RAVI ENGINEERING & LAND SURVEYING, P.C.

September 10, 2019

City of Rochester
Division of Environmental Quality
City Hall, Room 300B
30 Church Street
Rochester, New York 14614

Attention: Dennis Peck

Subject: Preliminary Geotechnical Engineering Investigation
101-113 Franklin Street and 106 Pleasant Street
Rochester, New York

Readers:

This report presents the results of a preliminary geotechnical engineering investigation for the site identified above. The work was performed in conjunction with a Phase II Environmental Site Assessment, which was also performed by Ravi Engineering & Land Surveying, P.C.

It is understood that the future use of the site has not yet been determined.

SUBSURFACE EXPLORATIONS

Subsurface explorations for this investigation consisted of nine test pits, 21 environmental probes (Geoprobes), and five conventional test borings. Microwells were installed at five of the probe locations. Monitoring wells were installed at all five of the conventional test boring locations.

The nine test pits were identified as TP-1 through TP-9, and were performed on 7/11/19.

The 21 probes were identified as BH-1 through BH-21, and were performed on 7/17/19 and 7/18/19. Microwells were installed at the locations of BH-9, BH-11, BH-15, BH-20, and BH-21.

The conventional test borings were identified as BH-22 through BH-26, and were performed between 7/24/19 and 7/26/19. As noted above, monitoring wells were installed at all five locations.

A plan showing the locations of all of the explorations is presented as Attachment A.

The logs of all of the explorations were prepared by Ravi Engineering & Land Surveying, P.C. These logs are presented as Attachment B.

COMMENTS ON SUBSURFACE CONDITIONS

Many of the subsurface explorations encountered random fill materials, to depths as great as approximately 10 feet below the ground surface. Greater depths of random fill may be present at other locations. It is likely that the greatest amounts of random fill exist within the outlines of former basements and underground tanks.

As previously noted, this preliminary geotechnical engineering investigation was performed in conjunction with a Phase II Environmental Site Assessment, which was also performed by Ravi Engineering & Land Surveying, P.C.

In general, soils at the east end of the site were found to consist of varying amounts of brick and rock rubble intermixed with loamy fill soils from zero to 10 feet below ground surface, with native soils encountered at a typical depth of 5 feet below ground surface across the site. The brick and stone rubble that is predominant throughout the eastern portion of the site is absent in borings advanced on the west side of the site, with the exception of a small amount of brick rubble at shallow depths near the northwest portion of the site. Typical soils in the west portion of the site consist of sandy loam and silty fine sand.

If fill material is disturbed during redevelopment activities, it may not be acceptable for re-use on the site and will likely need to be handled/disposed of as a regulated solid waste. This could have significant cost implications for future development.

The encountered natural soils contain varying amounts of silt, sand, and gravel. Lesser amounts of clay were also noted.

Bedrock was not core sampled at any of the exploration locations. It appears likely, however, that the depth to bedrock ranges from roughly 15 to 30 feet below the ground surface.

The depths to groundwater, in the five monitoring wells, were measured on 8/7/19 and 8/8/19. These measurements indicated depths to groundwater of approximately 13 to 18 feet below the ground surface.

It should be noted that groundwater levels will vary with factors including location, time, precipitation, season, and site activities.

More detailed descriptions of the subsurface conditions, as encountered by the subsurface explorations, are provided on the logs in Attachment B.

PRELIMINARY COMMENTS ON DESIGN AND CONSTRUCTION

General

All design and construction should meet or exceed the requirements of all applicable codes.

With regard to the International Building Code, it currently appears that a seismic Site Class of "D" will be applicable to this site. This corresponds to a "Stiff soil profile."

Conventional Footing Foundation Option

It currently appears that conventional footings are one foundation option. Preliminary recommendations are a follows:

- No topsoil, organic matter, existing pavement, existing fill, existing utilities, remnant foundations, remnant floor slabs, or other unsuitable materials should be left in place below a footing.

- Footings should bear on stable natural soil, or on compacted granular fill.

- Any granular fill below a footing should be placed directly on stable natural soil. The granular fill should extend laterally beyond each edge of the footing, a distance at least as great as the vertical thickness of granular fill below the footing.

- Individual column footings could be sized using a preliminary bearing pressure of 2,000 pounds per square foot or less, and should in no case be less than 36 inches wide.

- Continuous wall footings could be sized using a preliminary bearing pressure of 2,000 pounds per square foot or less, and should in no case be less than 24 inches wide.

- Footings should be seated at least 2 feet below the lowest adjacent final surface, and at least 4 feet below the lowest adjacent final surface exposed to freezing temperatures.

It should be noted that the bearing pressure above is preliminary, and that this pressure may be revised on the basis of additional subsurface explorations.

Given the presence of random fill materials, it currently appears that conventional footing foundations would be well suited to structures having basements.

Drilled Pier (Caisson) Foundation Option

It currently appears that drilled piers (caissons) are another foundation option. Preliminary recommendations are a follows:

- Drilled piers should bear directly on sound bedrock, below any severely weathered or fractured zones.

- Drilled piers could be sized using a preliminary bearing pressure of 30,000 pounds per square foot or less, and should in no case be less than 2.5 feet in diameter..

- The bearing surface below each pier should be relatively level, with a slope no steeper than 1 vertical on 10 horizontal.

- Exterior grade beams between drilled piers should be seated at least 4 feet below final adjacent exterior grade.

It should be noted that the bearing pressure above is preliminary, and that this pressure may be revised on the basis of additional subsurface explorations.

Given the presence of random fill materials, it currently appears that drilled pier foundations would be well suited to structures without basements.

Floor Slabs on Grade

Complete removal of the existing random fill materials, below new floor slabs on grade, may not be necessary. This would depend on additional evaluations, on environmental acceptability, on exposure and examination during construction, and on the anticipated floor loads and usage requirements. For typically moderate floor loads and normal usage requirements, it is likely that at least some of the existing fill could be left in place.

If unusually heavy floor loads are anticipated, however, or if the use of the floors would be unusually sensitive to settlement, complete removal of the fill should be considered.

It currently appears that a subgrade modulus (K) of 75 pounds per cubic inch would be appropriate for the design of floor slabs on grade.

For a structure supported on drilled pier foundations, and not having a basement, consideration could also be given to a structural floor.

Basement Walls

All earth-retaining walls should be designed and constructed to meet or exceed applicable code requirements, and to resist lateral movement. Any wall subjected to unbalanced lateral earth pressures will serve as an earth-retaining structure.

The backfill materials, any surcharge loads, and any sloping ground surfaces should all be considered.

Drained, unsaturated conditions should be maintained within the backfill.

Pavement

It appears that conventional pavement design and construction will be feasible.

For auto parking areas, a preliminary minimum flexible pavement section would consist of a 1-inch asphaltic top course, a 2-inch asphaltic binder course, and a 12-inch course of compacted granular fill.

For areas subjected to more frequent and/or heavier vehicles, the minimum combined thickness of asphaltic top and binder courses would be increased to 5 inches. The minimum thickness of the granular subbase would be increased to 16 inches.

It currently appears that a subgrade modulus (K) of 75 pounds per cubic inch would be appropriate for the design of rigid (concrete) pavement.

Depending on environmental acceptability, it appears that most of the existing random fill materials could be left in place below new paved areas.

Utilities

It appears that conventional utility construction will generally be feasible.

At some locations, excessively weak and/or compressible random fill materials may be present. This may require undercutting of the trench bottom, and the placement of increased thicknesses of better-quality material.

Excavation, Construction Dewatering, and Subgrade Preparation

Excavation should be performed in accordance with all applicable local, state, and federal requirements. The sides of all excavations should be sloped or supported as required by safety regulations. Existing structures, utilities, and other property should be protected.

With regard to the current OSHA regulations, Type C soil should be assumed. This would apply to adequately dewatered soil.

To minimize subgrade disturbance, excavation should be performed with increasing care as subgrade levels are approached.

All work should be performed in the dry. In addition, the dewatering should be sufficient to permit suitable preparation of the subgrade and compaction of any subsequent fill materials.

The contractor should be prepared to dewater as necessary, and should choose and employ an appropriate type of dewatering system. Any dewatering system should be operated in such a way that disturbance or removal of the subgrade soil does not occur.

It is cautioned that the soils at this site contain fine-grained material, and that they will be sensitive to disturbance. Subgrades should be kept free of water, subjected to a minimum amount of construction traffic, exposed no longer than necessary, and not permitted to freeze.

Subgrades should be carefully prepared and thoroughly examined by qualified personnel. Subgrades should also be tamped using vibratory equipment, to the greatest extent possible without loosening or softening the subgrade soils. Where space permits, subgrades should be proofrolled using a fully-loaded ten-wheel dump truck or full-size (ten-ton or larger) roller.

No new fill or foundation concrete should be placed over material that is loose, soft, wet, frozen, organic, or otherwise unsuitable.

Granular Fill and Backfill

Granular fill should consist of a durable sand and gravel or crusher-run stone, free of any organic matter. The plasticity index should be less than 5. It should meet the NYSDOT requirements for Subbase Course; 304-2.02; Type 1, 2, or 4.

Granular fill should be compacted, in lifts of 9 inches or less, to at least 95 percent of the maximum dry density determined by ASTM D 1557.

CLOSING COMMENTS

Professional services for this investigation were performed in accordance with generally accepted geotechnical engineering practices, exclusively for the subject project. No warranty, expressed or implied, is made.

Subsurface conditions are inferred from the logs of subsurface explorations. Conditions between, beyond, and below these explorations are likely to vary. It should also be noted that subsurface conditions are often described on the basis of visual examinations of recovered samples, that these visual descriptions may not always agree well with descriptions made on the basis of laboratory tests, and that the distinction between fill and naturally-deposited soil can not always be readily determined on the basis of recovered samples. If subsurface conditions are subsequently revealed that appear to be significantly different or less favorable than those described, we should be given the opportunity to revise the statements in this report.

This report is preliminary. As more information becomes available, and as the project proceeds toward final design and construction, additional geotechnical evaluations will be necessary. These additional evaluations are likely to include subsurface explorations, laboratory testing, and engineering analyses. The preliminary information in this report can be refined, expanded, and presented in a design-level report.

If you have questions or comments regarding this report, please contact the undersigned.

Yours truly,

RAVI ENGINEERING & LAND SURVEYING, P.C.

Nagappa Ravindra, P.E.
President

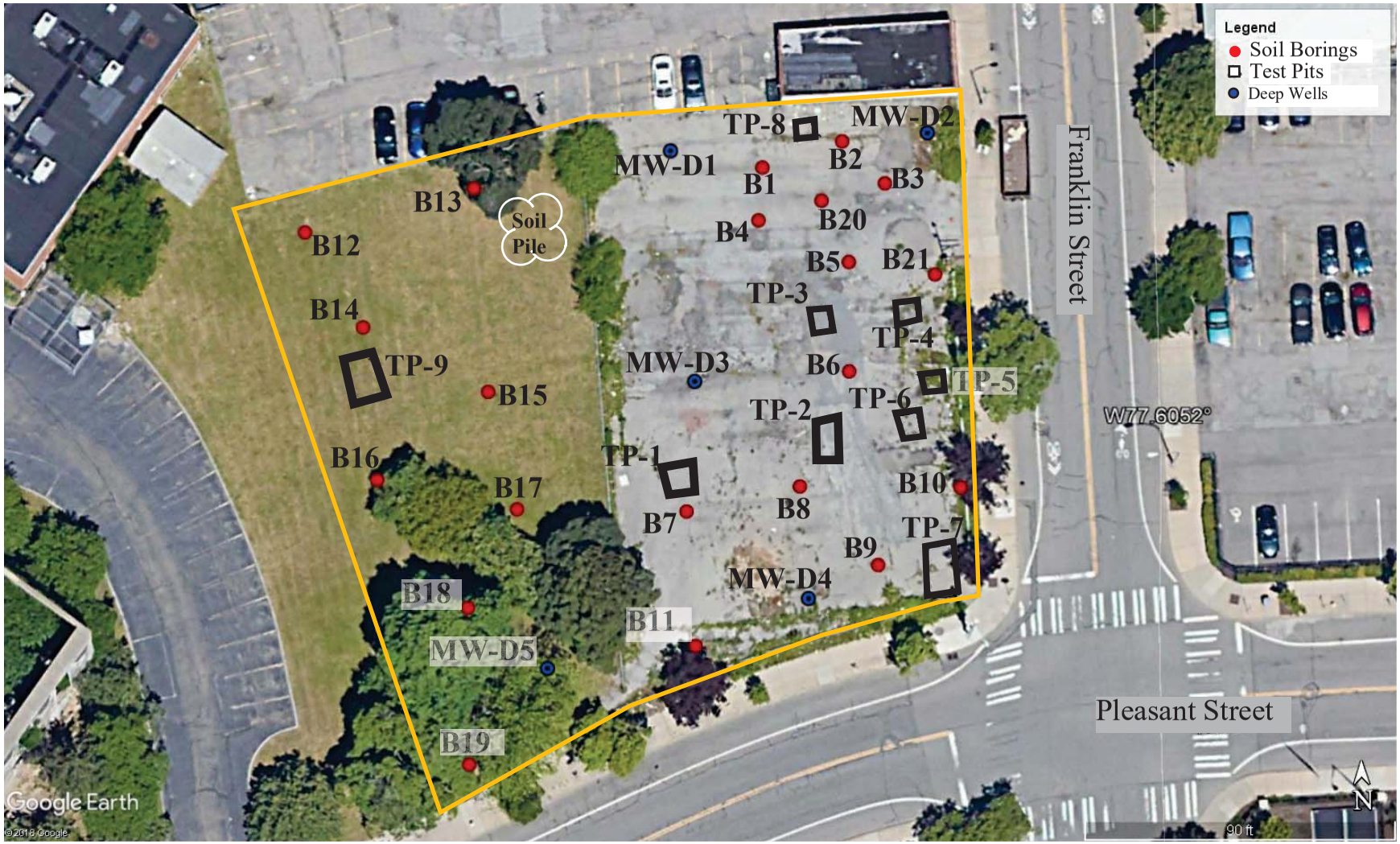
Ray M. Teeter, P.E.
Geotechnical Engineer

Attachments: Attachment A – Location Plan

Attachment B – Logs of Subsurface Explorations

Attachment A

Location Plan



RAVI ENGINEERING & LAND SURVEYING, P.C. 2110 S. CLINTON AVENUE, SUITE 1 ROCHESTER, NEW YORK 14618 TL: (585) 223-3660 FX: (585) 697-1764	City of Rochester Phase II Environmental Site Assessment	Project No. 4318179 C	Figure No: 1
	Figure 1: Location Map 101-113 Franklin Street and 106 Pleasant Street	Scale: NTS	Date: August 2019

Attachment B

Logs of Subsurface Explorations

101-113 Franklin Street
106 Pleasant Street

BORING BH-22 MW-D1

PROJECT # 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Steve/Nate
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: EAST CENTRAL BOUNDARY LINE
GROUND SURFACE ELEVATION: N/A
DATE: 7/24/2019

TYPE OF DRILL RIG: Drill Rig
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD: Split Spoon
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS
8/7/2019		14.27		

RAVI ENGINEERING & LAND SURVEYING, P.C.

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)	Well Construction
1								Flush Mount/protective casing
2								
3								Portland Cement
4								
5	2				50%	Moist, dense, gray clayey silt with orange/brown mottles grading to brown and loose.	0.0	Bentonite Seal
	3							
	5							
6	12	1	4-6	8				
7								2" PVC Riser
8								
9								
10	3				50%	Moist, brown silty f sand, tr clay, some gravel	0.1	Filter Sand Pack
	6							
	5							
11	5	2	9-11	11				
12								
13								
14								
15	6				50%	Moist, dense, tan silt, some gravel (till)	0.0	2" PVC Screen (010 slot)
	15							
	26							
16	29	3	14-16	41				
	50/1	4	16-16.5					
17								
18						Refusal 17.4"		
19						SS-22 collected at 17'		
20								
21								
22								
23								
24								
25								
26								

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B22

	101-113 Franklin Street 106 Pleasant Street	BORING BH-23 MW-D2 PROJECT #: 4318179C CHKD. BY:	
CONTRACTOR: Nature's Way DRILLER: Steve/Nate RE&LS PERSONNEL: L.Zicari	BORING LOCATION: EAST CENTRAL BOUNDARY LINE GROUND SURFACE ELEVATION: N/A DATE: 7/24/2019		RAVI ENGINEERING & LAND SURVEYING, P.C.
TYPE OF DRILL RIG: Drill Rig CASING SIZE AND TYPE: OVERBURDEN SAMPLING METHOI Split spoon ROCK DRILLING METHOD: NA	WATER LEVEL DATA		

DATE	TIME	WATER	CASING	REMARKS
8/7/2019		13.3		

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)	Well Construction
1								Flush Mount/protective casing
2								
3								
4								
5	6 15 17				80%	Moist, loose, brown silty f sand, tr. Clay, some gravel	0.4	Portland Cement
6	17	1	4-6	32				
7								
8								
9								
10	6 14 16				75%	Moist, loose, brown silty f sand, some gravel. Dense from 10'-11'	0.2	
11	17	2	9-11	30				
12								
13								
14								Bentonite Seal
15	10 25 33				65%	Moist, dense, brown silty f sand, some gravel. Very dense at 15'. Wet at 16'	0.2	
16	26	3	14-16	58				
17								2" PVC Riser
18								
19								Filter Sand Pack
20	18 15				75%	Wet, very dense, brown grading to gray, silty f sand, some gravel to 20'. Saturated, gray very dense silt, tr fine gravel, tr f sand from 20.5'-21'	0.2	
21	50/5	4	19-20.5	65				
22								
23								
24								
25	10 27 49				60%	Saturated, loose, gray coarse sand over saturated medium dense/grading to loose, gray silty f sand	0.1	2" PVC Screen (010 slot)
26	50/5	5	24-*26	76				
27								

LEGEND

S- Surficial Soil Sample
SS Subsurface Soil Sample

Refusal 27.0'
SS-23 collected at 19'

GENERAL NOTES:

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ppm = parts per million

BORING # B23

	101-113 Franklin Street 106 Pleasant Street	BORING BH-24 MW-D3 PROJECT # 4318179C CHKD. BY:	RAVI ENGINEERING & LAND SURVEYING, P.C.
CONTRACTOR: Nature's Way DRILLER: Steve/Nate RE&LS PERSONNEL: L.Zicari	BORING LOCATION: EAST CENTRAL BOUNDARY LINE GROUND SURFACE ELEVATION: N/A DATE: 7/24/2019		
TYPE OF DRILL RIG: Drill Rig CASING SIZE AND TYPE: OVERBURDEN SAMPLING METHOI Split spoon ROCK DRILLING METHOD: NA	WATER LEVEL DATA		

DATE	TIME	WATER	CASING	REMARKS
8/8/2019		14.49		

PTH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)	Well Construction
1								Flush Mount/protective casing
2								
3								
4								
5	1 1 1				20%	Fill: Sand, brick, cinders and ash	0.3	Portland Cement
6	0	1	4-6	2				
7								
8								
9								
10	4 13 13				20%	Soft, dry, brown clay loam 9'-9.5 Stiff, dry, brown clay loam 9.5'-10.5'	0.1	Bentonite Seal
11	10	2	9-11	26		Moist, medium dense, brown silty f sand, tr gravel		
12								2" PVC Riser
13								
14								
15	4 9 11				75%		0.1	Filter Sand Pack
16	12	3	14-16	20				
17	4 10 22				50%	Moist, medium dense, brown silty f sand, some fine gravel. Dense at 17', saturated from 17'-18'.		
18	29	4	16-18	32			0.1	
19	29 22 24				60%		0.1	
20	27	5	18-20	46				2" PVC Screen (010 slot)
21	10 25 31				30%	Saturated, fine to coarse gravel intermixed with fmc sand.	0.2	
22	21	6	20-22	56				
23	29 50/5	7	22-22.5	-		Refusal 22.5	4.9	
24								
25								
26								
27								

LEGEND

S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:

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2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.

bgs = below ground surface
ppm = parts per million

BORING # B24

	101-113 Franklin Street 106 Pleasant Street	BORING BH-25 MW-D4 PROJECT #: 4318179C CHKD. BY:	
CONTRACTOR: Nature's Way DRILLER: Steve/Nate RE&LS PERSONNEL: L.Zicari	BORING LOCATION: EAST CENTRAL BOUNDARY LINE GROUND SURFACE ELEVATION: N/A DATE: 7/25/2019		RAVI ENGINEERING & LAND SURVEYING, P.C.
TYPE OF DRILL RIG: Drill Rig CASING SIZE AND TYPE: OVERBURDEN SAMPLING METHOI Split spoon ROCK DRILLING METHOD: NA	WATER LEVEL DATA		

DATE	TIME	WATER	CASING	REMARKS
8/8/2019		16.4		

PTH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)	Well Construction
	--					Asphalt (no blow count)	0.0	Flush Mount/protective casing
1	7				75%			
	14							
2	12	1	0-2	21				
	10				40%	Fill: Crushed/weathered brick and stone	0.2	
3	5							Portland Cement
	3							
4	4	2	2-4	8				
	7				25%	Fill consisting of intermixed soils and debris (glass, concrete)	0.1	
5	9							
	3							
6	3	3	4-6	12				
	2				65%	Moist, soft, light brown clay loam (fill)	0.0	
7	2							
	3							
8	3	4	6-8	5				
	3				50%			
9	4							
	16							
10	14	5	8-10	20				
	7				50%	Moist, soft, light brown, silty f sand, tr clay, tr fine gravel	0.0	
11	9							
	14							
12	16	6	10-12	23				
	14				70%	Moist, dense, silty f sand, some gravel. Wet at 13.5'.	0.0	Bentonite Seal
13	5							
	9							
14	8	7	12-14	14				
	3				75%			2" PVC Riser
15	6							
	7							
16	10	8	14-16	13				
	3				70%			
17	9							
	9							
18	13	9	16-18	18		Moist, very dense, light brown grading to tan, silty f sand, some gravel	0.1	Filter Sand Pack
	7				75%			
19	21							
	31							
20	43	10	18-20	52		Coarse gravel	0.1	
	9				75%	Moist, very dense, tan, silty f sand, tr coarse sand/fine gravel	0.1	
21	27							
	32							
22	31	11	20-22	59				2" PVC Screen (010 slot)
	16				50%	Saturated, silty fmc sand and fmc gravel	0.1	
23	20							
	21							
24	27	12	22-26	41				
	7				75%	Moist, tan silt, fmc sand and fine gravel. Saturated at 25	0.1	
25	33							
	50/4	13	24-25	>50				
26						**Refusal 25.5'**		
						SS-25 collected from 21.5'-22'		
27								

LEGEND

S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:

1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.

bgs = below ground surface
ppm = parts per million

BORING # B25

	Street 106 Pleasant Street	BORING BH-26 MW-D5 PROJECT #: 4318179C CHKD. BY:	
CONTRACTOR: Nature's Way DRILLER: Steve/Nate RE&LS PERSONNEL: L.Zicari	BORING LOCATION: EAST CENTRAL BOUNDARY LINE GROUND SURFACE ELEVATION: N/A DATE: 7/26/2019		RAVI ENGINEERING & LAND SURVEYING, P.C.

TYPE OF DRILL RIG: Drill Rig
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING ME Split spoon
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS
8/8/2019		18.32		

PTH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)	Well Construction
1	3 7 7				75%	8" topsoil over 4' concrete	0.0	Flush Mount/protective casing
2	9	1	0-2	14				
3	8 11 9				75%	Dry, loose, dark brown sandy loam. Brick fragments and rock from 3'-3.25'	0.0	
4	9	2	2-4	20				
5	3 10 16				75%			Portland Cement
6	20	3	4-6	26		Dry, med dense/soft dark brown loam, some gravel	0.0	
7	8 15 21				75%			
8	24	4	6-8	36				
9	9 15 19				75%			
10	22	5	8-10	34		Dry, dense/stiff dark brown loam, some gravel	0.0	
11	7 18 21				60%			
12	21	6	10-12	34				Bentonite Seal
13	4 11 13				60%			
14	16	7	12-14	24				
15	3 7 14				60%			2" PVC Riser
16	19	8	14-16	23		Moist, dense, light brown, silty f sand, some gravel	0.0	
17	7 18 24				60%			
18	26	9	16-18	42				Filter Sand Pack
19	17 28 32				60%			
						Saturated, dense, light brown silty f sand	0.0	
20	30	10	18-20	60				
21	10 27 50/5	11	20-21.5	72	50%	Wet, dense, light brown, silty f sand	0.0	2" PVC Screen (010 slot)
22								
23	12 36 33				40%			
24	34	12	22-24	69				
25	18 50/5	13	24-25	-	40%	Saturated, dense, fmc sand, fmc gravel	0.0	
26						**Refusal 25.3'**		
						SS-26 collected from 18.5'-19'		
27								

LEGEND

S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:

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BORING # B26

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-21

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: EAST CENTRAL BOUNDARY LINE
GROUND SURFACE ELEVATION: N/A
DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						Asphalt and weathered asphalt over 4" dark gray clayey fill grading to brown clay loam (fill)	0.0
2							
3						Moist, loose, silty f sand, grading to dense. Saturated at 8'-8.5	0.0
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14						Refusal 13.5'	
15						SS-21 collected from 8'-8.5	
16						Microwell MW-3 installed	
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
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2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
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ppm = parts per million

BORING # B21

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-20

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: SOUTH OF HISTORIC GAS TANKS
GROUND SURFACE ELEVATION: N/A
DATE: 7/18/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						Asphalt	0.0
2					75%	Moist, dense, silty f. sand, tr clay, more dense from 5'-12'	0.8
3							
4							
5					75%		
6							
7							
8							
9					75%		
10							
11							
12							
13					75%	Dry, loose light brown silty f sand.	0.4
14						Moist, dense light brown silty f sand tr gravel	
15						Refusal @ 14.2'	
16						Microwell MW-1 installed	
17						SS-20 collected at 5'-6'	
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B20

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-19

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: SOUTHWEST CORNER OF PROPERTY
GROUND SURFACE ELEVATION: N/A
DATE: 7/18/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						topsoil	0.0
2					80%	Loose, moist, light brown sandy loam (appears to be reworked native soil)	0.0
3							
4							
5							
6					85%		
7						Dense, moist, tan silty f sand	0.0
8							
9							
10					95%	Loose, dry, tan silty f sand	0.0
11						Dense, moist, tan silty f sand	0.0
12							
13						End of boring @ 12'	
14						SS-19 collected from 4'-5'	
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B19

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-18

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: WEST BOUNDARY LINE
GROUND SURFACE ELEVATION: N/A
DATE: 7/18/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
						Topsoil	0.0
1–10						Loose, moist, light brown, sandy loam, tr gravel, grading to silty f sand. Appears to be reworked native soil.	0.0
11–12						Dense, moist tan silt (till), tr gravel	0.9
						End of boring @ 12'	
						SS-18 collected at 3'-4'	

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B18

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-17

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: SOUTHERN AREA OF GRASSY LOT
GROUND SURFACE ELEVATION: N/A
DATE: 7/18/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						Topsoil	0.0
2					90%	Loose, black loam	0.9
3						Loose, dry, tan silty f sand, tr clay with orange mottles	
4							
5					95%		
6						Dry, loose, light brown silty f sand	
7							0.7
8							
9					95%	Dry, dense light brown silty f sand	
10							
11						Moist, dense, light brown silty f sand, grading to wet.	
12							
13						End of boring @ 12'	
14						SS-17 collected at 11.5'-12'	
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B17

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-16

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: WEST BOUNDARY LINE
GROUND SURFACE ELEVATION: N/A
DATE: 7/18/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1					90%	6" topsoil	0.0
2						Loose, dry, light brown sandy loam	0.0
3						Dense, dry, tan sandy loam	0.0
4							
5					95%	Loose, slightly moist, silty f sand	0.0
6							
7						Dense, moist, light brown, silty loam (till)	0.0
8							
9					95%	Loose, moist, light brown, silty loam (till)	0.0
10							
11						Dense, moist silt (till)	0.0
12						End of boring @ 12"	
13						SS-16 collected at 3'-4'	
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B16

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-15

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: CENTER OF GRASSY FIELD
GROUND SURFACE ELEVATION: N/A
DATE: 7/18/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						8" topsoil over dry,loose, dark brown sandy loam	0.1
2					90%		0.0
3							
4						Dry, dense, light brown sitly f sand	
5							0.0
6					90%		
7							
8							
9					90%	Very dense, dry, light brown silty f. sand, moist at 10'-10.5'	0.0
10							
11						Refusal @ 10.5"	
12							
13						Microwell MW-2 Installed	
14						SS-15 collected at 4'	
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B15

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-14

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: NORTHWEST BOUDARY LINE
GROUND SURFACE ELEVATION: N/A
DATE: 7/18/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						4" topsoil over loose fill consisting of brick and sand (fill)	0.0
2					75%	Loose, dry, light brown loam, tr. brick fragments (fill)	0.0
3							
4							
5					95%		
6							
7							
8						Dry, dense, light brown silty f sand, moist at 11.5'-12'	0.0
9					90%		
10							
11							
12						End of boring @ 12'	
13						SS-14 collected at 3.5'-4'	
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B14

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-13

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: NORTH BOUNDARY LINE
GROUND SURFACE ELEVATION: N/A
DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1–4					80%	3" topsoil over very loose, dry, brown silty loam (reworked soil or fill)	0.0
5–8					95%	Dry, dense, tan, silty f sand, tr clay, grading to light brown, moist.	0.0
9–12					60%		
13–26						End of boring @ 12' SS-13 sampled at 4'-4.5'	

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B13

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-12

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: NORTHWEST CORNER OF PROPERTY
GROUND SURFACE ELEVATION: N/A
DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1–4					95%	4" topsoil and 3" crushed stone over loose, dry, light brown silty f. sand (fill)	0.0
1–4					95%	Dry,light brown, dense silty f sand	0.0
5–8					95%	SAA - very dense	0.0
9–12					50%	SAA - less dense, moist from 11'-12'	0.0
13						End of boring @ 12'	
14						SS-12 collected @ 3'-4'	

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B12

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-11

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: SOUTH BOUNDARY LINE
GROUND SURFACE ELEVATION: N/A
DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1–4					10%	Ashphalt, little recovery	0.4
5–8					100%	Dry, dense, light brown silty f sand, tr clay with orange streaks. Loose, silty f sand at 5'-6'	0.5
9–12					75%		
13–16					75%	Moist, tan silt, some gravel (till)	0.6
17–19					100%		
20–26						Refusal @ 19' Microwell MW-4 installed SS-9 collected @ 5'-6'	

LEGEND

S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:

1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B11

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street 106 Pleasant Street

BORING BH-10

PROJECT #: 4318179C

CHKD. BY:

CONTRACTOR: Nature's Way

DRILLER: Tom

RE&LS PERSONNEL: L.Zicari

BORING LOCATION: EAST BOUNDARY LINE

GROUND SURFACE ELEVATION: N/A

DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe

CASING SIZE AND TYPE:

OVERBURDEN SAMPLING METHOD:

ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1-4					20%	Asphalt, crushed stone intermixed with dark gray sand and gravel over crushed brick intermixed with a small amount of sand	0.0
5-6					5%	Crushed brick and brick fragments	0.0
7-26						Refusal at 6' Driller had difficulties advancing probe. Probe kept getting kicked out an an angle and became lodged in borehole. Probe moved several times but encountered same problem. Very little recovery. No soil sample collected in this location.	

LEGEND

S- Surficial Soil Sample

SS Subsurface Soil Sample

GENERAL NOTES:

1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.

bgs = below ground surface

ppm = parts per million

BORING # B10

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street 106 Pleasant Street

BORING BH-9

PROJECT #: 4318179C

CHKD. BY:

CONTRACTOR: Nature's Way

DRILLER: Tom

RE&LS PERSONNEL: L.Zicari

BORING LOCATION: SOUTHEAST CORNER OF PARKING LOT

GROUND SURFACE ELEVATION: N/A

DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe

CASING SIZE AND TYPE:

OVERBURDEN SAMPLING METHOD:

ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						3-4" 'weathered asphalt	0.0
2					70%	Fill consisting of broken/crushed/weathered brick intermixed with sand to 9'	0.3
3							
4							
5					40%		
6							
7							
8							
9					95%	Dry, dense, light-brown silty f sand grading to moist	0.3
10							
11							
12							
13					100%		
14							
15						Refusal @ 14'	
16						Two attempts to advance boring with no recovery in first two locations	
17							
18						SS-9 collected at 10' BGS	
19						Microwell MW-5 Installed	
20							
21							
22							
23							
24							
25							
26							

LEGEND

S- Surficial Soil Sample

SS Subsurface Soil Sample

GENERAL NOTES:

1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B9

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street 106 Pleasant Street

BORING BH-8

PROJECT #: 4318179C

CHKD. BY:

CONTRACTOR: Nature's Way

DRILLER: Tom

RE&LS PERSONNEL: L.Zicari

BORING LOCATION: SOUTH CENTRAL SECTION OF PARKING LOT

GROUND SURFACE ELEVATION: N/A

DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe

CASING SIZE AND TYPE:

OVERBURDEN SAMPLING METHOD:

ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						Asphalt	
2					75%	Crushed brick intermixed with clayey loam (fill)	0.0
3							
4						Very dark gray gravelly fmc sand (fill)	
5						Refusal @ 5'	
6							
7						Driller made three attempts to advance boring with shallow refusal (2') in first two borings.	
8							
9						Sample SS-8 collected at 4'	
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND

S- Surficial Soil Sample

SS Subsurface Soil Sample

GENERAL NOTES:

1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.

bgs = below ground surface

ppm = parts per million

BORING # B8

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street 106 Pleasant Street

BORING BH-7

PROJECT #: 4318179C

CHKD. BY:

CONTRACTOR: Nature's Way

DRILLER: Tom

RE&LS PERSONNEL: L.Zicari

BORING LOCATION: SOUTHWEST CORNER OF PARKING LOT

GROUND SURFACE ELEVATION: N/A

DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe

CASING SIZE AND TYPE:

OVERBURDEN SAMPLING METHOD:

ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
						4" Asphalt	0.0
1							
2					60%		
3							
4						Fill material consisting of light brown sand intermixed with crushed brick	0.0
5					40%		
6							
7							
8							
9					80%	Moist, medium dense, tan, silty f sand, dense at 10'.	0.0
10							
11							
12							
13						End of boring at 12'	
14						SS-7 collected beneath fill materials at 12'	
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND

S- Surficial Soil Sample

SS Subsurface Soil Sample

GENERAL NOTES:

1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B7

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-6

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: CENTER OF PARKING LOT
GROUND SURFACE ELEVATION: N/A
DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1					30%	Asphalt, weathered asphalt over dry, stiff, brown clayey loam (fill)	0.0
						Moist, dark br/gray sandy silt (fill)	
2						Refusal at 1.5'	
3							
4						Note: Driller made two attempts to advance boring but hit shallow refusal both times.	
5							
6						Sample SS-6 collected from 1-1.5'	
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B6

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-5

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: SOUTH OF HISTORIC GAS TANKS
GROUND SURFACE ELEVATION: N/A
DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1					80%	Asphalt and weathered asphalt intermixed with silt and sand	0.0
2						1.5-3.5': 'Fill - Dry, dense, black silt over dry, tan f sand, wet at 3.25'	
3							
4							
5					75%		
6							
7							
8						3.5' - 12': Dry, dense, tan, silty f sand grading to moist	0.0
9					80%		
10							
11							
12							
13						End of boring at 12'	
14						Sample SS-5 - sampled black silt fill at 2'	
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B5

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-4

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: SOUTHWEST OF HISTORIC GAS TANKS
GROUND SURFACE ELEVATION: N/A
DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						0-1.5': 'Weathered asphalt over black organic material	
2					65%	1.5'-4': 'Fill - dry, very dense, light brown silty f sand grading to f sand, tr. clay	0.0
3							
4							
5					75%	4-8.5': Dry, dense light brown mf sand	0.0
6							
7							
8							
9					70%	8.5-10.0': Saturated Gravel	0.0
10							
11						10.0'-12.0': Brown silty f sand grading to f sand	0.0
12							
13						End of boring @ 12'	
14						Sample SS-4 collected at 8' above saturated interval.	
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B4

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-3

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: EAST OF HISTORIC GAS TANKS
GROUND SURFACE ELEVATION: N/A
DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						Asphalt	
2					85%	0.5'-2'; Dry, brown loamy fill (reworked soil or fill), few rocks.	0.0
3							
4							
5						2'-7.5": Dry, tan silty vf sand (till)	0.0
6					75%		
7							
8						Refusal at 7.5' on tight silt/sand	
9						Sample SS-3 - sampled fill material @ 2'	
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B3

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-2

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: NORTH OF HISTORIC GAS TANKS
GROUND SURFACE ELEVATION: N/A
DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
						0-6" 'Asphalt and crushed stone based	0.0
1					50%	0.5-3.5": Fill consisting of crushed brick intermixed with dry, tan,	0.0
2							
3							
4						3.5-4: Dry, tan, mf sand	0.0
5					50%	4'-7'- Fill consisting of gravel intermixed with sandy loam. Light gray layered/fractured rock (basement slab?) at 7'.	0.0
6							
7							
8							
9					75%	7'-12': 'Tan, mf sand; wet at 12'	0.0
10							
11							
12							
13						End of boring at 12'	
14						Sample SS-2 collected at 7.5-8'	
15						NOTE: DRILLER MADE THREE ATTEMPTS TO ADVANCE BORING BUT HIT SHALLOW REFUSAL ON FIRST TWO ATTEMPTS.	
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B2

RAVI ENGINEERING & LAND SURVEYING, P.C.

101-113 Franklin Street
106 Pleasant Street

BORING BH-1

PROJECT #: 4318179C
CHKD. BY:

CONTRACTOR: Nature's Way
DRILLER: Tom
RE&LS PERSONNEL: L.Zicari

BORING LOCATION: WEST OF HISTORIC GAS TANKS
GROUND SURFACE ELEVATION: N/A
DATE: 7/17/2019

TYPE OF DRILL RIG: Truck Mounted Geoprobe
CASING SIZE AND TYPE:
OVERBURDEN SAMPLING METHOD:
ROCK DRILLING METHOD: NA

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

PATH	Sample Data BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (%)		PID (ppm)
1						Asphalt over weathered rock base to 6"	0.0
2					75%	0.5'-4': Fill consisting of loose dk brown sandy loam grading to tan sandy loam	0.0
3							
4							
5					80%	4'-12.0': Dense silty f sand. Saturated at 9.5 ft. bgs.	0.0
6							
7							
8							
9					90%		
10							
11							
12							
13						End of boring @ 12'	
14						Sample SS-1 collected above saturated interval at 9.5 ft. bgs.	
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

LEGEND
S- Surficial Soil Sample
SS Subsurface Soil Sample

GENERAL NOTES:
1) Stratification Lines represent approximate boundary between soil types; transitions may be gradual.
2) PID readings were taken directly on exposed soil in disposable sleeve, immediately following retrieval from boring.
bgs = below ground surface
ppm = parts per million

BORING # B1

Test Pit Log

RAVI ENGINEERING & LAND SURVEYING, P.C.

Test Pit No. TP-1 Project Name 101-113 Franklin Street, 106 Pleasant Street Page 1 of 1

Approx. Elev. 533 Project Number 4318179C Date 7-11-19

Location: 101-113 Franklin Street

Field Eng./Geo. L. Zicari

Weather: Cloudy 80F

Equipment Used: Mini Excavator

Test Pit Dimensions: 9 ft. length; 9 ft. width; 8 ft. depth; 648 cf volume

Ground Water Data		
Date	Actual Time	Depth
	Not encountered	X

Depth	PID Reading	Description
0-6”	0.0	Asphalt, 1.5” thick over 6” crushed stone.
6” to 8.25’	0.0	Dry, loose, brown loam with crushed brick and large blocky stone (up to 1 cf). More brick than stone.

Comments

☒ No rock encountered; or
Rock encountered at __0-2_____ feet

☐ Perch/Seepage water encountered at _____ feet

X No groundwater encountered; or

☐ Ground water encountered at _____ feet

Remarks:

No tanks or metal objects (anomaly C not found)

No odors or staining; no C&D debris

Did not reach bottom of fill due to equipment limitations (excavator could not reach any deeper).

Test Pit Log

RAVI ENGINEERING & LAND SURVEYING, P.C.

Test Pit No. TP-2 Project Name 101-113 Franklin Street, 106 Pleasant Street Page 1 of

Approx. Elev. 533 ft. Project Number 4318179C Date 7-11-19

Location: 101-113 Franklin Street (parking lot)

Field Eng./Geo. L. Zicari

Weather: Cloudy 80F

Equipment Used: Mini Excavator

Test Pit Dimensions: 7 ft (length) 11 ft (width) 6.5 ft (depth) 500.5 cf (volume)

Ground Water Data		
Date	Actual Time	Depth
	Not encountered	X

Depth	PID Reading	Description
0-6”	0.0	Asphalt, 1.5” thick over 6 “crushed stone.
6”-24”	0.0	Fill consisting of dry, loose, brown loam intermixed with brick and brick fragments, stone, some sand and ash. Metal I-beam at surface, encased in concrete (loose in pit).
24”-78”	0.0	Moist, brown, sandy loam.

Comments

☒ No rock encountered; or
Rock encountered at __0-2_____ feet

☐ Perch/Seepage water encountered at _____ feet

X No groundwater encountered; or

☐ Ground water encountered at _____ feet

Remarks:

I-beam appears to be anomaly #4 as no other metal was found in pit.


STOP
TREC
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Test Pit Log

RAVI ENGINEERING & LAND SURVEYING, P.C.

Test Pit No. TP-3 Project Name 101-113 Franklin Street, 106 Pleasant Street Page 1 of 2

Approx. Elev. 533 ft. Project Number 4318179C Date 7-11-19

Location: 101-113 Franklin Street (parking lot)

Field Eng./Geo. L. Zicari

Weather: Cloudy 80F

Equipment Used: Mini Excavator

Test Pit Dimensions: 6.5 ft. length; 8 ft. width; 4 ft. depth; 208 cf volume

Ground Water Data		
Date	Actual Time	Depth
	Not encountered	X

Depth	PID Reading	Description
0-12”	0.0	Asphalt, 6” thick over 6” black sandy crushed stone
12”-48”	0.0	Fill consisting of tan sand intermixed with brick and brick fragments, coarse tan sand with some ash, glass, metal shards and other debris. Loose 2” pipe (30” length) and buried rusted crushed metal drum at 4’ depth.
48”		Refusal on Slab at 4 ft.

Comments

☒ No rock encountered; or
Rock encountered at __0-2_____ feet

☐ Perch/Seepage water encountered at _____ feet

X No groundwater encountered; or

☐ Ground water encountered at _____ feet

Remarks:

Anomaly #1 appears to be 30” length of water pipe and remnants of a crushed steel drum found in pit.

Test Pit Log

RAVI ENGINEERING & LAND SURVEYING, P.C.

Test Pit No. TP-4 Project Name 101-113 Franklin Street, 106 Pleasant Street Page 1 of

Approx. Elev. 533 ft. Project Number 4318179C Date 7-11-19

Location: 101-113 Franklin Street (parking lot)

Field Eng./Geo. L. Zicari

Weather: Cloudy 80F

Equipment Used: Mini Excavator

Test Pit Dimensions: 8 ft. length; 8 ft. width; 5 ft. depth; 320 cf volume

Ground Water Data		
Date	Actual Time	Depth
	Not encountered	X

Depth	PID Reading	Description
0-24”	0.0	Asphalt, 2-3” thick over fill consisting of light gray angular rock (limestone, dolostone) intermixed with dry clayey loam. Foundation wall encountered near middle of excavation in E/W direction, then south near the east end of pit.
24”-60”	0.0	Moist, brown clayey loam. Metal conduit and electrical box at southwest corner of pit approximately 2.5-3 ft bgs.

Comments

☒ No rock encountered; or
Rock encountered at __0-2_____ feet

☐ Perch/Seepage water encountered at _____ feet

X No groundwater encountered; or

☐ Ground water encountered at _____ feet

Remarks:

No tanks or other large metal objects to explain Anomaly #2. A small metal conduit and electrical box are only metal found at approximately 2.5-3 ft bgs.

Test Pit Log

RAVI ENGINEERING & LAND SURVEYING, P.C.

Test Pit No. TP-5 Project Name 101-113 Franklin Street, 106 Pleasant Street Page 1 of

Approx. Elev. 533 ft. Project Number 4318179C Date 7-11-19

Location: 101-113 Franklin Street (parking lot)

Field Eng./Geo. L. Zicari

Weather: Cloudy 80F

Equipment Used: Mini Excavator

Test Pit Dimensions: 7 ft. length; 7 ft. width; 5.5 ft. depth; 269.5 cf volume

Ground Water Data		
Date	Actual Time	Depth
	Not encountered	X

Depth	PID Reading	Description
0-6”	0.0	Asphalt, 1.5” thick over 3-4” brown sand and gravel.
6”-65”	0.0	Reworked soil/fill consisting of moist, brown clay loam, few large limestone boulders, trace brick. Native clay loam at 5”. One inch conduit on south end of excavation running E/W direction approximately 2.5” bgs.

Comments

☒ No rock encountered; or
Rock encountered at __0-2_____ feet

☐ Perch/Seepage water encountered at _____ feet

X No groundwater encountered; or

☐ Ground water encountered at _____ feet

Remarks:

1” metal conduit pipe is only metal object found. No tanks or other metal to explain anomaly.

Test Pit Log

RAVI ENGINEERING & LAND SURVEYING, P.C.

Test Pit No. TP-6 Project Name 101-113 Franklin Street, 106 Pleasant Street Page 1 of

Approx. Elev. 533 ft. Project Number 4318179C Date 7-11-19

Location: 101-113 Franklin Street (parking lot)

Field Eng./Geo. L. Zicari

Weather: Cloudy 80F

Equipment Used: Mini Excavator

Test Pit Dimensions: 7.5 ft. length; 9 ft. width; 5.6 ft depth; 378 cf volume

Ground Water Data		
Date	Actual Time	Depth
	Not encountered	X

Depth	PID Reading	Description
0-10”	0.0	Asphalt 1.5” over black sandy soil intermixed with crushed stone, trace brick and wood fragments.
10”-66”	0.0	Moist, brown clayey loam, no debris.

Comments

☒ No rock encountered; or
Rock encountered at __0-2_____ feet

☐ Perch/Seepage water encountered at _____ feet

X No groundwater encountered; or

☐ Ground water encountered at _____ feet

Remarks:
No metal found to explain Anomaly #3.

Test Pit Log

RAVI ENGINEERING & LAND SURVEYING, P.C.

Test Pit No. TP-7 Project Name 101-113 Franklin Street, 106 Pleasant Street Page 1 of

Approx. Elev. 532 ft. Project Number 4318179C Date 7-11-19

Location: 101-113 Franklin Street (parking lot – SE corner)

Field Eng./Geo. L. Zicari

Weather: Cloudy 80F

Equipment Used: Mini Excavator

Test Pit Dimensions:	9 ft. length	15.25 ft. width	6.25 ft. depth	857.8 cf volume

Ground Water Data		
Date	Actual Time	Depth
	Not encountered	X

Depth	PID Reading	Description
0-6”	0.0	Asphalt, 1.5” thick, over 4” crushed stone and sand. Steel I-beam encased in concrete just beneath asphalt.
6”-75”	0.0	Brick intermixed with brown sandy loam, some limestone. Several large pieces of metal. Concrete slab at south perimeter of excavation at 2.25 ft. bgs. over foundation wall. Wall is 4 ft high. Refusal on tile floor at 6.25 ft. bgs.

Comments

☒ No rock encountered; or
Rock encountered at __0-2_____ feet

☐ Perch/Seepage water encountered at _____ feet

X No groundwater encountered; or

☐ Ground water encountered at _____ feet

Remarks:

- Footer or foundation wall is on south end of excavation running E/W – appears to be constructed of field stone and mortar with a plaster skim coat painted dark gray.
- Several metal objects in excavation to explain Anomaly B include a steel safe (22”x24.5”x31”), an I-beam encased in concrete, and several sheets of metal (12”x48”)

Test Pit Log

RAVI ENGINEERING & LAND SURVEYING, P.C.

Test Pit No. TP-8 Project Name 101-113 Franklin Street, 106 Pleasant Street Page 1 of

Approx. Elev. 534 ft. Project Number 4318179C Date 7-11-19

Location: 101-113 Franklin Street (parking lot)

Field Eng./Geo. L. Zicari

Weather: Cloudy 80F

Equipment Used: Mini Excavator

Test Pit Dimensions: 5 ft. length; 6 ft. width; 4 ft. depth; 120 cf volume

Ground Water Data		
Date	Actual Time	Depth
	Not encountered	X

Depth	PID Reading	Description
0-6”	0.0	Asphalt, 1.5” thick over crushed stone
6”-48”	112 ppm	Fill consisting of stone and brick intermixed with dry, loose tan/brown mf sand. At 12” bgs, brick wall encountered on east perimeter of excavation. Black soil staining observed on north side of excavation from 6” to approximately 18”. Strong chemical odor emanating from pit.

Comments

☒ No rock encountered; or
Rock encountered at __0-2_____ feet

☐ Perch/Seepage water encountered at _____ feet

X No groundwater encountered; or

☐ Ground water encountered at _____ feet

Remarks:

Chemical odor appears to be coming from north perimeter of pit where black staining was observed, but could not find any elevated PID readings on perimeter walls. Elevated PID readings were detected on soils in bucket only.

Test Pit Log

RAVI ENGINEERING & LAND SURVEYING, P.C.

Test Pit No. TP-9 Project Name 101-113 Franklin Street, 106 Pleasant Street Page 1 of 1

Approx. Elev. 530 ft. Project Number 4318179C Date 7-11-19

Location: 106 Pleasant Street

Field Eng./Geo. L. Zicari

Weather: Cloudy 80F

Equipment Used: Mini Excavator

Test Pit Dimensions: 5' length, 8' width, 5' depth, 200 cf volume

Ground Water Data		
Date	Actual Time	Depth
	Not encountered	X

Depth	PID Reading	Description
0-6"	0.0	Topsoil - dry, loose, brown sandy loam
12" – 30"	0.0	Dry, loose, brown sandy loam with some brick (large and small fragments) and light gray angular rock (limestone). Loose 2" steel pipe encountered at 24" deep on north end of excavation. Small amount of sand, ash, debris at bottom of interval.
30"-60"	0.00	Moist, brown fine sandy loam.

Comments

☒ No rock encountered; or
Rock encountered at __0-2_____ feet

☐ Perch/Seepage water encountered at _____ feet

X No groundwater encountered; or

☐ Ground water encountered at _____ feet

Remarks:

Black film (possibly a vapor barrier) observed on one limestone block

Pipe appears to be debris, not attached to anything. Approximately 8' in length.