From: Unruh, David (ECY)
To: "Levi Fernandes"
Subject: RE: AMLI Wallingford - Compliance GW Well Network
Date: Wednesday, April 24, 2024 11:21:36 AM

Hi Levi,

I've had a chance to look over the data for the site, here are Ecology's recommendations for sampling moving forward:

- Per WAC 173-340-720(9)(c)(vi), compliance monitoring samples must be collected after groundwater is no longer affected by cleanup actions. For this project, that means we should show manganese (Mn) concentrations have either returned to background levels or have stabilized. From the data provided in your email, Mn concentrations at MW-11 and MW-18 are still above background levels. Ecology's recommendation is to wait to collect confirmation monitoring samples site-wide until we can show Mn concentrations have returned to pre-remedial levels. In addition to sampling MW-11, MW-18, and MW-17, it would be beneficial to add a monitoring well upgradient of the injection areas to use as a benchmark for background Mn concentrations.
- If you would like to proceed with sampling the compliance monitoring well network, Ecology recommends collecting Mn concentrations from all confirmation monitoring wells to confirm elevated Mn is not affecting chlorinated solvent concentrations. Manganese concentrations may be measured using a combination of colorimetric kits and analytical samples. Ecology recommends using colorimetric kits at all wells and collecting samples for analysis of total Mn at 5 of the 17 wells to back up colorimetric data. Ecology's suggestions for wells to analyze for Mn are MW11, MW12, MW14, MW17, and IW39.

Please let me know if you have any questions regarding compliance monitoring or would like to schedule a meeting to discuss further.

Thank you,
David

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From: Unruh, David (ECY)
Sent: Monday, April 22, 2024 4:45 PM
To: 'Levi Fernandes' <LFernandes@soundearthinc.com>
Subject: RE: AMLI Wallingford - Compliance GW Well Network

Hi Levi,

Thank you for the update. I'm glad to hear things are progressing well at the site. I'll have some time in the next week or two to review these data. I'll let you know if I come up with any questions in the meantime.

Best,
David

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From: Levi Fernandes <LFernandes@soundearthinc.com>
Sent: Monday, April 22, 2024 2:35 PM
To: Unruh, David (ECY) <dunr461@ECY.WA.GOV>
Subject: AMLI Wallingford - Compliance GW Well Network

External Email

David, good catching up with you last week.

SoundEarth completed sodium/potassium permanganate injections at the AMLI Wallingford site in November 2023. The potassium/sodium permanganate solution (prepared up to 10%) was injected into wells MW11 (300 gallons), IW16 (300 gallons), IW58 (160 gallons), MW18 (200 gallons), IW56 (325 gallons), and IW57 (100 gallons) for a total of 1,385 gallons. Per the Remedial Injection and Groundwater Monitoring Work Plan (Updated), dated June 20, 2023, performance groundwater monitoring events were proposed to be completed 3 and 6 months following the completion of injections. On February 23, 2024, groundwater samples were collected from monitoring wells MW11, MW17, and MW18 to assess post-injection contaminant concentrations and chemical oxidant attenuation. Groundwater samples collected from wells MW11 and MW18 were submitted for chlorinated volatile organic compound (CVOC) analysis; groundwater samples collected from wells MW11, MW17, and MW18 were submitted for total manganese analysis. CVOCs were not detected above the method reporting limit in MW11 or MW18 (see attached Figure 1 showing the groundwater analytical results for the March/May 2023 and February 2024 events). Total manganese was detected at 98,000 and 37,000 micrograms per liter (µg/L) in monitoring wells MW11 and MW18, respectively (indicating the presence of sodium permanganate oxidant); total manganese was detected at 1.2 µg/L in downgradient monitoring well MW17 (indicating a lack of or minimal presence of oxidant).

Given the absence of CVOCs in wells MW11 and MW18, we recommend proceeding with the second performance groundwater monitoring event (6 months after the injections), consistent with the Updated Work Plan. We also propose initiating quarterly compliance groundwater monitoring with the collection of groundwater samples from wells MW05, MW11, MW11D, MW12, MW14, MW15, MW16A, MW17, MW18, IW04A, IW08, IW30, IW39, and IW47 and submitting for CVOC analysis. Samples from wells MW11, MW17, and MW18 would also be submitted for total manganese analysis. The compliance groundwater monitoring network is consistent with the groundwater monitoring event performed in March/May 2023. The first compliance groundwater monitoring event is tentatively scheduled for May 2024.

Please let me know whether Ecology concurs with the proposed sampling of the compliance groundwater monitoring well network.

Thanks

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