

One Pointe Drive
Suite 320
Brea, CA 92821

714.388.1800 *tel*
714.388.1839 *fax*
www.projectnavigator.com

April 19, 2013

Project No: 12-101

Lisa Dernbach, P.G.
California Regional Water Quality Control Board
Lahontan Region
2401 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150

**RE: CAC and IRP Manager Comments Regarding Cr6 Groundwater Plume
Monitoring in Response to Clean Up and Abatement Order (CAO) No.
R6V-2008-0002A4 Issued to PG&E on January 8, 2013**

Dear Lisa:

The above CAO requires PG&E to further monitor areas on the perimeter of the core 3.1ppb Cr6 plume where there are perceived to be data gaps; viz in the north at the Hinkley Gap, to the east of Dixie Road, and at *“any other areas outside of the currently identified primary contiguous plume boundary that may show anomalous or otherwise unexplained concentrations of chromium in domestic wells¹.”*

I am writing about the application of this *highlighted text²*.

The IRP Manager and CAC believe there are at least three (3) other areas which would benefit from the installation of multi-depth monitoring wells. Namely, (1) in the Mulberry Road area, just north of Acacia Street, (2) the residential area immediately north of the Hinkley School³ and (3) at the area in the vicinity of Indian Wells Road . The first two areas are described in **Figure 1**, along with some Cr6 interpretive plots (circled areas) which tend to show Cr6 “hit clustering” in the neighborhoods when the screening level is set at 2 ppb⁴ Cr6.

¹ CAO No. R6V-2008-0002A4, Ordering Section I.A.1, p. 5, January 8, 2013.

² PG&E submitted a Work Plan on February 22, 2013 to address the Northern and Dixie Road provisions of Ordering Section I.A.1. but did not consider other areas. This Work Plan was subsequently amended, detailing revised monitoring well locations, via a March 15, 2013 Work Plan Amendment.

³ Area bounded by Manacor Road., Serra Road., Alcudia Road. and Hinkley Road.

⁴ The IRP Manager is not inferring that the 2 ppb Cr6 level has any scientific basis. The 2ppb Cr6 level has been used by the IRP Manager to simply examine the sensitivity of Cr6 measurements beyond the core contiguous 3.1ppb Cr6 plume.

In addition, with the issue of the performance of the NWFI⁵ barrier still in debate⁶ between PG&E and the Water Board, it would seem prudent to add a monitoring well in the neighborhood immediately north of the Hinkley School. This area is depicted in **Figure 2**'s left hand map as Area 1, and in greater detail in Figure 2's right hand panel.

Despite the presence of MWs 57, 81S, 118S, and 119S seemingly standing in the groundwater flow pathway from the 3.1ppb Cr6 plume area to the School neighborhood, the CAC respectively asks that the Water Board require PG&E to monitor the residential area.

The CAC also recommends installing one additional monitoring well in the area of Indian Wells Road. This recommendation results from IRP Manager discussions with several residents⁷ in the Indian Wells Road area. While this location is beyond the 1 mile boundary around the contiguous 3.1 ppb Cr6 plume, these residents have had their wells privately tested and the results indicate Cr6 levels above 3.1 ppb.

In addition to the above suggestions specifically pertaining to the placement of additional monitoring wells, the IRP Manager recommends that the Water Board allows PG&E, under this CAO, to implement their recommendations for evaluating the performance of the NWFI barrier. PG&E's suggestions are contained in their January 28, 2013 Memo (reference 6).

The Memo describes PG&E's interpretation of the chromium "finger" to the west. PG&E recommends collecting additional data to understand the chromium "finger". IRP Manager is suggesting that the present Cr6 monitoring order, with the now extra monitoring activities proposed for the western side of the plume, is a logical place to request the work. Below is a summary of the recommendations made by PG&E in their memo:

- Further Evaluation of Ag Well 27-03
- Placement of transducers in existing monitoring wells in the area of Ag Well 27-03
- Installation of additional piezometers to gauge groundwater levels on the east and west sides of NWFI Barrier
- Injection of a tracer to the east of IN-02 and IN-03
- Collection of additional water quality data from existing monitoring points to assess groundwater flow
- Sampling of PZ-01A/B in the vicinity of injection wells

⁵ NWFI is North West fresh water injection barrier.

⁶ Technical Memorandum by Dennis Maslonkowski (CH2M Hill), January 28, 2013, Regarding: The Interpretation of Cr Sample Results from Newly Installed Monitoring Wells in the Western Area.

⁷ e.g. CAC member Mr. John Turner.

In addition with the above information in hand, and its improved quality, it would seem possible that a particle tracking analysis could be computed for the NWFI barrier area. This analysis could then be used to validate the performance of the NWFI.

Should you have any questions or comments, please feel free to contact me at iwebster@projectnavigator.com or 714-388-1800 (main) or 714-863-0483 (mobile).

Sincerely yours,



Ian A. Webster, Sc.D.
IRP Manager

Attachments:

- Figure 1: Cr6 Groundwater Impacts with a Focus on Residential Locations to the West of the Plume
- Figure 2: IRP Manager's Evaluation of Cr6 Plume Monitoring in Areas Northwest of Southern Plume (i.e., Area North of School) and in Flower/Mulberry Roads Area. Locations Have a High Number of Domestic Wells, but Few Monitoring Wells

CC:

CAC Members
PNL Staff (RS, RP, HK, MJE)
Kevin Sullivan, PG&E
Devin Hassett, Keadjian and Associates