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**Subject: Topock Interim Measures No. 3 Extraction System 20 Percent Downtime in July  
2009 Report  
Pacific Gas and Electric Company, Topock Compressor Station  
Interim Measure No. 3 Groundwater Treatment System**

Dear Mr. Yue and Ms. Baker:

This PG&E Topock Interim Measures No. 3 (IM3) Extraction System 20 Percent Downtime Report is provided pursuant to the July 27, 2007 letter regarding Updates and Modifications to PG&E's Topock Interim Measures Performance Monitoring Program: "if the IM3 extraction system is offline for an extended period (of time)... a period of extraction system shutdown that exceeded 20% of any reporting month was defined as an 'extended offline period' that would require a notification report."

As identified in the July 27, 2007 letter, "The notification letter report should fully describe the time and duration of the shutdown periods, the reasons for shutdown, and provide the performance monitoring data (flow rate and hydraulic data/gradients measured, etc) for the reporting period."

### ***Extraction System Operations***

Pumping data for the IM3 groundwater treatment system for July 2009 are presented in Attachment 1 - July 2009 IM3 Daily Flow Rates; included in the Daily Flow Rates are the IM3 extraction system (extraction wells PE-01, TW-3D, TW-2S and TW-2D) flow rates.

The IM3 extraction system was shut down for 267.9 hours during July 2009 (36.0 percent), for both planned and unplanned events. Attachment 2 presents the IM3 Extraction System Operations Log (Downtime Summary) for July 2009. The causes of the extraction system downtime include:

- planned maintenance to replace the aging reverse osmosis (RO) system with a modern RO system;
- unplanned maintenance to troubleshoot the modern RO system during testing; and
- unplanned maintenance to repair the microfilter level system.

PG&E notified DTSC by e-mail on July 23, 2009 that the IM3 extraction system downtime would exceed 20 percent, or 6 days (144 hours) within the month of July 2009, consistent with the Interim Measure Notification guidelines that DTSC approved on April 9, 2008. RO unit start-up testing was completed July 27, 2009, and the entire plant has been back in treatment service since that date.

### **Hydraulic Gradients**

PG&E selected the summer season as an appropriate time of year for conducting the RO unit replacement activity because summer is during the high-water season for the Colorado River.

Hydraulic gradients were measured during July 2009 for well pairs selected for performance monitoring with two pumping centers (TW-3D and PE-1). The following well pairs were approved by DTSC on October 12, 2007 to define the gradients induced while pumping from the two locations:

- MW-31-135 and MW-33-150 (northern gradient pair)
- MW-45-95 and MW-34-100 (central gradient pair)
- MW-45-95 and MW-27-85 (southern gradient pair)

Table 1 presents the average monthly hydraulic gradients that were measured between the well pairs in July 2009.

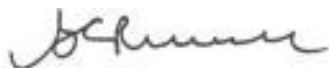
Table 1 - Landward Gradients in Approved Well Pairs

<b>Approved Well Pairs</b>	<b>Landward Gradient (feet/foot)</b>	<b>Landward Gradient Performance Standard (feet/foot)</b>
MW-31-135 & MW-33-150	0.00134	0.001
MW-45-095a & MW-34-100	0.00986	0.001
MW-45-095a & MW-27-085	0.00315	0.001

The groundwater gradient data for July 2009 demonstrates that PG&E met the DTSC performance standards for a landward gradient during the month of July 2009.

If you need any additional information or if you have any questions regarding this report, please do not hesitate to call me at (760) 326-5582.

Sincerely,



Curt Russell  
Topock Site Manager

Enclosures:

Attachment 1 - July 2009 IM3 Daily Flow Rates

Attachment 2 - July 2009 IM3 Extraction System Operations Log

cc: Bob Doss, PG&E  
Yvonne Meeks, PG&E  
Chris Smith, PG&E

**Attachment 1 - July 2009 IM3 Daily Flow Rates**

**July 2009 Operational Data**

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

Month	Day	Year	Extraction Well System					Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
July	1	2009	--	--	155,603	38,726	194,329	179,040	18,665	197,704	3,147
July	2	2009	--	--	131,911	32,520	164,431	164,450	21	164,471	3,140
July	3	2009	--	--	105,637	26,200	131,837	126,448	23	126,471	6
July	4	2009	--	--	145,845	36,320	182,165	176,276	21	176,298	3,160
July	5	2009	--	--	155,489	38,491	193,980	191,481	25	191,505	3,143
July	6	2009	--	--	155,433	38,967	194,399	188,876	20	188,896	3,166
July	7	2009	--	--	155,750	38,452	194,202	189,708	22	189,730	3,138
July	8	2009	--	--	154,468	37,890	192,358	96,913	94,194	191,107	3,138
July	9	2009	--	--	155,166	38,192	193,358	19	187,341	187,360	3
July	10	2009	--	--	75,681	20,053	95,734	7	97,123	97,129	3,991
July	11	2009	--	--	154,442	39,304	193,746	15	174,949	174,964	3,174
July	12	2009	--	--	154,367	39,365	193,732	7	191,234	191,241	3,159
July	13	2009	--	--	57,834	15,063	72,897	15	71,531	71,546	3
July	14	2009	--	--	14	16	30	18	134	151	2,720
July	15	2009	--	--	12	17	29	7	76	83	2
July	16	2009	--	--	45,541	11,678	57,220	10	44,516	44,525	2,428
July	17	2009	--	--	63,454	16,061	79,516	18	82,048	82,066	9,955
July	18	2009	--	--	151,135	38,143	189,279	13	167,777	167,790	3,124
July	19	2009	--	--	151,591	39,103	190,693	10	187,970	187,980	6,321
July	20	2009	--	--	139,247	36,229	175,477	10	171,280	171,289	3,229
July	21	2009	--	--	153,960	39,949	193,909	15,472	173,577	189,048	3,284
July	22	2009	--	--	46,924	12,409	59,332	16	54,498	54,513	3,290
July	23	2009	--	--	12	22	34	8	17	25	3
July	24	2009	--	--	15	25	39	7	16	22	1
July	25	2009	--	--	14	16	30	12	19	31	2
July	26	2009	--	--	17	24	41	9	29	38	2
July	27	2009	--	--	49,687	12,795	62,482	8	62,887	62,895	2
July	28	2009	--	--	98,863	26,122	124,985	9	119,475	119,484	1,860
July	29	2009	--	--	154,137	39,711	193,848	11,808	178,229	190,037	6,820
July	30	2009	--	--	131,561	34,174	165,734	19,010	136,390	155,400	6,796
July	31	2009	--	--	120,083	30,219	150,301	14	151,242	151,256	3
<b>Total Monthly Volumes (gal)</b>			<b>0</b>	<b>0</b>	<b>3,063,892</b>	<b>776,256</b>	<b>3,840,148</b>	<b>1,359,714</b>	<b>2,365,345</b>	<b>3,725,059</b>	<b>82,213</b>
<b>Average Pump/Injection Rates (gpm)</b>			<b>0.0</b>	<b>0.0</b>	<b>68.6</b>	<b>17.4</b>	<b>86.0</b>	<b>30.5</b>	<b>53.0</b>	<b>83.4</b>	<b>1.8</b>

NOTES: gal: gallons  
gpm: gallons per minute  
RO: Reverse Osmosis

**Attachment 2 – July 2009 Extraction System  
Operation Log**

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## **Extraction System Operations Log for July 2009**

### **PG&E Topock Interim Measures Performance Monitoring Program**

During July 2009, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gallons per minute (gpm) excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during July 2009. The operational run time for the IM No. 3 groundwater extraction system (combined or individual pumping) was 64.0 percent during the July 2009 reporting period.

The IM No. 3 facility treated approximately 3,840,148 gallons of extracted groundwater during July 2009. The IM No. 3 facility also treated approximately 1,985 gallons of water generated from the groundwater monitoring program and 11,500 gallons of injection well backwashing/re-development water. No containers of solids from the IM No. 3 facility were transported offsite during July 2009.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 36.0 percent of downtime during July 2009) are summarized below. The times shown are in Pacific Standard Time (PST) to be consistent with other data collected (e.g., water level data) at the site.

- **July 2, 2009 (planned):** The extraction well system was offline from 2:37 p.m. to 6:14 p.m. for electrical and mechanical work associated with the RO upgrade. Extraction system downtime was 3 hours and 37 minutes.
- **July 3, 2009 (planned):** The extraction well system was offline from 2:02 p.m. to 9:41 p.m. for a microfilter repair. Extraction system downtime was 7 hours and 39 minutes.
- **July 4, 2009 (unplanned):** The extraction well system was offline from 3:04 p.m. to 4:18 p.m. and from 11:33 p.m. to 11:44 p.m. when City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 1 hour and 25 minutes.
- **July 8, 2009 (planned):** The extraction well system was offline from 12:24 p.m. to 12:25 p.m. and from 12:38 p.m. to 12:39 p.m. to measure and calculate the specific capacity of the extraction wells. Extraction system downtime was 2 minutes.
- **July 9, 2009 (planned):** The extraction well system was offline from 12:54 p.m. to 12:55 p.m., 12:59 p.m. to 1:00 p.m., and 1:05 p.m. to 1:06 p.m. while testing the pipeline leak detection system. Extraction system downtime was 3 minutes.
- **July 10, 2009 (unplanned):** The extraction well system was offline from 6:47 a.m. to 6:56 p.m. when the TVSS failed after the City of Needles power supply imbalance alarmed and shut down the extraction wells. TVSS was replaced with a spare. Since the plant was down, additional electrical work associated with the RO upgrade was completed. Extraction well downtime was 12 hours and 9 minutes.
- **July 13 - 16, 2009 (planned):** The extraction well system was offline from 9:01 a.m. on July 13, 2009 to 4:14 p.m. on July 16, 2009, for the commissioning and startup of the new RO equipment that replaced the aging RO equipment. Extraction well downtime was 3 days, 7 hours, and 13 minutes.

- **July 16, 2009 (planned):** The extraction well system was offline from 5:43 p.m. to 6:18 p.m. for maintenance prior to starting up the plant with the existing RO system. Extraction well downtime was 35 minutes.
- **July 17, 2009 (planned):** The extraction well system was offline from 5:38 a.m. to 11:32 a.m. and from 11:33 a.m. to 7:45 p.m. for plant maintenance. Extraction well downtime was 14 hours and 6 minutes.
- **July 18 - 19, 2009 (unplanned):** The extraction well system was offline from 1:27 p.m. to 1:50 p.m. on July 18, 2009 and from 11:52 p.m. on July 18, 2009 to 12:21 a.m. on July 19, 2009 when City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction well downtime was 52 minutes.
- **July 20, 2009 (planned):** The extraction well system was offline from 10:07 a.m. to 11:04 a.m. and 11:07 a.m. to 12:24 p.m. to switch from generator power to City of Needles power. Extraction well downtime was 2 hours and 14 minutes.
- **July 22 - 27, 2009 (planned):** The extraction well system was offline from 7:21 a.m. on July 22, 2009 to 4:13 p.m. on July 27, 2009 to complete the commissioning and startup of the new RO equipment that replaced the aging RO equipment. Extraction well downtime was 5 days, 8 hours, and 52 minutes.
- **July 28, 2009 (unplanned):** The extraction well system was offline from 7:54 a.m. to 8:17 a.m., 10:19 a.m. to 5:09 p.m., and 5:13 p.m. to 6:29 p.m. for microfilter repairs. Extraction well downtime was 8 hours and 29 minutes.
- **July 30, 2009 (unplanned):** The extraction well system was offline from 3:39 p.m. to 7:03 p.m. to replace a membrane element in the new primary RO. Extraction well downtime was 3 hours and 24 minutes.
- **July 30, 2009 (unplanned):** The extraction well system was offline from 11:56 p.m. to 11:57 p.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction well downtime was 1 minute.
- **July 31, 2009 (planned):** The extraction well system was offline from 12:00 a.m. to 12:01 a.m., from 12:06 a.m. to 12:11 a.m., 12:14 a.m. to 12:15 a.m., 12:16 a.m. to 12:21 a.m., 10:06 a.m. to 3:04 p.m., and 3:59 p.m. to 4:01 p.m. due to power supply imbalances and for plant maintenance. Extraction well downtime was 5 hours and 12 minutes.