PITT-08-19-021

August 13, 2019

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Eric Amadi
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via email: Eric.Amadi@wisconsin.gov

Subject: **Thirty-Third Semiannual Progress Report**
Interim Measure Implementation
BRRTS # 02-41-241728, PPG IND Tank Farm – Corrective Action
PPG Industries, Inc. Oak Creek, Wisconsin Facility

Dear Mr. Sasnow and Mr. Amadi:

This letter is being submitted to fulfill the progress reporting requirements for the EPA RCRA Closure as well as Wisconsin Administrative Code (WAC) NR 700 for the PPG Industries, Inc. (PPG) facility located at 10800 South 13th Street, Oak Creek, Wisconsin. This report describes on-going activities completed in 2019, by PPG to address a spill of xylene and naphtha initially reported to the Wisconsin Department of Natural Resources (WDNR) and the U.S. Environmental Protection Agency (EPA) on February 12, 2002. The project was transferred to the open Environmental Repair Program (ERP) Activity (BRRTS # 02-41-241728, PPG IND Tank Farm – Corrective Action) associated with the closure of the former Tank Farm area on the property.

2019 Cotemporaneous Potentiometric Surface Measurement Results

Per the US EPA's April 29, 2019 request, a cotemporaneous synoptic groundwater level measurement event for the RAX Building (2002 Spill) and Tank Farm Area (TFA) was conducted on May 14, 2019 by APTIM personnel. No groundwater sampling was completed on this date (Table 1). Groundwater flow from the TFA is primarily to the east and southeast, as presented in Figure 1. The flow from the RAX building is generally flat with apparent flow to the south. The potentiometric surface between the TFA and RAX building is inferred and appears to have a slight southwest gradient.

2019 RAX Building Monitoring Results

The semi-annual RAX Building groundwater monitoring event occurred on May 29, 2019. A plan view of the RAX Building site showing monitoring well locations and groundwater elevation contours are presented on Figure 2.

The 2002 subsurface investigation determined that groundwater at the site is encountered primarily in the shallow coarse backfill materials associated with building foundations and underground utility lines.

Groundwater flow direction was generally to the west in the vicinity of the RAX Building. In the native material, groundwater was found in occasional fine to coarse-grained sand lenses interspersed in the low permeability clay till.

Figures 3 and 4 present cross-sections developed in 2002 as part of the subsurface assessment and interim remedial activities for the site. The cross sections show that monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5 were screened or partially screened in the coarse gravel backfill or in fine to coarse sand and gravel material (MW-5), which appears to be hydraulically connected to the coarse gravel backfill.

A synoptic round of groundwater elevations was measured at the RAX Building in May 2019 and is presented in Table 2. The May 2019 potentiometric surface measurements indicate the groundwater gradient remains relatively flat with less than 1 foot of elevation difference between the potentiometric surface high in monitoring well MW-4 and low in MW-2 (Figure 2). The coarse-grained granular backfill associated with underground utility lines and building foundations provide a preferential migration pathway for groundwater towards the south side of the building, resulting in the appearance of a shallow radial gradient in the groundwater contours.

All monitoring wells were monitored for the presence of light non-aqueous phase liquid (LNAPL). LNAPL was not observed in any of the wells nor was it observed in the sample water collected from MW-2 or MW-3. LNAPL has not been detected in the monitoring wells since 2003 (16 years).

Groundwater samples were collected from monitoring wells MW-2 and MW-3. Sampling of MW-1, MW-4, MW-5, and MW-6 was discontinued in November 2012 because concentrations were consistently either below laboratory method detection limits or at concentrations well below the Wisconsin Preventive Action Limit (PAL). The results for MW-2 and MW-3 are presented in the table below and compared to the maximum contaminant levels (MCL), Wisconsin PAL and the enforcement standards (ES).

Summary of May 2019 Results

		Ethylbenzene	**Xylenes**
Maximum Contaminant Level (MCL)		700	10,000
Preventive Action Level (PAL):		140	400
Enforcement Standard (ES):		700	2,000
Well Number	**Date**	µg/l	µg/l
MW-2	05/29/18	***742***	***6,210***
MW-3	05/29/18	***2,400***	***19,790***

Notes: All concentrations in µg/l.
(1) Italic indicated exceedance of the Preventative Action Level (PAL)
(2) Bold indicates exceedance of the Enforcement Standard (ES)
(3) Underline indicates exceedance of the Maximum Contaminant Level (MCL)

The historical data, presented in Table 3, show that since monitoring began in 2004, ethylbenzene and xylene concentrations in wells MW-2 and MW-3 continued to fluctuate but overall concentrations have decreased since 2002. Figures 5 and 6 illustrate the seasonal differences in xylenes and ethylbenzene concentrations. The fluctuations in concentrations in MW-2 and MW-3, which primarily occur in the fall, are attributed to seasonal changes in groundwater elevations within the backfill material with higher and more variable concentrations occurring during the November sampling events when water levels can decrease, or increase based on the types of precipitation (e.g. rainfall and/or snow). These results suggest continued gradual decrease in concentration over time through natural attenuation while seasonal variation in precipitation and water levels continues to result in fluctuations in concentrations.

Sampling Frequency and Planned Activities

The next semiannual groundwater sampling event is scheduled for November 2019. MW-2 and MW-3 will be sampled for ethylbenzene and xylenes and the results will be evaluated relative to MCLs and WAC groundwater quality standards. All of the wells will be monitored for the presence of LNAPL.

Per EPA's request, a work plan to further delineate site contaminants of concern south of the RAX building, southwest of the TFA is being prepared.

Closing

PPG will continue to submit progress reports to EPA and WDNR and advise immediately if there is any significant change in conditions at the site. If you have any questions, please contact me at (724) 325-5034.

Sincerely,

Erica Love, PG
Project Manager
Tetra Tech, Inc

ec: Angela Cary – WDNR, RR Program
Jennifer Dorman – WDNR S.E. Region - DNRRRSER@wisconsin.gov (hardcopy)
Jim Chojnacki – PPG EHS, Oak Creek
Jody Overmyer – PPG EHS, Monroeville
Mark Manthey – Tetra Tech, Inc.

Attachment 1
Tables

TABLE 1

Synoptic Groundwater Elevation Measurements
PPG Inc., Oak Creek, Wisconsin Facility

Monitoring Well	Total Depth	Top of PVC Elevation	5/14/2019	
			Water Level	Water Elevation
	(feet btoc)	(feet msl)	(feet btoc)	(feet msl)
Former TFA Monitoring Wells				
OW-1	**15**	696.40	5.95	690.45
OW-2	**15**	696.30	4.09	692.21
LP-3	**35**	696.06	7.23	688.83
LW-3	**15**	695.90	4.44	691.46
LW-5	**15.26**	698.21	NM	NA
MW-9R	**15**	697.76	8.39	689.37
MW-10R	**15**	695.27	5.72	689.55
MW-11R	**15**	690.88	4.75	686.13
MW-12	**15.5**	687.80	4.95	682.85
MW-13	**15**	686.24	4.80	681.44
MW-14	**15**	693.63	4.28	689.35
MW-16R	**15**	698.51	6.03	692.48
TF-1	**16.4**	699.26	7.36	691.90
TF-2	**16.9**	698.01	5.93	692.08
TF-3	**18.8**	699.36	7.77	691.59
TF-4	**18.8**	699.04	7.14	691.90
RAX Building Monitoring Wells				
MW-1	11.06	694.54	5.30	689.24
MW-2	7.89	694.06	4.47	689.59
MW-3	7.48	693.95	4.37	689.58
MW-4	12.65	694.36	4.02	690.34
MW-5	12.2	693.68	3.82	689.86
MW-6	10.5	693.06	3.5	689.56

TABLE 2

Groundwater Elevation Measurements
PPG Inc., Oak Creek, Wisconsin Facility

Monitoring Well	Total Depth	Top of PVC Elevation	5/29/2019	
			Water Level	Water Elevation
	(feet btoc)	(feet msl)	(feet btoc)	(feet msl)
MW-1	11.06	694.54	5.18	689.36
MW-2	7.89	694.06	4.32	689.74
MW-3	7.48	693.95	4.25	689.7
MW-4	12.65	694.36	3.83	690.53
MW-5	12.2	693.68	3.63	690.05
MW-6	10.5	693.06	3.32	689.74

Notes:
btoc: Below Top of Casing
msl: Mean Sea Level

TABLE 3

Summary of Historical Groundwater Sample Results
PPG Inc., Oak Creek, Wisconsin Facility

Well	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6	
Date	Ethylbenzene	Xylene[1]	Ethylbenzene	Xylene	Ethylbenzene	Xylene	Ethylbenzene	Xylene	Ethylbenzene	Xylene	Ethylbenzene	Xylene
06/21/02	N/S[2]	N/S	N/S	N/S	N/S	N/S	N/S	N/S	510	2,550	0.28	1.05
03/04/03	N/S	N/S	N/S	N/S	N/S	N/S	1,100	9,200	230	677.4	<0.53	<1.83
11/04/03	940	10,600	N/S	N/S	N/S	N/S	N/S	N/S	<0.54[3]	<2.63	<0.54	<2.63
04/29/04	N/S	N/S	10,000	89,000	6,000	49,000	1.9	72	<0.54	<2.63	<0.54	<2.63
11/03/04	1,400	12,200	3,900	47,000	3,500	39,000	4.6	310	<0.54	<2.63	<0.54	<2.63
05/04/05	400	2,000	11,000	99,000	10,000	81,000	<0.54	<2.63	<0.54	<2.63	<0.54	<2.63
12/22/05	480	3,420	15,000	123,000	11,000	97,000	<0.54	<2.63	<0.54	<2.63	<0.54	<2.63
05/30/06	310	2,460	6,600	61,000	2,000	18,700	<0.54	<2.63	<0.54	<2.63	<0.54	<2.63
11/09/06	430	1,520	14,000	110,000	12,000	99,000	<0.4	<1.1	<0.4	<1.1	<0.4	<1.1
05/10/07	1,400	7,800	11,000	82,000	8,800	71,000	<1.1	<5.3	<0.54	<2.63	<0.54	<2.63
11/20/07	1,200	6,550	47,100	371,000	14,800	112,900	<0.50	1.04 J	<0.50	<0.62	<0.50	1.23 J
05/28/08	26.5	97.6	105	1,045	332	2,868	<0.4	1.70 J	<0.4	<1.1	<0.4	<1.1
11/12/08	54.6	380	10,200	79,200	8210	65,900	<0.4	0.80 J	<0.4	<1.1	<0.4	<1.1
05/06/09	22.9	186.9	2,030	17,030	1,490	12,220	<0.4	0.42 J	<0.4	<1.1	<0.4	<1.1
11/03/09	16.6	72	6,280	50,400	3,310	27,510	0.68 J	9	<0.4	<1.1	<0.4	<1.1
05/24/10	<0.41	<0.87	7,930	63,000	1,020	8,030	<0.41	0.41 J	<0.41	<0.87	<0.41	<0.87
11/17/10	17.7	92.3	10,000	79,600	8,750	72,600	<0.41	<0.87	<0.41	<0.87	<0.41	<0.87
05/26/11	<0.41	0.42J	583	4,770	98.6	796	<0.41	<0.87	<0.41	<0.87	<0.41	<0.87
11/01/11	<0.41	4.3	5,580	45,100	8,000	66,200	<0.41	2.6	<0.41	<0.87	<0.41	<0.87
06/17/12	<0.41	<0.87	3,080	27,740	540	4,980	<0.41	11.1	<0.41	<0.87	<0.41	<0.87
11/08/12	N/S	N/S	4,840	42,000	559	4,700	N/S	N/S	N/S	N/S	N/S	N/S
07/26/13	N/S	N/S	186	1,864	558	6,130	N/S	N/S	N/S	N/S	N/S	N/S
11/15/13	N/S	N/S	3,860	36,500	932	10,010	N/S	N/S	N/S	N/S	N/S	N/S
05/20/14	N/S	N/S	7,000	53,800	1,710	15,700	N/S	N/S	N/S	N/S	N/S	N/S
11/11/14	N/S	N/S	13,800	110,000	11,900	93,900	N/S	N/S	N/S	N/S	N/S	N/S
05/20/15	N/S	N/S	4,520	36,500	783	6,750	N/S	N/S	N/S	N/S	N/S	N/S
11/11/15	N/S	N/S	5,020	40,800	6,130	49,600	N/S	N/S	N/S	N/S	N/S	N/S
05/10/16	N/S	N/S	326	2,560	39.5	324	N/S	N/S	N/S	N/S	N/S	N/S
11/03/16	N/S	N/S	366	3,005	296	2,504	N/S	N/S	N/S	N/S	N/S	N/S
05/24/17	N/S	N/S	483	3,930	410	3,510	N/S	N/S	N/S	N/S	N/S	N/S
11/02/17	N/S	N/S	912	7,450	1,810	15,300	N/S	N/S	N/S	N/S	N/S	N/S
05/31/18	N/S	N/S	2,690	20,900	3,170	25,000	N/S	N/S	N/S	N/S	N/S	N/S
11/30/18	N/S	N/S	4,860	48,900	965	7,920	N/S	N/S	N/S	N/S	N/S	N/S
05/29/19	N/S	N/S	742	6,210	2,400	19,790	N/S	N/S	N/S	N/S	N/S	N/S

Notes: All concentrations in µg/l.

(1) Xylene concentrations are the total concentration form, o, and p isomers and for non-detections the greater of the detection limits for each isomer.

(2) N/S indicates not sampled.

(3) "<" indicates less than reporting limit.

Attachment 2
Figures

LEGEND

LP–3 ⊕	EXISTING MONITORING WELL LOCATION
OW–01 ⊕	OBSERVATION WELL LOCATION
(690.45)	GROUNDWATER ELEVATION (MSL)
—692—	GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
→	DIRECTION OF GROUNDWATER FLOW

NOTES

1. GROUNDWATER CONTORS CONSTRUCTED FROM WATER LEVELS COLLECTED ON MAY 14, 2019.
2. *LP-3 NOT USED FOR CONTOURING PURPOSES AS IT IS SCREENED AT A DIFFERENT INTERVAL.
3. NG = MONITORING WELL NOT GUAGED ON MAY 14, 2019.

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APPROVED BY:	JGK
PCP/PC2:	MFG–STD
VIEW NAME:	
ORIGINATION DATE:	08/08/19
PLOT SCALE:	1:120
DATE:	AUGUST 2019

PPG – OAK CREEK

OAK CREEK, WISCONSIN

FIGURE 1
SYNOPTIC GROUNDWATER LEVEL MEASUREMENTS

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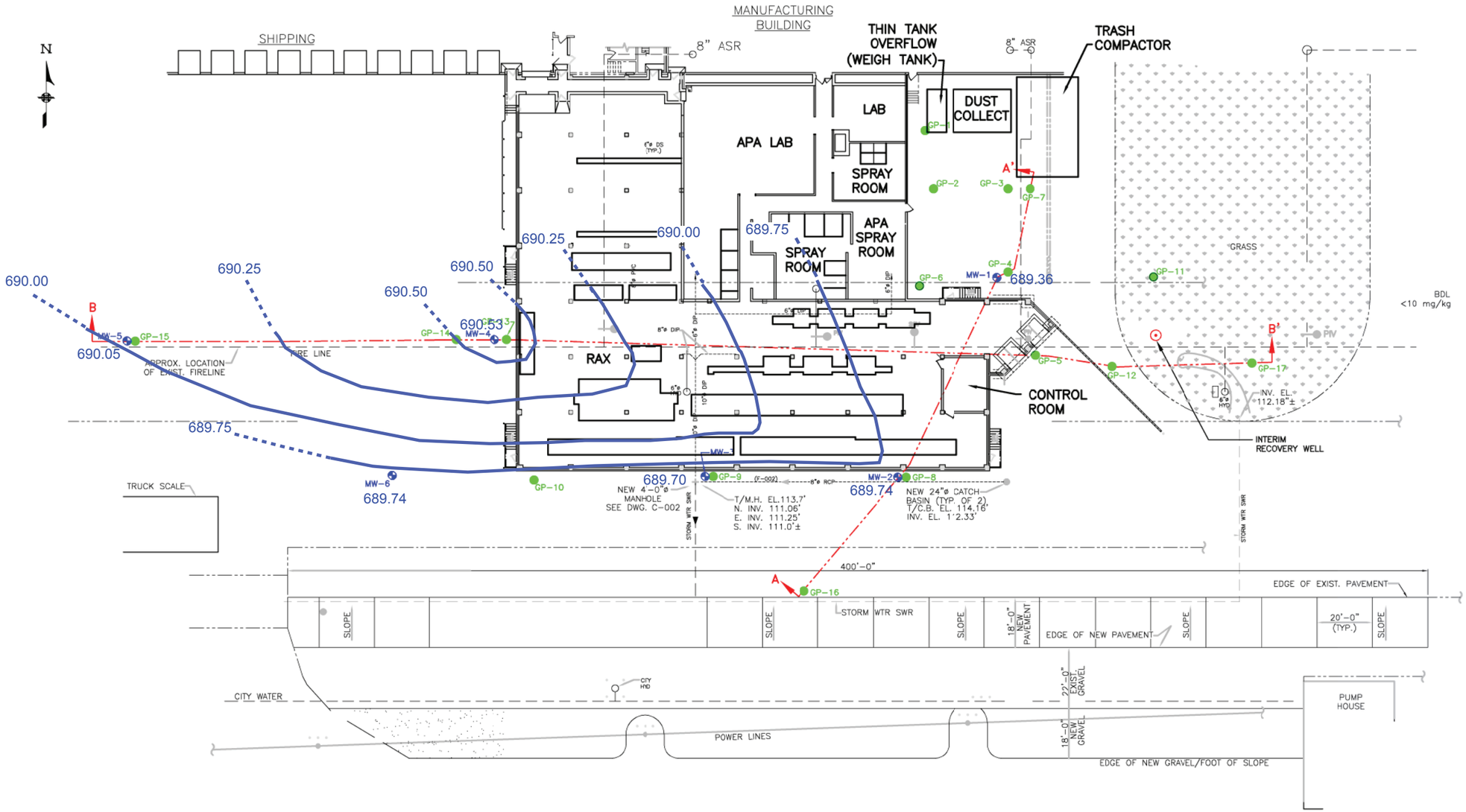

LEGEND

- MONITORING WELLS
- GEOPROBE TEST BORING
- INTERIM RECOVERY WELL
- GEOLOGIC CROSS SECTION LOCATIONS
- GROUNDWATER CONTOUR (DASHED WHERE INFERED

SCALE
20 0 20 FEET

THIS DRAWING IS DERIVED FROM PPG DRAWING NO. OC-01010-C-001 REV. 1

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PLOT SCALE:	1:1 OR 1:2
DATE:	JUNE 2019

PPG – OAK CREEK

OAK CREEK, WISCONSIN

FIGURE 2 - SITE PLAN MAY 2019

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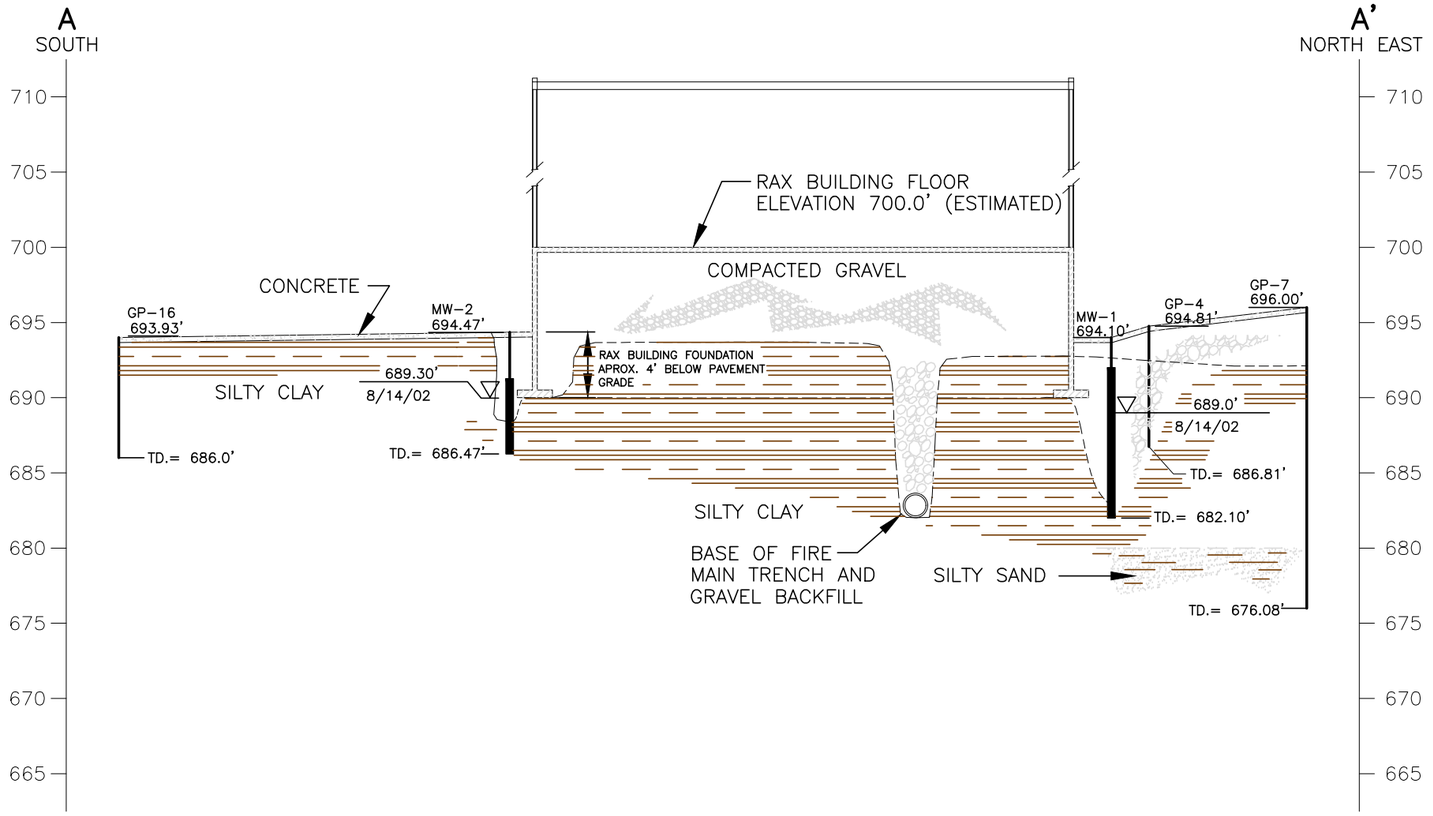

LEGEND:

HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 10'
VERTICAL EXAGGERATION = 2x

NOTES:

1. MONITORING WELL TOP OF CASING ELEVATION SURVEYED IN 2018 BY KAMPUR & ASSOCIATES, INC. (FT AMSL)
2. ORIGINAL ELEVATION DATA FOR ALL OTHER FEATURES BASED ON A RAX BUILDING FLOOR ELEVATION OF 100.00 (FT), SURVEYED BY LAND INFORMATION SERVICES INC. MILWAUKEE, WI (2002). ELEVATIONS CORRECTED BASED ON 2018.
3. WATER LEVEL DATA BASED ON AUGUST 14, 2002 DUAL PHASE EXTRACTION EVENT.
4. THE DEPTH AND THICKNESS OF THE SUBSURFACE UNITS ON THE CROSS SECTION WAS INTERPRETED BETWEEN SOIL BORINGS AND MONITORING WELL LOCATIONS. PLANT UTILITY DRAWINGS WERE USED AS A REFERENCE TO ILLUSTRATE SUBSURFACE FEATURES. CONDITIONS MAY VARY FROM THOSE DEPICTED.

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PLOT SCALE:	1:1 OR 1:2
DATE:	JANUARY 2019

PPG – OAK CREEK

OAK CREEK, WISCONSIN

FIGURE 3
CROSS SECTION
A–A'

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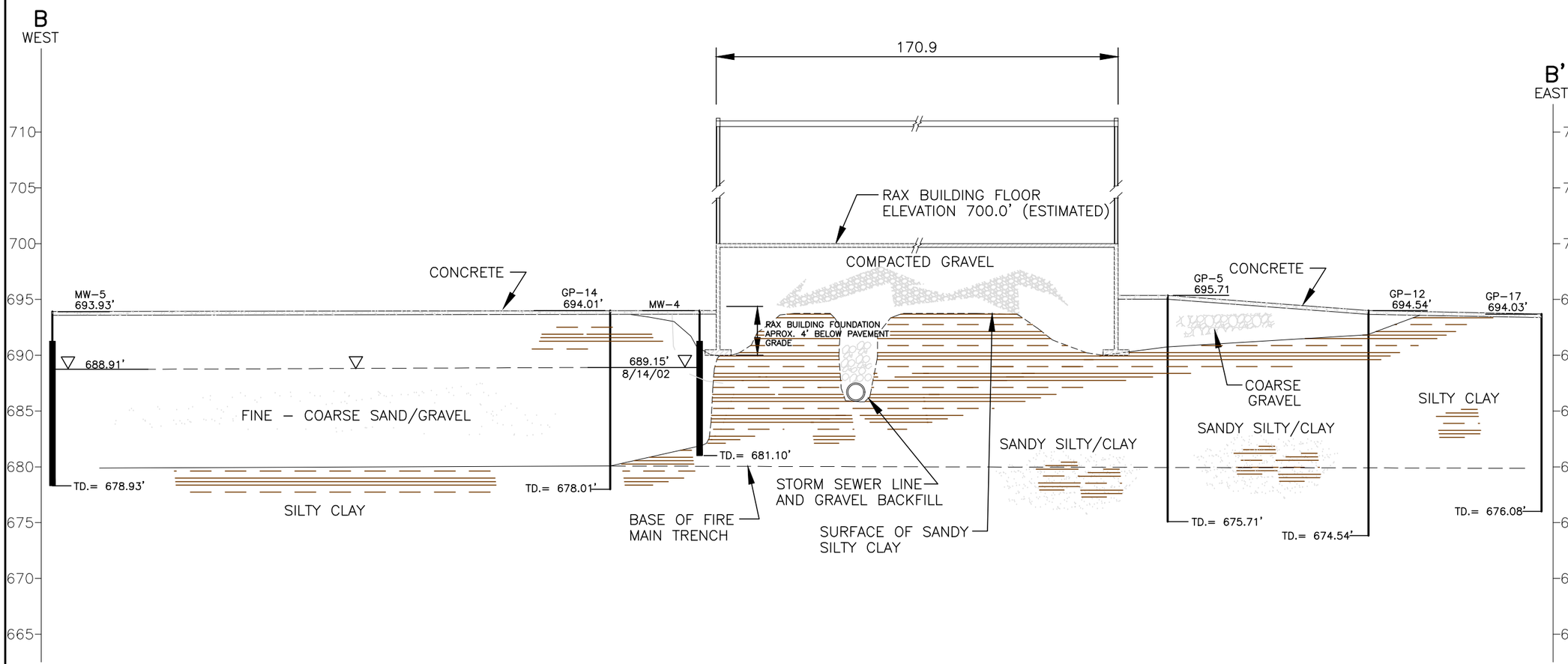

LEGEND:

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VERTICAL SCALE 1" = 10'
VERTICAL EXAGGERATION = 4x

NOTES:

1. MONITORING WELL TOP OF CASING ELEVATION SURVEYED IN 2018 BY KAMPUR & ASSOCIATES, INC. (FT AMSL)
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PLOT SCALE:	1:1 OR 1:2
DATE:	JANUARY 2019

PPG – OAK CREEK

OAK CREEK, WISCONSIN

FIGURE 4
CROSS SECTION
B–B'

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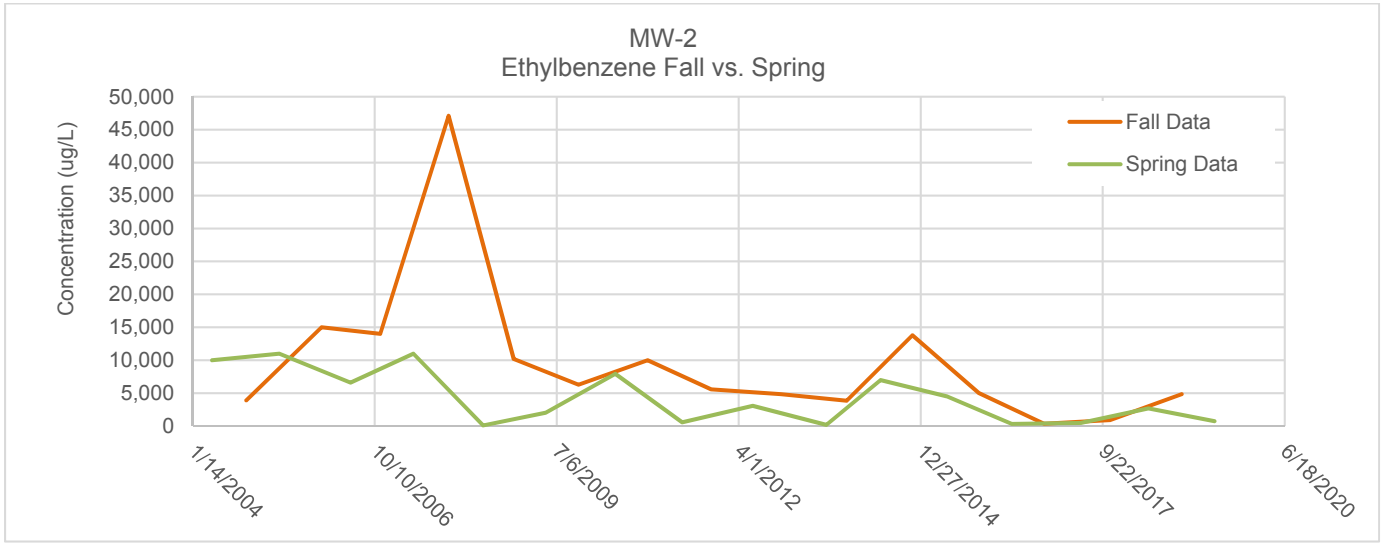
Figure 5 - Seasonal Concentrations Fluctuations in MW-2



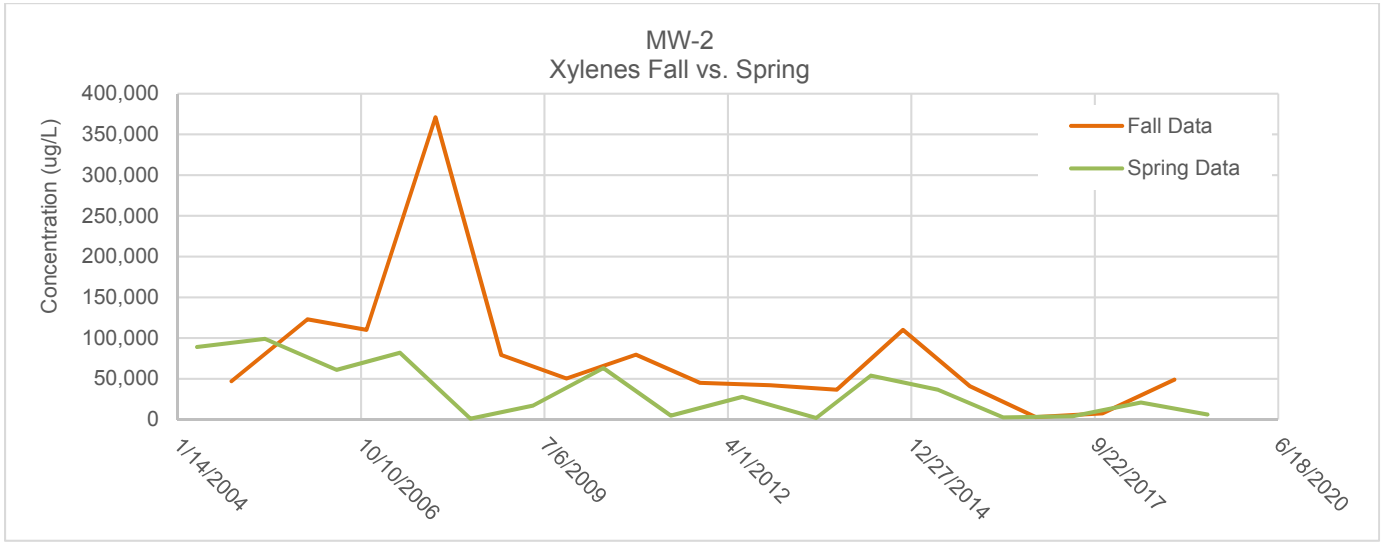
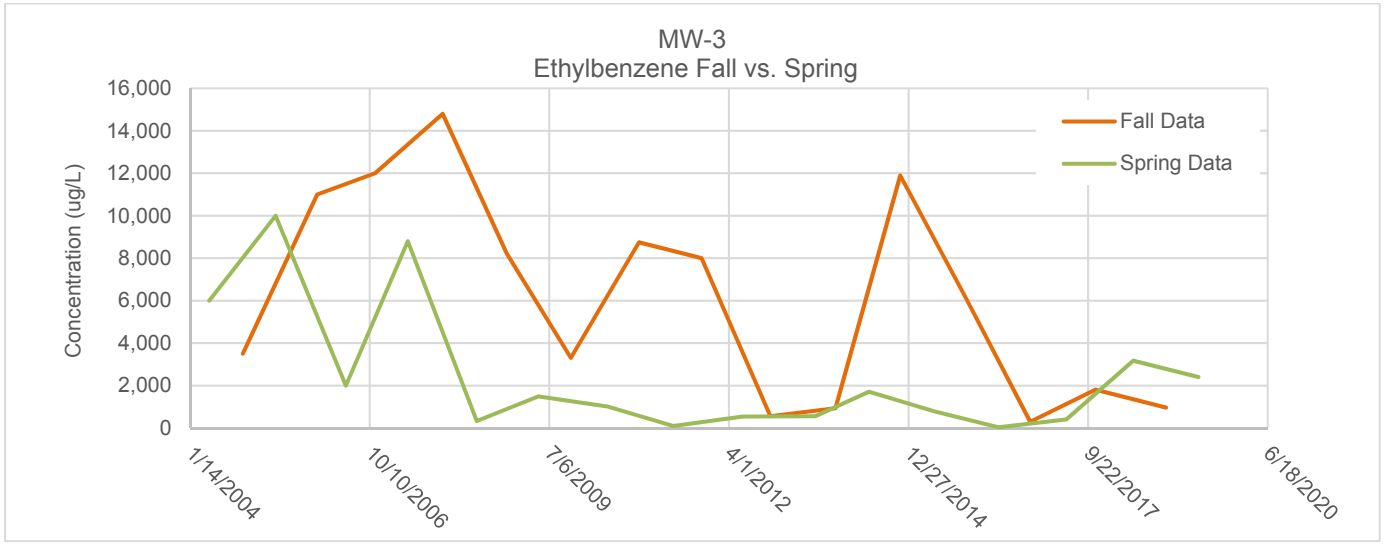
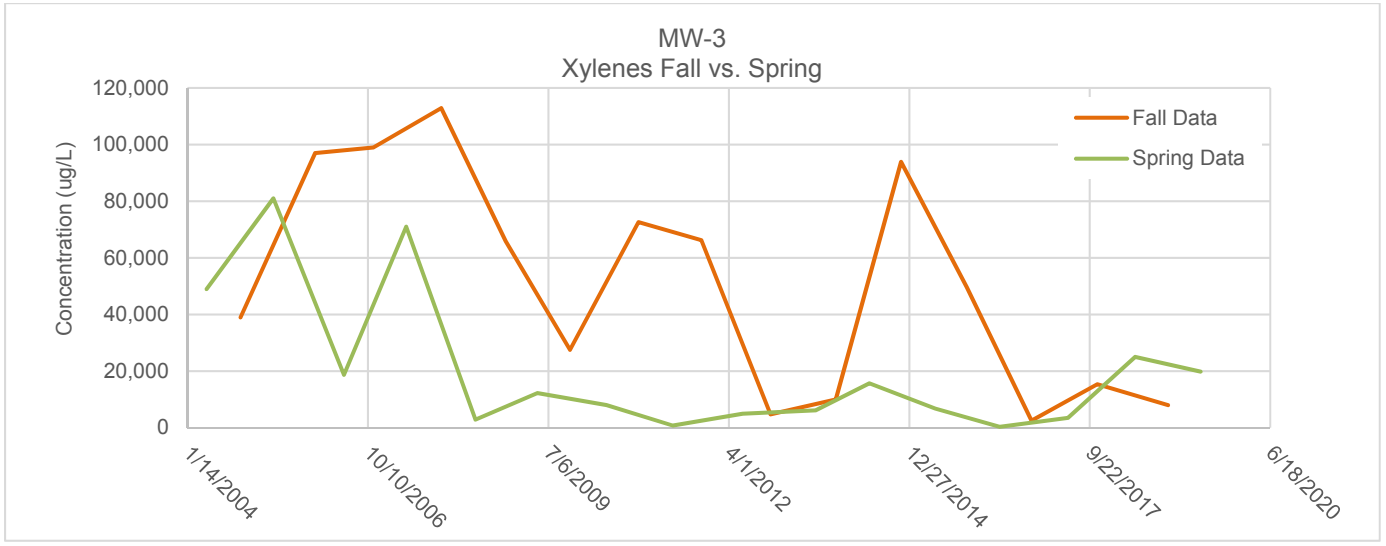



Figure 6 - Seasonal Concentrations Fluctuations in MW-3