To: Hanson, Kristen[KHanson@ldftribe.com]
Cc: Kamke, Sherry[Kamke.Sherry@epa.gov]; Dee.allen@ldftribe.com[Dee.allen@ldftribe.com]; Olson, Erik[olson.erik@epa.gov]; Greenwater, Anthony[greenwater.anthony@epa.gov]; Manville, Jennifer[manville.jennifer@epa.gov]
From: Egan, Robert
Sent: Fri 3/17/2017 12:49:29 PM
Subject: RE: Haskell Lake Area Petroleum Contamination Site- Well Placement Planning

Kristen,

Regarding #2- well locations- Below in red is a copied message from Bristol in response to my request for their opinion about the locations that Tom Kady and I had supported last autumn. Bristol will include recommendations for locations in the revised tech memo which will be submitted after we have had our model presentation and they respond to our earlier comments on the draft memo. Because the model results can affect the content of the tech memo, they are waiting for us to be satisfied with the model revisions we had asked them to perform before submitting the new tech memo.

For #1- I will send your question to Bristol today to see if they have gw data formatted in any other ways than the format used for the model. The model data set should be on the website set up by Tom Kady, but I do not remember it being formatted in a way that is useful for review of one type of data such as gw.

Bob

Bob,

Bob Allen and I went over the recommended well locations in your email correspondence with Tom Kady and largely concur with all of the proposed wells.

At a lower priority, we would also recommend a true background well pair immediately up-gradient (north) of the plume. Somewhere in the vicinity of 272,500 N, 1,990,650 E. One of the potential benefits would be the data gathered on redox chemistry of the aquifer immediately before entering the impacted zone.

We would also like to note that we could refine these locations with the information provided by the next iteration of S2C2's model.

We hope that is helpful,

--Matt

Matt Faust, P.G.
Project Manager/Geologist
Bristol Environmental Remediation Services, LLC
Phone : (907) 743-9346

From: Hanson, Kristen [mailto:KHanson@ldftribe.com]
Sent: Thursday, March 16, 2017 5:09 PM
To: Egan, Robert <egan.robert@epa.gov>
Cc: Dee.allen@ldftribe.com; Manville, Jennifer <manville.jennifer@epa.gov>; Greenwater, Anthony <greenwater.anthony@epa.gov>
Subject: Haskell Lake Area Petroleum Contamination Site- Well Placement Planning

Bob,

Thank you for the invitation to work on well placement using all site data.

While some new monitoring well locations and depths are easily identifiable based in current site data, a complete network of wells requires identification of COCs, evaluation of all groundwater data to identify data gaps, and a strategy to address the identified gaps.

In the interest of preparing for our discussion, please provide the following:

1) You have mentioned that all site data has been uploaded into the model and we were able to see the data spreadsheets in one the S2C2 presentation. I have reviewed all of the model files and cannot locate the accumulated site data spreadsheets. If all groundwater data exists in the one place (whatever the format), could you please send it.

2) In the July 12,2016 Task Order, Bristol was tasked with recommendations for the number and locations of additional monitoring wells. Could you provide Bristol's well placement evaluation work and recommendations.

Kristen Hanson

Environmental Response Program Coordinator

Lac du Flambeau Tribal Natural Resource Department

Office: 715-588-4290

Cell : 715-614-4644

From: Hanson, Kristen
Sent: Tuesday, December 6, 2016 3:32 PM
To: 'Saari, Christopher A - DNR'; egan.robert@epa.gov; Dave Larsen
Cc: Kady, Thomas (Kady.Thomas@epa.gov); kamke.sherry@epa.gov; Allen, Dee; 'Wawronowicz, Larry (lwawronowicz@ldftribe.com)'
Subject: RE: Tower Standard Proposed Well Locations - PECFA Perspective

Good Afternoon Chris,

I understand that REI has collected input in advance of preparing a scope of work for installation of a monitoring well network.

The Tribe is conformable with EPAs proposed locations that define the eastern and southern extent of the plume and provide specific comments below. Data gaps in the monitoring well network exist along the western plume path and margin, specific comments are provided below.

The Scope of Work and signed access agreement will need to be submitted to the Tribe in advance of Tribal Approval to complete well installation work.

General Comments:

Note: The plume shown on the figure is based on the incomplete data set and extends further to the east than existing data suggests, does not account for the BH17 total VOCs of 24,335, and does not show the plume path from the source area to the lake including the MW16 well nest.

A monitoring well network proposal should consider

1) All identified Contaminants of Concern (COC) and Potential Contaminations of Concern (PCOCs).

2) All groundwater monitoring data and supporting data to identify groundwater monitoring data gaps.

3) A strategy for monitoring well placement that addresses identified data caps associated with source area characterization, plume fata and transport monitoring, and long term sentinel well monitoring.

Specific Comments

EPA Proposed Location #1- Upgradient Well.

Nearby previously collected data suggests that this well nest will be clean well (VAS4, BH25, BH27).

EPA Proposed Location #2- Defines the plume to the east

Nearby Previously collected data suggests this well nest will be clean

EPA Proposed Location # 3- Defines the eastern arm of the plume

EPA Proposed Location # 4-

Agree to move this from the top of a berm separating the pond from the lake to the VAS 2 area a few feet west.

There was some discussion about appropriate screening depths at this nudged location. Appropriate screening depths will need to be determined based on evaluating existing data.

EPA Proposed Location # 5-

The Tribe agrees with this location.

Existing Identified Data Gaps- the western margin of the plume

BH17 groundwater collected from 10-15 feet – total VOCs 24,335-

The plume path between the source area and the lake

Example- The plume appears to exist the source area between MW-18 and MW-19 along a path near MIP 11 and MIP 7

Western Margin near MW18 nest and MW17 nest

The nearest MIP point- (MIP 15) shows a Mip response from 25-29 feet . The MW17 and MW18 well nests are screened above and below the depth of MIP response.

Please be aware that the proposal does not address the vertical extent of contamination into fractured bedrock.

Kristen Hanson

Tribal Natural Resource Department

Phone: 715-588-4290

From: Saari, Christopher A - DNR [mailto:Christopher.Saari@wisconsin.gov]
Sent: Friday, December 2, 2016 3:39 PM
To: Dave Larsen
Cc: Egan, Robert (egan.robert@epa.gov); Hanson, Kristen; Robinson, John H - DNR; Fassbender, Judy L - DNR
Subject: RE: Tower Standard Proposed Well Locations - PECFA Perspective

Hi Dave:

I took some time today to more fully evaluate your proposal as well as the recommendations forwarded by EPA and Bristol, and I'd like to provide you with some likely sideboards for drawing up a scope of work (for both drilling contractors and PECFA cost request purposes). I tend to agree with most of what has been proposed so far. My comments will follow the numbering scheme in Bob Egan's November 2 message.

1. I agree with the need for this well nest, as well as the proposed screen depths. I also agree with your recommendation to move the location slightly to the north and west. We should use data from the previous investigation to help inform our decisions.

2. I agree with the need for and location of this well nest, but there is a discrepancy between Bob's recommendation (shallow and mid-depth screens) and Tom Kady's recommendation (mid-depth and deep screens). I think the shallow and mid-depth screens would be more useful at this location, as the PID response from MIP2 pointed to smear zone contamination that decreased with depth.

3. I agree with the location and screen depths proposed here.

4. I agree with the need for and location of wells here, but I do not think a shallow well is essential for defining the degree and extent of contamination or as part of a post-remedial monitoring network, and my recommendation would be to not include the shallow well in the PECFA drilling scope of work. By this point in the plume configuration, dissolved contamination (per the PID readings in MIP 14) was found only at depth.

5. I agree with the need for these wells and the proposed screen depths, and I would concur with your proposal to relocate the nest slightly to the west.

6. Bristol background well nest – I would recommend that this well nest not be included in the PECFA drilling scope of work. I think this nest would be somewhat duplicative of the proposed #1 well nest, and I do not think it is an essential location for defining the degree and extent of contamination or as part of a post-remedial monitoring network.

With the completion of this proposed scope of work, we will have expended approximately $150,000 of PECFA funds on monitoring well installations at this site. I hope that you are able to arrange for the installation of these monitoring wells yet in December. I also hope that we can then begin to focus more on selecting, designing and implementing a remedy here.

Feel free to contact me if you have questions. I'd be happy to explain my recommendations/comments when we talk on Tuesday. Have a good weekend.

We are committed to service excellence.

Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Chris Saari

Phone: (715) 685-2920

Christopher.Saari@Wi.gov

From: Dave Larsen [mailto:dlarsen@reiengineering.com]
Sent: Tuesday, November 29, 2016 11:11 AM
To: Egan, Robert; KHanson@ldftribe.com; Saari, Christopher A - DNR; Robinson, John H - DNR; Fassbender, Judy L - DNR
Cc: Kamke, Sherry; Dee.allen@ldftribe.com; Faust, Matt
Subject: Proposed Well Locations
Importance: High

Hello all. REI has been in contact with drilling contractors to see if we can get the proposed wells installed in 2016. I heard back yesterday from one contractor that they have availability from December 7-16 and was hoping that we would be able to expedite an approval to allow the wells to be installed during that period of drilling availability. Can we arrange a conference call for tomorrow, Wednesday Nov 30th at 1:00 pm central? **Please respond with your availability, if this date/time does not work, please provide alternative(s).**

I have taken all the proposed locations (thank you to Bob Egan, Tom Kady and the folks at Bristol) and included them on the attachment.

- The well placements proposed by Tom Kady are identified in **RED**

- The well placements proposed by REI are identified in **Green**
- The well placements identified by Bristol are in **Blue**

For the most part we all are in agreement on the approximate locations of the proposed wells. I recommended moving the locations of EPA proposed Well #1 and #5. I recommend moving #1 nearer the REI proposed location mainly due to the historical location of nested wells MW6 and MW7 from the initial investigation (figure is attached). Both wells were essentially non-detect for each sampling event. REI also referenced historical well MW8 and it too was essentially non-detect for each sampling event. I split the difference between the Bristol recommended location (by MW8) and the EPA recommended location (by MW's 6-7). But the group can decide on final locations. I also recommend moving proposed well location #5 further west near the former locations of the MW13 historical well nest (FYI - these wells were also non-detect).

- Historic Investigation Well Construction Data

o MW6: 15' depth and 10' screen

o MW7: 40' depth and 5' screen

o MW8: 40' depth and 5' screen

o MW13s: 33' depth and 5' screen

o MW13d: 50' depth and 5' screen

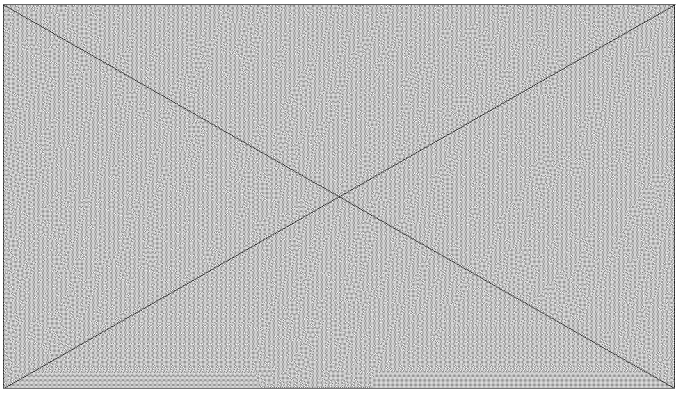
I am not sure if we can get the #4 well location wells installed along the spit between the pond and the lake. The drillers equipment is very big and there may not be enough room for the rig, support truck and everything else needed to install and well. If we can agree to move forward I will provide the driller with the proposed locations and rely on his recommendations regarding accessibility to the proposed locations.

Timing is pretty critical, the driller is looking at up to 7 days to complete and I am trying to assist in reducing it to 5 days. We will need to notify the off-site property owners and get their blessing to access their property. We will also need to complete a diggers hotline locate (3 business day advance notice is required) and I will have to try to find a disposal option for the significant volume of water that will be generated.

Thank you,

David N. Larsen P.G

Hydrogeologist / Professional Geologist



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From: Egan, Robert [mailto:egan.robert@epa.gov]
Sent: Tuesday, November 29, 2016 8:16 AM
To: KHanson@ldftribe.com; Christopher A Saari <Christopher.Saari@Wisconsin.gov>; Dave Larsen <dlarsen@reiengineering.com>
Cc: Kamke, Sherry <Kamke.Sherry@epa.gov>; Dee.allen@ldftribe.com
Subject: Bristol recommendations on additional well locations

All,

I asked Matt Faust and Bob Allen at Bristol to look at our additional well recommendations.

Matt's message back to me is copied below:

Bob Allen and I went over the recommended well locations in your email correspondence with Tom Kady and largely concur with all of the proposed wells.

At a lower priority, we would also recommend a true background well pair immediately up-gradient (north) of the plume. Somewhere in the vicinity of 272,500 N, 1,990,650 E. One of the potential benefits would be the data gathered on redox chemistry of the aquifer immediately before entering the impacted zone.

Please let me know if you have any questions.

Regards,

Bob

Bob Egan

Corrective Action Manager

Underground Storage Tanks Section

RCRA Branch

EPA Region 5

(312) 886-6212

(312) 692-2911 (fax)