

Sonja Birr

From: Dan Koski
Sent: Monday, February 05, 2018 11:30 AM
To: Sonja Birr
Subject: FW: Evaluation of Potable Well Plume Delineation for Manitowoc City / Former Newton Tn Gravel Pit
Attachments: 20180126_99_PW_Req.pdf

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From: Beggs, Tauren R - DNR [<mailto:Tauren.Beggs@wisconsin.gov>]
Sent: Friday, January 26, 2018 3:29 PM
To: GravelPit; Dave Henderson
Cc: Kasdorf, James H Jr - DNR; Chronert, Roxanne N - DNR
Subject: Evaluation of Potable Well Plume Delineation for Manitowoc City / Former Newton Tn Gravel Pit

Good afternoon,

Attached is the letter regarding potable well plume delineation work and potable well replacement. A paper copy is in the mail to you today so you have it prior to the February 2nd meeting.

After the recent sampling of private wells completed in the Town of Newton and Town of Manitowoc, I evaluated the new data and re-evaluated past data and documentation of this case. I want to provide this information along with the letter regarding potable well plume delineation and potable well replacement. The following are my observations:

- The first mention of separate plumes in the meeting notes is during the data gap meeting on February 19, 2014, which stated that dots need to be connected between the source area and impacted potable wells on the north end of CTH CR.
- Email from September 11, 2014, 1:35pm: Beggs contacted Kevin Erb with the UW Extension Conservational Professional Development and Training Coordinator for bedrock characteristics, Erb stated there are many sand lenses within the geologic deposition in the City of Manitowoc/Town of Newton area that have shown opposite direction in groundwater flow relative to the regional groundwater flow.
- Conference call minutes from October 8, 2014: summary of meeting with the Wisconsin Geological and Natural History Survey staff who was compiling a Manitowoc County bedrock map and publication. The Survey staff stated with bedding planes, fractures and reef structures there can be drastic changes and variability in flow patterns and in similar geologic environments there has been horizontal groundwater movement up to 150' per day. The Survey staff were not surprised to see contaminants migrating in two different flow directions.
 - Even a small fraction of that quick of horizontal movement could carry contaminants through the bedrock aquifer a significant distance over a period of 50+ years.

- Conference call minutes from December 3, 2014: new hits in private wells on CTH CR and Viebahn, looked for second source, possibly a junkyard, no other evident source, water table divide in shallow groundwater flow direction just east of Silver Creek (between the meander of the creek).
 - Surface water sampling from Silver Creek in September 2014 shows a discharge of chlorinated solvents to the creek; therefore, contaminated groundwater is being influenced by the creek and the water table divide shows diversion of groundwater flow in variable directions. Based on wells that needed replacement on Hecker Rd, there also appears to be a southeast and east groundwater flow component, which is seen by the replacements of 3303 Hecker Rd and 3320 Hecker Rd, 3515 Hecker Rd and 3609 Hecker Rd.
- Peer review on January 28, 2015 with DNR Hydrogeologist Patrick Collins that is experienced with chlorinated solvents in bedrock with some large scale case he project manages: he recommended well nest transects to better define horizontal and vertical extent of groundwater contamination.
- Meeting minutes from March 11, 2015: discussed well nest locations and DNR proposed special well casing area, Liz Heinen expressed concern about potable wells beyond Orchard Lane in the Town of Manitowoc. At that time, investigation sampling was not required to be extended past Orchard Lane.
- Technical Information meeting minutes from April 1, 2015: discussed searching for missing well logs for private wells on CTH CR, if unable to find, consider pulling pumps and getting measurements, discussed surrounding potential second source with well nests.
 - A regional groundwater flow map was provided during the meeting. This map was created using information from private well construction logs. Map shows variability in regional groundwater flow direction to the southeast, east and northeast.
- Meeting minutes from April 27, 2015: additional discussion on plume delineation, well nests between plumes and on county land due to discussion of two plumes and information received from the open houses, one additional well log was found on CTH CR. Since well construction reports were not found, pulling pumps was next step.
- Special well casing depth area finalized December 7, 2015. Conservatively, the DNR included a small portion of the Town of Manitowoc beyond the Town of Newton limits.
 - Recent vinyl chloride ES exceedances at 2918 S. 26th St and 3008 S. 26th St in the Town of Newton are within the special well casing depth area.
- Email from March 28, 2016, 5:00pm: Henderson provided the Manitowoc County map that was given to him by Ken Bradbury from the Wisconsin Geological and Natural History Survey. The report to go with the map was still being drafted.
 - I recently reached out to Ken Bradbury via email on January 10, 2018 to see if the report was completed. Have not heard anything back from him at this time.
- Meeting minutes from April 6, 2016: last mention of plume delineation work. The focus was shifted to the source area remedial action.
- January 10, 2018 conference call minutes: plume delineation was brought back up due to recent sampling. A draft potable well sampling results figure was provided that included the additional wells that had been sampled.
 - Impacted wells that have been replaced tend to line up/correlate with the flow directions indicated on the regional groundwater flow figure provided on April 1, 2015.
 - Recent sampling shows the same two contaminants, cis-1,2-DCE and vinyl chloride at the same depth at or near the top of bedrock with similar concentrations.

Sincerely,

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Tauren R. Beggs

Hydrogeologist & Northeast Region Land Recycling Expert

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