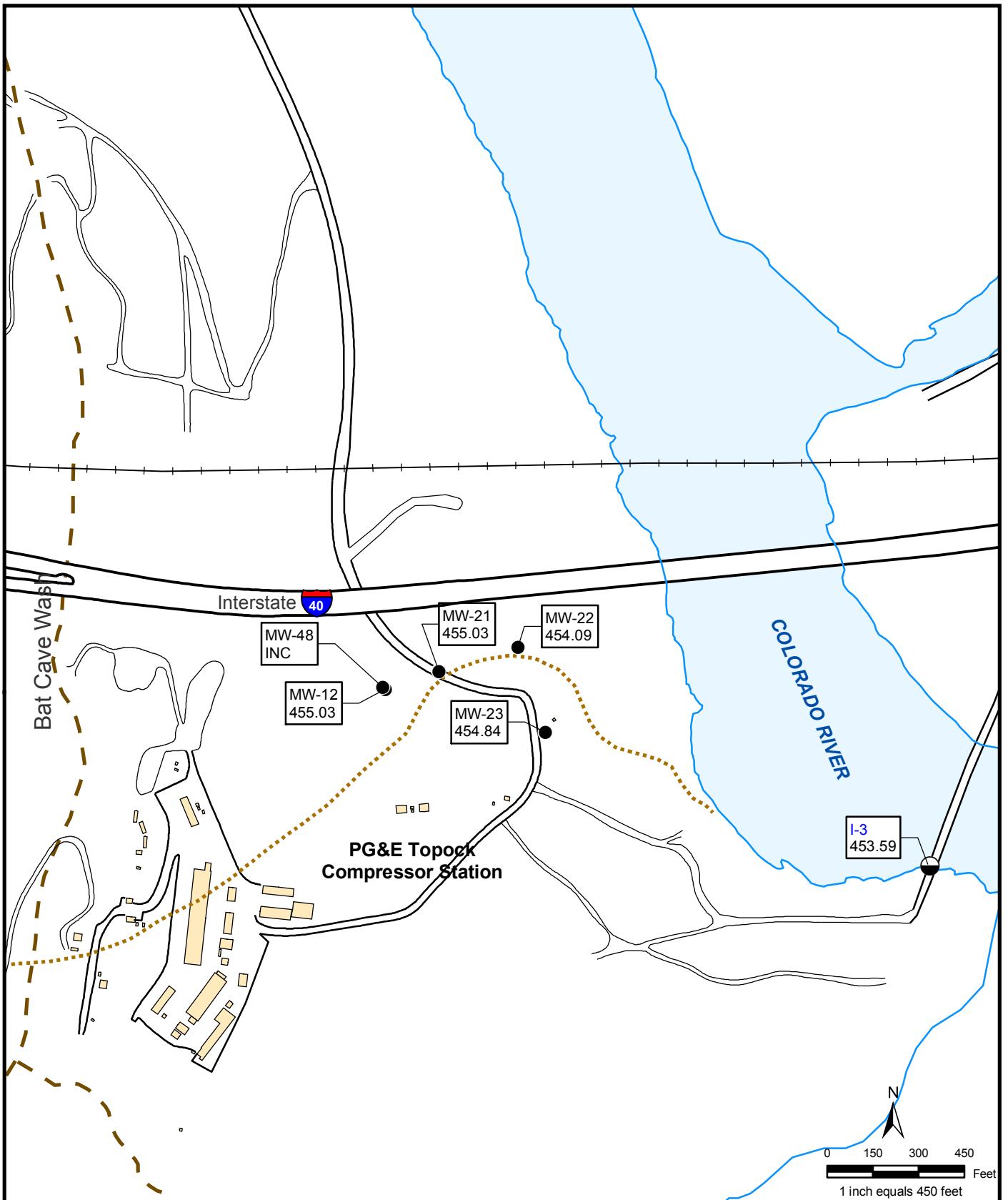
○ River Station

INC Data incomplete or unavailable
over reporting period

FIGURE 2
AVERAGE GROUNDWATER ELEVATIONS
AT MW-23 AND ADJACENT WELLS
OCTOBER 2007

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL



● MW-22 Average Groundwater Elevation at Monitoring Station (ft AMSL) 455.85

● I-3 River Elevation (ft AMSL) Interpolated Average 455.13

— Approximate Bedrock Contact at 455 ft AMSL

● Monitoring Well
 ● River Station
 INC Data incomplete or unavailable over reporting period

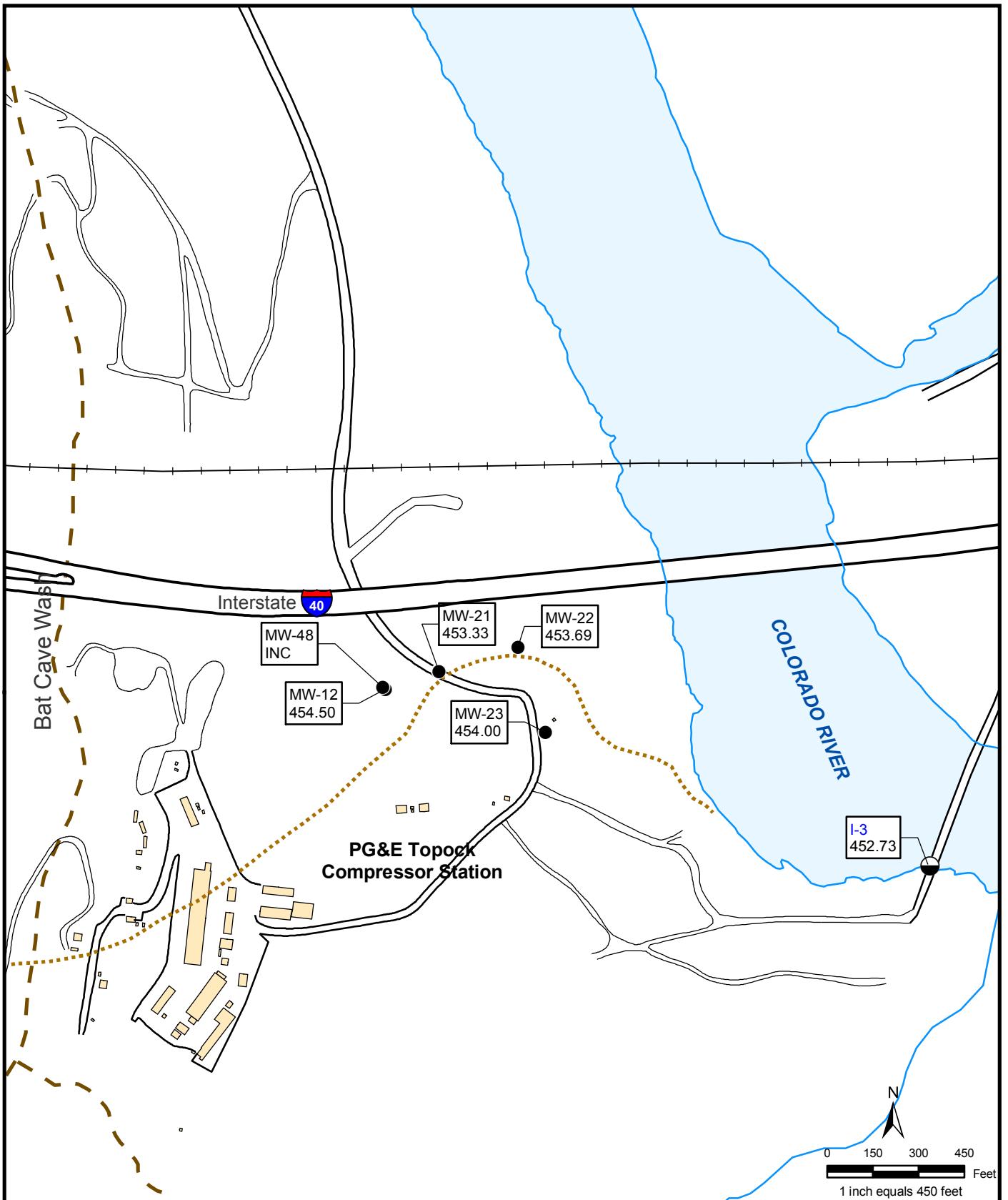
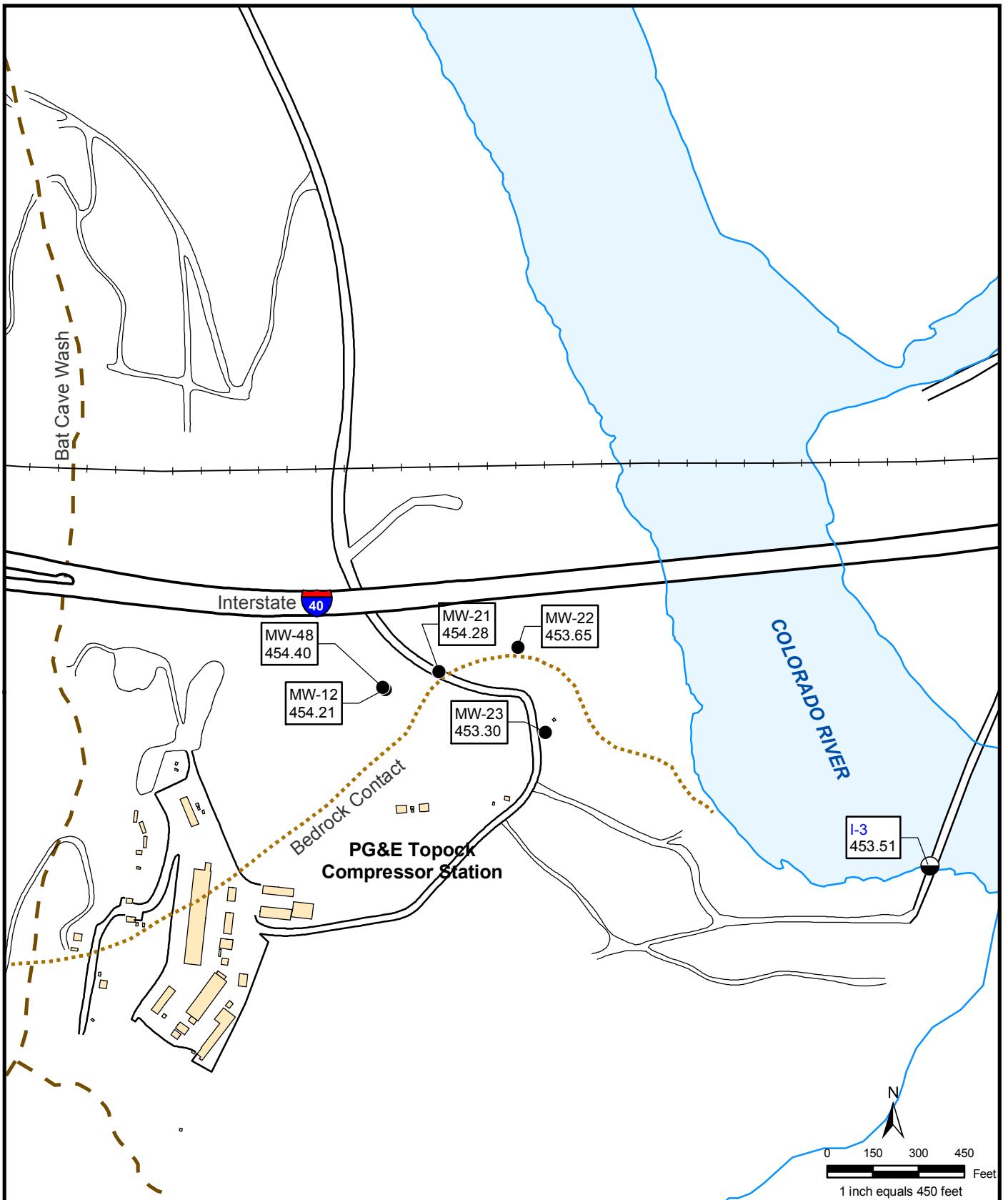


FIGURE 4
AVERAGE GROUNDWATER ELEVATIONS
AT MW-23 AND ADJACENT WELLS
DECEMBER 2007

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL



● MW-22 Average Groundwater Elevation
453.65 at Monitoring Station (ft AMSL)

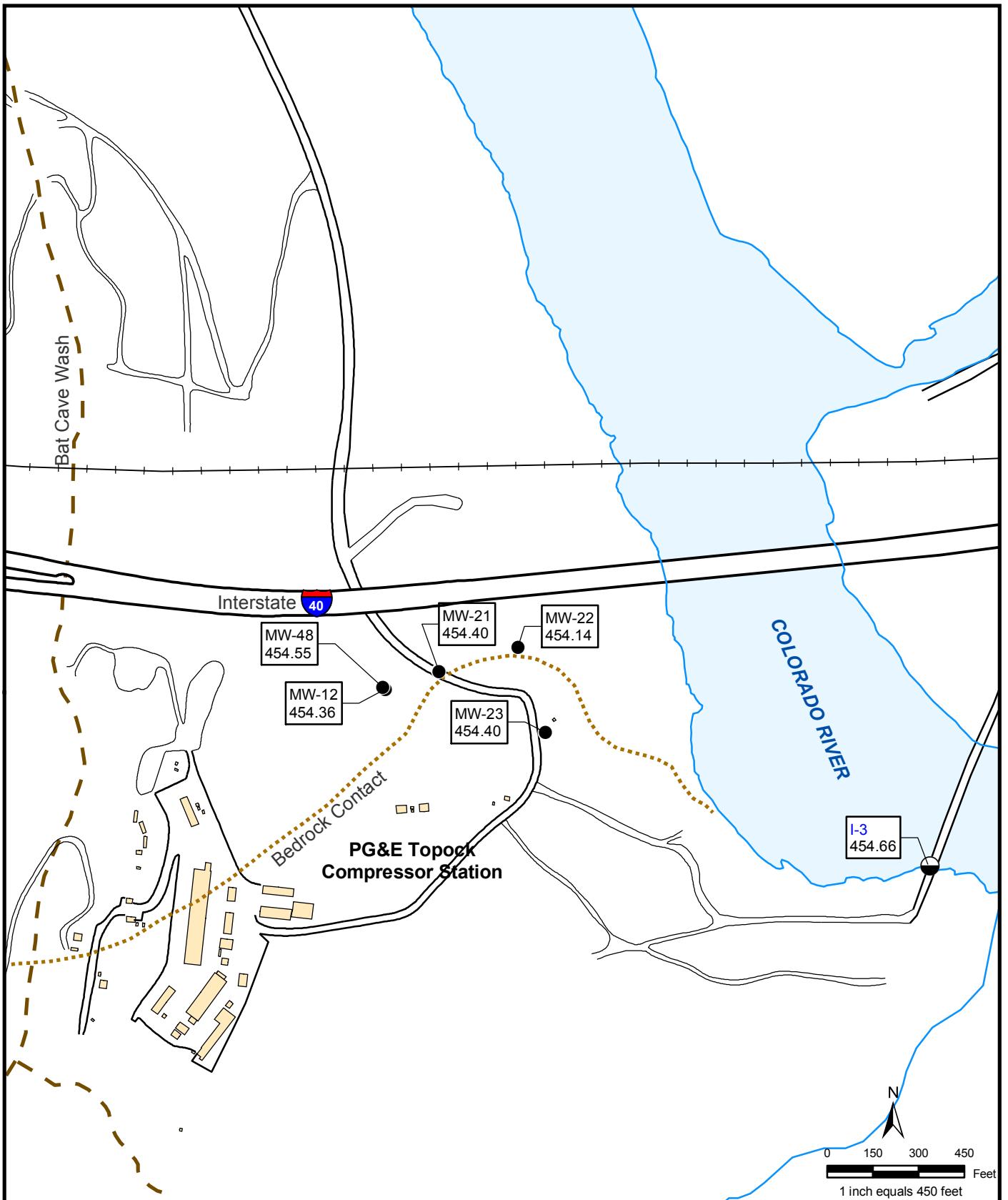
● Monitoring Well
River Station

● I-3 River Elevation (ft AMSL)
453.51 Interpolated Average

INC Data incomplete or unavailable
over reporting period

— Approximate Bedrock
Contact at 455 ft AMSL

FIGURE 5
AVERAGE GROUNDWATER ELEVATIONS
AT MW-23 AND ADJACENT WELLS
JANUARY 2008
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA



● MW-22 Average Groundwater Elevation
454.14 at Monitoring Station (ft AMSL)

● Monitoring Well
River Station

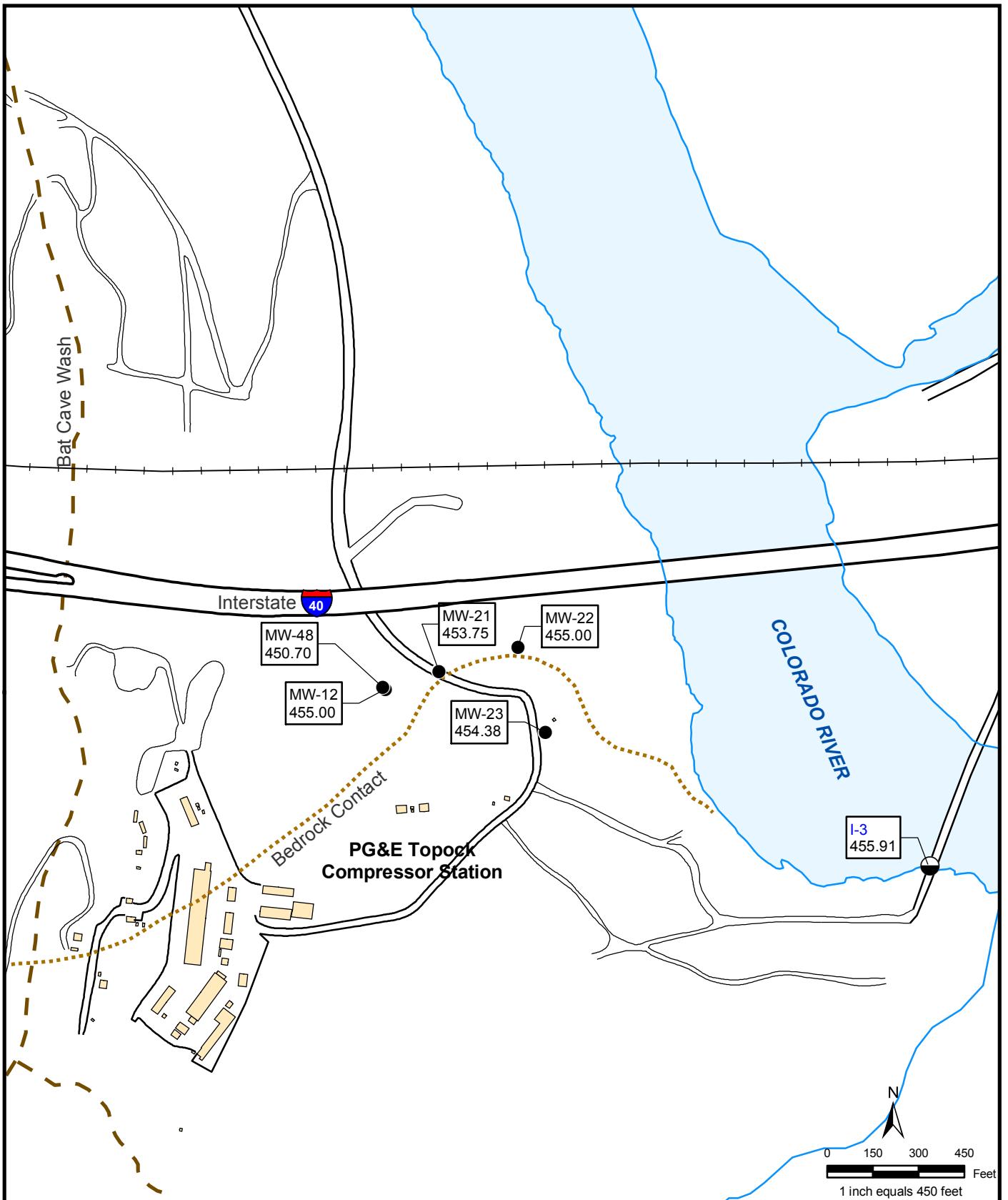
● I-3
454.66 River Elevation (ft AMSL)
Interpolated Average

INC Data incomplete or unavailable
over reporting period

— Approximate Bedrock
Contact at 455 ft AMSL

FIGURE 6
AVERAGE GROUNDWATER ELEVATIONS
AT MW-23 AND ADJACENT WELLS
FEBRUARY 2008
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL



● **MW-22** Average Groundwater Elevation at Monitoring Station (ft AMSL)
455.00

● Monitoring Well
● River Station

● **I-3** River Elevation (ft AMSL)
455.91

INC Data incomplete or unavailable over reporting period

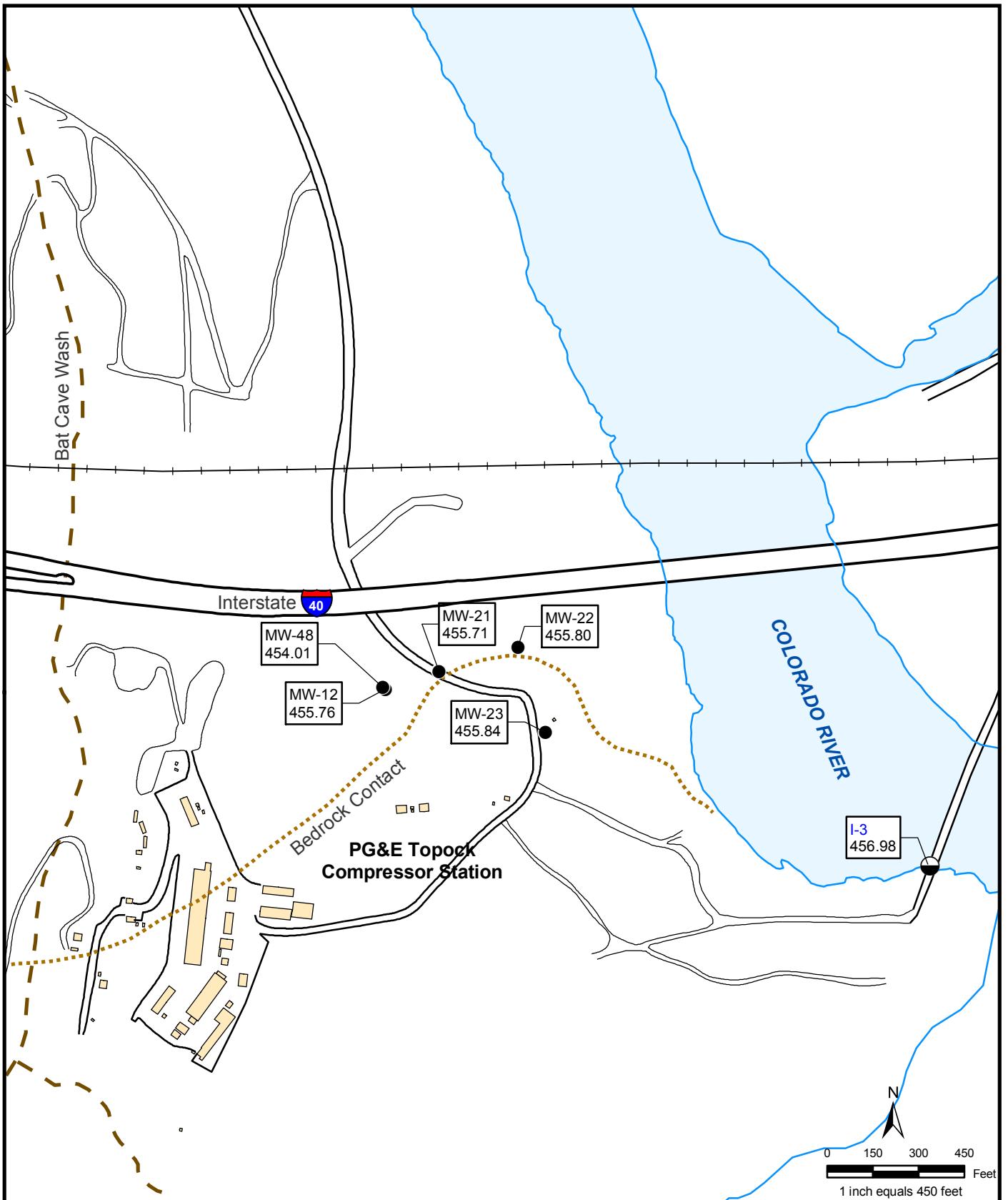
INC Data incomplete or unavailable over reporting period

FIGURE 7
AVERAGE GROUNDWATER ELEVATIONS
AT MW-23 AND ADJACENT WELLS

MARCH 2008

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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● MW-22 Average Groundwater Elevation
453.65 at Monitoring Station (ft AMSL)

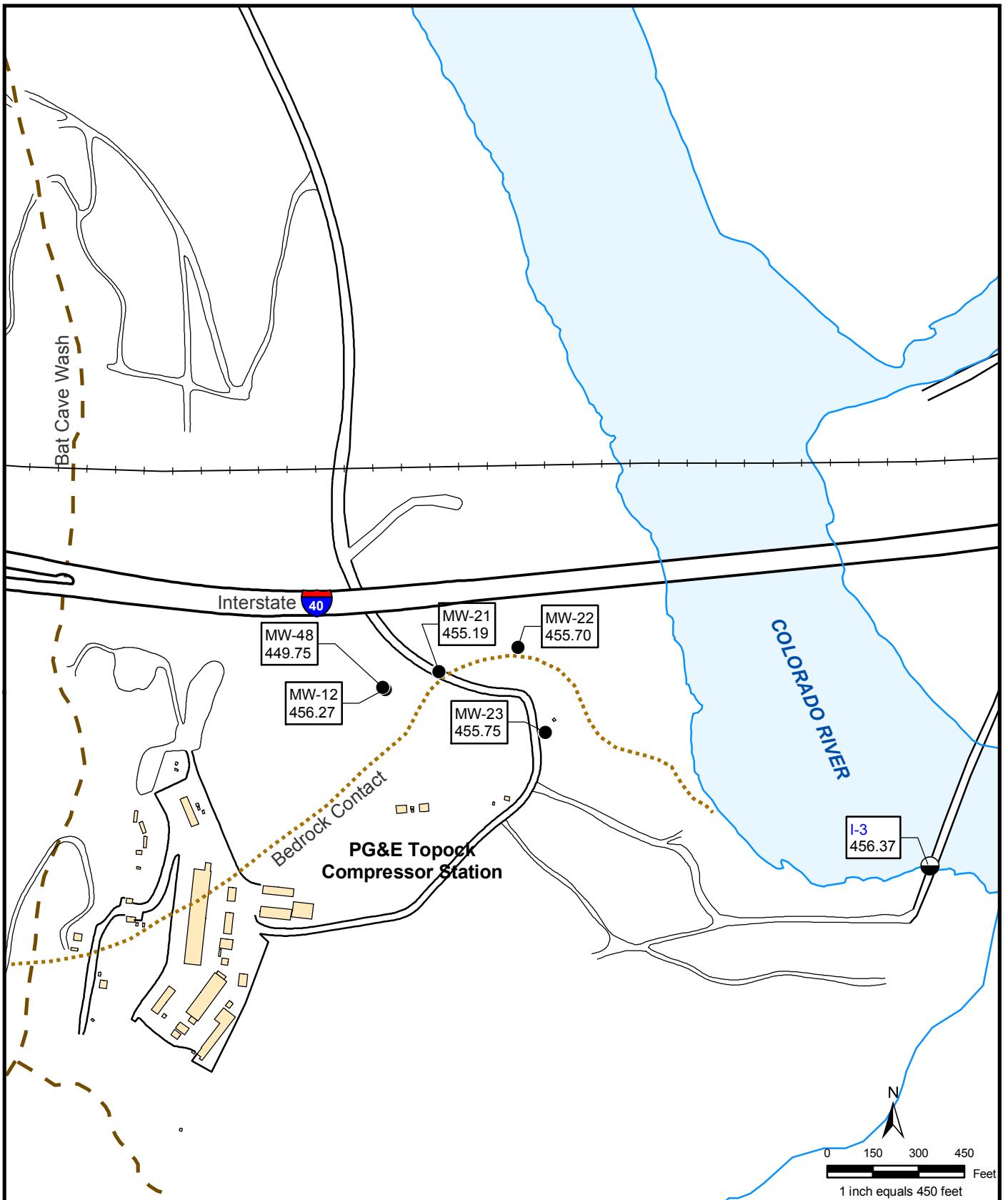
● Monitoring Well
River Station

● I-3 River Elevation (ft AMSL)
456.98 Interpolated Average

● INC Data incomplete or unavailable
over reporting period

— Dashed orange line Approximate Bedrock
Contact at 455 ft AMSL

FIGURE 8
AVERAGE GROUNDWATER ELEVATIONS
AT MW-23 AND ADJACENT WELLS
APRIL 2008
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA



● MW-22 Average Groundwater Elevation
454.14 at Monitoring Station (ft AMSL)

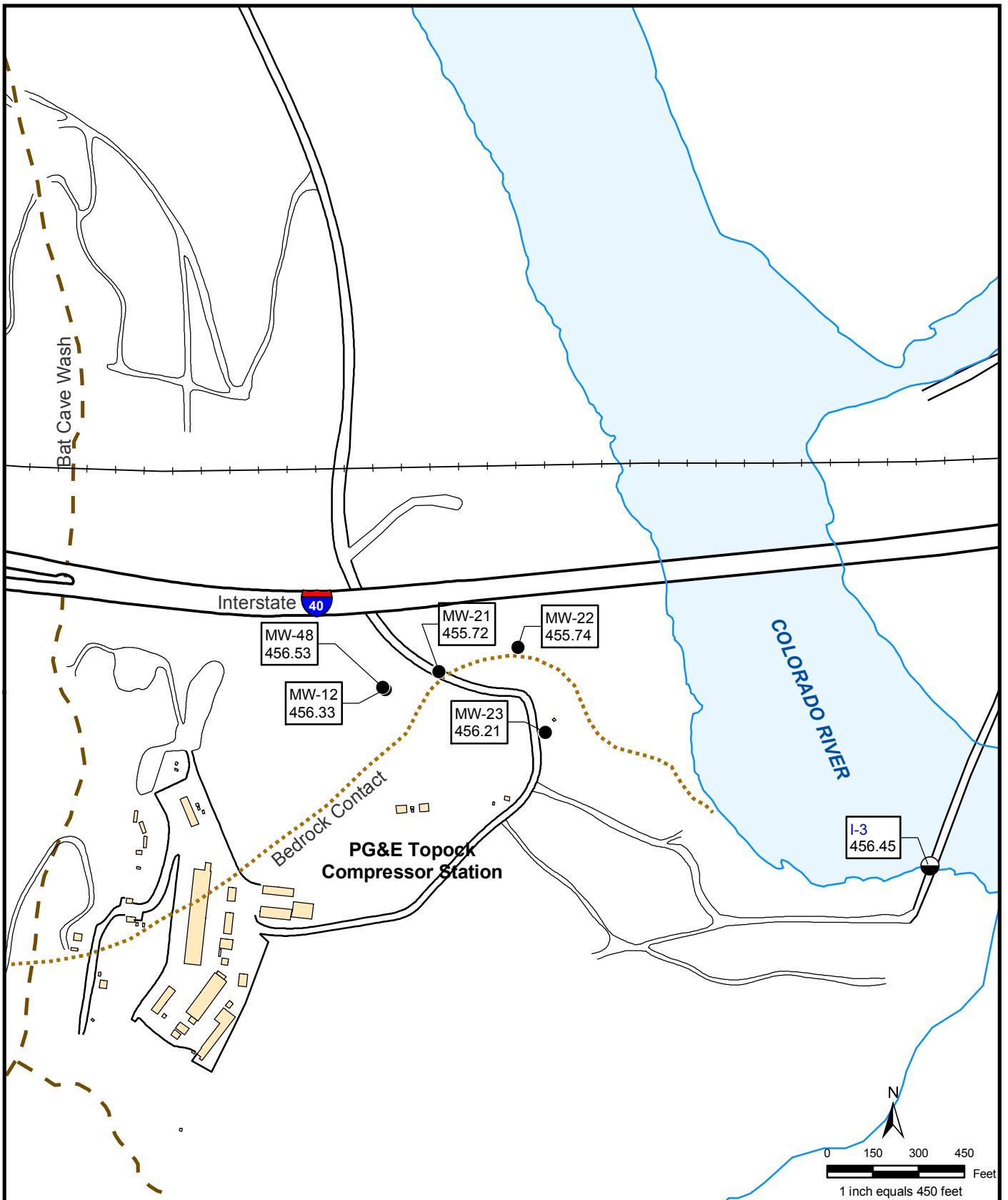
● Monitoring Well
River Station

● I-3
454.66 River Elevation (ft AMSL)
Interpolated Average

● INC Data incomplete or unavailable
over reporting period

— Approximate Bedrock
Contact at 455 ft AMSL

FIGURE 9
AVERAGE GROUNDWATER ELEVATIONS
AT MW-23 AND ADJACENT WELLS
MAY 2008
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA



● **MW-22** Average Groundwater Elevation at Monitoring Station (ft AMSL)
455.00

● Monitoring Well
River Station

● **I-3** River Elevation (ft AMSL)
455.91

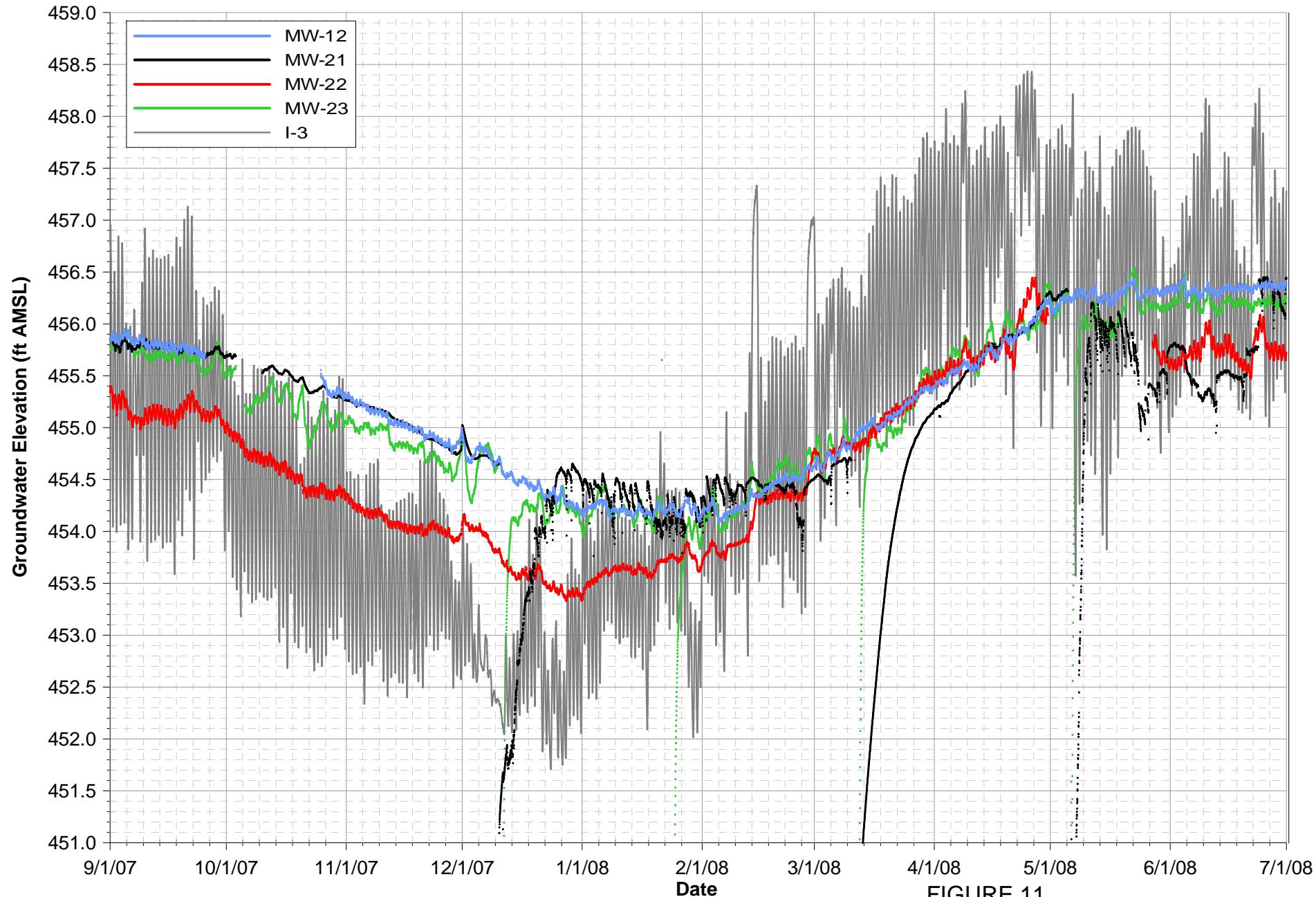
● INC Data incomplete or unavailable over reporting period

Approximate Bedrock Contact at 455 ft AMSL

FIGURE 10
AVERAGE GROUNDWATER ELEVATIONS
AT MW-23 AND ADJACENT WELLS
JUNE 2008

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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Notes:
Data subject to review.

FIGURE 11
MW-23 AND ADJACENT WELLS
HYDROGRAPHS AND RIVER LEVELS
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Attachment 3

**Groundwater COPC Sampling Results, January
through December 2007**

ATTACHMENT 3

Groundwater COPC Sampling Results, January through December 2007
PG&E Topock Groundwater and Surface Water Monitoring Program

Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	pH
MW-9	10/04/2007	304	304	2,810	7.52 J
MW-10	03/06/2007	1,640	1,700	2,760	7.67
	05/03/2007	1,230	1,440	2,840	7.58 J
	10/02/2007	1,010	1,050	2,700	7.74 J
MW-12	03/06/2007	2,630	2,440	4,820	8.41
	05/03/2007	2,620	2,880	5,220	8.40 J
	10/04/2007	2,830	2,700	5,560	8.41 J
	10/04/2007 FD	2,970	2,800	5,540	8.47 J
	12/13/2007	2,530	2,930	5,170	---
MW-13	03/05/2007	23	25	1,860	7.66
	10/02/2007	22	24	1,860	7.67 J
MW-14	03/12/2007	13	13	1,450	7.75
	10/02/2007	27	31	1,410	7.86 J
MW-15	10/02/2007	12	13	1,450	7.89 J
MW-16	10/02/2007	9	10	1,040	8.12 J
MW-17	10/03/2007	7	7	1,710	---
MW-18	03/12/2007	36	36	1,200	7.69
	03/12/2007 FD	36	34	1,200	7.73
	10/02/2007	28	28	1,250	7.78 J
MW-19	03/06/2007	1,040	1,030	2,240	7.69
	05/02/2007	836	777	2,310	7.70 J
	10/05/2007	1,390	1,510	2,200	7.33 J
MW-20-70	03/14/2007	2,820	2,720	2,850	7.62
	05/03/2007	2,790	3,050	2,750	7.62 J
	10/11/2007	2,400	2,140	2,800	7.66 J
MW-20-100	03/14/2007	9,470	9,270	3,590	7.63
	05/03/2007	10,100	9,820	3,560	7.56 J
	05/03/2007 FD	10,000	10,500	3,590	7.54 J
	10/10/2007	9,000	10,700	3,390	7.61 J
MW-20-130	03/08/2007	12,800	11,900	12,600	7.59
	03/08/2007 FD	14,400	12,100	12,800	7.57
	05/03/2007	13,400	16,200	12,700	7.58 J
	05/03/2007 FD	13,500	14,800	12,800	7.53 J
	10/05/2007	12,200	13,000	11,600	7.55 J
MW-21	03/09/2007	ND (1.0)	ND (1.0) LF	11,100	7.26
	05/01/2007	ND (1.0)	1	12,200	7.23 J
	10/04/2007	ND (5.0)	ND (1.0)	14,100	7.21 J
	12/11/2007	ND (1.0)	ND (1.0)	13,700	---
MW-22	03/08/2007	ND (1.0)	ND (1.0)	27,700	7.02
	10/10/2007	ND (1.0)	ND (1.0)	23,700	6.93 J
MW-23	03/06/2007	1,020	1,020	10,200	7.75
	05/02/2007	13	11	17,100	7.38
	10/04/2007	19	22	15,800	7.50 J
	12/11/2007	40	40	16,400	---

ATTACHMENT 2

Groundwater COPC Sampling Results, January through December 2007
PG&E Topock Groundwater and Surface Water Monitoring Program

Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	pH
MW-24A	03/06/2007	3,540	3,600	3,190	7.69
MW-24B	03/05/2007	5,980	6,100	14,900	7.92
MW-24BR	03/06/2007	ND (1.0)	ND (1.0)	14,200	8.26
	05/03/2007	ND (1.0)	ND (1.0) LF	14,000	8.29 J
	10/04/2007	ND (1.0)	ND (1.0)	13,500	8.72 J
	12/14/2007	ND (1.0)	3	13,000	---
MW-25	03/06/2007	945	951	1,330	7.59
	10/02/2007	895	805	1,190	7.62 J
	10/02/2007 FD	933	884	1,210	7.69 J
MW-26	03/12/2007	3,440	3,540	3,580	7.57
	10/02/2007	3,510	3,740	3,490	7.58 J
MW-27-20	10/02/2007	ND (0.2)	2	1,120	7.73 J
MW-27-60	10/02/2007	ND (0.2)	ND (1.0)	7,400	7.51 J
MW-27-85	01/10/2007	ND (1.0)	4	---	---
	02/06/2007	ND (1.0)	ND (1.0)	---	---
	03/07/2007	ND (0.2)	ND (1.0)	18,100	7.31
	04/03/2007	ND (1.0)	ND (1.0)	---	---
	05/01/2007	ND (1.0)	1	18,500	7.21 J
	06/13/2007	ND (1.0)	ND (1.0)	---	---
	07/11/2007	ND (1.0)	ND (1.0)	---	---
	08/08/2007	ND (1.0)	ND (1.0)	---	---
	08/08/2007 FD	ND (1.0)	ND (1.0)	---	---
	09/05/2007	ND (1.0)	ND (1.0)	---	---
	10/02/2007	ND (1.0)	ND (1.0)	16,300	7.24 J
	12/11/2007	ND (1.0)	ND (1.0)	17,800	---
MW-28-25	10/04/2007	ND (1.0)	ND (1.0)	1,220	7.52 J
MW-28-90	03/08/2007	ND (1.0)	ND (1.0)	7,450	7.56
	05/04/2007	ND (0.2)	ND (1.0)	7,560	7.49 J
	10/04/2007	ND (1.0)	ND (1.0)	7,020	7.42 J
	12/14/2007	ND (0.2)	ND (1.0)	7,290	---
MW-29	10/04/2007	ND (1.0)	ND (1.0)	2,630	7.46 J
MW-30-30	10/08/2007	ND (1.0)	ND (1.0) LF	35,800	7.14 J
MW-31-60	03/12/2007	626	638	2,730	7.69
	10/04/2007	726 J	669	2,840	7.60 J
MW-31-135	03/08/2007	51	55	9,980	7.91
	03/08/2007 FD	52	54	9,970	7.93
	10/01/2007	33	29	9,750	7.91 J
MW-32-20	03/06/2007	ND (2.0)	ND (1.0)	37,200	6.85
	04/30/2007	ND (2.0)	ND (1.0)	27,500	6.86 J
	10/01/2007	ND (2.0)	ND (1.0)	47,700	6.79 J
MW-32-35	03/06/2007	ND (1.0)	ND (1.0)	17,300	7.22
	04/30/2007	ND (1.0)	ND (1.0)	19,400	7.07 J
	10/01/2007	ND (1.0)	1	18,700	7.12 J
MW-33-40	03/06/2007	ND (0.2)	ND (1.0)	4,960	8.31

ATTACHMENT 2

Groundwater COPC Sampling Results, January through December 2007
PG&E Topock Groundwater and Surface Water Monitoring Program

Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	pH
MW-33-40	05/02/2007	ND (0.2)	ND (1.0)	4,500	8.38 J
	10/05/2007	ND (0.2)	1	6,260	8.14 J
	12/12/2007	0.40	4	7,890	---
MW-33-90	03/12/2007	17	18	9,750	7.53
	05/02/2007	19	17	9,980	7.56 J
	10/05/2007	18	19	9,540	7.27 J
	12/13/2007	21	23	9,730	---
	12/13/2007 FD	21	21	9,710	---
MW-33-150	03/06/2007	7	7	15,900	7.67
	05/02/2007	7	6	16,000	7.61 J
	10/09/2007	9	8	15,600	7.71 J
	10/09/2007 FD	9	8	15,500	7.70 J
	12/12/2007	9	10	16,700	---
MW-33-210	03/05/2007	11	11	18,900	7.45
	05/02/2007	9	9	18,800	7.46 J
	10/05/2007	12	12	17,500	7.30 J
	12/12/2007	13	14	17,600	---
MW-34-55	10/03/2007	ND (0.2)	ND (1.0)	1,160	---
MW-34-80	01/09/2007	ND (1.0)	3	---	---
	02/05/2007	ND (1.0)	ND (1.0)	---	---
	03/05/2007	ND (1.0)	ND (1.0)	10,000	7.33
	04/02/2007	ND (0.2)	ND (1.0)	---	---
	04/30/2007	ND (1.0)	1	10,000	7.40 J
	06/13/2007	ND (1.0)	ND (1.0)	---	---
	07/11/2007	ND (1.0)	ND (1.0)	---	---
	08/08/2007	ND (1.0)	ND (1.0)	---	---
	09/06/2007	ND (1.0)	ND (1.0)	---	---
	10/03/2007	ND (0.2)	ND (1.0)	8,790	---
	11/12/2007	ND (1.0)	ND (1.0)	---	---
	12/13/2007	ND (1.0)	ND (1.0)	7,750	---
MW-34-100	01/09/2007	797	830	---	---
	01/24/2007	832	817	---	---
	02/05/2007	780	646	---	---
	02/05/2007 FD	764	634	---	---
	02/21/2007	804	895	---	---
	03/07/2007	806	788	16,400	7.76
	03/21/2007	724	642	---	---
	04/02/2007	749	786	---	---
	04/02/2007 FD	720	800	---	---
	04/18/2007	687	641	---	---
	04/30/2007	626	500	16,500	7.60 J
	04/30/2007 FD	632	572	16,300	7.68 J
	05/16/2007	588	573	---	---
	05/30/2007	597	656	---	---
	06/13/2007	609	644	---	---
	06/13/2007 FD	608	633	---	---
	06/27/2007	574	536	---	---

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Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	pH
MW-34-100	07/12/2007	557	520	---	---
	07/12/2007 FD	558	521	---	---
	07/25/2007	560	627	---	---
	08/08/2007	596	670	---	---
	08/22/2007	550	490	---	---
	09/06/2007	551	581	---	---
	09/06/2007 FD	546	516	---	---
	09/19/2007	501	603	---	---
	10/03/2007	521	609 J	16,000	---
	10/03/2007 FD	513	424 J	16,100	---
	11/13/2007	590	598	---	---
	12/13/2007	567	591	16,400	---
	12/13/2007 FD	614	610	15,400	---
MW-35-60	03/08/2007	31	35	6,750	7.53
	03/08/2007 FD	31	33	6,740	7.50
	10/01/2007	25	21	7,160	7.51 J
	10/01/2007 FD	25	21	7,270	7.47 J
MW-35-135	03/08/2007	32	39	9,820	7.76
	05/04/2007	27	26	10,800	7.62 J
	05/04/2007 FD	28	25	10,500	7.65 J
	10/01/2007	32	29	9,150	7.83 J
MW-36-20	10/03/2007	ND (1.0)	ND (1.0)	23,500	---
MW-36-40	10/03/2007	ND (1.0)	ND (1.0)	8,390	---
MW-36-50	10/10/2007	ND (0.2)	2	3,360	7.88 J
MW-36-70	03/07/2007	ND (0.2)	ND (1.0)	2,780	7.93
	05/01/2007	ND (0.2)	ND (1.0)	2,210	8.02 J
	10/09/2007	ND (0.2)	ND (1.0)	1,520	8.29 J
MW-36-90	01/10/2007	6	10	---	---
	02/05/2007	5	5	---	---
	03/07/2007	3	4	7,060	7.54
	04/03/2007	3	3	---	---
	05/02/2007	2	2	6,080	7.54 J
	05/02/2007 FD	2	2	6,170	7.43 J
	06/12/2007	3	3	---	---
	07/12/2007	3	3	---	---
	08/07/2007	3	4	---	---
	09/06/2007	3	4	---	---
	10/09/2007	3	3	3,210	7.84 J
MW-36-100	01/10/2007	571	554	---	---
	02/05/2007	538	474	---	---
	03/08/2007	436	454	14,100	7.33
	04/02/2007	366	378	---	---
	05/02/2007	297	348	13,500	7.25 J
	06/14/2007	181	192	---	---
	07/12/2007	180	219	---	---
	08/07/2007	159 J	187	---	---

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Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	pH
MW-36-100	09/06/2007	157	184	---	---
	10/10/2007	228	196	12,500	7.27 J
MW-37D	03/07/2007	1,420	1,310	14,700	7.84
	05/03/2007	1,350	1,260	14,400	7.56 J
	10/04/2007	834	794	13,600	7.78 J
MW-37S	03/07/2007	8	9	4,640	7.86
	10/04/2007	8	8	4,470	7.89 J
	10/04/2007 FD	8	7	4,530	7.91 J
MW-39-40	03/05/2007	ND (1.0)	ND (1.0)	9,480	7.43
	05/03/2007	ND (1.0) J	ND (1.0)	9,490	7.26 J
	10/08/2007	ND (1.0)	ND (1.0)	10,800	7.18 J
MW-39-50	10/08/2007	ND (0.2)	ND (1.0)	3,660	7.98 J
MW-39-60	10/08/2007	ND (0.2)	ND (1.0)	4,550	7.72 J
MW-39-70	03/05/2007	35	37	8,250	7.31
	05/03/2007	10 R	10	6,920	7.42 J
	06/07/2007	5	4 LF	---	---
	10/08/2007	6	6	5,420	7.56 J
MW-39-80	01/10/2007	302	292	---	---
	02/08/2007	286	247	---	---
	03/05/2007	151	144	13,300	7.10
	04/04/2007	112	126	---	---
	05/03/2007	156	146	12,400	7.27 J
	06/12/2007	84	73	---	---
	07/12/2007	63	56	---	---
	08/08/2007	43	45	---	---
	09/06/2007	65	66	---	---
	10/08/2007	59	48	11,800	7.24 J
MW-39-100	01/10/2007	2,930	2,560	---	---
	02/08/2007	2,880	2,400	---	---
	03/12/2007	2,850	2,770	18,700	7.20
	04/04/2007	3,190	2,990	---	---
	05/03/2007	2,670	2,920	18,600	7.20 J
	06/13/2007	2,530	2,730	---	---
	07/12/2007	2,020	2,430	---	---
	08/07/2007	1,830	1,780	---	---
	09/07/2007	1,660	1,690	---	---
	10/10/2007	1,660	1,840	18,600	7.07 J
MW-40D	03/09/2007	104	92	15,300	7.68
	05/04/2007	78	80	15,300	7.60 J
	10/04/2007	112	104	14,600	7.44 J
MW-40S	10/04/2007	6	7	2,040	7.80 J
MW-41D	03/07/2007	ND (1.0)	ND (1.0)	20,800	7.86
	03/07/2007 FD	ND (1.0)	ND (1.0)	20,700	7.84
	10/03/2007	ND (1.0)	1	20,000	---
MW-41M	03/08/2007	10	12 LF	14,500	7.76

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Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	pH
MW-41M	10/03/2007	11	9	14,100	---
MW-41S	03/08/2007	20	21	4,710	7.96
	10/03/2007	20	18	4,650	---
	10/03/2007 FD	20	18	4,580	---
MW-42-30	03/07/2007	ND (0.2)	ND (1.0)	13,300	7.38
	10/04/2007	ND (1.0)	ND (1.0)	20,600	7.17 J
MW-42-55	03/07/2007	ND (0.2)	ND (1.0)	15,000	7.35
	03/07/2007 FD	ND (0.2)	ND (1.0)	15,200	7.35
	05/01/2007	ND (1.0)	ND (1.0)	15,400	7.33 J
	10/04/2007	ND (1.0)	ND (1.0)	13,900	7.30 J
	12/11/2007	ND (1.0)	ND (1.0)	14,600	---
MW-42-65	03/07/2007	ND (0.2)	ND (1.0)	17,500	7.06
	05/01/2007	ND (1.0)	ND (1.0)	16,300	7.10 J
	10/03/2007	ND (1.0)	ND (1.0)	14,400	---
	12/11/2007	ND (1.0)	ND (1.0)	15,900	---
MW-43-25	03/06/2007	ND (0.2)	ND (1.0)	1,250	7.55
	10/02/2007	ND (1.0)	ND (1.0)	1,210	7.46 J
MW-43-75	03/06/2007	ND (1.0)	ND (1.0)	13,800	7.47
	04/30/2007	ND (1.0)	ND (1.0)	13,600	7.46 J
	10/02/2007	ND (1.0)	ND (1.0)	13,400	7.53 J
MW-43-90	03/06/2007	ND (1.0)	ND (1.0)	19,700	6.99
	04/30/2007	ND (1.0)	ND (1.0)	19,800	6.99 J
	10/02/2007	ND (1.0)	ND (1.0)	18,200	6.93 J
MW-44-70	03/09/2007	ND (1.0)	ND (1.0)	6,320	7.50
	05/03/2007	ND (0.2)	ND (1.0)	5,890	7.38 J
	10/04/2007	ND (0.2)	ND (1.0)	4,790	7.65 J
	12/11/2007	ND (0.2)	ND (1.0)	4,430	---
MW-44-115	01/09/2007	1,140	1,260	---	---
	02/06/2007	1,140	1,020	---	---
	03/09/2007	1,210	1,340 LF	13,000	7.79
	03/09/2007 FD	1,200	1,340	13,000	7.81
	04/02/2007	1,210	1,420	---	---
	05/04/2007	1,080	1,190	13,200	7.81 J
	06/14/2007	1,030	1,110	---	---
	07/10/2007	919	1,060	---	---
	08/06/2007	834	924	---	---
	09/05/2007	872	850	---	---
	10/04/2007	763	866	12,300	7.95 J
	10/04/2007 FD	783	830	12,200	7.83 J
	11/13/2007	766	890	---	---
MW-44-125	11/13/2007 FD	767	884	---	---
	12/11/2007	736	766	13,100	---
	01/09/2007	285	285	---	---
MW-44-125	01/09/2007 FD	284	268	---	---
	02/06/2007	213	190	---	---
	03/09/2007	258	287	12,300	7.85

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Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	pH
MW-44-125	04/03/2007	296	272	---	---
	05/03/2007	254	315	11,700	7.54 J
	05/03/2007 FD	300	309	12,200	7.87 J
	06/14/2007	229	258	---	---
	07/11/2007	252	283	---	---
	08/07/2007	278	251	---	---
	09/04/2007	255	253	---	---
	10/04/2007	314	347	11,900	7.85 J
	11/12/2007	318	330	---	---
	12/11/2007	359	311	13,600	---
MW-45-095a	05/04/2007	169	140	10,100	7.57 J
MW-46-175	01/10/2007	138	133	---	---
	02/08/2007	130	108	---	---
	03/08/2007	153	147	16,200	8.47
	04/03/2007	113	96	---	---
	05/04/2007	86	114	16,100	8.35 J
	06/14/2007	101	109	---	---
	07/13/2007	103	101	---	---
	08/06/2007	94	99	---	---
	09/04/2007	88	95	---	---
	10/05/2007	100	87	15,500	8.45 J
	11/13/2007	104	95	---	---
	12/13/2007	123	128	15,800	---
MW-46-205	03/08/2007	4	5	19,900	8.32
	05/04/2007	4	3	20,400	7.49 J
	10/05/2007	4	5	18,900	8.32 J
	12/14/2007	4	4	19,100	---
MW-47-55	03/06/2007	55	53	3,610	7.70
	05/04/2007	30	32	3,990	7.64 J
	10/04/2007	62	59	3,660	7.79 J
	12/12/2007	152	134	3,720	---
MW-47-115	03/06/2007	11	11	12,500	7.77
	05/04/2007	14	13	12,700	7.68 J
	10/04/2007	12	12	12,200	7.69 J
	12/12/2007	10	11	13,200	---
	12/12/2007 FD	11	11	13,000	---
MW-48	03/07/2007	ND (1.0)	ND (1.0) LF	17,400	7.89
	05/01/2007	ND (1.0)	1	17,900	7.37 J
	10/04/2007	ND (1.0)	ND (1.0)	16,500	7.30 J
	12/14/2007	ND (1.0)	1	16,400	---
MW-49-135	03/09/2007	ND (1.0)	ND (1.0)	13,500	7.67
	05/04/2007	ND (0.2)	ND (1.0)	13,400	7.83 J
	10/10/2007	ND (1.0)	3	12,300	7.81 J
MW-49-275	03/09/2007	ND (1.0)	ND (1.0)	23,700	8.10
	05/04/2007	ND (0.2)	ND (1.0)	23,400	8.05 J
	10/09/2007	ND (1.0)	ND (1.0)	22,200	8.20 J

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Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	pH
MW-49-365	03/09/2007	ND (2.0)	ND (1.0)	36,100	7.98
	05/04/2007	ND (0.2)	ND (1.0)	36,900	7.91 J
	10/09/2007	ND (2.0)	ND (1.0)	34,200	8.08 J
MW-50-095	03/07/2007	274	372	4,770	7.98
	05/02/2007	304	264	4,810	7.87 J
	10/04/2007	217	216	4,660	8.06 J
	12/11/2007	173	163	4,910	---
MW-50-200	03/07/2007	12,300	14,600	20,700	7.92
	04/30/2007	10,900	12,100	20,300	7.83 J
	10/04/2007	9,430	9,780	18,800	7.37 J
	12/11/2007	8,930	9,340	19,400	---
MW-51	03/06/2007	4,690	5,090	10,500	7.56
	05/01/2007	4,670	5,120	11,100	7.52 J
	10/05/2007	4,500	4,340	10,100	7.59 J
MW-52D	03/13/2007	ND (1.0)	ND (1.0)	---	---
	05/01/2007	ND (1.0)	ND (1.0)	---	---
	06/05/2007	ND (1.0)	ND (1.0)	20,700	8.03 J
	07/12/2007	ND (1.0)	ND (1.0)	20,600	7.44 J
	08/08/2007	ND (1.0)	ND (1.0)	20,500	7.96 J
	09/05/2007	ND (1.0)	ND (1.0)	19,200	7.98 J
	10/11/2007	ND (1.0)	ND (1.0)	19,700	8.02 J
	12/17/2007	ND (1.0)	ND (1.0)	19,500	---
MW-52M	03/13/2007	ND (1.0)	ND (1.0)	---	---
	05/01/2007	ND (1.0)	ND (1.0)	---	---
	06/05/2007	ND (1.0)	ND (1.0)	16,100	7.94 J
	07/12/2007	ND (1.0)	ND (1.0)	15,900	7.77 J
	08/08/2007	ND (1.0)	ND (1.0)	16,400	7.94 J
	08/08/2007 FD	ND (1.0)	ND (1.0)	16,100	7.86 J
	09/05/2007	ND (1.0)	ND (1.0)	15,100	7.93 J
	10/11/2007	ND (1.0)	ND (1.0)	15,800	8.01 J
	12/17/2007	ND (1.0)	ND (1.0)	15,400	---
MW-52S	03/13/2007	ND (1.0)	ND (1.0)	---	---
	05/01/2007	ND (1.0)	ND (1.0)	---	---
	06/05/2007	ND (1.0)	ND (1.0)	10,600	7.40 J
	07/12/2007	ND (1.0)	ND (1.0)	11,600	7.48 J
	08/08/2007	ND (1.0)	ND (1.0)	11,600	7.65 J
	09/05/2007	ND (1.0)	ND (1.0)	10,800	7.45 J
	10/11/2007	ND (1.0)	ND (1.0)	11,000	7.50 J
	12/17/2007	ND (1.0)	ND (1.0)	10,700	---
MW-53D	04/03/2007	ND (1.0)	ND (1.0)	---	---
	05/02/2007	ND (1.0)	1	---	---
	06/05/2007	ND (1.0)	ND (1.0)	26,100	8.91 J
	06/05/2007 FD	ND (1.0)	ND (1.0)	23,100	8.85 J
	07/12/2007	ND (1.0)	ND (1.0)	25,500	8.79 J
	08/08/2007	ND (1.0)	ND (1.0)	25,700	8.98 J
	09/05/2007	ND (1.0)	ND (1.0)	23,500	8.56 J

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Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	pH
MW-53D	09/05/2007	ND (1.0)	ND (1.0)	24,200	8.67 J
	10/11/2007	ND (2.0)	2 J	24,300	8.79 J
	10/11/2007	ND (1.0)	ND (1.0) J	24,800	8.85 J
	12/17/2007	ND (1.0)	ND (1.0)	24,300	---
MW-53M	04/03/2007	ND (1.0)	ND (1.0)	---	---
	05/01/2007	ND (1.0)	ND (1.0)	---	---
	06/05/2007	ND (1.0)	ND (1.0)	14,400	8.71 J
	07/12/2007	ND (1.0)	ND (1.0)	15,400	8.52 J
	08/08/2007	ND (1.0)	ND (1.0)	16,200	8.50 J
	09/05/2007	ND (1.0)	ND (1.0)	15,500	8.48 J
	10/11/2007	ND (1.0)	ND (1.0)	16,900	8.57 J
	12/17/2007	ND (1.0)	ND (1.0)	16,900	---
OW-3D	03/09/2007	3	3	7,680	8.18
	10/03/2007	4	4	7,710	---
OW-3M	03/09/2007	18	17	5,100	8.07
	10/03/2007	17 J	19	4,980	---
OW-3S	03/09/2007	23	22	1,730	7.71
	10/03/2007	22	22	1,690	---
PE-1	12/06/2006	97	86	10,000	7.48
	01/10/2007	89	103	8,410	7.75
	02/06/2007	81	90	8,390	7.49
	03/07/2007	85	91	8,360	7.52
	06/13/2007	52	48	7,650	7.52 J
	07/11/2007	47	40	7,450	7.55 J
	08/08/2007	51	61	7,290	7.59 J
	09/05/2007	49	49	6,590	7.55 J
	10/03/2007	53	45	6,550	7.53 J
	11/13/2007	50	52	6,450	7.62 J
	12/12/2007	47	55	7,120	7.65 J
PGE-7BR	12/19/2007	ND (1.0)	ND (1.0) LF	---	---
PGE-8	08/11/2007	ND (1.0)	ND (1.0)	18,000	8.46 J
Park Moabi-3	05/02/2007	0.90	1 UF	1,890	7.82 J
	10/04/2007	ND (1.0)	ND (1.0) UF	1,920	7.93 J
Park Moabi-4	05/02/2007	ND (0.2)	ND (1.0) UF	1,530	7.99 J
	10/04/2007	21	24 UF	1,720	8.14 J
	11/13/2007	13	22 UF	1,470	8.01 J
TW-1	10/11/2007	4,610	4,220	6,200	7.54 J
TW-2D	10/04/2007	210	228	7,350	7.40 J
TW-2S	10/04/2007	1,250	1,220	2,380	7.93 J
TW-3D	12/06/2006	2,500	2,090	10,000	7.38
	01/10/2007	2,440	2,580	8,670	7.34
	02/06/2007	2,400	2,310	8,610	7.30
	03/07/2007	2,420	2,500	8,740	7.37
	06/13/2007	2,000	2,350	8,670	7.32 J
	07/11/2007	2,000	2,390	8,750	7.37 J

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Well ID	Sample Date	Hexavalent Chromium ($\mu\text{g/L}$)	Dissolved Total Chromium ($\mu\text{g/L}$)	Specific Conductance ($\mu\text{S/cm}$)	pH
TW-3D	08/08/2007	1,930	1,800	8,660	7.28 J
	09/05/2007	2,260	2,110	7,750	7.28 J
	10/03/2007	2,000	1,860	8,200	7.29 J
	11/13/2007	1,790	1,570	8,080	7.39 J
	12/12/2007	1,800	2,040	8,930	7.44 J
TW-4	03/07/2007	35	31	20,700	7.85
	03/07/2007 FD	36	37	20,800	7.77
	10/03/2007	33	32	19,400	---
	10/03/2007 FD	34	33	19,600	---
	12/12/2007	26	23	19,600	---
TW-5	10/04/2007	7	8	12,200	7.91 J

Notes:

$\mu\text{g/L}$ micrograms per liter
 $\mu\text{S/cm}$ microSiemens per centimeter
ND not detected at listed reporting limit
J concentration or reporting limit estimated by laboratory or data validation
R result exceeded analytical criteria for precision and accuracy; should not be used for project decision-making
(--) not collected or not available
FD field duplicate sample
LF lab filtered
UF unfiltered

Hexavalent chromium analysis methods: SW 7196A (reporting limit 10 $\mu\text{g/L}$) and SW 7199 (reporting limit 0.2 $\mu\text{g/L}$ for undiluted samples).

Other analysis methods: dissolved total chromium (Methods SW 6020A and SW 6010B), specific conductance (SW 9050), pH (SW 9040).

Wells TW-3D and PE-1 are active extraction wells for the IM hydraulic containment system.

Monitoring well MW-39-70 was resampled on June 7, 2007 due to the rejected hexavalent chromium sample collected on May 3, 2007.

The March, April and May 2007 results for slant wells MW-52 and MW-53 are from initial groundwater sampling events.

Attachment 4

Groundwater Sampling and Chain-of-Custody

Forms
