To: Kamke, Sherry[Kamke.Sherry@epa.gov]
From: Egan, Robert
Sent: Tue 11/15/2016 3:53:44 PM
Subject: FW: Recommendations for additional well locations at the Tower Standard site
Cross-Section 2-D max MIP-FID screenshot.jpg
2-D max MIP-FID screenshot.jpg
Cross-Section 2-D max MIP-PID screenshot.jpg
2-D max MIP-PID screenshot.jpg

Tom's thoughts o well locations and justification, plus his opinion on moving forward with the project.

Bob Egan

Corrective Action Manager

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From: Kady, Thomas
Sent: Tuesday, November 15, 2016 9:50 AM
To: Egan, Robert <egan.robert@epa.gov>
Subject: FW: Recommendations for additional well locations at the Tower Standard site

Bob –

Some final thoughts. I believe sufficient information exists to install the monitoring well network immediately. Analytical information from these wells will help greatly in "calibrating" the visualization to enhance our understanding the spatial distribution and matrix distribution of the COCs at the site. I also believe sufficient information exists to select an interim remedy now; however, I recommend using analytical data from the proposed monitoring wells to refine the data visualization model prior to completing the final design of the selected interim remedy.

Tom

From: Kady, Thomas
Sent: Tuesday, November 15, 2016 8:58 AM
To: Egan, Robert <egan.robert@epa.gov>
Subject: RE: Recommendations for additional well locations at the Tower Standard site

Hi Bob – I've included below in red some of the logic and additional details from our discussion on the proposed monitoring well locations. I believe this information will help to provide some boundary conditions to improve the accuracy of the 3D data visualization and to help provide a reliable basis to quantify the mass distribution of contaminants across different response ranges with MIP equipment. NOTE: I do ask that neither you nor others take my comments as truth, but rather question the locations and the logic to flag any mistakes or disagreement in professional opinion.

Best regards,

Tom

From: Egan, Robert
Sent: Wednesday, November 02, 2016 9:08 AM
To: KHanson@ldftribe.com; Christopher A Saari <Christopher.Saari@Wisconsin.gov>; Dave Larsen <dlarsen@reiengineering.com>
Cc: Kamke, Sherry <Kamke.Sherry@epa.gov>; Kady, Thomas <Kady.Thomas@epa.gov>
Subject: Recommendations for additional well locations at the Tower Standard site

All,

Here are some suggestions for locations to fill in gaps in the well network:

NOTE: My comments refer to the attached screenshots (plan views and cross-sections) from the MIP-PID and MIP-FID 3D visualizations performed by S2C2.

1. A background well nest near Highway 70 with shallow and mid-depth range wells.

•□□□□□□□ Approximate location is ~272,400 N, 1,990,750 E

•□□□□□□□ Screen intervals: Shallow = ~1565' to 1560'; Mid = ~1540' to 1535'; Deep = ~1530' to 1525'

•□□□□□□□ This location would be outside of the 100,000 uV contour due east of the primary source area

•□□□□□□□ Based on MIP responses, COCs should be low in these wells

•□□□□□□□ The data visualization depicts the deep portion of the dissolved plume extending below Rt. 70 to the northeast, which may or may not be the case. Analytical data from this well nest will help: 1) bound the plume visualization in the upgradient direction; and 2) help to quantify COC concentrations associated with MIP-PID responses in the 50,000 uV to 100,000 uV range.

2. Shallow and mid-depth range wells at a location south and east (about 30-40 feet) of the MIP2 location.

•□□□□□□□ Approximate location is ~272,325N, 1,990,725 E

•□□□□□□□ Screen intervals: Mid = ~1545' to 1540', Deep = ~1530' to 1525'

•□□□□□□□ A shallow well screened at ~1565' to 1560' may help evaluate smear zone migration (i.e., dissolved phased concentration gradient). As this area appears to be just outside the residual source area, we might expect to find the highest dissolved phase COCs in this area (at or just inside the 300,000 uV contour near the smear zone elevation)

•□□□□□□□ Analytical data in these locations will also help quantify COC concentrations associated with MIP responses in the 100,000 uV to 300,000 uV range.

3. A location between MIP13 and MIP3 where contamination is at depth. Mid-range and deeper wells.

•□□□□□□□ Approximate location is ~272,275 N, 1,990,600 E

•□□□□□□□ Screen intervals: Mid = ~1545' to 1540', Deep = ~1530' to 1525'. These wells appear to be in the heart of the dissolved phase plume migration pathway. Analytical data will help to quantify mass flux in the dissolved phase plume.

•□□□□□□□ A shallow well screened at ~1565' to 1560' may help evaluate smear zone migration (i.e., dissolved phased concentration gradient). As this area appears to be just outside the residual source area, we might expect to find the highest dissolved phase COCs in this area (approximately 75' downgradient of the 300,000 uV contour near the smear zone elevation)

•□□□□□□□ Analytical data in these locations will also help quantify COC concentrations associated with MIP-PID responses in the 50,000 uV to 100,000 uV range.

4. If access is possible, wells near the MIP14 location. Shallow, mid-depth and deep.

•□□□□□□□ Approximate location is ~272,260 N, 1,990,490 E

•□□□□□□□ There appears to be an isolated hot spot in this area from MIP responses. Analytical data will help determine if this is the case.

•□□□□□□□ Screen intervals: Shallow = ~1557' to 1552', Mid = ~1545' to 1540', Deep = ~1520' to 1515'. Analytic al data will help to quantify mass flux in the dissolved phase plume. Per the FID visualization, the Mid well should be the cleanest and the shallow well the hottest. Good truth check of the MIP system.

•□□□□□□□ Analytical data in these locations will also help quantify COC concentrations associated with MIP-PID responses in the 30,000 uV to 100,000 uV range.

5. A location somewhere to the west or northwest of the MW16 wells to try to find the edge of the plume in that area. Shallow, mid-depth and deep.

•□□□□□□□ Approximate location is ~272,265 N, 1,990,375 E

•□□□□□□□ Screen intervals should mirror the MW-16 well nest

Bob

Bob Egan

Corrective Action Manager

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