2018 Annual Residential Well Sampling Report

Project No: 1036-10081

Prepared For:

Franklin Waste Facility Monitoring Committee

Prepared By:

JSA Environmental

WHAT WE DO TODAY TOUCHES SEVEN GENERATIONS.

In May of 1992 an agreement between The Waste Management Metro Landfill and Recycling Facility (Waste Facility) and the neighboring Municipalities was signed; a Host agreement. This agreement defined the rights and responsibilities of a Monitoring Committee that would be made up of representatives from the neighboring municipalities and the "host" community, City of Franklin. The Monitoring Committee was titled the Franklin Waste Facility Monitoring Committee (Franklin WFMC). The other communities with seats on the Franklin WFMC are:

- Milwaukee County
- Waukesha County
- Racine County
- City of Muskego
- Town of Raymond
- Town of Norway

One of the responsibilities of the Waste Facility is to procure annual sampling and testing of thirty five (35) residential wells, selected by the Franklin WFMC. The samples under go testing for constituents regulated by both the Primary and Secondary Federal Drinking Water Standards. The results of this testing is presented to the Franklin WFMC by the Waste Facility directly, allowing the Franklin WFMC to analyze the results and generate a report.

In 1996 the Franklin WFMC initiated a contract with Environmental Graphics, Inc.; a consultant to analyze the results from the Annual Residential Well Sampling and provide a report summarizing results, recording sampling history, and providing recommendations for the subsequent annual sampling. In 2003, the Franklin WFMC engaged the services of Ruekert Mielke, Inc. to perform the Annual Residential Well Sampling Report Contract for 2003 through 2005. The Franklin WFMC awarded the 2006 Annual Residential Well Sampling Contract to JSA Civil Environmental Engineers, Inc.; now JSA Environmental, Inc. (JSA). JSA has maintained the contract since 2006.

This year, 2018, the Franklin WFMC again appointed Davy Laboratories[1] to perform the sampling and testing of the 35 wells. Davy had been selected the previous five years, following an open bid process and the previous years sampling protocols were in compliance with the contract between the Franklin WFMC and the Waste Facility.

JSA initiated the 2018 contract by reviewing the findings from the August 23, 2018 results of testing the 35 residential wells, sampled on July 25th of 2018. JSA also made the commitment to generate this report, maintain the historic database, and aid the Franklin WFMC in the selection of the 35 residential wells for sampling in 2019.

On November 1, 2018; JSA has completed Tasks 1, 2, and 3 of the "Annual Well Sampling Report", by submitting the Well Sampling Report to the Franklin WFMC. This report includes a Map of Wells Sampled, Table 1- 2018 Residential Well Sampling, Table 2 – Historic Sampling Summary, Table 3 – 2018 Residential Well Samples Exceeding the Federal Secondary Drinking Water Standard, Table 4 – History of Constituents Detected Above LOD. All tables have been sized to fit on standard Letter paper and when applicable are produced in duplex, however Table 2 and the map still require 11"x17" formatting.

1 Davy Laboratories, 115 Sixth Street, P.O. Box 2076, Lacrosse, WI 54602-2076

Wells Sampled

In June 2018, JSA made recommendations to the Franklin WFMC for the selection of the 35 residential wells for the 2018 sampling. Wells were selected based on past sampling frequency, most recent sampling, and potential for trend analysis in organic constituents detected; as recommended in the 2017 Annual Residential Well Sampling Report. All wells selected were sampled in 2018. No new wells were sampled in 2018. Well sampling frequency was focused on newer wells and wells that had had limited sampling to date. Sampling this year did include properties adjacent to the WMWI Metro Waste and Recycling Facility both South and West. The Waste Facility is in ownership of the properties immediately adjacent to the property on the East side of 112th Street and the South side of Oakwood Road, this has removed those wells from the "Residential Sampling Program". Several of the purchased properties are now the location of required Monitoring Wells for current operations and future expansions of the Metro Facility.

The sampling was performed by Davy Laboratories on July 25th of 2018. The locations are marked on MAP 1 of the report, using Tax ID to identify the property that the well is located on. The Well location data is found in Table 1, providing Property Owner, Property Address, and previous sampling date.

Davy sampled only from external locations when possible, with immediate connections to the well. They performed purging (discharging of water from the well for at least two minutes) prior to all sample gathering. Samples were handled and returned to the lab following protocols established by the US EPA for drinking water sampling and testing.

Samples are evaluated in the field and in the laboratory, these are defined as field and analytical results. In the field Davy's technicians record the follow:

- Specific Conductance – electrical conductivity of the sample
  - Contamination by Landfill gas or leachate raises specific conductance
- Odor – a subjective analysis done by the technician
  - The presence of organic materials and/or chemistry can create odors in groundwater.
- pH – acidic/basic analysis of the sample
  - Groundwater, in Wisconsin, is typically neutral to basic; landfill leachate or gas is predominantly acidic and if present in the sample would lower the pH (make more acidic)
- Temperature – recorded in centigrade
  - Groundwater, in Wisconsin, ranges from 50 to 60 degrees depending on depth and recharge rate of the aquifer. The introduction of chemical reactions and organic degradation raises temperatures. Higher than expected temperatures can also be an indication of inadequate purging, which is addressed by re-purging and sampling.
- Turbidity – a measure of the transparency of the sample
  - Turbidity in surface water is an excellent measure of water quality, in groundwater it

suggests further testing. It is a very good indicator of the current quality of the well construction itself.

Field results are water quality indicators that can often be used to identify potential contamination to be discovered in the analytical results. Davy technicians would flag field results that were outside the norm for groundwater in the Franklin, WI area. All the samples were within the normal parameters for the area and in addition were consistent with previous sampling events.

Federal Primary Drinking Water Standards

In 2017 the US EPA updated the Federal Primary Drinking Water Standards Maximum Contaminant Level (MCL) for some constituents that are in the protocols. The majority of these constituents are heavy metals, none of the affected constituents have ever been detected in the Franklin WFMC Annual Residential Well Sampling history.

The 2018 Annual Residential Well Sampling Laboratory Testing yielded no constituents that exceeded the Federal Primary Drinking Water Standards Maximum Contaminant Level (MCL). No wells contained constituents above the identified Limit of Detection (LOD)

The Wisconsin Department of Natural Resources also maintains a set of parameters for groundwater contaminants. All constituents detected in the Well Sampling are found in NR 140 – Groundwater Quality. The Public Health Groundwater Quality Standards are similar to the Federal Primary Drinking Water standards. No VOC's detected in the Annual 2018 Well Sampling, therefore no samples had constituents that exceeded the Preventative Action Limit (PAL), therefore no constituents that exceeded the Enforcement Standard.

Federal Secondary Drinking Water Standards(FSDWS)

The secondary standards act as guide lines for public water systems. Each well that had been previously sampled was compared to its past history. The 2018 Well Samples are predominantly consistent with the Well Sampling history and with the groundwater constituents of Southeastern Wisconsin.

Of the constituents measured under the Federal Secondary Drinking Water Standards, Iron (Fe) and Sulfate (SO4) are detected in excess. Ten (10)[2] wells had Iron concentrations higher than 0.30 milligrams per liter (mg/L) and two (2)[3] wells had Sulfate concentrations equal to or greater than 250 mg/L. There is no indication to suggest that these concentrations are anything other than naturally occurring and have been consistent over more than 15 years of sampling and testing.

In past years of sampling many wells had Sulfate concentrations above 250 mg/L; the majority of these wells are now owned by the landfill or are outside of the defined sampling area. In 2016, JSA identified that the Thiessenhusen well had doubled the sulfate concentration, as recorded in previous samples. The high sulfate content should have an impact on the taste of the water and can potentially cause diarrhea (can cause dehydration in infants). JSA recommended a re-sampling of the well to see if the concentration was a

2 See Table 3 Results Fe+
3 See Table 3 Results SO4

unique occurrence or a consistent parameter; however the owners did not respond to the 2017 Well Sampling Mailer. The Thiessenhusen well was sampled in 2018 and the sulfate concentration had dropped below the Federal Secondary Drinking Standard; most likely due to changes in the properties water supply system.

Trending

The 2018 Well Sampling results, consistent with the 2017 and prior results, continue to support that there is no current trending with respect to Federal Primary Drinking Water Standards. The detection of Dichlorodifluoromethane occurred in several wells between 1997 and 2013, there have been no detects since 2013. Dichlorodifluoromethane is now a banned substance, since 1996, and its presence has been attributed to poor sampling locations at the subject properties. Dichlorodifluoromethane is not present in the Waste Facility leachate.

With respect to the Federal Secondary Drinking Water Standards, trending is recorded throughout the history of the Annual Residential Well Sampling Reports. Both Iron and Sulfate are tracked in every report. Only two (2) wells had concentrations of Sulfate in excess of the FSDWS this year, these exceedances are minor and historic. Except for two wells, the exceedances of Iron are minor and historic. However, the Acker[4] and Cherek[5] wells exceeded the FSDWS by six times. The Acker well has been decreasing in iron concentration per sampling event and the Cherek well has increased. The historic values of testing for these wells suggest that the well and/or water supply system are deteriorating; it does not rule out the possibility that the supplying aquifer is iron rich. The concentration of iron should be impacting the appearance, taste, and possibly odor of the water supply.

Conclusions

The 2018 Well Sampling Laboratory Results yielded no detection of any constituents sampled for under the Federal Primary Drinking Water Standards. This is what should be expected in a sampling event and is most probably an example of improved well protection by well owners and improvements in the technology and protocols of sampling and testing.

The subject wells sampled were consistent with historic sampling results with respect to The US EPA Secondary Drinking Water Standards, exceedances were found in Iron and Sulfate concentrations; but do not pose a threat to public health and are consistent with previous sampling events.

Recommendations

JSA recommends that sampling for the 2019 report be focused on new wells and wells with close proximity to the landfill. When Waste Management purchases residences about the landfill, the associated wells are removed from the Annual Well Sampling Program and sampling adjacent to the landfill occurs less frequently. Wells along 92nd Street should be viewed as “adjacent” to the Facility and a focus for future sampling, as recommended in 2016.

JSA does not recommend any specific well to be sampled in 2019.

4 Acker – Tax ID - 985.9997.003
5 Cherek – Tax ID - 899.9990.052

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Table 1 2018 Residential Well Sampling

Owner	Street	City	Tax ID	Site #	Last
Kennith Bosch	10923 7 Mile Rd	Hales Corners, WI 5313	012.04.21.07.001.000	1	2004
Duane & Dorothy Acker	8731 8 Mile Road	Franksville, WI 53126	985.9997.003	2	2016
Joseph & Sandra Blazek	11530 W. 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.059.016	3	2014
Thomas & Chris Gaulke	8674 W. Oakwood Rd.	Franklin, WI 53132	935.9994.004	4	2014
Lloyd & Beverly Gellings	21207 W 7 Miles Rd	Franksville, WI 53126	012.04.21.06.004.000	5	2015
Ruth M. Grandlich	11722 W. Oakwood Rd.	Franklin, WI 53132	939.9999.000	6	2015
Diane & Kay Hackstein	626.628 Adeline Dr.	Franksville, WI 53126	012.04.21.06.062.000	7	2014
Mark W. Hagert	10820 S. 92nd St.	Franklin, WI 53132	985.9995.001	8	2016
Don Kochnowicz	107 108th Street	Raymond, WI 53126	012.04.10.06.007.000	9	2017
Marcia Knollenberg	216.218 Highway 45	Franksville, WI 53126	012.04.21.06.010.020	10	2014
Edd Konopka	7930 Oakwood Road	Franklin, WI 53132	934.9997.000	11	2014
Jerry A. & Jessica J. Krause	627 Shirley Dr.	Franksville, WI 53126	012.04.21.06.059.004	12	2016
James & Jean Langenohl	9970 S 112th Street	Franklin, WI 53132	938.9988.005	13	2015
Preston Ludtke & Jane Riehle	11230 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.035.000	14	2012
Michael & Mary MacDonald	11555 W. Loomis Road	Franklin, WI 53132	892.9996.000	15	2015
Eve Parsons	8108 Raynor Ave.	Franksville, WI 53126	010.04.20.01.027.000	16	2013
Kim Williams & Paul Thiessenhusen	326 S. 124th St.	Franksville, WI 53126	012.04.21.06.013.000	17	2016
Michael Zolecki	11835 W. Ryan Rd	Franklin, WI 53132	891.9989.003	18	2014
Richard Wallratzl	8180 W Oakwood Road	Franklin, WI 53132	934.9998.001	19	2012
James Bonney	10146 S. 124th St.	Franklin, WI 53132	939.9996.002	20	2016
Roger Berndt	12320 W. Oakwood Rd.	Franklin, WI 53132	939.9996.006	21	2015
Lisa Cherek	8850 W. Bosch Ln.	Franklin, WI 53132	899.9990.052	22	2017
Michael & Katherine Delemont	9917 S. 112 St.	Franklin, WI 53132	938.9993.000	23	2017
Kenneth & Mary Schingeck	11765 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.019.000	24	2015
Albert H & Gwen Schill	10942 S. 124th St.	Franklin, WI 53132	989.9998.003	25	2015
Gary VandenBoom	11507 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.005.000	26	2015
Charles Presser	11100 W Oakwood Rd.	Franklin, WI 53132	938.9998.000	27	2015
Bill Zamecnik	10614 7 Mile Rd.	Franksville, WI 53126	012.04.21.05.022.000	28	2015
Donald & Paulene Acker	10023 S. 92nd St.	Franklin, WI 53132	936.9996.000	29	2016
Joanne Jaroki/Alan Kleman	10456 S 92nd Street	Franklin, WI 53132	944.9996.000	30	2016
Michael N. & Pamela K. Lewis	11600 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.040.000	31	2016
Dave Mudgett	9911 S. 92nd St.	Franklin, WI 53132	936.9995.000	32	2016
Ronald VandenBoom	524 Raynor Ave.	Franksville, WI 53126	012.04.21.06.019.000	33	2016
Frances Solivan Tinpa	10534 W. Oakland	Franklin, WI 53132	937.9999.003	34	2017
Helmut & Adeline Kopp	10944 W. Oakwood Rd.	Franklin, WI 53132	938.9997.000	35	2017

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Table 2 Historical Sampling Summary

ID	Owner(s)	Well Address	City, State Zip	Taxkey Id	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	Harold Abramowski	8808 Raynor Avenue	Franksville, WI 53126	010.04.20.01.031.000	X						X		X		X			X												
2	Don Adams	10307 W. Oakwood Rd.	Franklin, WI 53132	942.9997.000	X																									
3	Albert H & Gwen Schill	10942 S. 124th St.	Franklin, WI 53132	989.9998.003	X	X											X					X				X				X
4	Gregory D. & Betty A. Solfest	11920 7 Mile Rd.	Caledonia, WI 53108	012.04.21.06.027.000	X						X		X		X			X												
5	Joseph & Nancy Bedalov	11403 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.011.000	X				X		X			X				X			X			X						
6	Jeffrey & Penny Hill	654 Adeline Dr.	Franksville, WI 53126	012.04.21.06.044.000	X																									
7	Preston Ludtke & Jane Riehle	11230 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.035.000	X		X				X			X			X				X			X				X		X
8	Kurt L. & Sharon L. Block JR	11417 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.010.000	X						X			X		X				X	X				X	X				
9	Kim R. Borchardt	11316 7 Mile Road	Franksville, WI 53126	012.04.21.06.034.000	X																									
10	Kennith Bosch	10923 7 Mile Rd.	Hales Corners, WI 53130	012.04.21.07.001.000	X						X					X														X
12	Richard S. & Mardell A. Bruhn	21204 7 Mile Rd.	Franksville, WI 53126	010.04.20.01.026.000	X								X				X			X	X				X			X		
13	Marcia Knollenberg	216.218 Highway 45	Franksville, WI 53126	012.04.21.06.010.020	X			X			X		X		X			X			X			X		X				X
14	Gilbert Couillard	10568 S. 124th St.	Franklin, WI 53132	940.9997.000	X					X	X		X		X			X				X							X	
15	Stever/Liles	8122 Raynor Ave.	Franksville, WI 53126	012.04.21.06.024.000	X						X	X				X									X					
16	Ronald J. Plevak	21719 8 Mile Rd.	Palmyra, WI 53156	010.04.20.01.001.000	X			X			X																			
17	Dorothy S. Diekow	460 S. 124th St.	Franksville, WI 53126	012.04.21.06.006.000	X					X						X			X											
18	Dale M. & Teri L. Drought	21510 7 Mile Rd.	Franksville, WI 53126	010.04.20.01.016.000	X																									
19	Le Roy & Ardith A. Revolinski	21016 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.028.000	X				X		X		X	X											X					
20	Ronald Latus	10422 S. 112th St.	Franklin, WI 53132	941.9985.000	X			X					X		X				X											
21	Dean R. Storm	11431 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.004.000	X																									
22	Rosemarie Frey	10668 S. 112th St.	Franklin, WI 53132	988.9998.000	X																									
23	Eve Parsons	8108 Raynor Ave.	Franksville, WI 53126	010.04.20.01.027.000	X															X					X					X
24	Alan J. Gellings Trust	223 S. 108th St.	Franksville, WI 53126	012.04.21.06.008.000	X					X				X		X		X												
25	Arlen C. Gellings	239 S. 108th St.	Franksville, WI 53126	012.04.21.06.003.000	X					X	X			X		X				X			X				X			
26	Joseph G. & Diana L. Gellings	10346 7 Mile Rd.	Franksville, WI 53126	012.04.21.05.021.000	X								X			X									X		X		X	
27	Tom E. & Lisa M. Harris	449 Adeline Dr.	Franksville, WI 53126	012.04.21.06.031.000	X				X		X		X			X						X				X				
28	Adrine B. Hebron Trust	1243 S. 108th St.	Franksville, WI 53126	012.04.21.07.002.000	X												X				X									
29	Jon & Sheila J. Colby	1331 S. 108th St.	Franksville, WI 53126	012.04.21.07.046.000	X															X										
30	Jack D. & Kathleen A. Hintz	8832 Raynor Ave.	Franksville, WI 53126	010.04.20.01.004.000	X												X													
32	Harold Jordan	9801 W. Oakwood Rd.	Franklin, WI 53132	943.9999.000	X																									
33	Jeffrey D. JR & Penny S. Hill	623.625 Adeline Dr.	Franksville, WI 53126	012.04.21.06.047.000	X					X	X																			
33	Deanna M. Chiapete	11287 7 1/8 Mile Rd.	Franksville WI 53126	012.04.21.06.057.000														X	X		X					X			X	
34	Dennis Karthausser	10667 S. 112th St.	Franklin, WI 53132	941.9999.000	X																									
35	Robert J. & Jill A.Janikowski	11567 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.016.000	X					X	X	X	X		X						X				X				X	
36	Joseph & Joyce L. Knox	11536 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.036.000	X																X									
37	Waste Management	319 S. 108th St.	Chicago, IL 60690.1450	012.04.21.06.001.000	X																									
38	Donald Lange	10905 W. Oakwood Rd.	Franklin, WI 53132	941.9983.000	X						X		X			X						X				X			X	
39	Ralph Losey	10520 S.112th St.	Franklin, WI 53132	941.9996.000	X				X		X	X								X		X								
40	Steven Zirzow	11757 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.017.000	X				X							X								X	X			X		
41	Eugene Masconi	10530 S. 112th St.	Franklin, WI 53132	941.9997.000	X			X																						
42	Don Mateicka Sr.	560 Shirley Dr.	Franksville, WI 53126	012.04.21.06.054.000	X			X			X	X	X		X				X				X			X			X	
43	Ruben & Deborah Martinez	9329 W. Oakwood Rd.	Franklin, WI 53132	943.9997.004	X					X				X							X						X			
44	Frank J. & Aloys J. Mente	8502 Raynor Ave.	Franksville, WI 53126	010.04.20.01.020.000	X				X			X										X				X				
45	Jerome & Marilyn Metz	11407 Shirley Ct.	Franksville, WI 53126	012.04.21.06.064.000	X								X					X			X		X			X			X	

ID	Owner(s)	Well Address	City, State Zip	Taxkey Id	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
46	Gary F. Fleming & Christine R. Bitter	603 Adeline Dr.	Franksville, WI 53126	012.04.21.06.048.000	X			X			X					X	X													
48	Marylin Miller	610.612 Adeline Dr.	Franksville, WI 53126	012.04.21.06.066.000	X					X	X	X			X			X			X			X		X				
49	Sanford & Kathleen Olson Trust	11308 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.037.000	X						X	X				X														
50	Michael Penn	11735 W. Oakwood Rd.	Hales Corners, WI 53130	940.9989.000	X						X			X		X		X	X	X										
51	John Perkovich	10386 S. 124th St.	Franklin, WI 53132	940.9994.000	X									X																
53	Dennis & Judith Sanford	8606 Raynor Ave.	Franksville, WI 53126	010.04.20.01.013.000	X					X	X				X			X	X	X			X						X	
54	Schaefer Family Living Trust	21224 7 Mile Rd.	Franksville, WI 53126	010.04.20.01.017.002	X													X												
55	Elfriede Schemeit Trust	461 Adeline Dr.	Franksville, WI 53126	012.04.21.06.041.000	X						X			X																
56	Michael N. & Pamela K. Lewis	11600 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.040.000	X						X							X			X				X			X		X
57	Greg Schrubbe	741 S. 108th St.	Franksville, WI 53126	012.04.21.06.069.000	X																									
58	Personally Yours Senior Living	12115 7 Mile Rd.	Waterford, WI 53185	012.04.21.07.014.000	X																									
59	Robert Schweitzer	10555 S. 92nd St.	Fraknlin, WI 53132	943.9997.007	X				X		X		X			X														
60	Timothy Smith	9209 W. Oakwood Rd.	Franklin, WI 53132	943.9996.001	X					X	X				X			X				X				X		X		
61	Charles Sobbe	707 Adeline Dr.	Franksville, WI 53126	012.04.21.06.045.000	X																									
62	John Stroud	702 Highway 45	Franksville, WI 53126	012.04.21.06.030.000	X								X			X							X			X			X	
63	Joseph D. & Doreen A. Langfeldt	880 Adeline Dr.	Franksville, WI 53126	012.04.21.06.038.000	X		X				X	X				X														
64	Michael Theys	10509 8 Mile Rd.	Franksville, WI 53126	012.04.21.05.016.000	X						X					X				X										
65	Gary VandenBoom	11507 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.005.000	X						X			X					X				X	X			X			X
66	Carol Welch	359 S. 108th St.	Franksville, WI 53126	012.04.21.06.002.000	X				X			X	X			X					X			X				X		
67	Gregory Worman	499.501 Adeline Dr.	Greenfield, WI 53228	012.04.21.06.046.000	X			X			X				X			X								X		X		
68	Bill Zamecnik	10614 7 Mile Rd.	Franksville, WI 53126	012.04.21.05.022.000	X						X	X		X			X				X		X				X			X
69	Faro R & Florence Balisteri	10623 W. Oakwood Rd.	Franklin, WI 53132	942.9998.000		X					X	X			X															
70	Frederick R. Gaffney	8820 Raynor Ave.	Oak Creek, WI 53154	010.04.20.01.005.000		X		X			X												X							
71	Joseph G. & Diana L. Gellings	642 S. 108th St.	Franksville, WI 53126	012.04.21.06.068.000		X							X												X			X	X	
72	Steve Bodi & Nanette Carlson	11207 W. 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.008.000		X		X										X												
73	Ronald R. Heritz	538 Raynor Ave.	Franksville, WI 53126	012.04.21.06.021.000		X					X			X			X				X				X		X			
74	Jeffrey & Penny Hill	653 Adeline Dr.	Franksville, WI 53126	012.04.21.06.044.000		X					X							X			X									
75	Kim Williams & Paul Thiessenhusen	326 S. 124th St.	Franksville, WI 53126	012.04.21.06.013.000		X																	X		X					X
76	Kenneth & Mary Schingeck	11765 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.019.000		X					X			X			X				X			X			X			X
77	Brian E. & Lana M. VanScoy	642 Raynor Ave.	Franksville, WI 53126	012.04.21.06.017.000		X																					X			
78	Ronald VandenBoom	524 Raynor Ave.	Franksville, WI 53126	012.04.21.06.019.000		X	X						X	X			X	X			X	X		X				X		X
80	Wayne Ziemer	11400 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.032.000		X	X					X	X		X			X												
81	Dale/Linda Meyer	660 Adeline Dr.	Franksville, WI 53126	012.04.21.06.060.000			X				X						X								X		X		X	
82	Norm/Laura Swenson	11285 Shirley Dr.	Franksville, WI 53126	012.04.21.06.055.000			X				X			X	X					X										
83	William Schittinger	10341 S. 92nd St.	Franklin, WI 53132	943.9997.010			X				X			X		X					X			X			X	X		
84	Amalia Weber	10632 S. 112th St.	Franksville, WI 53126	941.9998.000			X																							
85	Jeffrey & Penny Hill	651 Adeline Dr.	Franksville, WI 53126	012.04.21.06.044.000			X									X														
86	Kim Williams & Paul Thiessenhusen	326 S. 124th St.	Franksville, WI 53126	012.04.21.06.013.000			X				X				X			X						X						
87	Blanche Meyers	8916 Raynor Ave.	Franksville, WI 53126	010.04.20.01.003.000				X																				X		
88	Frank Nowag	580 Shirley Dr.	Franksville, WI 53126	012.04.21.06.042.010					X					X		X	X					X								
89	Lisa Gardner	664 Shirley Dr.	Franksville, WI 53126	012.04.21.06.042.000					X				X																	
90	Ronald J. Plevak	S98 W12712 Loomis Rd.	Palmyra, WI 53156	010.04.20.01.001.000							X																			
91	Roger Berndt	12320 W. Oakwood Rd.	Franklin, WI 53132	939.9996.006							X	X				X					X			X			X			X
92	James Bonney	10146 S. 124th St.	Franklin, WI 53132	939.9996.002							X									X								X		X
93	John T. Bunich	11210 W. 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.043.000	X				X		X		X				X				X				X			X		
94	James Dzewiecki	10780 S. 92nd St.	Franklin, WI 53132	985.9994.002							X	X			X			X				X							X	
95	William K & Rose Hinkel	9612 W. Oakwood Rd.	Franklin, WI 53132	936.9997.000							X	X	X		X					X			X			X				
97	Norbert & Susan Kita	10728 S. 92nd St.	Franklin, WI 53132	985.9993.003							X		X						X											
98	Craig & Sheryl Comp	10944 W. Oakwood Rd.	Franklin, WI 53132	938.9997.000							X		X				X		X						X			X		X
100	Anthony H. & Jane A. Mathews	11523 W. 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.006.000							X				X										X					

ID	Owner(s)	Well Address	City, State Zip	Taxkey Id	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
101	Mayer, S	11100 W. Oakwood Rd.	Franklin, WI 53132	938.9999.009							X			X			X													
102	Clyde\Barb Perdzock	9223 8 Mile Rd.	Franksville, WI 53126	012.04.21.05.002.000							X	X			X			X	X	X	X	X			X	X		X	X	
103	Charles H jr Presser	11100 W Oakwood Rd.	Franklin, WI 53132	938.9998.000							X						X		X		X		X				X			X
104	Todd Sarenac	9355 County Line Rd.	Milwaukee, WI 53219	012.04.21.05.009.000							X																			
105	Michael Sinda	10126 7 Mile Rd.	Franksville, WI 53126	012.04.21.05.024.000							X						X				X		X				X		X	
106	William Soliwoda	239 S. 92nd St.	Franksville, WI 53126	012.04.21.05.003.000							X																			
107	Francis Stich	10630 S. 92nd St.	Franklin, WI 53132	944.9998.000							X	X				X				X		X				X		X		
108	William Theys	312 S. 108th St.	Franklin, WI 53132								X			X																
109	Ludwig Vretenar	301 S. 92nd St.	Franksville, WI 53126	012.04.21.05.005.000							X			X	X			X			X			X			X	X		
110	Helmut & Adeline Kopp	10944 W. Oakwood Rd.	Franklin, WI 53132	938.9999.004							X	X		X					X	X	X	X	X	X	X				X	
111	Donald & W Woelbing	8910 W. Bosch Ln.	Franklin, WI 53132	935.9995.000							X				X				X	X				X				X		
112	Marvin Wolff	8400 W. Oakwood Rd.	Franklin, WI 53132	934.9999.002							X			X			X					X	X	X			X			
113	Waste Management	10712 S. 124th St.	Chicago, IL 60690.1450	010.04.20.01.002.000																										
114	Elroy & W Rynders	8600 W Oakwood Rd.	Franklin, WI 53132	935.9994.002								X		X			X				X				X			X		
115	Thomas & Chris Gaulke	8674 W. Oakwood Rd.	Franklin, WI 53132	935.9994.004												X			X				X			X				X
116	Donald & Paulene Acker	10023 S. 92nd St.	Franklin, WI 53132	936.9996.000											X			X					X	X		X	X	X		X
118	Evelyn Acker	8820 W. County Line Rd.	Franksville, WI 53126	985.9997.001								X								X			X							
119	Wayne F. & Diane M. Anderson	11761 W. 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.018.000								X			X		X					X					X		X	
121	Doreen Hinkel	9808 W. Oakwood Road	Franklin, WI 53132	936.9998.003															X											
125	Joseph & Sandra Blazek	11530 W. 7 Mile Rd.	Franksville, WI 53126	012.04.21.06.059.016								X		X				X		X			X			X				X
126	Erwin & Vir. Revoc Trust Bosch	8830 W. Oakwood Rd.	Franklin, WI 53132	944.9994.000																										
127	Edwin & Vir. Bosch	8830 W. Oakwood Rd.	Franklin, WI 53132	935.9999.006	X										X				X											
129	Vincent Carriveau	216 Highway 45	Franksville, WI 53126	012.04.21.06.010.010													X				X		X				X			
131	Frank & Rafaela Rodriguez	10653 S. 76th St.	Franklin, WI 53132	945.9999.000												X											X			
131	Edward C. Drewitz Trust	219 92nd St.	Franksville, WI 53126	012.04.21.05.007.000											X															
134	Robert F. & Victoria M. Foulston	444 Adeline Dr.	Franksville, WI 53126	012.04.21.06.065.000											X									X	X				X	
135	Scott S. & Diana Fredrickson	8432 W. County Line Rd.	Franksville, WI 53126	985.9999.000								X			X					X	X			X			X		X	
138	Ruth M. Grandlich	11722 W. Oakwood Rd.	Franklin, WI 53132	939.9999.000								X					X		X			X		X			X			X
140	Shirley Haasch	6614 Channel Rd.	Waterford, WI 53185	012.04.21.06.042.000								X						X												
141	Diane & Kay Hackstein	626.628 Adeline Dr.	Franksville, WI 53126	012.04.21.06.062.000										X					X	X			X			X				X
142	Mark W. Hagert	10820 S. 92nd St.	Franklin, WI 53132	985.9995.001									X				X			X								X		X
146	William A. & Susie L. Seager	10639 W. 8 Mile Rd.	Franksville, WI 53126	012.04.21.05.019.000									X				X		X	X		X	X		X			X		
147	Howard W. & Rebecca S. Kietzke	11307 7 Mile Rd.	Franksville, WI 53126	012.04.21.07.007.000											X				X	X		X								
149	Charles B. Arnold & Cheryl A. Haynes	9375 W. 8 Mile Rd.	Franksville, WI 53126	012.04.21.05.010.000								X		X			X	X		X										
155	Donald L. & Susan M. Kochnowicz	231 108th St.	Oak Creek, WI 53154	012.04.21.06.007.000											X		X	X	X			X	X			X		X		
165	Robert & Rachel Millin	12026 W. Oakwood Rd.	Franklin, WI 53132	939.9996.005									X		X		X	X				X				X				
167	Joanne R. & Coblentz Robert M. Pawluk	10122 W. County Line Rd.	Franksville, WI 53126	987.9997.002													X						X		X					
177	Jerry A. & Jessica J. Krause	627 Shirley Dr.	Franksville, WI 53126	012.04.21.06.059.004													X		X					X		X		X		X
181	Brandon Sumiejski	10830 W. Oakwood Rd.	Franklin, WI 53132	938.9999.005								X	X							X			X			X			X	
182	James J. & Cheryl A. Bayer	1030 Silvermist Ct.	Franksville, WI 53126	012.04.21.06.012.100														X				X								
186	Loretta A. Gebel Wulf	10578 S. 92nd St.	Franklin, WI 53132	944.9997.000								X				X			X	X		X				X		X		
191	Dave Mudgett	9911 S. 92nd St.	Franklin, WI 53132	936.9995.000								X	X					X			X				X			X		X
192	Greg Schrubbe	663 108th St.	Franksville, WI 53126	012.04.21.06.069.000								X																		
195	Michael Zolecki	11835 W. Ryan Rd	Franklin, WI 53132	891.9989.003																X		X				X				X
201	Colleen Domask & Steve Vallee	11808 W. Loomis Rd.	Franklin, WI 53132	891.9992.000																X			X	X			X			
214	Robert Deidrich	11111 W. Ryan Rd.	Franklin, WI 53132	892.9991.000																X		X	X					X	X	
229	Daniel Kaminski	9880 S. 112th Street	Franklin, WI 53132	893.9999.000									X			X			X		X			X					X	
230	Gregory T. Weber	9865 S 92nd ST	Franklin, WI 53132	894.9997.001									X							X		X		X			X		X	
288	James & Delores Acker	10563 S. 27th Street	Franklin, WI 53132	951.9996.007															X											
294	James Bayer	272 Raynor Avenue	Franksville WI 53126	012.04.21.06.012.100														X	X						X		X			

ID	Owner(s)	Well Address	City, State Zip	Taxkey Id	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
355	Duane & Dorothy Acker	8731 8 Mile Road	Franksville, WI 53126	985.9997.003											X			X								X		X		X
363	Sally Thompson	10280 W. South County Line Road	Franklin, WI 53133	987.9997.003									X										X	X						
664	Richard Schweitzer	7912 W Oakwood Road	Franklin, WI 53132	934.9992.004												X										X				
665	David Schweitzer	20 Watters Court	Franklin, WI 53132	934.9995.000											X				X											
671	Daryl & Ann Kooping	10007 S 76th ST	Franklin, WI 53132	934.9994.001												X														
675	Richard Wallratzl	8180 W Oakwood Road	Franklin, WI 53132	934.9998.001												X			X	X				X						X
680	Marvin W. Wolff	8502 W Oakwood Rd.	Franklin, WI 53132	935.9994.006													X			X	X				X	X				
698	James & Jean Langenohl	9970 S 112th Street	Franklin, WI 53132	938.9988.005									X			X			X			X		X			X			X
700	PROM TRUST PROM, JAMES & JANE	9918 S 112th Street	Franklin, WI 53132	938.9988.007									X			X		X												
705	Ursula Immekus	10070 S 112th Street	Franklin, WI 53132	938.9992.000											X															
716	Jenny & Steve Heckler	10810 W Oakwood Road	Franklin, WI 53132	938.9999.006									X			X			X		X		X	X	X			X	X	
722	Ramona Maria Machulak	10077 S 124 Street	Muskego, WI 53150	939.9995.000													X									X	X		X	
773	Franklin Meats, Inc.	9431 W Oakwood Road	Franklin, WI 53132	943.9998.000													X													
777	Joanne Jaroki/Alan Kleman	10474 S 92nd Street	Franklin, WI 53132	944.9995.000								X				X			X			X	X		X			X		
778	Joanne Jaroki/Alan Kleman	10456 S 92nd Street	Franklin, WI 53132	944.9996.000													X			X		X				X		X		X
782	Marian Stanizs	10642 S 92nd Street	Franklin, WI 53132	944.9999.002													X		X											
783	Kenneth Kania	10373 S 76TH ST	Franklin, WI 53132	945.9996.000												X			X											
784	Kenneth Moore	10409 S 76TH ST	Franklin, WI 53132	945.9997.000											X			X												
803	Lloyd & Beverly Gellings	21207 W 7 Miles Rd	Franksville, WI 53126	012.04.21.06.004.000													X										X			X
807	George Van Eperen	624 124 St.	Franksville, WI 53126	012.04.21.06.025.000													X		X	X		X				X				
810	Don & Darci Mateika, Jr.	500 Shirley Lane	Franksville WI 53126	012.04.21.06.058.000															X	X		X			X		X		X	
811	Gregg Alberti	12302 W. Loomis Ct.	Franklin, WI 53132	891.9998.001																		X								
812	Michael & Katherine Delemont	9917 S. 112 St.	Franklin, WI 53132	938.9993.000																		X				X			X	X
813	Carol Gillette	550 S. 124 St.	Franksville WI 53126	012.04.21.06.018.000																		X								
814	Eugene Magarich	11327 W. Ryan Rd.	Franklin, WI 53132	892.9994.000																		X	X	X		X	X		X	
815	Kyle Schultz	10011 W. Ryan Rd.	Franklin, WI 53132	012.04.21.05.013.000																		X					X		X	
816	Joseph Heritz	10931 W. Ryan Rd.	Franklin, WI 53132	893.9997.002																										
817	Frances Solivan Tinpa	10534 W. Oakland	Franklin, WI 53132	937.9999.003																			X						X	X
818	Lisa Cherek	8850 W. Bosch Ln.	Franklin, WI 53132	899.9990.052																			X		X				X	X
819	Nick and Jackie Ioder	10338 W. Ryan Rd.	Franklin, WI 53132	888.9998.001																			X							
820	Anthony/Anne Kraus	10233 W. Oakwood Road	Franklin, WI 53133	942.0004.000																				X						
821	Roseanne Liebl	10155 W. Oakwood Rd	Franklin, WI 53132	942.0002.000																				X		X			X	
822	Don Mateicka, Jr	500 Shirley Dr	Franksville WI 53126	012.04.21.06.066.000																				X			X			
823	Dennis F. Schaefer	10004 S. 112 St	Franklin, WI 53132	938.9989.000																				X		X				
824	Darlene M Pasniak	9910 S. 92 St	Franklin, WI 53132	935.9999.002																				X	X	X	X			
825	Michael Zolecki	11835 W. Ryan Rd	Franklin, WI 53132	891.9989.003																				X	X					
826	Harry/Vivian Guzniczak	9010 W. Bosch Lane	Franklin, WI 53132	935.9996.000																					X		X			
827	William/Julie Page	4657 W. Oakwood Rd.	Franklin, WI 53132	949.9997.001																					X					
828	David Palmersheim	653 S. 92 St.	Franksville, WI 53126	012.04.21.05.020.000																					X					
829	Don Kochnowicz	107 108th Street	Raymond, WI 53126	012.04.10.06.007.000																							X		X	X
830	Michael & Mary MacDonald	11555 W. Loomis Road	Franklin, WI 53132	892.9996.000																							X			X
831	Anthon Scheltner	10405 W. Ryan Road	Fraknlin, WI 53132	893.9996.000																							X			
832	Edd Konopka	7930 Oakwood Road	Franklin, WI 53132	934.9997.000																								X	X	X
833	Leo/Allyson Tundo	9645 W. Ryan Road	Franklin, WI 53132	894.9998.000																								X		
834	Joanne Zolecki	11736 W. Loomis Road	Franklin, WI 53132	899.9990.056																								X	X	

Franklin Waste Facility Monitoring Committee
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Table 3 2018 Residential Well Samples Exceeding the Federal Secondary Drinking Water Standards

			Results Fe+		Results SO4		
Tax ID	**Owner**	**Site #**	**Iron** (mg/L)	**MCL**	**Sulfate** (mg/L)		**MCL**
985.9997.003	Acker	2	1.800	0.300			
939.9999.000	Grandlich	6	0.364	0.300			
012.04.21.06.062.000	Hackstein	7			306		250
Raymond, WI 53126	Kochnowicz	9	0.339	0.300			
012.04.21.06.010.020	Knollenberg	10			257	257	250
012.04.21.06.035.000	Riehle	14	0.340	0.300			
012.04.21.06.013.000	Thiessenhusen	17	0.440	0.300			
939.9996.002	Bonney	20	0.324	0.300			
899.9990.052	Cherek	22	1.810	0.300			
938.9993.000	Delemont	23	0.303	0.300			
944.9996.000	Kleman	30	0.314	0.300			
012.04.21.06.019.000	VandenBoom	33	0.676	0.300			

Franklin Waste Facility Monitoring Committee
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Table 4 Historic Residential Well Samples Exceeding Constituent LOD

Legend

Formula	Compond Name	Use or History
Fe	Iron -	Secondary Drinking Water Standard in exceedance
SO_4	Sulfate -	Secondary Drinking Water Standard in exceedance
CCl_2F_2	Dichlorodifluoromethane -	A CFC known as R-12 and a spray propellant
$C_6H_5CH_3$	Toluene -	Commonly used solvent
TCE	Trichloroethylene -	Commonly used solvent
$CHCl_3$	Chloroform -	Commonly a product of improper chlorination
$CHBrCl_2$	Bromodichloromethane -	Commonly a product of improper chlorination
$CHBr_2Cl$	Chlorodibromomethane -	Commonly a product of improper chlorination
CH_3Cl	Chloromethane -	Commonly known as R-40, also known as methyl chloride
C_8H_{10}	Orhtoxylene -	Known as 0-xylene, used in polymerizations and as a solvent
C_9H_{12}	1,2,4Trimethylbenzene -	Occurs in coal tar, petroleum, often by product of combustion
C_8H_8	Styrene -	Commonly used in the production of polymers and resins
CH_3CCl_3	1,1,1 Trichloroethane -	Commonly used as a solvent

** Above the LOQ

2017 Residential Well Samples Exceeding Constituent LOD

Tax ID	Owner	Fe (mg/L)	SO_4 (mg/L)
899.9990.052	Cherek	0.396	
940.9997.000	Couillard	0.318	
892.9991.000	Deidrich	0.512	
012.04.21.06.065.000	Fredrickson		275
985.9999.000	Gellings	0.377	325
938.9999.004	Kopp	0.476	
941.9983.000	Lange	0.547	
942.0002.000	Liebl	0.525	
939.9995.000	Machulak	0.593	
892.9994.000	Magarich	0.383	
012.04.21.06.058.000	Mateika, Jr.		332
012.04.21.06.054.000	Mateicka Sr.		373
012.04.21.05.002.000	Perdzock		264
012.04.21.05.024.000	Sinda		306
012.04.21.06.030.000	Stroud	0.423	
010.04.20.01.013.000	Sanford	0.333	
012.04.21.05.013.000	Schultz		366
894.9997.001	Weber	0.339	

** Above the LOQ

2016 Residential Well Samples Exceeding Constituent LOD

Tax ID	Owner	Fe (mg/L)	SO_4 (mg/L)
985.9996.000	Acker	2.380	
939.9996.002	Bonney	0.424	
935.9995.000	Rybacki	0.526	
892 9991.000	Diedrich	0.346	
012.04.21.05.021.006	Gellings		253
120.42.10.60.210.000	Heritz	0.579	
012.04.21.06.007.000	Kochnowicz	0.410	
012.04.21.06.059.000	Kraus	0.366	
012.04.21.06.035.000	Ludke	0.302	
012.04.21.05.010.000	Perdzeck		284
012.04.21.05.019.000	Seager	0.553	253
012.04.21.06.013.000	Thiessenhusen	0.405	614
894.9998.000	Tundo	0.408	
012.04.21.06.019.000	Vander Boom	0.418	
012.04.21.05.005.000	Vretenar		414
012.04.21.06.046.000	Worman		281
012.04.21.07.017.000	Zirzow	0.355	

** Above the LOQ

2015 Residential Well Samples Exceeding Constituent LOD

Tax ID	Owner	Fe (mg/L)	SO_4 (mg/L)
936.9996.000	Anderson	0.326	
939.9996.006	Berndt	0.301	
935.9999.006	Bosels	0.303	
985.9999.000	Fredrickson	0.472	
012.04.21.06.003.000	Gellings	0.459	
939.9999.000	Grandlich	0.392	
942.0002.000	Liebl	0.509	
939.9995.000	Machulak	0.373	
893.9996.000	Scheltner	0.382	
012.04.21.06.013.000	Thiessenhusen	0.389	303
012.04.21.07.005.000	Vanden Boom	0.398	
892.9994.000	Magarich	0.397	

** Above the LOQ

2014 Residential Well Samples Exceeding Constituent LOD

Tax ID	Owner	Fe (mg/L)	SO_4 (mg/L)
985.9997.003	Acker	3.190	
012.04.21.07.010.000	Block	0.325	
012.04.21.06.010.020	Carriveau	0.331	
012.04.21.06.062.000	Hackstein		335
941.9983.000	Lange	1.140	
892.9994.000	Magarich	0.366	
012.04.21.06.054.000	Mateicka, Sr.		357
939.9995.000	Machulak	0.483	
012.04.21.06.064.000	Metz	0.647	
939.9996.005	Millin	0.450	
938.9989.000	Schaefer	0.332	
012.04.21.06.045.000	Sobbe	0.301	
938.9999.005	Sumiejski	0.352	
012.04.21.06.025.000	Eperen	0.325	
012.04.21.06.046.000	Worman		264
012.04.21.06.057.000	Chiapete		252

** Above the LOQ

2013 Residential Well Samples Exceeding Constituent LOD

Tax ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	$C_6H_5CH_3$ (μg/L)	TCE (μg/L)
987.9997.002	Coblentz		340			
012.04.21.06.068.000	Gellings				0.787	
938.9999.006	Heckler			9.89		
010.04.20.01.020.000	Mente	0.467				
012.04.21.05.002.000	Perdzeck		250		0.484	
012.04.21.06.028.000	Revolinski	0.491				
012.04.21.05.019.000	Seager	0.324		0.825		
012.04.21.06.013.000	Thiessenhusen	0.329				
935.9994.006	Wolff	0.445				0.233
899.9990.052	Woelbing	0.331				
012.04.21.07.017.000	Zirzow	0.637				

** Above the LOQ

2012 Residential Well Samples Exceeding Constituent LOD

Tax ID	Owner	Fe (mg/L)	SO_4 (mg/L)	$CHCl_3$ (µg/L)
985.9996.000	Acker	3.120		
012.04.21.07.011.000	Bedalov	0.331		
939.9996.006	Berndt	0.356		
012.04.21.06.010.020	Carriveau	0.303	275	
891.9992.000	Domask			
012.04.21.06.065.000	Foulston			
985.9999.000	Fredrickson	0.535	310	
939.9999.000	Grandlich	0.392		
938.9999.004	Kopp			0.358
012.04.21.06.059.004	Krause	0.416		
892.9994.000	Magarich	0.464		
012.04.21.06.066.000	Mateicka, Jr		283	
012.04.21.06.066.000	Olson	0.360	274	
935.9999.002	Pasniak	0.507		
938.9989.000	Schaefer	0.328		
012.04.21.06.013.000	Thiessenhusen	0.324		1.16
987.9997.003	Thompson	0.357		0.488
012.04.21.07.005.000	Vanden Boom	0.302		
012.04.21.06.019.000	Vanden Boom	0.517		
012.04.21.05.005.000	Vretenar		365	
894.9997.001	Weber	0.531		
899.9990.052	Woelbing	1.120		
935.9994.006	Wolff	0.378		

** Above the LOQ

2011 Residential Well Samples Exceeding Constituent LOD

Tax ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	$CHBrCl_2$ (μg/L)	$CHCl_3$ (μg/L)	$CHBr_2Cl$ (μg/L)
985.9996.000	Acker	3.47					1.00
012.04.21.06.059.016	Blazek		251				
012.04.21.06.010.010	Carriveau		279				
987.9997.002	Coblentz		325				
892.9991.000	Diedrich	0.31				2.02	
891.9992.000	Domask	0.805			3.26		
935.9994.004	Gaulke	0.314					
012.04.21.06.062.000	Hackstein		346				
985.9995.001	Hagert	0.791					
938.9999.006	Heckler			5.43**		1	
888.9998.001	Ioder	0.319					
892.9994.000	Magarich	0.526	350				
012.04.21.06.064.000	Metz	0.375					
938.9998.000	Presser	0.445					
012.04.21.05.019.000	Seager		262	1.82**			
012.04.21.06.030.000	Stroud	0.47					
012.04.21.07.005.000	Vanden Boom	0.44					
012.04.21.05.022.000	Zamecnik	4.96					

** Above the LOQ

2010 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)
012.04.21.07.018.000	119	Anderson	0.488		
940.9997.000	14	Couillard	0.59		
939.9999.000	138	Grandlich	0.31		
012.04.21.06.007.000	155	Kochnowicz	0.93		
941.9983.000	38	Lange	0.668		
941.9996.000	39	Losey	1.43		
892.9994.000	814	Magarich	0.37		
010.04.20.01.020.000	43	Mente	0.714		
939.9996.005	165	Millin	0.546		
012.04.21.06.042.010	88	Nowag	0.326		
012.04.21.05.013.000	815	Schultz		318	
012.04.21.05.019.000	146	Seager	0.548		0.62**
012.04.21.06.025.000	807	Eperen	0.343		
012.04.21.06.019.000	78	Vandenboom	0.474		

** Above the LOQ

2009 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	$CHBrCl_2$ (μg/L)	$CHCl_3$ (μg/L)
012.04.21.06.036.000	36	Knox			0.05	0.2
012.04.21.05.010.000	5	Bedalov	0.564			
012.04.21.07.010.000	8	Block	0.367			
012.04.21.06.043.000	93	Bunich	0.664			
012.04.21.06.010.020	13	Carriveau	0.31	255		
985.9999.000	135	Fredrickson	0.632	299		
012.04.21.06.021.000	73	Heritz	0.43			
012.04.21.06.057.000	809	Jorgenson	0.332			
012.04.21.06.036.000	36	Knox	1.87			
012.04.21.05.013.000	815	Knutsen		320		
012.04.21.06.064.000	45	Metz	0.427			
012.04.21.06.066.000	48	Olson	0.532	292		
012.04.21.05.002.000	102	Perdzeck	0.33			
938.9998.000	103	Presser	0.58			
935.9998.000	114	Rynders	0.43			
012.04.21.05.024.000	105	Sinda		277		
012.04.21.07.019.000	76	Schingeck	0.40			
012.04.21.06.019.000	78	VandenBoom	0.363			
012.04.21.05.005.000	109	Vretenar		364		
012.04.21.06.002.000	66	Welch	0.332			
012.04.21.05.022.000	680	Zamecnik	7.68			

** Above the LOQ

2008 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	CH_3Cl (μg/L)	$C_6H_5CH_3$ (μg/L)
985.9997.001	118	Acker	0.46				
012.04.21.05.012.010	149	Arnold		350			
012.04.21.06.059	125	Blazek		260			
012.04.21.07.010	8	Block	0.35	260			
939.9996.002	92	Bonney	0.33				
938.9999.004	110	Kopp			0.21		
985.9999.000	135	Fredrickson	0.69	340			
012.04.21.06.003	25	Gellings	0.39	290			
012.04.21.06.062.000	141	Hackstein		350			
941.9996.000	39	Losey	0.42				
012.04.21.06.058	810	Mateika		340			
010.04.20.01.027	23	Parsons	0.51				
940.9989.000	50	Penn					0.36
012.04.21.05.002	102	Perdzock		280	0.28		
010.04.20.01.013	53	Sanford	0.35				
012.04.21.05.019	146	Seager	0.48	250	0.84		
938.9999.005	181	Sumiejski	0.48				
012.04.21.05.016	64	Theys/Wilke		260			
012.04.21.06.025	807	Van Eperen	0.54				
944.9996.000	778	Vogt/Stieff	0.33			6.40**	
935.9995.000	111	Woelbing	1.40				
012.04.21.05.022.000	680	Zamecnik	7.68				

** Above the LOQ

2007 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	C_8H_8 (μg/L)	$C_6H_5CH_3$ (μg/L)
012.04.21.06.012.100	294	Bayer	0.42	250			
938.9997.000	98	Comp	0.31				
939.9999.000	138	Grandlich	0.93				
012.04.21.06.062.000	141	Hackstein		360			
936.9998.003	121	Hinkel	0.48				
012.04.21.07.007.000	147	Kietzke	0.38				
012.04.21.06.007.000	155	Kochnowicz	1.30				
938.9999.004	110	Kopp			0.16		
012.04.21.06.059.004	177	Krause	0.49				
941.9985.000	20	Latus	0.36				
941.9997.000	42	Mateicka, Sr.		370			
010.04.20.01.001.000	17	Olson	0.32	340			0.48
940.9989.000	50	Penn	0.97				
012.04.21.05.002.000	102	Perdzeck		260	0.22		
938.9998.000	103	Presser			0.61**		
010.04.20.01.013.000	53	Sanford	0.37				
012.04.21.05.019.000	146	Seager	0.37	250	0.37		
012.04.21.06.025.000	807	Van Eperen	0.48	250			
012.04.21.06.017.000	65	VandenBoom	0.51	260	0.74**		
935. 9999.009	808	Woelbing				0.20	

** Above the LOQ

2006 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	$CHCl_3$ (μg/L)
985.9997.003	355	Acker	1.40			
012.04.21.05.010.000	149	Arnold		340		0.16
012.04.21.06.012.100	294	Bayer	0.42	260		
012.04.21.07.011.000	5	Bedalov	0.36	260		
012.04.21.06.059.016	125	Blazek		270		
012.04.21.07.008.000	72	Carlson	0.55			
012.04.21.06.010.020	13	Carriveau		360		
940.9997.000	14	Couillard	0.35			
985.9994.002	94	Drzewieki,				0.33
012.04.21.06.042.000	89	Gardner	0.36	300		
012.04.21.06.008.000	24	Gellings	0.74	270		
012.04.21.06.044.000	6	Hill		330		
941.9982.000	38	Lange	0.62			
939.9998.001	165	Millin	0.62			
012.04.21.06.066.000	48	Olson	0.30	370		
940.9989.000	50	Penn	0.37		2.7**	
012.04.21.05.002.000	102	Perdzock		270	0.25	
012.04.21.06.013.000	86	Thiessenhusen	0.42			
012.04.21.06.017.000	65	VandenBoom	0.39			
935. 9999.009	808	Woelbing	1.50			
012.04.21.06.046.000	67	Worman	0.42	310		
012.04.21.06.032.000	80	Ziemer	1.30	250		

** Above the LOQ

2005 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	CH_3Cl (μg/L)	$CHCl_3$ (μg/L)	$C_6H_5CH_3$ (μg/L)
012.04.21.07.018.000	119	Anderson	0.31					
012.04.21.05.010.000	149	Arnold	0.33	340				
010.04.20.01.026.000	12	Bruhn		260				
987.9997.002	167	Coblentz	0.43	310				
012.04.21.06.048.000	46	Fleming, Sr.		320				
012.04.21.06.004.000	803	Gellings	0.46	280				
939.9999.000	138	Grandlich	0.97					
012.04.21.07.002.000	28	Hebron	0.36					
012.04.21.06.021.00	73	Heritz	0.48					
938.9999.004	110	Kopp	0.31		0.18			0.19
012.04.21.06.035.000	7	Ludke	0.31					
939.9995.000	722	Machulak	0.81					
012.04.21.06.060.000	81	Meyer	0.57	270				
939.9996.005	165	Millin	0.55				1.2**	
012.04.21.06.042.010	88	Nowag	0.71	390				
989.9998.003	3	Schill						
012.04.21.07.019.000	76	Schingeck	0.56					
012.04.21.05.019.000	146	Seager	0.53	250	0.37			
012.04.21.05.024.000	105	Sinda		310				
944.9999.002	782	Stanisz				0.19		
012.04.21.06.025.000	807	Van Eperen		260				
012.04.21.06.019.000	78	VandenBoom	0.36	250	0.16			

** Above the LOQ

2004 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	$C_6H_5CH_3$ (μg/L)
939.9996.006	91	Berndt	0.42			
012.04.21.07.010.00	8	Block	0.35	260		
010.04.20.01.001.000	16	DeBack	0.46	300		
892.9991.000	214	Diekow	1			
012.04.21.06.048.000	46	Fleming, Sr.		300		
012.04.21.06.008.000	24	Gellings		250		0.16
012.04.21.06.003.000	25	Gellings		250		
012.04.21.05.021.000	26	Gellings	0.35			
012.04.21.06.044.000	6	Hill		330		
012.04.21.06.042.010	88	Nowag	0.34	370		
012.04.21.06.037.000	49	Olson	0.52		0.94**	
940.9989.000	50	Penn	0.35		0.93**	
938.9999.006	716	Werther			0.27	

** Above the LOQ

2003 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)
985.9996.000	117	Acker	1		
012.04.21.07.018.000	119	Anderson	0.33		
942.9998.000	69	Balisteri	0.32		0.87**
012.04.21.06.010.020	13	Carriveau		390	
012.04.21.05.007.000	131	Drewitz	0.36	250	
985.9999.000	135	Fredrickson	0.68	310	
938.9992.000	705	Immekus	0.51		
012.04.21.07.007.000	147	Kietzke	0.51		
012.04.21.06.059.004	177	Krause	0.55	270	
941.9985.000	20	Latus	0.31		
941.9997.000	42	Mateicka, Sr.	0.53	320	
012.04.21.07.006.000	100	Mathews			0.44
939.9996.005	165	Millin	0.49		
012.04.21.06.066.000	48	Olson	0.34	320	
012.04.21.05.002.000	102	Perdzock			0.38
010.04.20.01.013.000	53	Sandford	0.35		
Surface Water			0.31		
012.04.21.05.005.000	109	Vretenar		360	
935. 9999.009	808	Woelbing	6.1		
012.04.21.06.046.000	67	Worman	0.33	270	
012.04.21.06.032.000	80	Ziemer	2.9		

** Above the LOQ

2002 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	$CHCl_3$ (μg/L)
012.04.21.07.011.000	5	Bedalov	0.43	260		
012.04.21.06.059.016	125	Blazek		260		
012.04.21.07.010.000	8	Block		280		
987.9997.002	167	Coblentz	0.95	370		0.75
012.04.21.06.008.000	24	Gellings	0.62	270		
012.04.21.06.003.000	25	Gellings		270		
012.04.21.06.062.000	141	Hackstein		360		
012.04.21.06.021.000	73	Heritz	1.2			
010.04.20.01.004.000	30	Hintz	0.35	250		
Unknown	Unknown	Kolp		350		
012.04.21.06.035.000	7	Ludke	0.3			
940.9989.000	50	Penn			2.8**	
012.04.21.06.042.010	88	Nowag		340		
012.04.21.06.041.000	55	Schemeit	0.65			
012.04.21.07.019.000	76	Schingeck	0.38			
012.04.21.06.055.000	82	Swenson	0.87			
012.04.21.06.017.000	65	VandenBoom	0.41			
012.04.21.06.019.000	78	VandenBoom	0.51		0.33	
012.04.21.05.005.000	109	Vretenar		390		
938.9997.000	98	Whipple			0.25	
012.04.21.06.013.000	86	Williams	0.52	250		
012.04.21.05.022.000	68	Zamecnik	0.45			

** Above the LOQ

2001 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)
012.04.21.06.019.000	78	VandenBoom			0.33
012.04.21.07.016.000	35	Janikowski			0.36
012.04.21.06.030.000	62	Stroud	0.47		
012.04.21.06.064.000	45	Metz	0.32	250	
941.9997.000	42	Mateicka, Sr.	0.39	350	
941.9982.000	745	Lange	0.62		
012.04.21.05.021.000	26	Gellings	0.58		
012.04.21.06.042.000	89	Gardner	0.48	290	
012.04.21.06.048.000	46	Fleming	0.33	300	
010.04.20.01.031.000	1	Abramowski		260	

** Above the LOQ

2000 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	CH_3Cl (mg/L)	C_8H_{10} (μg/L)	C_9H_{12} (μg/L)
985.9996.000	117	Acker	3.2					
012.04.21.07.018.000	119	Anderson	0.49					
942.9998.000	69	Balisteri			0.56**			
939.9996.006	91	Berndt	0.47					
012.04.21.06.059.016	125	Blazek	0.35	250				
010.04.20.01.001.000	16	DeBack		280	0.13			
985.9999.000	135	Fredrickson	0.53	300				
012.04.21.06.042.000	89	Gardner	0.59	290				
012.04.21.06.004.000	803	Gellings	0.49	260				
939.9999.000	138	Grandlich	0.35					
012.04.21.06.042.000	140	Haasch		270				
936.9997.000	95	Hinkel	0.34					
010.04.20.01.031.000	1	Abramowski			0.25			
Unknown	Unknown	Kolp	0.31	300				
941.9997.000	42	Mateicka, Sr.	0.39	340				
010.04.20.01.020.000	44	Mente	0.99					
939.9996.005	165	Millin	0.47					0.27
012.04.21.06.037.000	49	Olson	0.52		0.92**			
012.04.21.06.066.000	48	Olson	0.79	300				
012.04.21.05.002.000	102	Perdzock		260	0.33			
012.04.21.06.069.000	192	Prodoehl	0.37	420			0.12	
935.9994.002	114	Rynders						
944.9998.000	107	Stick	0.36					
Surface Water			1.7					
938.9999.005	181	Tomczak	0.54					
012.04.21.06.019.000	78	VandenBoom	0.59			0.29		
938.9997.000	98	Whipple	0.36		0.51			

** Above the LOQ

1999 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	$CHCl_3$ (μg/L)	$C_6H_5CH_3$ (μg/L)
010.04.20.01.001.000	90	Alex	1.7		0.44		
942.9998.000	69	Balisteri			0.32		
012.04.21.06.027.000	4	Barbian	9.2				
01204.21.07.011.000	5	Bedalov	0.37				
939.9996.006	91	Berndt	0.37				0.13
012.04.21.07.010.00	8	Block	0.51				
012.04.21.06.043.000	93	Buncich	0.42				
940.9997.000	14	Couillard	0.33				
010.04.20.01.001.000	16	DeBack	0.3				
010.04.20.01.005.000	70	Gaffney	0.37				
012.04.21.06.003.000	25	Gellings	1.2				
012.04.21.06.031.000	27	Harris	0.32				
012.04.21.06.021.00	73	Heritz	0.43				
936.9997.000	95	Hinkel	0.38				
012.04.21.06.013.000	86	Hubbard	0.46				
012.04.21.06.057.000	809	Jorgenson	0.51				
010.04.20.01.031.000	1	Abramowski			0.22		
938.9999.004	110	Kopp	0.42				
941.9982.000	38	Lange	0.36				
012.04.21.06.038.000	63	Langfeldt	0.5				
941.9997.000	42	Mateicka, Sr.	0.35				
012.04.21.06.066.000	48	Olson	0.32				

** Above the LOQ

1999 Residential Well Samples Exceeding Constituent LOD – Cont.

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	$CHCl_3$ (μg/L)	$C_6H_5CH_3$ (μg/L)
012.04.21.06.037.000	49	Olson	0.44		0.44		
940.9989.000	50	Penn	1.3		0.7**		
012.04.21.05.002.000	102	Perdzock			0.29		
010.04.20.01.013.000	53	Sandford	0.45				
012.04.21.05.009.000	104	Savenac	0.5				
012.04.21.07.019.000	76	Schingeck	0.41				
012.04.21.06.040.000	56	Schmid	0.36				
944.9998.000	107	Stick				0.26	0.2
Trip Blank							
012.04.21.06.019.000	78	VandenBoom	0.59				
938.9997.000	98	Whipple			0.35		
935. 9999.009	808	Woelbing	0.88				
012.04.21.05.022.000	68	Zamecnik					0.13

1998 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)
940.9997.000	14	Couillard	0.36		
892.9991.000	214	Diekow	0.78		
012.04.21.06.008.000	24	Gellings	0.72		
012.04.21.06.003.000	25	Gellings	0.35		
012.04.21.06.057.000	809	Jorgenson	0.4	250	
010.04.20.01.031.000	1	Abramowski			0.27
012.04.21.06.066.000	48	Olson	1.2	250	
012.04.21.06.037.000	49	Olson	0.37		

** Above the LOQ

1997 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)	$CH3CCl_3$ (μg/L)
012.04.21.07.016.000	35	Janikowski	0.38		0.094	
941.9996.000	39	Losey	0.3			0.06
010.04.20.01.020.000	44	Mente	1		0.13	
012.04.21.07.017.000	40	Zirzow			0.25	

1996 Residential Well Samples Exceeding Constituent LOD

Tax ID	Well ID	Owner	Fe (mg/L)	SO_4 (mg/L)	CCl_2F_2 (μg/L)
012.04.21.06.010.020	13	Carriveau		270	
012.04.21.06.048.000	46	Fleming, Sr.		280	
010.04.20.01.005.000	70	Gaffney	0.3		
941.9997.000	42	Mateicka, Sr.	0.52	310	0.16
010.04.20.01.003.000	87	Meyers	0.49		
012.04.21.06.046.000	67	Worman		260	

** Above the LOQ

Franklin Waste Facility Monitoring Committee
2018 Well Monitoring Report

Map 1
2018 Residential Well Sampling Locations
(Located by Tax ID)

Well Sampling Locations

JSA Environmental

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Appendix

Disclaimer

The purpose of this Appendix is to provide a narrative to aid in the understanding of Table 4. The term contaminant is used to provide definition and not in a legal sense. At this time, November 1, 2018, there is no evidence to suggest that the Waste Facility Monitoring Committee should exert any more expenditure or time to the Annual Well Sampling Report.

Well Sampling History

As stated in the 2018 Annual Well Sampling Report (Report), the annual sampling of thirty five (35) residential wells about the landfill has occurred since 1996. In 1996, the sampling area was inadvertently established as the entire City of Franklin and the well count was well in the thousands. In 2006, the area was limited by the boundaries of Loomis Road/HWY 36 to the North; 124th Street/US 45 to the West; the Racine County border to the South; a 76th Street to the East. This reduced the number of potential wells to approximately two hundred and fifty (~250), with wells being added and removed as properties were constructed or removed as residential[1]. In 2018, two hundred and thirty five (235) well owners were contacted, of which fifty seven (57) responded with a positive request to be sampled. This is consistent with the twelve previous years of Residential well sampling.

The Residential well sampling program was created by the Wisconsin Department of Natural Resources (DNR) and is part of the groundwater monitoring program for any landfill in the state of Wisconsin. The sampling parameters are defined from Primary and Secondary Federal Standards and the DNR's regulations NR-140 Groundwater Quality with additional sampling parameters based on waste types, sampling history, etc. The Waste Facility does not have any additional sampling parameters or protocols at this time and has no recorded exceedance of the Maximum Contaminant Limit for any constituent at any well within its groundwater monitoring program, including residential wells.

Secondary Drinking Water Standards

As stated in the Report, the secondary standards act as guide lines for public water systems. The sampling results are compared with the sampling history as it develops. There are several wells that have repetitive exceedances in Iron (Fe) and Sulfate (SO4). Both Iron and Sulfate are naturally occurring in the soils, bed rock, and groundwater of Wisconsin. Both have an impact on taste, color, and smell of water based on concentrations.

Iron concentrations higher than 0.30 milligrams per liter (mg/L) are in excess of the Secondary standards. Wells that have iron in concentrations of greater than 0.30 mg/L tend to recurrently test in excess; but do trend negatively (concentrations lessening). The iron concentrations can be an indicator of unique well health and site plumbing quality. If sudden spikes in Iron concentrations occur well conditions and plumbing will be investigated first.

Sulfate concentrations equal to or greater than 250 mg/L are in excess of the Secondary standards. Wells that have sulfate in concentrations of greater than 25 mg/L tend to recurrently test in excess; but do trend negatively (concentrations lessening). One well has

1 Waste Management purchase of a property removes it from the Residential lists in addition to the abandonment of wells that occurs in annexing of properties in installation of Municipal Utilities.

tested with extremely high levels of Sulfate, but further investigation yielded that the well is not in use at the property; allowing the Sulfate concentrations to build in that area of the aquifer.

Primary Drinking Water Standard and NR-140 Groundwater Quality

In the twenty one years of Residential well sampling there have been eleven (11) contaminants detected in samples. The last "detect" was in 2013; this perceived improvement in groundwater quality is attributed to better property stewardship, lab technology, and sampling protocols. The contaminants discovered are:

CCl_2F_2	Dichlorodifluoromethane
$C_6H_5CH_3$	Toluene
TCE	Trichloroethylene
$CHCl_3$	Chloroform
$CHBrCl_2$	Bromodichloromethane
$CHBr_2Cl$	Chlorodibromomethane
CH_3Cl	Chloromethane
C_8H_{10}	Orhtoxylene
C_9H_{12}	1,2,4Trimethylbenzene
C_8H_8	Styrene
CH_3CCl_3	1,1,1 Trichloroethane

Dichlorodifluoromethane, also known as Freon 12 (R12), was used primarily as a refrigerant, a direct freezing agent, and propellant (first propellant for silly string). It's production has been banned since 1996, however it was detected in several wells from 1997 until 2013, with periods between of no detect. The concentrations detected were below the Level of Quantification (LOQ) in all but one well and the values did not exhibit any trending behavior. R12 is not soluble in water, nor is it present in the Waste Facility leachate or gas. As the detects are repetitive in the same wells it has been assumed that the R12 detects are unique to the sampling location. To rule out lab contamination the lab vendor was changed and R12 was still detected, then the unique sampling locations were changed and no additional detects occurred. The presence of dichlorodifluoromethane detected in residential wells did not reach or exceed the Maximum Contaminant Level (MCL).

Toluene is a solvent that is used in several commercial and industrial activities, its use in residential products has been greatly reduced during the history of the residential sampling. It is also an environmental contaminant that is closely monitored. The detects for Toluene occurred in wells on Adaline and Shirley Drives, adjacent to one another and adjacent to auto-painting and autobody activities that were observed during the testing period. All impacted wells tested negative, no value, for Toluene in the next testing cycle. The presence

of Toluene detected in residential wells did not reach or exceed the MCL.

Trichlorethylene (TCE) is another solvent, commonly used in paints and epoxies. The sampling event that yielded a detect of TCE was a single event and only one well. The well owner had recently sealed the concrete about the well head, located in an outbuilding. The sealant was still off gassing during the sampling period. Sampling was redone and the concentration of TCE was significantly lower and non-existent the following year. To be clear, the TCE was not present in the groundwater, it was in enough concentration in the environment about the well head to contaminate the sample at the time of collection.

Chloroform, Bromodichloromethane, and Chlorodibromomethane most commonly occur in groundwater after improper chlorination of the subject well. These products are daughter chemicals to the chlorination reaction and are created when chlorine is used in too high a concentration or improperly added to the well. In all of the sampling events that chloroform, Bromodichloromethane, and Chlorodibromomethane were detected; further investigation (contacting well owner) substantiated that the well had been recently chlorinated (shocked) by the well owner. The well owners were provided DNR information regarding well chlorination and certified well drillers in the State of Wisconsin. The presence of all three constituents detected in residential wells did not reach or exceed the respective MCL.

Chloromethane; also known as Methyl Chloride and Freon 40 (R40); is a refrigerant and solvent. It was used previously as a bottle cleaner for laboratory samples in the early 2000's. The detects of Chloromethane throughout the history of the residential well sampling has been attributed to lab error, specifically proper bottle cleaning prior to sampling events. One sampling event the trip blank contained Chloromethane along with several well samples. The detects are all "J" flags, the concentration is greater than the Limit of Detection (LOD), but lower than the Limit of Quantification (LOQ); the concentration values are estimates of concentration, not accurate values. The detects occurred between 2000 and 2008 and Chloromethane is no longer in use due to concerns of toxicity. The presence of Chloromethane detected in residential wells did not reach or exceed the MCL.

Orthoxylene, also known as O-Xylene, is a solvent commonly used in polymerization and is a byproduct of petroleum cracking. The single detect of Orthoxylene occurred prior to JSA's management of the Well Sampling Database and drafting of the Annual Well Sampling Reports. Based on location and single occurrence the presence of Orthoxylene is most probably do to sampling error. Possible sources could be thermal damage to plastic sample bottles and burning petroleum materials near sampling location; such as vehicle exhaust. Davy's protocols require no combustion activities in the area of the sampling. The presence of Orthoxylene in residential wells did not reach or exceed the MCL.

1,2,4 Trimethylbenzene a common by product or organic combustion and found as a component of coal tar. This was a single event, single well detect; also from before JSA; at a large farm. As there were/are no additional detects in history or geography this occurrence has been attributed to wood, weed, or similar burning during the sampling event. The presence of 1,2,4 Trimethylbenzene in residential wells did not reach or exceed the MCL.

Styrene commonly used in production of polymers and resins; such as plastic bottles, hoses, glue, etc. Styrene was another single event, single well detect. The well was sampled the following year and no Styrene was detected. The probable cause of the detection of Styrene is lab or sampling error. The presence of Styrene in residential wells did not reach or exceed

the MCL.

1,1,1 Trichloroethane is a solvent commonly used in photo production, propellants, adhesives and to fumigate insects. It has been identified as an ozone depleting chemical and its use has dramatically dropped off. This detect was a single event, single well occurrence; also from before JSA; at a large farm. There are several potential sources for the contamination of the well sample, lab or sampling error being the most likely. The presence of 1,1,1 Trichloroethane did not reach or exceed the MCL.

Conclusion

The history of the Annual Well Sampling has identified trending in Secondary Drinking Water Standards for the concentrations of Iron and Sulfate. Both Iron and Sulfate are commonly occurring constituents of groundwater. There is no recurrent history or trend in constituents identified in the Primary Drinking Water Standards or in NR 140-Groundwater Quality; with the exception of Dichlorodifluoromethane. There is no indication of trend in the presence of Dichlorodifluoromethane, however there is the recurrent history. To evaluate the occurrence of Dichlorodifluoromethane detects the sampling vendor, laboratory, and sampling point were all changed. Dichlorodifluoromethane ceased to be detected after the sampling points were changed at recurrent wells.

To date; November 1, 2018; there is no evidence or history to suggest that any groundwater contamination is occurring in the aquifers supplying water to the residents within the Annual Water Sampling boundaries.