

Michelle Pedrazas

From: Hai Pham
Sent: Monday, January 29, 2024 2:31 PM
To: Michelle Pedrazas
Cc: Greg Ruskauff
Subject: Re: Preliminary D-South Rebound Cr(VI) Results - November, December 2023 Events and most of January 2024 Events

[@Michelle Pedrazas](#)

Please incorporate the Cr(VI) concentration listed in the tables below to the concentration shapefile that you are working on.

I will take care of processing the new water level data.

Thanks,
Hai

From: Hai Pham <HPham@intera.com>
Sent: Tuesday, January 23, 2024 1:49 PM
To: Greg Ruskauff <gruskauff@intera.com>; Michelle Pedrazas <MPedrazas@intera.com>
Subject: Re: Preliminary D-South Rebound Cr(VI) Results - November, December 2023 Events and most of January 2024 Events

Perfect timing. I am about to start working on this tomorrow.

Hai

From: Greg Ruskauff <gruskauff@intera.com>
Sent: Tuesday, January 23, 2024 1:41 PM
To: Hai Pham <HPham@intera.com>; Michelle Pedrazas <MPedrazas@intera.com>
Subject: FW: Preliminary D-South Rebound Cr(VI) Results - November, December 2023 Events and most of January 2024 Events

Newer data from Sylvana.

From: Ruskauff, Gregory J <gregory_j_ruskauff@rl.gov>
Sent: Tuesday, January 23, 2024 11:34 AM
To: Greg Ruskauff <gruskauff@intera.com>
Subject: FW: Preliminary D-South Rebound Cr(VI) Results - November, December 2023 Events and most of January 2024 Events

This sender is trusted.

From: Bendana, Sylvana J <sylvana_j_bendana@rl.gov>
Sent: Wednesday, January 17, 2024 10:10 PM
To: Ramirez, Michael (ECY) <mira461@ECY.WA.GOV>; Armijo.Roberto@epa.gov

Cc: Boyd, Alicia (ECY) <aboy461@ecy.wa.gov>; Todak, David <david_todak@rl.gov>; Glossbrenner, Ellwood T <ellwood.glossbrenner@rl.doe.gov>; Virgin, John J <john.virgin@rl.doe.gov>; Jaschke, Naomi M <naomi.jaschke@rl.doe.gov>; Day, Garrett A. (ECY) <dayg461@ECY.WA.GOV>; Smith-Jackson, Noel <nsmi461@ecy.wa.gov>; KIM.WELSCH@ECY.WA.GOV; Neshem, Dean O <dean_o_neshem@rl.gov>; Ruskauff, Gregory J <gregory_j_ruskauff@rl.gov>

Subject: Preliminary D-South Rebound Cr(VI) Results - November, December 2023 Events and most of January 2024 Events

Hi All,

Below is a summary of the November and December 2023 (and some January 2024) D-South Rebound Study sample results.

The November 2023 sampling included only monthly and quarterly D-South rebound network wells and ATs. All wells and aquifer tubes were sampled except for the following:

1. Extraction well 199-D5-103, due to insufficient water in the well to pump to the facility before the pump shut off.

The December 2023 sampling included monthly and bimonthly D-South rebound network wells and ATs. All wells and aquifer tubes were sampled.

The January 2024 sampling included monthly and bimonthly D-South rebound network wells and ATs. All wells were sampled at the beginning of January however we are still waiting for the aquifer tubes to be sampled.

A summary of Cr(VI) results for samples collected in November and December 2023 are presented in the following table. Also presenting already available January 2024 Cr(VI) data.

Well	April 2023	May 2023	June 2023	July 2023	August 2023	September 2023	October 2023	November 2023	December 2023	January 2024
INLAND WELLS (ug/L)										
Mon: 199-D5-15	3.87	3.13	5.05	3.95	5.55	3.55	4.48	4.96	5.38	4.82
Mon: 199-D5-123	5.78	X	4.13	X	5.86	X	4.45	X	5.44	X
Mon: 199-D5-142	2.77	X	2.85	X	3.14	X	2.5 (U)	X	3.13	X
Mon: 199-D5-133	4.13	20.2	34.10	34.2	33.0	32.2	35.2	32.3	32.6	33.2
Mon: 199-D5-17	6.18	X	3.5	X	4.98	X	2.96	X	4.13	X
Inj: 199-D5-128	X	4.70	7.07	X	5.05	X	10.2	X	10.3	X
Mon: 199-D2-11	2.5 (U)	X	2.5 (U)	X	3.52	X	2.61	X	3.19	X

Mon: 199-D5-36	X	2.5 (U)			X	X	2.5 (U)	X	X	2.67	X	X
Mon: 199-D5-38	X	2.5 (U)			X	X	3.83	X	X	3.69	X	X
MIDLAND WELLS (ug/L)												
Mon: 199-D5-106	5.79	5.26			8.37	6.80	7.11	5.31	4.63	6.68	6.62	6.24
Mon: 199-D1-1	7.02	7.82			7.85	8.32	7.70	6.34	7.2	7.02	6.34	5.96
Mon: 199-D2-14	4.49	3.36	4.03	7.58	12.6	23.40	45.4	46.5	49.6	70.20	63.10	71.20
Ext: 199-D5-103	110	102	56.1		43.5	53.6	32.60	34.8	X	X	33.9	9.8
Ext: 199-D5-160	16.20	14.5	14.7	4.92	7.21	6.77	10.30	5.91	10.1	8.49	13.1	7.23
Mon: 199-D5-150	3.49	2.5 (U)	2.5 (U)	2.5 (U)	2.5 (U)	2.75	2.63	1.67	2.56	2.92	2.88	2.5(U)
Ext: 199-D5-151	35.3	36.4	36	40.1	45.50	40	37.3	107	33.5	37.3	40.4	45.8
Mon: 199-D5-149	8.31	16.7	16.6	20	18.1	17.70	27.2	29.9	50.4	43.8	59.4	54
Mon: 199-D5-152	4.51	3.04	3.74	3.72	4.09	5.79	5.39	4.82	5.47	6.12	6.61	6.46
Mon: 199-D5-43	2.5 (U)	2.5 (U)			2.5 (U)	2.5 (U)	2.5 (U)	1.52	2.50(U)	2.5(U)	2.5(U)	2.5(U)
Ext: 199-D5-146	25.5	20.4	28.3	34.2	31.5	28	34.2	43.6	37.0	39.2	36	44.4
Mon: 199-D5-145	6	2.57	4.27	2.64	4.48	3.95	4.6	5.5	4.82	7.81	8.49	7.64
Ext: 199-D5-39	5.74	5.07			4.75	5.29	X	5.4	4.33	7.17	6.82	8.05
Ext: 199-D5-104	18.9	13		14.1	15.8	14.00	13.8	15.2	15.9	17.3	19	17.3

Ext: 199-D5-34	7.27	8.14	8.68	10	9.81	12.0	12.4	11.8	7.62	8.25
NEAR RIVER WELLS & AQUIFER TUBES (ug/L)										
Mon: 199-D5-41	23.4	24.1	32.5	30.8	31.9	28.1	26.1	24.5	24	25.7
Mon: 199-D5-33	2.50 (U)	2.50 (U)	2.50 (U)	2.50 (U)	2.50 (U)	1.3 (U)	2.5(U)	2.5(U)	2.5(U)	2.5(U)
Mon: 199-D5-44	20.2	24.9	25.5	26.9	26.2	19.3	16.4	19.1	21.2	22
Mon: 199-D5-37	4.8	3.43	4.15	3.66	10.2	2.28	12.3	4.57	3.37	4.83
C6272	2.50 (U)	X	2.50 (U)	2.50 (U)	2.50 (U)	2.50 (U)	2.50 (U)	2.50 (U)	2.50 (U)	
AT-D-1-M	2.50 (U)	X	2.50 (U)	2.50 (U)	2.50 (U)	2.50 (U)	2.50 (U)	2.50 (U)	2.50 (U)	
35-S	2.50 (U)	X	X	X	X	X	X	Removed from Sampling		

In summary:

Near River

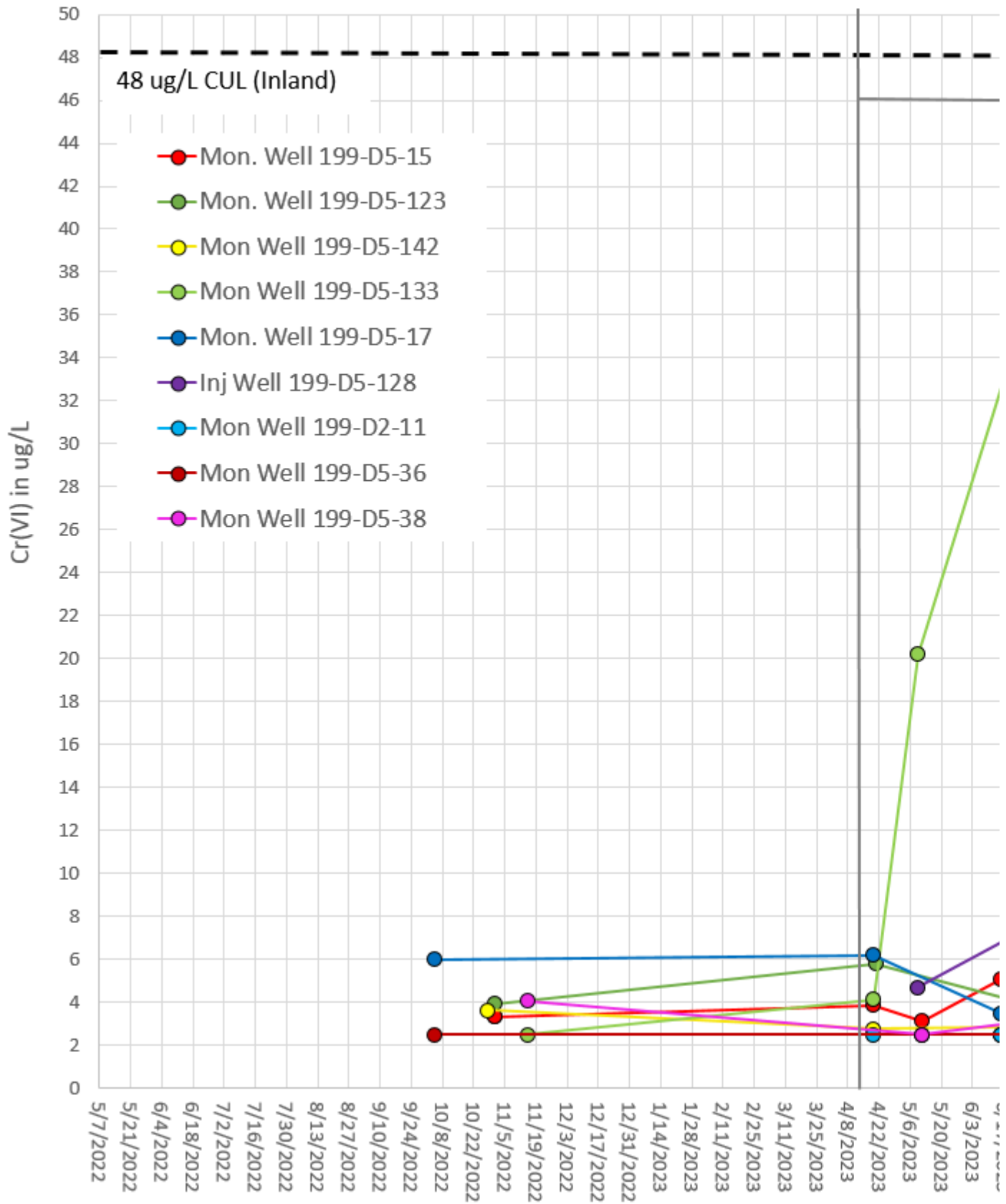
- For November through January, Cr(VI) contaminant concentrations at these wells and aquifer tubes display non-detect concentrations except for wells 199-D5-41, 199-D5-44, and 199-D5-37. Well 199-D5-37 continues to display concentrations below the 10 ug/L CUL. The other two wells (though displaying varying to increasing behavior) are still below the inland cleanup level of 48 ug/L.

General comments

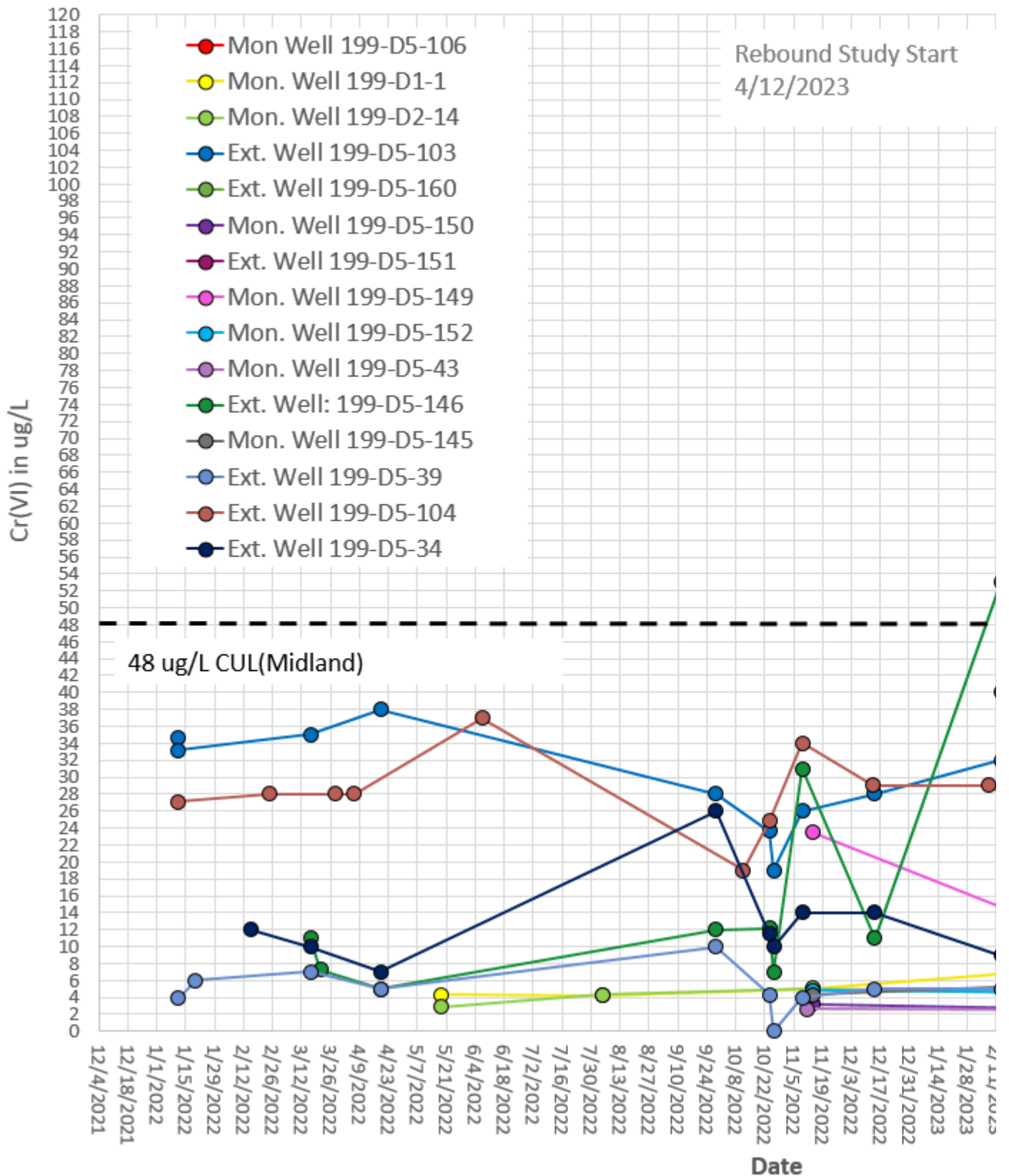
- Results from the midland wells showed the most variability in concentrations between the wells. Well 199-D5-103 exhibited the highest concentration of 110 ug/L with the sample take just after the start of the rebound study, the concentration in the well decreased, continued to be around 33.9 ug/L in December 2023. Cr(VI) concentration in 199-D5-103 decreased to under 10 ug/L in January 2024 (we are performing a re-check to make sure that concentration is correct). Well 199-D5-151 exhibited the highest increase in Cr(VI) concentration between August and September from 37.3 ug/L to 107 ug/L, concentrations then decreased back down below the 48 ug/L CUL to a concentration of 33.5 ug/L in October. Since October 2023, well 199-D5-151 continues to increase in concentration of Cr(VI).
- For November 2023, all wells except for 199-D2-14 exhibit concentrations below the 48 ug/L CUL. In December 2023 and January, all wells except for 199-D5-149 and 199-D2-14 exhibit concentrations below the 48 ug/L CUL. Wells 199-D2-14 and 199-D5-149 display increasing Cr(VI) concentrations. Well 199-D2-14 exhibit the highest increases in Cr(VI) from October 2023 through January 2024.
- Aside from wells 199-D5-149 and 199-D2-14, all of the remaining midland and inland wells show more static or variable concentration trends as we are in low river stage.
- The Cr(VI) concentration at well 199-D5-133 that started to increase right after the start of the rebound study since nearby well 199-D5-129 ceased injecting water is now more static around 33 ug/L.

Results shown in the trend plots below.

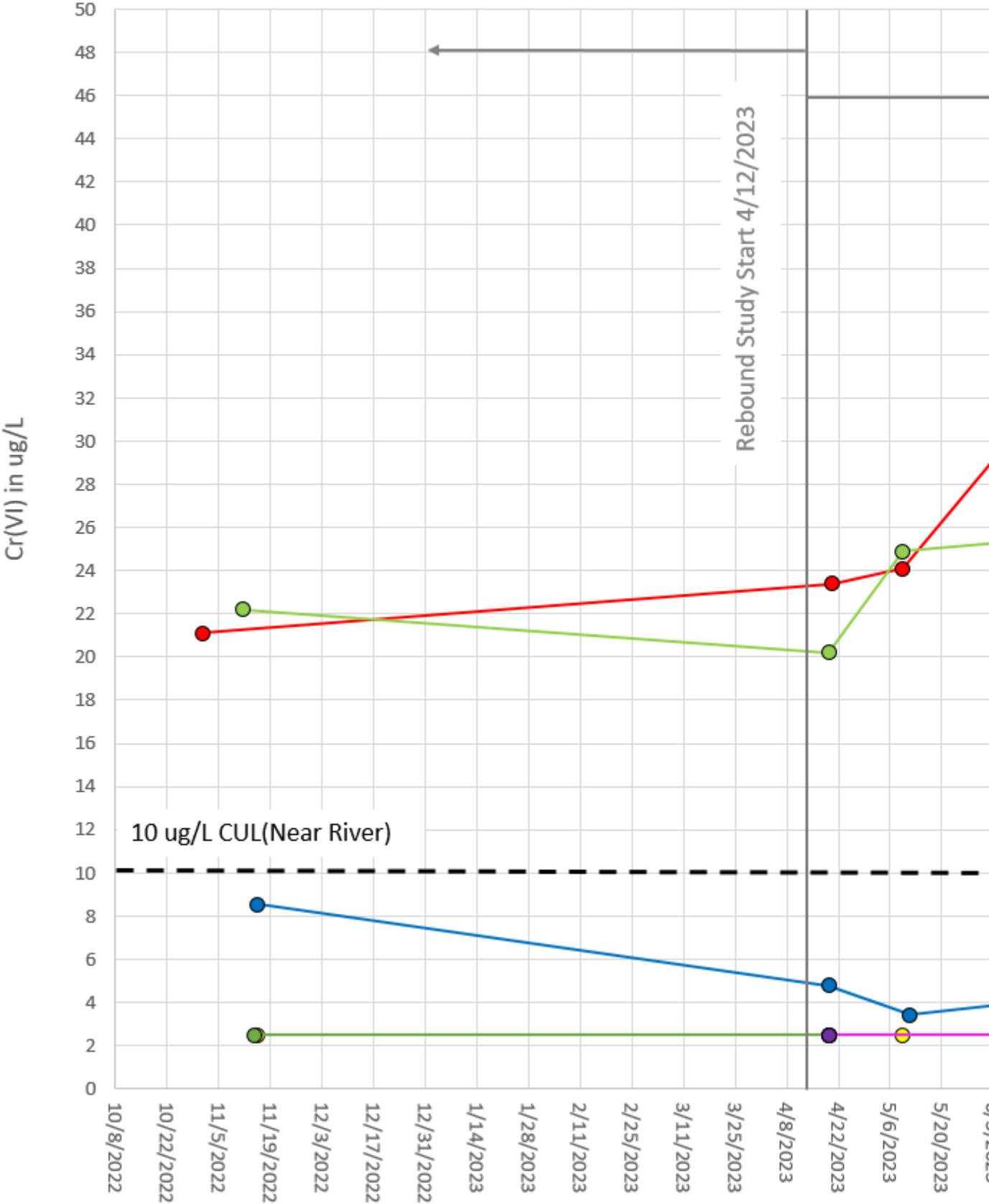
Inland Wells: Hexavalent



Midland Wells: Hexavalent Chromium

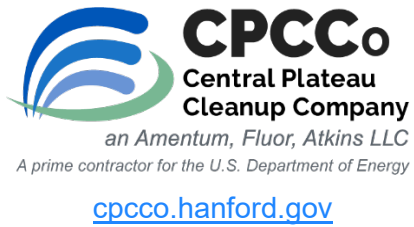


Near River Wells/A



Please let me know if you have any questions.

Thank you,



Sylvana Bendaña, PG

Regulatory Strategy & Integration

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