

Jakub, Barbara, Env. Health

From: Jakub, Barbara, Env. Health
Sent: Wednesday, February 17, 2010 9:13 AM
To: 'Chevlen, Benjamin'
Subject: RE: RO#2444 - Follow-up on Work Plan dated July 20, 2009

Thanks for the quick response. I will review this when I respond to the work plan.

From: Chevlen, Benjamin [mailto:Benjamin.Chevlen@stantec.com]
Sent: Wednesday, February 17, 2010 8:53 AM
To: Jakub, Barbara, Env. Health
Subject: RE: RO#2444 - Follow-up on Work Plan dated July 20, 2009

Hi Barb - While the injection well being used as the injection point for the proposed hydrogen peroxide pilot test (IP-1) is down-gradient of the monitoring well with highest impact (MW-3), the proximity of IP-1 to MW-3, and groundwater data collected from the adjacent soil boring (SB-4), indicate that well IP-1 would be installed in an area of high dissolved-phase impact. Baseline groundwater samples collected from IP-1 prior to performing the pilot test would be able to confirm that groundwater observed in well IP-1 is impacted by petroleum hydrocarbons.

Looking at Stantec's *Additional Assessment Report*, dated October 15, 2008, hydrocarbon impact in the off-site soil was extremely limited, and at concentrations which do not warrant active remediation. Since the hydrocarbon impact observed down-gradient of the former source area is primarily dissolved-phase, remediation of dissolved-phase impact is the primary remedial goal. While the relatively long screens for the injection wells would preferentially inject the hydrogen peroxide solution into the higher permeable zones, it is these higher permeable zones in which dissolved-phase hydrocarbons can migrate most readily, and are expected to be most readily remediated by performing hydrogen peroxide injections.

If you have any further questions, or would like to discuss the matter further, please contact me at your convenience.

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From: Jakub, Barbara, Env. Health [mailto:barbara.jakub@acgov.org]
Sent: Tuesday, February 16, 2010 4:09 PM
To: Chevlen, Benjamin
Subject: RE: RO#2444 - Follow-up on Work Plan dated July 20, 2009

Two other concerns that I had were that location of the injection well seemed downgradient of the highest concentrations and that the screened intervals of the injection wells were very long. I'm not looking at the cross-section now but a note that I had said the highest contamination was present in the clay unit. I'm concerned that a large well screen would not target the clay but preferentially migrate along the coarser sediments. Any thoughts on that?

From: Chevlen, Benjamin [mailto:Benjamin.Chevlen@stantec.com]
Sent: Tuesday, February 16, 2010 3:02 PM
To: Jakub, Barbara, Env. Health
Subject: RO#2444 - Follow-up on Work Plan dated July 20, 2009

Barb - I just reviewed the July 20, 2009 work plan for the above-referenced site. In our conversation earlier today, you expressed concern that a down-gradient monitoring point would be required for observation during the hydrogen peroxide injection pilot test. Upon a closer review of the work plan, I was reminded that Stantec had already accounted for this requirement (admittedly, the down-gradient monitoring point is not explicitly defined in the work plan). In the work plan, Stantec proposes, that for pilot testing purposes, that hydrogen peroxide will be injected ONLY into well IP-1. Proposed hydrogen peroxide injection well IP-2 will be used solely as a down-gradient monitoring point. The differences between the proposed monitoring wells and remedial wells is that the remedial wells will be 2-inch diameter (4-inch for the monitoring wells), will be constructed of thicker PVC (Sch. 80 vs. Sch 40), and will be screened from 15-25 feet bgs (as opposed to the monitoring wells which will be screened from (10 to 25 feet bgs). While the expected submerged well screen of IP-2 may yield a slightly different reported hydrocarbon concentration, as compared to a monitoring well without a submerged well screen, the submerged well screen is not expected to skew the data for the metals analysis being run (ferrous iron, total chromium, hexavalent chromium, and arsenic). Proposed hydrogen peroxide injection well IP-2 will only be used for hydrogen peroxide injection activities upon completion of the pilot test (assuming favorable results of the pilot test, and site conditions warrant additional hydrogen peroxide injection activities).

If you would like to discuss the matter further, please feel free to contact me at your convenience.

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