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April 16, 2015

Maureen Snelgrove
San Bernardino County Regional Parks Department
777 E. Rialto Avenue
San Bernardino, CA 92415

Subject: Results of PG&E December 2014 and March 2015 sampling of the Moabi Regional Park Wells (PM-03 and PM-04)

Dear Ms. Snelgrove,

This letter provides recent Pacific Gas and Electric Company (PG&E) groundwater sampling results from your water supply wells located within San Bernardino County's Moabi Regional Park in Needles, California.

Since 1997, PG&E has had a groundwater monitoring program (GMP) in place in the vicinity of the Topock Compressor Station. The purpose of the GMP sampling is to assess the nature and extent of chromium in groundwater as a result of past practices at the Compressor Station. The GMP includes the sampling of more than 150 wells in the area.

As part of the GMP, PG&E has conducted sampling within Moabi Regional Park since 1997, and provided the results each year. PG&E samples your two water supply wells within the park: PM-03 (installed in 1997) and PM-04 (installed in 2006). These two wells are considered to be located hydraulically up-gradient (i.e., upstream) relative to the Topock project area. The water quality of both the Park Moabi wells has been generally stable over this time period. Annual monitoring of PM-03 and PM-04 as part of the GMP is planned to continue as work continues on the Topock groundwater cleanup. More details are provided below and in the attached tables.

On December 23, 2014, with the Park's permission, PG&E's sampling team collected groundwater samples from wells PM-03 and PM-04. Beginning with the December 2014 sampling event, samples from PM-03 and PM-04 are collected from new sampling locations upstream from a chlorination system that was added to the Park's water supply sometime after the December 2013 groundwater sampling event. The samples collected on December 23, 2014 were analyzed for total dissolved chromium instead of total chromium that should have been used for these samples. With the Park's permission, PG&E's sampling team collected a supplemental sample on March 17, 2015 from wells PM-03 and PM-04.

The December 2014 groundwater samples were analyzed for hexavalent chromium, dissolved total chromium, pH, and specific conductance. The March 2015 groundwater samples were analyzed for the

full analytical suite for these wells: hexavalent chromium, total chromium, pH, specific conductance, calcium, chloride, nitrate/nitrite, sulfate, alkalinity, iron, magnesium, manganese, and sodium. The attached Tables 1 through 3 present a summary of the results for the above-listed analytes/parameters from 2007 through March 2015 for wells PM-03 and PM-04. Please save these data tables if you intend to refer to the historical data in the future, because PG&E plans to drop the oldest results from future letters in order to reduce the bulk of future letters. The latest results will be formally reported to the California Department of Toxic Substances Control in PG&E's next report: *First Quarter 2015 IM Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*.

Also included is a table containing the state and federal drinking water standards (known as maximum contaminant levels, or MCLs), that can be used for comparison to the sampling results. The federal MCLs are based on health considerations, and secondary MCLs are based on taste or odor considerations at concentrations not considered to represent a health risk. There are also MCLs and secondary MCLs established by the State of California, and those are shown in the table as well. Note that some of these standards are listed in mg/L or parts per million, compared to the corresponding monitoring results that are listed in µg/L or parts per billion. One mg/L is equivalent to 1,000 µg/L. For example, a sampling result of 8.3 µg/L is equivalent to 0.0083 mg/L, which is well below the MCL for chromium in California, which is 0.05 mg/L.

In July 2014, the State of California established for the first time, a drinking water standard for hexavalent chromium. The established level (10 µg/L) is lower than the naturally occurring (background) concentrations for this metal in the Topock area. Background concentrations result from groundwater dissolving small amounts of metals over time, including chromium, from subsurface soils and rocks. Background levels for hexavalent chromium have been measured to range up to 32 µg/L in the Topock area. The naturally occurring hexavalent chromium concentration in samples from PM-04 (ranging from 18 to 21 µg/L) has been above this newly established drinking water standard since sampling began in 2006. As seen in Table 1, the concentration measured in March 2015 is 18.0 µg/L, consistent with the background level in Topock area wells, but above the newly established drinking water standard.

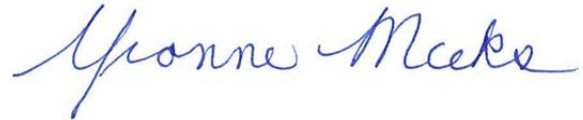
Results for total chromium and additional constituents are provided in Tables 1 through 3. The total chromium concentrations found in the March 2015 sampling event continue to be below both the state and federal drinking water standards and are consistent with the range of concentrations found in other Topock area wells that contain naturally occurring ("background") chromium concentrations. Total Nitrate/Nitrite (as N) is the only other constituent sampled for which there is a federal or state primary drinking water standard. The Nitrate/Nitrite (as N) results of 3.3 mg/L and 2.5 mg/L for PM-03 and PM-04, respectively, are well below the federal and state drinking water standard of 10 mg/L.

The current groundwater monitoring program plan calls for the Moabi Regional Park groundwater supply wells to be sampled for chromium and hexavalent chromium every year. The next regular sampling event will occur in December 2015. PG&E will continue to notify the park of our requests to sample, and will report future sampling results to you by letter.

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Ms. Snelgrove
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If you have any questions, or would like information about the environmental investigation at the Topock Site, please contact Frankie Burton at (415) 598-8252, Curt Russell at (760) 791-5884, or myself at (805) 234-2257.

Sincerely,



Yvonne Meeks
Topock Remediation Project Manager

cc: Troy Burton, San Bernardino County Regional Parks Department
Aaron Yue, California Department of Toxic Substances Control

Att: Moabi Regional Park, *Analytical Results 2008 – 2015*, Wells Sampling Results Tables 1 through 3 and MCL Table

TABLE 1
 Moabi Regional Park, San Bernardino County, CA; Analytical Results 2008 – 2015 - Historical Chemicals of Potential Concern
 PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Hexavalent Chromium (µg/L)	Total Chromium (µg/L)	Dissolved Total Chromium (µg/L) ^(a)	pH (b) (phunits)	Specific Conductance (µS/cm)	Oxygen Reduction Potential (mV) ^(c)
PM-03	10/02/2008	8.74	8.35	---	7.42	1400	-30
PM-03	10/01/2009	9.90	9.50	---	7.72	1400	345
PM-03	12/10/2010	11.9	10.5	---	7.57	1200	47.8
PM-03	12/12/2011	6.60	7.00	---	7.50	1400	13.4
PM-03	11/08/2012	7.20	8.30	---	7.81	1600	-12.9
PM-03	12/19/2013	4.10	7.90	---	7.67	1200	-61
PM-03	12/23/2014	9.20	---	8.60	7.35	1500	-38
PM-03	03/17/2015	9.30	8.40	---	7.31	---	-42
PM-04	10/02/2008	20.6	18.5	---	7.44	1700	-7.0
PM-04	10/01/2009	21.0	18.0	---	7.91	1800	---
PM-04	12/10/2010	21.0	20.6	---	7.44	1700	39.5
PM-04	12/12/2011	18.9	18.2	---	7.70	1800	---
PM-04	11/08/2012	21.3	23.0	---	7.79	2200	432
PM-04	12/19/2013	12.6	18.0	---	7.53	2000	-64
PM-04	12/23/2014	18.0	---	16.0	7.48	2000	-39
PM-04	03/17/2015	18.0	17.0	---	7.38	---	-46

Notes:

- (a) During the sampling event on December 23, 2014, the method used for analyzing chromium concentrations was changed from EPA Method 200.8 (Total Chromium) to EPA Method 6020a (Total Dissolved Chromium). Wells PM-03 and PM-04 were resampled on March 17, 2015 to correct this error.
 - (b) field measurements.
 - (c) From March 5, 2002 onwards, field measurement for Oxidation Reduction Potential were collected.
- µg/L micrograms per liter (parts per billion).
 µS/cm microSiemens per centimeter.
 mV millivolts.
 --- not collected or not available.

TABLE 2
 Moabi Regional Park, San Bernardino County, CA; Analytical Results 2008 – 2015, PM-03 - Sampling Events with Expanded Analyte Suite
 PG&E Topock Compressor Station, Needles, California

Group	Analyte	Units	PM-03	PM-03	PM-03	PM-03	PM-03	PM-03	PM-03	
			2008 Qtr 3 10/2/2008	2009 Qtr 3 10/1/2009	2010 Qtr 4 12/10/2010	2011 Qtr 4 12/12/2011	2012 Qtr 4 11/08/2012	2013 Qtr 4 12/19/2013	2014 Qtr 4 12/23/2014	2015 Qtr 1 3/17/2015
Anion										
	Chloride	mg/L	320	320	270	340	330	290	---	340
	Nitrate (as nitrogen)	mg/L	3.50	3.20	3.30	3.10	---	---	---	---
	Nitrate/Nitrite as Nitrogen	mg/L	---	---	---	---	3.12	3.24	---	3.30
	Sulfate	mg/L	61.0	58.0	54.0	59.0	61.0	61.0	---	67.0
General										
	Alkalinity, hydroxide	mg/L	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	---	ND (5.0)
	Alkalinity, bicarb as CaCO3	mg/L	88.0	83.0	89.0	89.0	84.0	95.0	---	85.0
	Alkalinity, carb as CaCO3	mg/L	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	---	ND (5.0)
	Alkalinity, total as CaCO3	mg/L	88.0	83.0	89.0	89.0	84.0	95.0	---	85.0
	Ammonia as nitrogen	mg/L	---	---	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.50)	---	---
	pH	pH units	7.42 (a)	7.72(a)	7.57 (a)	7.50 (a)	7.81 (a)	7.67 (a)	7.35 (a)	7.31 (a)
	Specific conductance	µS/cm	1400	1400	1200	1400	1600	1200	1500	---
Metals (Dissolved)										
	Calcium, dissolved	µg/L	75600	87000	78000	90000	84000	72000	---	95000
	Chromium, Hexavalent	µg/L	8.74	9.90	11.9	6.60	7.20	4.10	9.20	9.30
	Chromium, total dissolved	µg/L	---	---	---	---	---	---	8.60 (b)	---
	Iron, dissolved	µg/L	ND (20)	ND (20)	ND (20)	50.0	28.0	65.0	---	ND (20)
	Magnesium, dissolved	µg/L	14900	15000	14000	17000	16000	14000	---	19000
	Manganese, dissolved	µg/L	ND (10)	ND (10)	ND (10)	ND (10)	ND (0.50)	ND (0.50)	---	ND (0.50)
	Sodium, dissolved	µg/L	155000	130000	130000	160000	160000	150000	---	180000
Metals (Total)										
	Chromium, total	µg/L	8.35	9.50	10.5	7.00	8.30	7.90	---	8.40

Notes:

- (a) pH results are field measurements.
- (b) During the sampling event on December 23, 2014, the method used for analyzing chromium concentrations was changed from EPA Method 200.8 (Total Chromium) to EPA Method 6020a (Total Dissolved Chromium). Wells PM-03 and PM-04 were resampled on March 17, 2015 to correct this error.

µg/L micrograms per liter (parts per billion).
 mg/L milligrams per liter (parts per million).
 µS/cm microSiemens per centimeter.
 ND parameter not detected at the listed reporting limit (listed in the adjacent parenthesis).
 --- not collected or not available.

TABLE 3

Moabi Regional Park, San Bernardino County, CA; Analytical Results 2008 – 2015, PM-04 - Sampling Events with Expanded Analyte Suite

PG&E Topock Compressor Station, Needles, California

Group	Analyte	Units	PM-04	PM-04	PM-04	PM-04	PM-04	PM-04	PM-04	
			2008 Qtr 3 10/2/2008	2009 Qtr 3 10/1/2009	2010 Qtr 4 12/10/2010	2011 Qtr 4 12/12/2011	2012 Qtr 4 11/08/2012	2013 Qtr 4 12/19/2013	2014 Qtr 4 12/23/2014	2015 Qtr 1 3/17/2015
Anion										
	Chloride	mg/L	440	470	480	490	490	530	---	590
	Nitrate (as nitrogen)	mg/L	2.50	2.20	2.20	2.20	---	---	---	---
	Nitrate/Nitrite as Nitrogen	mg/L	---	---	---	---	2.52	2.28	---	2.50
	Sulfate	mg/L	85.0	82.0	92.0	91.0	100	110	---	180
General										
	Alkalinity, hydroxide	mg/L	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	---	ND (5.0)
	Alkalinity, bicarb as CaCO ₃	mg/L	64.0	68.0	61.0	58.0	61.0	65.0	---	65.0
	Alkalinity, carb as CaCO ₃	mg/L	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	---	ND (5.0)
	Alkalinity, total as CaCO ₃	mg/L	64.0	68.0	61.0	58.0	61.0	65.0	---	65.0
	Ammonia as nitrogen	mg/L	---	---	0.120	ND (0.10)	ND (0.10)	ND (0.50)	---	---
	pH	pH units	7.44 (a)	7.91 (a)	7.44 (a)	7.70 (a)	7.79 (a)	7.53 (a)	7.48 (a)	7.38 (a)
	Specific conductance	µS/cm	1700	1800	1700	1800	2200	2000	2000	---
Metals (Dissolved)										
	Calcium, dissolved	µg/L	72000	88000	93000	91000	91000	97000	---	120000
	Chromium, Hexavalent	µg/L	20.6	21.0	21.0	18.9	21.3	12.6	18.0	18.0
	Chromium, total dissolved	µg/L	---	---	---	---	---	---	16.0 (b)	---
	Iron, dissolved	µg/L	ND (20)	ND (20)	ND (20)	60.0	ND (20)	120	---	ND (20)
	Magnesium, dissolved	µg/L	12400	14000	15000	15000	16000	18000	---	26000
	Manganese, dissolved	µg/L	ND (10)	ND (10)	ND (10)	ND (10)	4.60	ND (0.50)	---	ND (0.50)
	Sodium, dissolved	µg/L	234000	220000	230000	260000	260000	280000	---	320000
Metals (Total)										
	Chromium, total	µg/L	18.5	18.0	20.6	18.2	23.0	18.0	---	17.0

Notes:

- (a) pH results are field measurements.
- (b) During the sampling event on December 23, 2014, the method used for analyzing chromium concentrations was changed from EPA Method 200.8 (Total Chromium) to EPA Method 6020a (Total Dissolved Chromium). Wells PM-03 and PM-04 were resampled on March 17, 2015 to correct this error.

µg/L micrograms per liter (parts per billion).

mg/L milligrams per liter (parts per million).

µS/cm microSiemens per centimeter.

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

--- not collected or not available.

**MAXIMUM CONTAMINANT LEVELS AND REGULATORY DATES
FOR DRINKING WATER
U.S. EPA VS CALIFORNIA
LAST UPDATED JULY 2014**

Contaminant	U.S. EPA		California	
	MCL (mg/L)	Date ^a	MCL (mg/L)	Effective Date
<i>Inorganics</i>				
Aluminum	0.05 to 0.2 ^b	1/91	1 0.2 ^b	2/25/89 9/8/94
Antimony	0.006	7/92	0.006	9/8/94
Arsenic	0.05	eff: 6/24/77	0.05	77
	0.010	eff: 1/23/06	0.010	11/28/08
Asbestos	7 MFL ^c	1/91	7 MFL ^c	9/8/94
Barium	1	eff: 6/24/77	1	77
	2	1/91		
Beryllium	0.004	7/92	0.004	9/8/94
Cadmium	0.010	eff: 6/24/77	0.010	77
	0.005	1/91	0.005	9/8/94
Chromium	0.05	eff: 6/24/77	0.05	77
	0.1	1/91		
Copper	1.3 ^d	6/91	1 ^b 1.3 ^d	77 12/11/95
Cyanide	0.2	7/92	0.2 0.15	9/8/94 6/12/03
Fluoride	4	4/86	2	4/98
	2 ^b	4/86		
Hexavalent Chromium	-	-	0.010	7/1/14
Lead	0.05 ^e	eff: 6/24/77	0.05 ^e	77
	0.015 ^d	6/91	0.015 ^d	12/11/95
Mercury	0.002	eff: 6/24/77	0.002	77
Nickel	Remanded		0.1	9/8/94
Nitrate	(as N) 10	eff: 6/24/77	(as NO3) 45	77
Nitrite (as N)	1	1/91	1	9/8/94
Total Nitrate/Nitrite (as N)	10	1/91	10	9/8/94
Perchlorate	-	-	0.006	10/18/07
Selenium	0.01	eff: 6/24/77	0.01	77
	0.05	1/91	0.05	9/8/94
Thallium	0.002	7/92	0.002	9/8/94

a. "eff." indicates the date the MCL took effect; any other date provided indicates when US EPA established (i.e., published) the MCL.

b. Secondary MCL.

c. MFL = million fibers per liter, with fiber length > 10 microns.

d. Regulatory Action Level; if system exceeds, it must take certain actions such as additional monitoring, corrosion control studies and treatment, and for lead, a public education program; replaces MCL.

e. The MCL for lead was rescinded with the adoption of the regulatory action level described in footnote d.

f. Gross beta MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ; Sr-90 MCL = 4 millirem/year to bone marrow; tritium MCL = 4 millirem/year to total body

g. Effective for surface water systems serving more than 10,000 people; effective for all others 1/1/04.

h. TT = treatment technique, because an MCL is not feasible.