



NRP ENVIRONMENTAL CONSULTANTS INC.

2357 Pamperin Road, Suite 2 Green Bay WI 54313-8929
(920) 662- 9212 Fax (920) 434 – 6464 NRPConsultants@gmail.com

January 27, 2019

Keld Lauridsen
WI-DNR
2984 Shawano Avenue
Green Bay, WI 54313-6727
Keld.Lauridsen@wisconsin.gov

RE: **Environmental Investigation Site Investigation Summary Report**
Ashwaubenon Boardwalk, 2491 South Broadway Street, Ashwaubenon, Wisconsin, (Parcel#
VA-1373, VA-1374, VA-1374-1))
DNR BRRTS# 02-05-551641

Dear Mr. Lauridsen:

NRP Environmental Consultants Inc. (NRP) is submitting this Site Investigation Summary Report to apprise you of all relevant information pertaining to the case and to supplement the case closure request submitted on December 13, 2018.

SITE LOCATION:

The site is located in the Village of Ashwaubenon approximately 1,000 feet West of the Fox River. Specifically, the site is North of the overpass of WI-172, Southeast of the intersection of S Broadway Street and Pilgrim Way. The property is bordered to the North by Aloft Hotel and BMO Harris Bank buildings, to the West by South Broadway street, and to the East by undeveloped parcel VA-1405. Contaminated soils are located South of the circle drive to the Aloft hotel, along the west end of the lot. PLSS Location is described as NE 1/4 of the SE 1/4 of Section 10, T23N, R20E.

SITE HISTORY AND BACKGROUND INFORMATION:

The site is currently unused commercial land. The site has not been used for commercial purposes since the early 2000s, prior to the discovery of contaminated fill on the property. There are no other known historical uses of the site.

The Site has Polycyclic Aromatic Hydrocarbon (PAH), based soil contamination. Contamination was brought to the site in 2006 to raise the site for future development. Soil analyses were conducted at the direction of the DNR in 2008 by RMT. These initial data were used to identify areas of RCL exceedances. The suspected source of contamination is an industrial property in West De Pere located at 2191 American Boulevard (Parcel WD-L176). The industrial property was the site of municipal waste water sludge lagoons in the late 1960's and 70's. Many industrial activities including bulk fueling operations, and fabrication are known to have occurred there.

A variety of material was brought to the site from several unknown locations to be used as fill. Fill material observed in soil piles from the initial site investigation in 2008 was primarily mixed clay and sand, cobbles, and some pieces of concrete and asphalt. Several loads of fill were placed in berms along South Broadway Street, and an additional fill pile on the east end of the parcel.

Reviewing Brown county digital elevation maps from 2000 and 2010, it appears that fill was used to create soil berm along South Broadway Street, and an additional soil pile centrally located within the parcel. Screenshots of the Brown county GIS digital elevation contour maps from 2000 and 2010 are included at the end of this report.

It should be noted that fill material was also brought to the Ashwaubenon Boardwalk property from several unidentified sites NOT owned by the RP - GDC American BLVD LLC.

There are BRRTS activities associated with the SOURCE property, 2191 American Boulevard O'Keefe Property - Open ERP - 02-05-241687 (original source of contaminated fill brought to Ambrosius Property)

SITE SOILS INFORMATION:

Geoprobe soil boring advanced at the site for the installation of MW-1 revealed reddish brown silty clay with some silt covered round. At 9' below grade the material had higher percentage of sand particles which was observed to 17'. This was the only boring advanced on the property. Significant vertical and lateral variations from the boring profile are not expected.

The NRCS soil survey identified the following soil map units at the site. The western end of the site is primarily composed of Oshkosh silt loam, which has a profile of silt loam and silty clay to 6.5 feet.

SITE SOIL ANALYTICAL RESULTS

Soil sample analytical data indicates there are NO PAH, or PCBs above the NR 700 residual contamination levels (RCL's) for Non-Industrial Direct Contact sites, or the Groundwater Pathway. Minor PAH contamination below the RCL likely remains across the site. Sample locations 11, 12, and 24 were sampled in 2016 and returned detects above the applicable RCL, resampling of these locations in 2018 returned NO RCL exceedances. These sample locations were the only locations to return PAH detects of Benzo(a)pyrene above the RCL until the Department revised PAH standards in Spring of 2017. All sample points now fall below the revised RCL.

The source of the contaminated fill material is an industrial property in the West De Pere industrial park owned by GDC American Boulevard LLC (Parcel # WD-L176-2).

SITE GROUNDWATER ANALYTICAL RESULTS

During the installation of MW-1 on June 2, 2011, the water table appeared to be at about 8' below grade (see December 12, 2011 report titled "Update on Site Work - Ashwaubenon Boardwalk, LLC Property 2491 S Broadway Street Ashwaubenon, Parcel Numbers VA-146-2 and VA-146-3 WDNR BRRTS # 02-05-551641").

One groundwater sample collected on 6/17/2011 returned NO detects for PAH compounds. Analytical groundwater results for PAH compounds returned NO detects at or approaching the applicable standard. This was the only groundwater analysis conducted and should be considered representative of groundwater impacts as the contaminated material had been on-site for several years by the time the sample was collected.

Impacts to water supply wells are unlikely given the proximity to any nearby private well and PAH's affinity to adhere to particulates. Impacts or interception with building foundations is also unlikely given observed analytical contaminant concentrations and proximity to nearby buildings.

SITE INVESTIGATION HISTORY

CHRONOLOGY OF SITE INVESTIGATION WORK

- 11/11/2008 - RMT advances soil borings H-1 through H-24 across the property.
- 06/02/2011 - NRP advances one geoprobe soil boring to 17' and converts to monitoring well MW-1.
- 06/14/2011 - NRP collects 10 hand auger soil samples from DNR recommended locations based on 2008 sample results.
- 12/12/2011 - NRP submits "Update on Site Work - Ashwaubenon Boardwalk Property 2491 South Broadway Street, Ashwaubenon, Parcel Numbers VA-146-2 and VA-146-3 BRRTS# 02-05-51641" update with soil and groundwater analytical data.
- 08/17/2012 - NRP collects samples per DNR request, and abandons MW-1.
- 06/17/2015 - NRP submits "Update and Proposed Site Work - Ashwaubenon Boardwalk Property; 2491 South Broadway Street, Ashwaubenon, Parcel Numbers VA-146-2 and VA-146-3 BRRTS# 02-05-51641" detailing proposed work and analytical sample results from previous sampling.
- 12/08/2016 - NRP Submits "Update - Ashwaubenon Boardwalk Property; 2491 South Broadway Street, Ashwaubenon, Parcel Numbers VA-146-2 and VA-146-3 BRRTS# 02-05-51641" detailing the revised PAH values in the 2017 RCL spreadsheet. The updated RCL values for PAHs significantly reduced the number of sample locations with RCL exceedances.
- 5/10/2018 - NRP collects soil samples from sample locations 11, 12, and 24 which had been the only locations with non-industrial RCL exceedances. Analytical results returned NO RCL exceedances for soil PAH.

VAPOR MIGRATION ANALYSIS

No vapor migration assessment was conducted. The site is an open field. With the exception of Naphthalene, the contaminants of concern have no screening level or standard. Vapor assessment was not requested by the department.

SEDIMENT MIGRATION AND SURFACE WATER IMPACT

Surface soil has been stabilized by years of vegetative growth across the property. Any sediment migration which may have occurred is no longer an issue to due dense vegetation across the site. Nearby development along the Fox River also inhibits any sediment migration to the river.

CONCLUSION

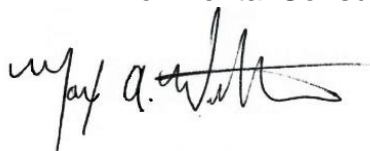
The site has PAH impacted soils. Contaminated soil was placed sometime in 2006 and has remained on site. Soil contamination levels are below the current NR 700 Residual Contamination Level (RCL). Sample locations which returned detects of PAH above the RCL in November of 2008 were resampled until analytical results were returned below the RCL. Of the 24 original sample locations, only 3 required sampling in 2018 (11, 12, and 20) to confirm contaminant levels across the site were below applicable standards. These locations were sampled again in 2014, returning RCL exceedances from 27-R. There are NO PAH compounds above the applicable RCL standard at the site.

Initial groundwater analytical results from June 2011, returned NO Detects of groundwater PAH impacts. Groundwater has not been analyzed since 2011, but increases would not be expected considering the contaminated soil had been onsite for approximately 5 years at the time of sampling in 2012.

We believe the case is ready for closure based on declining soil PAH concentrations observed in all sample location, and no detects of groundwater contamination in 2011 sampling. All soil contaminant concentrations are below applicable RCLs.

If you have any questions, concerns, or comments, please reach out to NRP using the contact information below or call our offices at (920) 662-9212.

Sincerely,
NRP Environmental Consultants, Inc.



Max A. Wilkinson
Environmental Scientist
(920) 327 – 1081
MaxNRPconsultants@gmail.com



Jeff LaViolette, P.E.
Civil/Environmental Engineer
(920) 655 - 0537
NRPconsultants@gmail.com

**Ashwaubenon Boardwalk – 2491 South Broadway Street
Ashwaubenon, Wisconsin
WDNR BRRTS# 02-05-551641**

A.1. Groundwater Analytical Tables

Ashwaubenon Boardwalk - 465 Pilgrim Way, Ashwaubenon, Wisconsin

WDNR BRRS# 02-55-551641

A.1. Groundwater Analytical Table

Sample ID	MW-1	NR 140 Groundwater Standard	
Sample Date	6/17/2011	Preventive Action Limit	Enforcement Standard
PAH Compound - ug/L			
ACENAPHTHENE	<.0045	NE	NE
ACENAPHTHYLENE	<.0036	NE	NE
ANTHRACENE	.0060J	600	3000
BENZNO(a)ANTHRACENE	<.0036	NE	NE
BENZO(a)PYRENE	<.0029	0.02	0.2
BENZO(b)FLUORANTHENE	<.0034	0.02	0.2
BENZO(g,h,i)PERYLENE	<.0048	NE	NE
BENZO(k)FLUORANTHENE	<.0044	NE	NE
CHRYSENE	<.0035	0.02	0.2
DIBENZO(a,h)ANTHRACENE	<.0032	NE	NE
FLUORANTHENE	<.0044	80	400
FLUORENE	<.0048	80	400
INDENO(1,2,3-cd)PYRENE	<.0047	NE	NE
1-METHYLNAPHTHALENE	.013J	NE	NE
2-METHYLNAPHTHALENE	.023J	NE	NE
NAPHTHALENE	.032J	10	100
PHENANTHRENE	<.0081	NE	NE
PYRENE	<.0047	50	250

NOTES:

µg/L = parts per billion

ND = Not detected above the MDL

NE -= Standard Not Established

Q - Detected below the limit of quantification



**Ashwaubenon Boardwalk – 2491 South Broadway Street
Ashwaubenon, Wisconsin
WDNR BRRTS# 02-05-551641**

A.2. Soil Analytical Results Table

PAH analytical results for original soil sample and resample locations.

Ashwaubenon Boardwalk - 465 Pilgrim Way, Ashwaubenon, Wisconsin

WDNR BRRTS# 02-55-551641

A.2. Soil Analytical Results Table

Sample ID	H-4	A-4	4-RR	4	H-8	A-8	8-RR	8	H-9	A-9	9-RR	9	Suggested generic residual contaminant levels (RCL's) for PAH in soil (ug/kg)		
Sample Depth (ft)	3.5-4	0.5	0.5	0.5	0-0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	Non-Industrial Direct Contact	Industrial Direct Contact	Groundwater Pathway
Collection Date	11/11/08	8/17/12	11/14/14	8/31/16	11/11/08	8/17/12	11/14/14	8/31/16	11/11/08	8/17/12	11/14/14	8/31/16			
PAH Compound - ug/kg													Non-Industrial Direct Contact	Industrial Direct Contact	Groundwater Pathway
Acenaphthene	<82	<10.3	<10.7	<9.5	<170	16.6J	<10.2	<9.4	<84	<9.4	<10.0	<10.3	3,590,000	45,200,000	NE
Acenaphthylene	<140	<10.3	<9.6	<8.5	<290	<9.9	<8.1	<8.4	<140	<9.4	<9.0	<9.2	NE	NE	NE
Anthracene	51	3.6J	13.2J	<9.8	96	25.6	<10.6	25.2	110	7.4J	13.3J	<10.7	17,900,000	100,000,000	196,949
Benzo(a)anthracene	200	18.6J	36.7	41.5	190	70.9	35.6	85.6	290	29.5	53.7	17.5 J	1,140	20,800	NE
Benzo(a)pyrene	250	23.8	38.9	52.4	190	72.7	40.2	107	270	39.8	62.3	21.1	115	2,110	470
Benzo(b)floranthene	170	20.3J	35.4	56.8	140	74	44.9	96.0	190	24.6	58.6	18.8 J	1,150	21,100	479.3
Benzo(g,h,i)perylene	220	23	38.9	42.9	140	75.2	43.6	76.9	210	33.4	65.2	15.5 J	NE	NE	NE
Benzo(k)fluoranthene	91	19.8J	27.6	47.9	69	61.2	38.3	110	99	31.9	54.6	22.6	11,500	211,000	NE
Chrysene	190	23.1	49.7	53.1	170	84.9	54.1	116	230	36.2	76.6	23.4	115,000	2,110,000	144.6
Dibenzo(a,h)anthracen	32	<10.3	<7.9	13.2 J	<26	19.7J	12.6J	25.2	15	10.8J	15.1J	<7.5	115	2,110	NE
Fluoranthene	510	39.7	86.6	84.3	500	168	92.3	199	680	64.2	125	40.1	2,390,000	30,100,000	88,878
Fluorene	<16	<10.3	<10.7	<9.5	<34	12.4J	<10.2	<9.4	18	<9.4	<10.0	<10.3	2,390,000	30,100,000	14,830
Indeno(1,2,3-cd)pyrene	240	15.6J	22.8	36.8	140	52.2	27	64.9	180	25.1	40.3	14.0 J	1,150	21,100	NE
1-Methylnaphthalene	<49	<9.4	<10.7	<9.5	<100	18.3J	10.5J	14.8 J	<51	20.5	<10.0	<10.3	17,600	72,700	NE
2-Methylnaphthalene	<41	5.6J	12.9J	<9.5	<86	26.1	13.8J	21.0	<42	25.9	12.4J	<10.3	239,000	3,010,000	NE
Naphthalene	<49	5J	<10.7	<9.5	<100	20.2	10.4J	15.1 J	<51	17.9J	<10.0	<10.3	5,520	24,100	658.2
Phenanthrene	250	18.4J	49.2	32.2	340	103	45	106	400	41.8	50.5	24.2	NE	NE	NE
Pyrene	510	31.4	72.3	65.5	500	136	75.3	155	760	53.2	102	30.1	1,790,000	22,600,000	54,546

NOTES:

Bold Concentrations exceed an established standard or suggested residual contamination level (RCL)

< means less than

NE = Standard is Not Established

ug/kg = ppb or parts per billion

Ashwaubenon Boardwalk - 465 Pilgrim Way, Ashwaubenon, Wisconsin

WDNR BRRTS# 02-55-551641

A.2. Soil Analytical Results Table

Sample ID	H-11	A-11	11-RR	11	11	H-12	A-12	12-RR	12	12	H-20	A-20	20-RR	20	Suggested generic residual contaminant levels (RCL's) for PAH in soil (ug/kg)		
Sample Depth (ft)	0.4	0.5	0.5	0.5	0.05	0-0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5			
Collection Date	11/11/08	8/17/12	11/14/14	8/31/16	5/16/18	11/11/08	8/17/12	11/14/14	8/31/16	5/10/18	11/11/08	8/17/12	11/14/14	8/31/16	Non-Industrial Direct Contact	Industrial Direct Contact	Groundwater Pathway
PAH Compound - ug/kg															Non-Industrial Direct Contact	Industrial Direct Contact	Groundwater Pathway
Acenaphthene	<87	<9.7	<10.4	14.6 J	<4.2	<86	<10	45.3	20.3	<4.5	<210	<9.8	72.7	<9.5	3,590,000	45,200,000	NE
Acenaphthylene	<150	<9.7	<9.3	<8.6	<3.5	<150	<10	<9.3	<8.0	4.3 J	<360	24.3	<10.3	<8.5	NE	NE	NE
Anthracene	36	14.8J	<10.8	41.4	<6.1	100	8.4J	124	98.3	8.1 J	37	32.9	171	14.7 J	17,900,000	100,000,000	196,949
Benzo(a)anthracene	140	66.9	20.5J	128	24.0	170	33.2	252	215	44.9	120	111	299	48.1	1,140	20,800	NE
Benzo(a)pyrene	190	97.6	24.9	142	27.7	170	36.5	185	206	50.9	130	143	221	55.5	115	2,110	470
Benzo(b)floranthene	130	66.2	22.2	135	30.0	120	37.4	235	183	45.5	130	105	285	88.8	1,150	21,100	479.3
Benzo(g,h,i)perylene	150	86.4	23.4	102	22.3	110	39.8	242	109	42.1	99	128	285	19.7	NE	NE	NE
Benzo(k)fluoranthene	110	74.1	18.6J	144	25.7	84	35	144	185	43.3	68	106	178	30.5	11,500	211,000	NE
Chrysene	150	79	28.9	158	32.8	150	40.2	198	229	53.5	190	127	371	67.0	115,000	2,110,000	144.6
Dibenzo(a,h)anthracen	20	21.7	<7.6	35.0	7.3 J	15	10.5J	48.9	43.7	17.9	<32	34.9	55.4	<6.9	115	2,110	NE
Fluoranthene	350	143	48.9	331	45.6	400	72.8	569	457	63.4	340	260	850	117	2,390,000	30,100,000	88,878
Fluorene	<17	<9.7	<10.4	15.8 J	<4.5	<17	<10	45.7	29.8	<4.8	<43	<9.8	95.6	<9.5	2,390,000	30,100,000	14,830
Indeno(1,2,3-	150	62.1	14.2J	94.5	18.9	120	28.9	130	107	32.7	68	91.3	159	20.6	1,150	21,100	NE
1-Methylnaphthalene	<52	11.4J	<10.4	<9.6	<4.3	<52	<9.1	25.7	<9.0	10.7 J	<130	31.7	18.2J	26.5	17,600	72,700	NE
2-Methylnaphthalene	<44	18.5J	<10.4	<9.6	<5.4	140	10.3J	33.1	9.1 J	15.1 J	<110	45.2	23.3	37.7	239,000	3,010,000	NE
Naphthalene	<52	35.2	<10.4	12.4 J	<9.1	<52	7.8J	30.3	<9.0	12.0 J	<130	28.8	36.9	24.5	5,520	24,100	658.2
Phenanthrene	170	55.5	21.7	187	19.6 J	320	35.4	427	276	24.0 J	140	137	819	84.8	NE	NE	NE
Pyrene	390	118	40.9	241	38.9	420	60.5	481	345	58.9	300	205	702	92.5	1,790,000	22,600,000	54,546

NOTES:

Bold Concentrations exceed an established standard or suggested residual contamination level (RCL)

< means less than

NE = Standard is Not Established

ug/kg = ppb or parts per billion

Ashwaubenon Boardwalk - 465 Pilgrim Way, Ashwaubenon, Wisconsin

WDNR BRRTS# 02-55-551641

A.2. Soil Analytical Results Table

Sample ID	H-21	A-21	21-RR	21	H-22	A-22	22-RR	22	H-23	A-23	23-RR	23	H-24	A-24	24-RR	24	24	Suggested generic residual contaminant levels (RCL's) for PAH in soil (ug/kg)		
Sample Depth (ft)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5			
Collection Date	11/11/08	8/17/12	11/14/14	8/31/16	11/12/08	8/17/12	11/14/14	8/31/16	11/12/08	8/17/12	11/14/14	8/31/16	11/12/08	8/17/12	11/14/14	8/31/16	5/10/2018			
PAH Compound - ug/kg																		Non-Industrial Direct Contact	Industrial Direct Contact	Groundwater Pathway
Acenaphthene	<440	12.3J	76.8	<9.4	<920	<9.8	15.9J	<9.6	<90	9.8J	15.3J	<9.7	86	<10.1	18.6J	25.1	<4.6	3,590,000	45,200,000	NE
Acenaphthylene	<750	<9.7	10.3J	<8.4	<1,600	<9.8	<9.5	<8.6	<150	53.6	<9.1	<8.7	<140	<10.1	<9	<8.6	<3.9	NE	NE	NE
Anthracene	190	24.8	122	10.7 J	2,500	16.7J	45.8	<9.9	77	56	35.2	11.8 J	37	16.6J	32.2	72.7	10.3 J	17,900,000	100,000,000	196,949
Benzo(a)anthracene	390	63.8	288	39.3	3,700	61.4	92.8	7.4 J	150	200	84.5	39.6	120	50.3	62.2	155	47.9	1,140	20,800	NE
Benzo(a)pyrene	290	94.1	286	48.9	3,300	80.8	81.3	<6.8	160	267	69.1	42.7	130	74.7	51.51	156	41.9	115	2,110	470
Benzo(b)fluoranthene	210	63.5	282	78.5	2,100	57.4	106	<9.6	130	191	79.9	60.7	98	56	69.9	238	60.9	1,150	21,100	479.3
Benzo(g,h,i)perylene	240	80.6	298	20.5	2,400	68.4	83.1	<7.3	100	227	83.8	30.0	96	65.3	61.6	50.0	21.4	NE	NE	NE
Benzo(k)fluoranthene	160	74.3	194	27.9	1,300	57.9	60.1	<10.6	82	142	55.6	24.8	69	56.7	41.9	86.1	24.5	11,500	211,000	NE
Chrysene	55	81	389	53.5	2,800	76.9	120	<8.8	130	205	106	52.7	110	65.9	79.5	177	51.1	115,000	2,110,000	144.6
Dibenzo(a,h)anthracene	<66	23	71	<6.9	370	21.2	19.0J	<7.0	15	55.9	16.4J	8.4 J	13	19.2	12.3J	18.1 J	6.4 J	115	2,110	NE
Fluoranthene	830	145	693	84.1	9,700	143	232	11.0 J	380	278	204	89.3	310	131	143	404	90.8	2,390,000	30,100,000	88,878
Fluorene	90	10.4J	72.7	<9.4	1,300	<9.8	17.9J	<9.6	<18	<9.7	15.1J	<9.7	17	<10.1	15.7J	23.6	<4.9	2,390,000	30,100,000	14,830
Indeno(1,2,3-cd)pyrene	290	57.6	173	20.9	1,900	50.4	51.6	<7.3	110	133	46.3	26.0	100	47.9	34.9	56.1	19.0	1,150	21,100	NE
1-Methylnaphthalene	<270	25.6	35.5	13.4 J	<550	28.1	20.6J	<9.6	<54	13J	19.3J	22.9	<50	13J	10.8J	20.2	9.7 J	17,600	72,700	NE
2-Methylnaphthalene	<220	35.4	50	19.5	<460	29.5	27	10.5 J	<45	21	21.3	31.6	<42	18.9J	13.7J	28.6	12.0 J	239,000	3,010,000	NE
Naphthalene	<270	24.3	95.1	12.6 J	1,500	16.9J	20.0J	<9.6	<54	15J	16.3J	18.6 J	<50	15.1J	13.8J	19.7	<10.0	5,520	24,100	658.2
Phenanthrene	680	101	607	43.3	9,200	82.7	164	<9.6	310	94	144	60.4	190	66.2	106	285	48.4	NE	NE	NE
Pyrene	310	116	583	70.6	5,100	115	179	<9.6	420	287	171	68.7	280	96.2	119	311	73.5	1,790,000	22,600,000	54,546

NOTES:

Bold Concentrations exceed an established standard or suggested residual contamination level (RCL)

< means less than

NE = Standard is Not Established

ug/kg = ppb or parts per billion

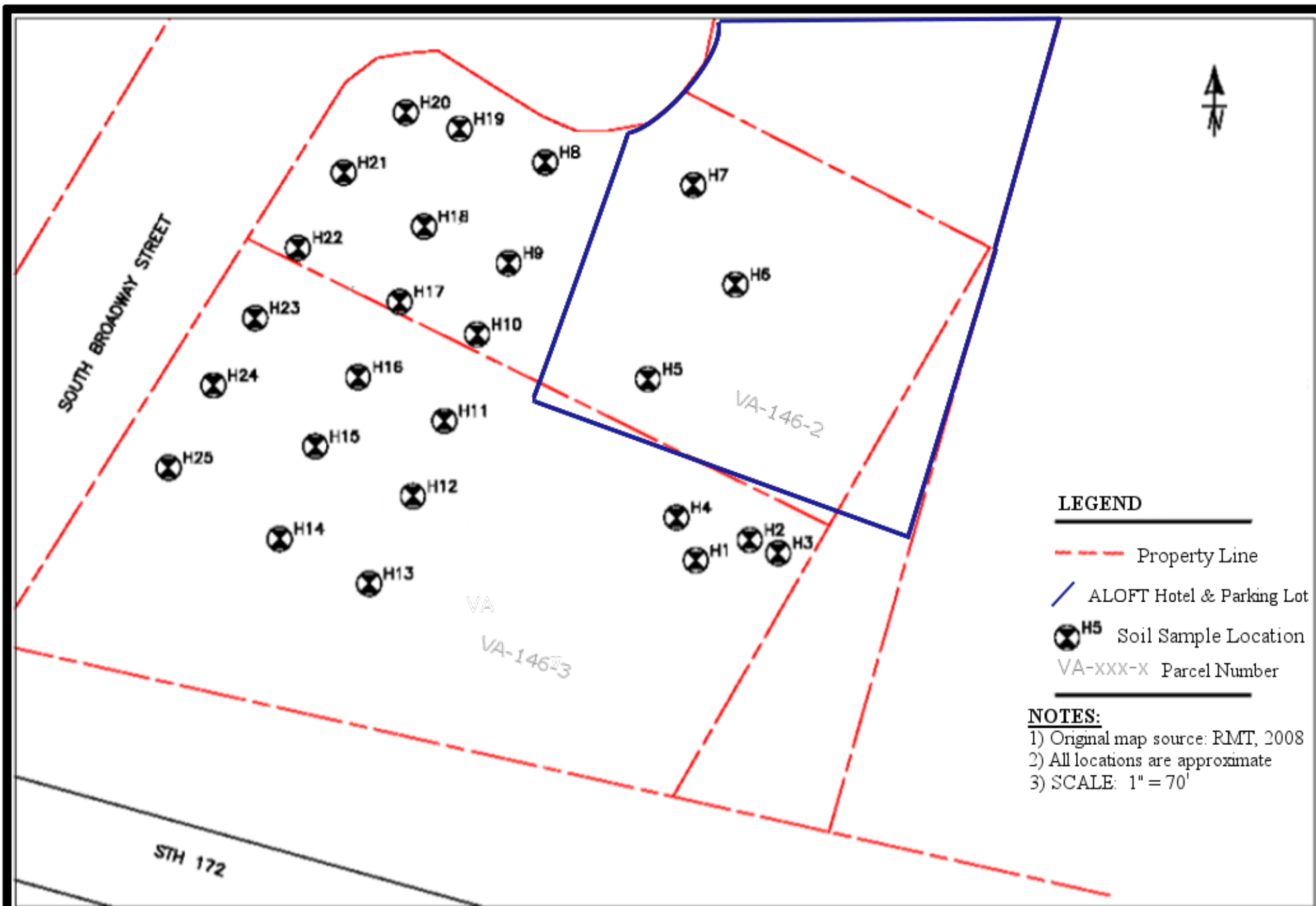


FIGURE
B.1.b.

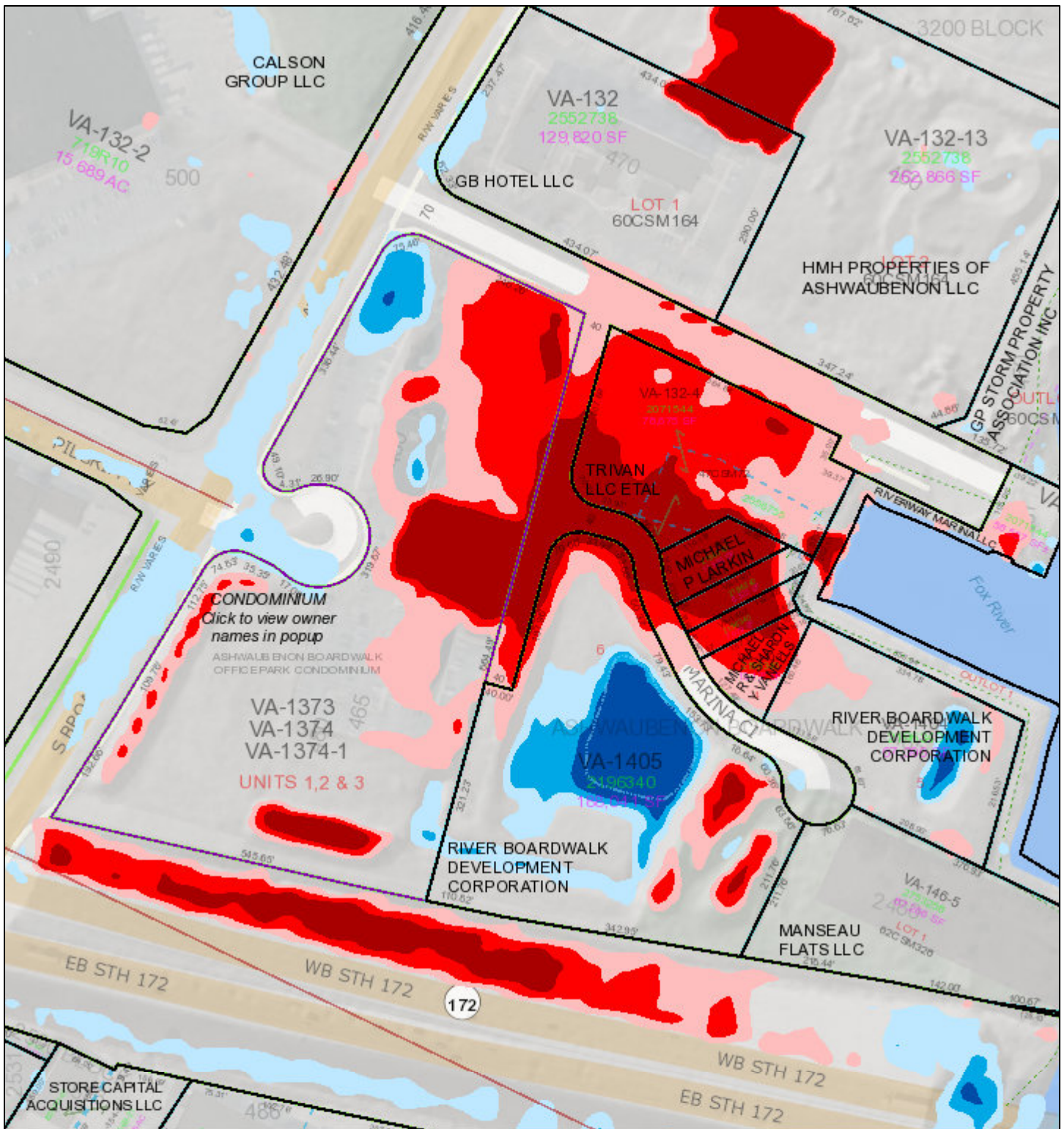
REVISED
1/16/2018

Detailed Site Map

Ashwaubenon Boardwalk BRRTS# 02-05-551641
2491 South Broadway Street
Ashwaubenon Wisconsin

NRP ENVIRONMENTAL CONSULTANTS
2357 PAMPERIN ROAD
GREEN BAY WISCONSIN 54313

Digital Elevation Change 2000 to 2010



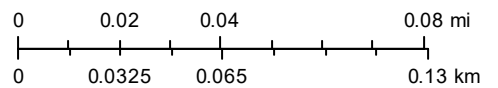
1/27/2019, 7:58:16 PM

1:2,400

TaxParcel

- Condominium
- Gap; Overlap
- Hydrography
- Right of Way

- TaxParcel
- Undetermined



Brown County
Brown County WI