ESSEX COUNTY
OFFICE OF THE MANAGER

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Telephone (518) 873-3332 · Fax (518) 873-3339

Daniel L. Palmer
County Manager

Linda M. Wolf
Purchasing Agent

TO: All Bidders

FROM: Linda Wolf, CPA, Purchasing Agent

DATE: November 7, 2016

SUBJECT: Addendum #2 GROUNDWATER MONITORING

This Addendum, issued to bid document holders of record, indicates changes to the bid documents for the *GROUNDWATER MONITORING* Bid Opening November 16, 2016.

Please see the following Questions and Answers

A complete PDF copy of the Horace Nye Nursing Home Limited Subsurface Investigation Report is available upon request (2,500 pages). The cover letter dated October 1, 2015, Figure 1, Figure 2, Table 1 and Appendix 1 are attached for reference.

1) The RFP indicates that all purge fluid will be stored in 55-gallon drums for disposal by the County. Will the drums also be provided by the County, or should the cost of drums be included in our estimate?

   Answer - Groundwater monitoring company responsible to supply containers for purged fluid.

2) How deep are the groundwater monitoring wells and what is the well diameter?

   Answer - See Appendix 1 attached.

3) The RFP indicates that samples will be collected with dedicated equipment. What equipment is currently in the well for purging groundwater?

   Answer - Dedicated equipment to be provided by Groundwater monitoring contractor (this contract), there is no equipment in the wells currently. The intent of the term dedicated equipment is equipment used for the purpose of collecting groundwater that has been completely cleaned prior to each sampling event to insure no contamination of sampling from other outside sources where such equipment was previously utilized.

4) Based on the language in the proposal, it appears that all wells can be accessed by a vehicle?

   Answer - See Figure 2 attached.

5) Does a Heron Dipper-T groundwater level meter have to be used or other water level meters acceptable?

   Answer - An equivalent model may be utilized.

6) Are the quarterly reports acceptable in CD format or would hard copies required? How many copies?

Answer - One hard copy (paper) and one electronic copy (pdf) is required for each reporting period.

7) For PP Total Metals EPA Method 200.7 includes many analytes or individual analytes—do you mean that the RCRA 8 analytes need to be analyzed or just specific analytes?

Answer - See item #3 of letter dated 3/30/16 from NYSDEC to Essex Centers.

8) For Phenolic Compounds, please confirm the correct EPA method number, I believe it should be 420.4 instead of 42.1.

Answer - See item #3 of letter dated 3/30/16 from NYSDEC to Essex Centers.

9) How deep are the wells and what is the distance between each well? Do you have previous measurements for water table levels?

Answer - For depths of wells and distance between wells, See Appendix 1 and Figure 2 attached. For previous measurements of water table levels see water level measurements sketch dated 6/1/16 attached.

10) Have the wells been surveyed? Do we have base maps?

Answer - No survey has been completed, however, See Appendix 1 and Figure 2 attached.

11) Regarding the construction of the wells. Are they 1" or 2"? Needed to determine the amount of groundwater.

Answer - No survey has been completed, however, See Appendix 1 and Figure 2 attached.

12) Can you give the site address?

Answer - Essex County Government Center, 7551 Court Street, Elizabethtown, NY 12932.

13) Is there access to electricity at the site?

Answer - See Figure 2 attached. The residential style building located between MW-4 and MW-5 is the workshop for the Essex county Buildings and Grounds department, 120 volt electrical power is available at that location for limited use by groundwater monitoring contractor.

14) Is testing for dissolved oxygen, pH, conductivity, or any other parameters required?

Answer – See item #3 of attached letter dated 3/30/16 from NYS DEC to Essex Centers.

15) Is low-flow sampling required?

Answer – See item #3 of attached letter dated 3/30/16 from NYS DEC to Essex Centers.

16) Is it possible to park a vehicle next to the wells, or will materials and equipment need to be brought to the site on foot?

Answer – See Figure 2 attached.

END OF ADDENDUM # 2

TECTONIC
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New York State Department of Environmental Conservation,
Region 5 – Division of Water,
1115 Route 86,
Ray Brook, NY 12977

Attention: Tamara J. Venne

October 1, 2015

RE: W.O.: # 6310.01
HORACE NYE NURSING HOME,
81 PARK STREET,
ELIZABETHTOWN, NEW YORK
LIMITED SUBSURFACE INVESTIGATION REPORT (SIR),

Dear Ms. Venne:

This letter report presents our findings and conclusions from the limited subsurface investigation (SI) performed on July 20 through 22 and July 30 through 31, 2015 at the Horace Nye Nursing Home located at 81 Park Street in Elizabethtown, New York (the "Site"). This SI was performed to evaluate whether or not the quality of groundwater located downgradient of sanitary seepage pits has been impacted by organic compounds, metal constituents and phenolics that were reported above protection of groundwater standards in sediment samples collected and analyzed by EnviroScience Consultants, Inc. during a Phase II Environmental Site Assessment (ESA), dated November 1, 2013.

This limited SIR includes:

a. Site Description;
b. Boring, well installation and Sampling Methodology and protocols;
c. Typed Soil Boring and Monitoring Well Installation Logs;
d. Summary of field sampling and observations;
e. Sample location plan;
f. Summary of test results compared to NYSDEC standards;
g. Copies of all laboratory chain-of-custody forms and analytical results;
h. Findings and Conclusions; and
i. Recommendations

1.0 SITE BACKGROUND

As indicated above, in connection with a real estate transaction between the County of Essex and the Buyer, EnviroScience Consultants Inc. (EnviroScience), on behalf of their client (the "Buyer"), scoped and also performed a Phase II ESA on November 1, 2013. The scope of services for the Phase II ESA included a subsurface investigation in which sediment samples from seepage pits were collected and analyzed to evaluate whether or not wastewater discharges of oil, grease and phenolics had any adverse impacts on the sanitary system used by the nursing home. The findings from the Phase II investigations conducted by EnviroScience concluded that eleven of the seepage pits required remediation (see **Figure 1**). It should be noted that groundwater sampling was not included as part of the Phase II ESA scope of services. Essex County reported these releases as a spill to the NYSDEC and NYSDEC subsequently stipulated a requirement that Essex County by virtue of the County's transaction terms with the Buyer perform a groundwater investigation at the Site.

Essex County then retained Tectonic Engineering and Surveying Consultants, P.C. (Tectonic) to develop and implement a Sampling and Analytical Testing Plan (SATP) to fulfill the NYSDEC requirement. The SATP was approved by NYSDEC on February 5, 2015, and this was subsequently finalized on February 10, 2015. The SATP included details pertaining to the installation of groundwater monitoring wells, groundwater sampling, and laboratory analysis. Details of the field investigation and sampling are discussed in Section 2.0 below.

2.0 FIELD INVESTIGATION AND SAMPLING

Tectonic's boring subcontractor, QCQA Laboratories, Inc., mobilized to the Site on July 20, 2015, and again on July 30, 2015 to install monitoring wells in accordance with the approved SATP. The first installation event took place between July 20 and July 22, in which three (3) of the monitoring wells were installed. Remobilization to the site on July 30, 2015 occurred to install the final two (2) monitoring wells that could not be installed during the first event due to access restrictions. A Tectonic Geologist with OSHA 40-hour HAZWOPER certification was present full time to log the subsurface conditions and attend the monitoring well installations. As shown in **Figure 2**, monitoring well locations were designated as MW-1 through MW-5 and correspond to borings B-1 through B-5. MW-1 was installed to evaluate background conditions, while wells MW-2 through MW-5 were installed at select downgradient locations. The first four feet of MW-4 were hand excavated in order to clear the top of on-site seepage pits.

Borings were advanced via CME 550X drill rig equipped with hollow stem auger to depths of up to thirty six (36) feet below ground surface (bgs). Samples were collected through continuous split spoon sampling and Standard Penetration Testing (SPT). Subsurface soils were classified using the United Soil Classification System (USCS) and generally consisted of coarse to fine sand with variable amounts of clayey silt and gravel. Groundwater levels were observed at approximately 20 feet bgs. Detailed descriptions of the subsurface and groundwater levels measured at individual borings are included on the boring logs attached as **Appendix I**.

Soils on each split spoon were visually and olfactorily inspected and screened with a calibrated MiniRAE 3000 PhotoIonization Detector (PID) for the presence of contamination. Soils were temporarily stored on clean plastic sheeting for evaluation. PID readings and observations were recorded on the boring logs (**Appendix I**).

At each boring location, a 2-inch diameter PVC groundwater monitoring well was installed to depths up to 34 feet bgs (see **Appendix II**). The wells were designated MW-1 through MW-5. The bottom approximately fifteen (15) feet of the wells were screened with #10 slot PVC and packed with clean #0 sand from the bottom of the well to approximately two (2) feet above the screened interval. Above the sand pack, the well was sealed with a one (1) foot bentonite plug and finished with a concrete grout seal. Flush mount casings were installed and concrete pads were poured around each well. Each well was developed until the water within each well ran clear. All developing fluid was placed into 55 gallon drums and stored at the Site for off-site disposal (see **Figure 2**). Monitoring Well Installation logs are included in **Appendix II**.

Tectonic's Geologist collected groundwater samples from each well on July 31, 2015. Prior to collecting the samples, depth to water measurements were obtained using a Testwell water level indicator and the wells were purged by removing approximately three (3) well volumes of fluid from the well. Groundwater was collected via dedicated balers and the resulting samples were placed into laboratory prepared containers and placed into a cooler on ice. The samples were shipped via standard chain-of-custody protocol to CHEMTECH located in Mountainside, New Jersey, a NYSDOH ELAP certified laboratory, for the chemical analysis outlined in the NYSDEC approved SATP.

Photographs documenting boring advancement, well installation, and conditions at the Site are included in **Appendix III**.

3.0 ANALYTICAL TEST RESULTS

The samples arrived at CHEMTECH intact, apparently undisturbed and within proper the holding times and temperature range. The samples were analyzed for Volatile Organic Compounds (VOCs), Semi-volatile Organic Compounds (SVOCs), Phenolic Compounds, Mercury and Selenium.

The analytical test results were compared to the Technical & Operational Guidance Series 1.1.1 Ambient Water Quality Standards and Guidance Values, Table 1 guidelines for groundwater (drinking water Class (GA)) (TOGS 1.1.1). Summary comparison tables of detected analytes are presented in **Table 1**. A copy of the analytical test results is attached in **Appendix III**.

4.0 FINDINGS & CONCLUSIONS

The following section presents the findings and conclusions of our site investigation conducted on July 20-22, 2015 and July 30-31, 2015.

1. No field observations including PID levels, odors or staining indicating the potential presence of contamination were observed in the soils or groundwater at any of the five (5) monitoring wells.

2. Analytical test results indicate that one (1) VOC, acetone, was detected above laboratory limits but below its respective TOGS 1.1.1 ambient water quality standard in samples designated MW-1 (the upgradient well) and MW-3. Acetone was not detected in any of the other samples.

3. Analytical test results indicate that the VOC, toluene, was detected above the TOGS 1.1.1 ambient water quality standards in samples designated MW-1 (the upgradient well) and MW-2. Toluene was not detected at the remaining three wells.

4. The analytical test results indicate that concentrations of metals in the groundwater samples were as follows:

    a. The metal mercury was detected above laboratory reporting limits but below its respective TOGS 1.1.1 ambient water quality standards in the samples designated MW-1 (the upgradient well), MW-3 and MW-4.

    b. The metal, mercury, was detected above its respective TOGS 1.1.1 ambient water quality standard in the sample designated MW-2. Mercury was not detected at MW-5.

c. The metal selenium was detected above laboratory reporting limits but below its respective TOGS 1.1.1 ambient water quality standards in the samples designated MW-1 (the upgradient well) and MW-5. Selenium was not detected at the remaining three wells.

5. Analytical test results indicate that total phenolic compounds were detected at levels above the TOGS 1.1.1 ambient water quality standard in the sample designated MW-3. Phenolic compounds were not detected at the remaining four wells.

6. Based on a review of the laboratory results, it appears that the groundwater at the downgradient wells MW-2 and MW-3 may have been impacted by discharges of toluene, mercury and phenolic compounds to the seepage pits. No groundwater impacts were observed at the downgradient wells MW-4 and MW-5.

7. Toluene concentrations at the upgradient well, MW-1, indicate that there is a possible upgradient source of toluene. Toluene is used as a gasoline additive, as a solvent for paint, and can be found in cements, solvents, spot removers and antifreezes. Toluene is released into the atmosphere principally from the volatilization of petroleum fuels and toluene-based solvents and thinners, and from motor vehicle exhaust. The concentrations of toluene in the groundwater at MW-1 and MW-3 may be influenced by adjacent and nearby roadway and parking lot and utility infrastructure or, as of this time, an otherwise undetermined source.

5.0 RECOMMENDATIONS

In consideration of the findings and conclusions presented in Section 4.0 of this report, Tectonic has the following recommendations:

1. Tectonic recommends that Essex County proceed with the site specific requirements set forth by NYSDEC which includes the removal of sediment from impacted seepage pits (see **Figure 1**).

2. Tectonic recommends that additional rounds of groundwater sampling and analyses for toluene, mercury and total phenolics be performed at wells MW-1 (upgradient), and MW-2 and MW-3 (the two downgradient wells with TOGS 1.1.1 exceedances) after sediment removal is completed.

3. Tectonic further recommends that the initial sampling and analytical testing event occur within three (3) months of the aforementioned sediment removal and then proceed biannually for a period of three (3) years thereafter. At the conclusion of the three (3) year sampling period, the cumulative analytical testing results should be evaluated and further recommendations should be provided.

6.0 LIMITATIONS

The site investigation services provided by Tectonic have been performed in general accordance with industry standards. Our professional services have been performed using the degree of care and skill ordinarily exercised under similar circumstances by reputable environmental engineers and geologists practicing in this or similar situations. Our interpretation of the field data is based on good judgment and experience. However, no matter how qualified the environmental engineer or detailed the investigation, conditions cannot always be predicted beyond the points of actual sampling and testing. No other warranty, expressed or implied, is made as to the professional advice included in this report.

If you have any questions or comments, please contact the undersigned.

Sincerely,
TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C.

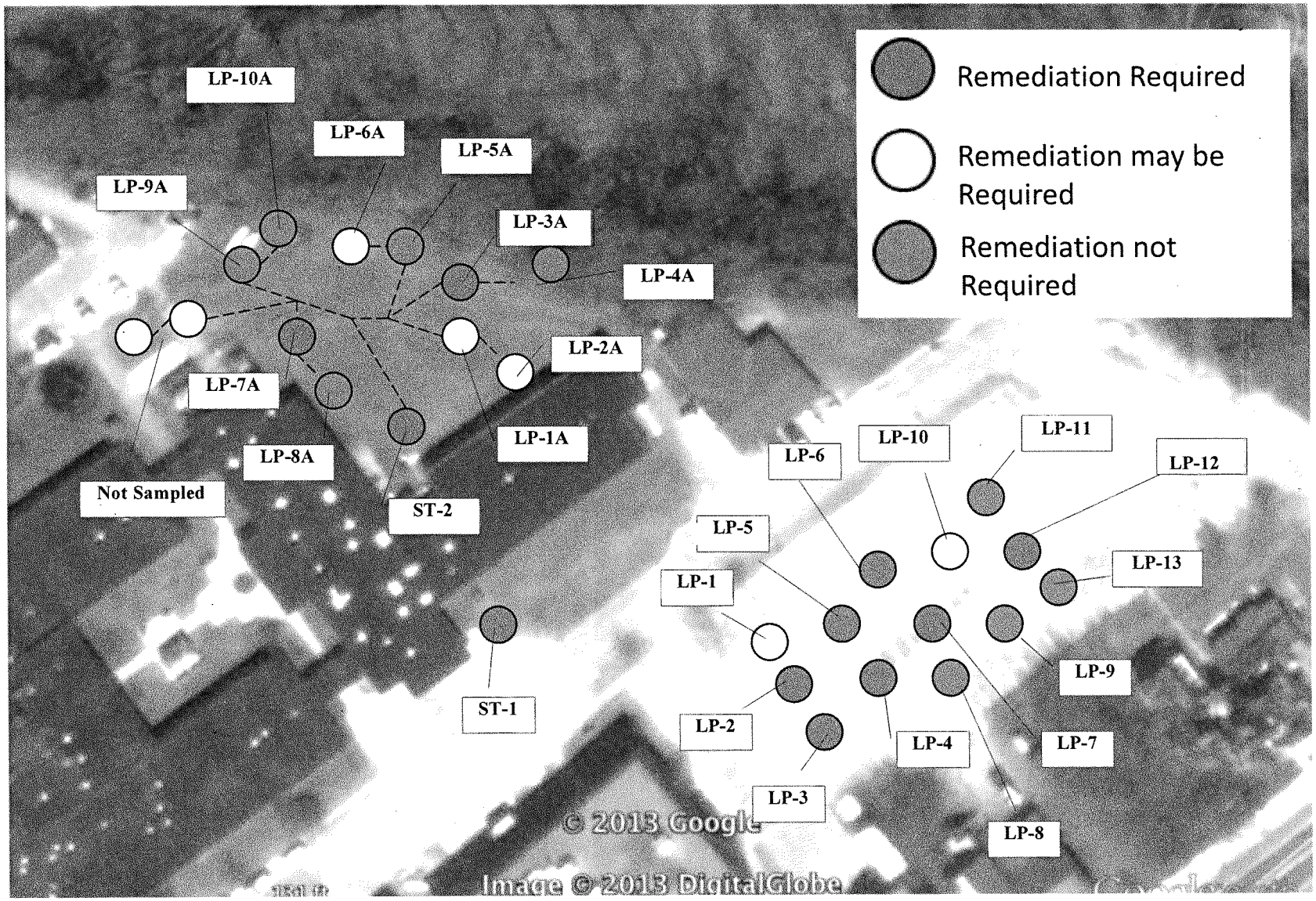
Kristine Garbarino, P.G.
Project Manager / Senior Geologist

G:\Mountainville\Environmental\6310 Essex County - Horace Nye Home\Field Well Installation & Sampling\Report

Attachments:

Figure 1	Seepage Pits to be Remediated
Figure 2	As-drilled Monitoring Well Locations
Table 1	Summary of Laboratory Detected Compounds
Appendix I	Boring Logs
Appendix II	Monitoring Well Installation Logs
Appendix III	Site Photographs
Appendix IV	Laboratory Analytical Test Results

FIGURE 1



Key:

NOTES

N

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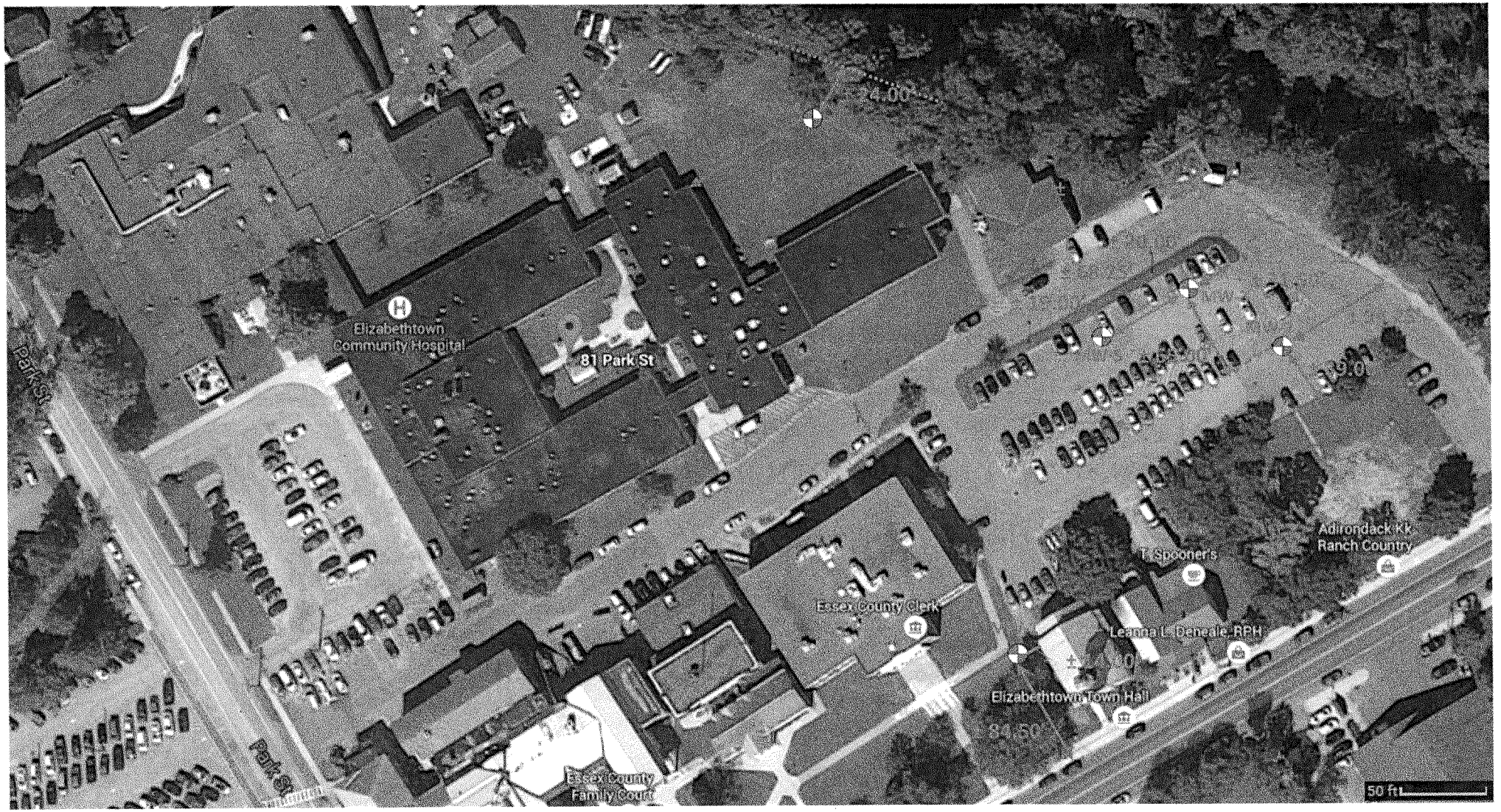
Title	**Figure 1 - Seepage Pits to be Remediated**
Location	**81 Park Street, Elizabethtown, NY**
Client	**Essex County New York**
Source	**EnviroScience Phase II ESA - November 1, 2013**

Date	Work Order	Drawing No.	Rev.
9/14/2015	**6310.01**	**Figure 1**	**0**
Scale: **NTS**			

FIGURE 2



Key:

As-drilled Monitoring Well Locations

Chain Link Fence

Approximate Location of 55 Gallon Drums

NOTES

All distances were measured from the approximate center of each monitoring well to the edge of pavement, the front face of curb or a building corner.

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www.tectonicengineering.com

Title	**Figure 2 - As-drilled Monitoring Well Locations**
Location	81 Park Street, Elizabethtown, NY
Client	Essex County New York
Source	Google Maps

Date	9/3/2015	Work Order	6310.01	Drawing No.	Figure 2	Rev.	0
Scale	NTS						

TABLE 1

Table 1. Summary of Laboratory Detected Compounds
Horace Nye Nursing Home
Elizabethtown, New York

SAMPLE ID:	TOGS 1.1.1 Table 1 Ambient Water Quality Standard	MW-1	MW-2	MW-3	MW-4	MW-5
LAB ID:		G3170-02	G3170-03	G3170-04	G3170-05	G3170-06
COLLECTION DATE:		7/31/2015	7/31/2015	7/31/2015	7/31/2015	7/31/2015
SAMPLE MATRIX:		Water	Water	Water	Water	Water
UNITS:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Volatile Organic Compounds (VOCs)						
Toluene	5	**19.4**	ND	**48.7**	ND	ND
Metals						
Mercury	0.7	0.235	**1.9**	0.275	0.311	ND
Phenolic Compounds						
Phenolics	1	ND	ND	**24** J	ND	ND

Qualifiers:

ND - Not Detected

NS - No Standard

J - Data indicates the presence of a compound that meets the identification criteria.

The result is less than the quantitation limit but greater than MDL.

The concentration given is an approximate value.

Notes:

Analytes that exceed their criteria as set forth by TOGS 1.1.1 are bolded and highlighted in yellow.

APPENDIX I

TECTONIC *ENGINEERING & SURVEYING CONSULTANTS P.C.*

PROJECT No. **6310.01**

PROJECT: **Horace Nye Nursing Home**

LOCATION: **Elizabethtown, NY**

BORING No. B-1

SHEET No. 1 of 2

CLIENT: **Essex County**

CONTRACTOR: **QCQA Laboratories, Inc.**

METHOD OF ADVANCING BORING	DIA.	DEPTH
POWER AUGER:	4 1/4"	0 TO 30'
ROT. DRILL:		TO
CASING:		TO
SPLIT SPOON:	2"	0 TO 30'

550X Central Mine Equipment equipped w/ safety hammer

GROUND WATER	DATE	TIME	DEPTH
	7/30/15	10:00 am	19.18'

MON. WELL ☒ YES ☐ NO

SCREEN DEPTH: 15' TO 30'

WEATHER: Clear TEMP: 80° F

DEPTH TO ROCK: Not Encountered'

*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Chris Callinan**

DRILLER: **James Burrowbridge**

SURFACE ELEVATION: **596.0**

DATUM: **Google Earth estimate**

DATE START: **7/30/15**

DATE FINISH: **7/30/15**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5

PLASTIC LIMIT % × — WATER CONTENT % ⊗ — LIQUID LIMIT % △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLE NUMBER	RECOV. LENGTH (IN.)	RECOV. RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL
1-2	8	6 5 3 3	S-1	8		M	SM	Bwn c-f SAND, little c-f Gravel, trace Clayey Silt (PID=0ppm)
3-4	16	3 3 13 25	S-2	14		M	SM	3" Same (PID=0ppm) 11" Tn c-f SAND, little c-f Gravel, trace Clayey Silt (PID=0ppm)
5-6	36	18 22 14 22	S-3	14.5		M	SM	Bwn-tn c-f SAND, little c-f gravel, trace Clayey Silt (PID=0ppm)
7-8	44	28 24 20 14	S-4	13		M	SM	Bwn-tn c-f SAND, little c-f Gravel, trace Clayey Silt (PID=0ppm)
9-10	15	5 7 8 7	S-5	13		M	SP	Bwn-tn m-f SAND, trace Clayey Silt (PID=0ppm)
11-12	18	8 8 10 10	S-6	16		M	SP	Same (PID=0ppm)
13-14	19	5 9 10 8	S-7	18		M	SP	Same Bottom 7" (resembles varves, alternating light & dark bands) (PID=0ppm)
15-16	18	5 9 9 8	S-8	13.5		M	SP	Bwn-tn c-f SAND, trace c-f Gravel, trace Clayey Silt (PID=0ppm)
17-18	22	9 11 11 9	S-9	17		M	SP	Bwn-tn m-f SAND, trace Clayey Silt (PID=0ppm)
19-20	13	4 6 7 7	S-10	19		W W	SP SP	10" Same 9" Gy c-f SAND, trace f Gravel, trace Clayey Silt (PID=0ppm)
21-22	13	5 5 8 9	S-11	19		W W	SP SP	7" Bwn-tn m-f SAND, trace Clayey Silt (PID=0ppm) 12" Gy m-f SAND, trace Clayey Silt (PID=0ppm)
23-24	16	6 8 8 10	S-12	19.5		W	SP	Gy m-f SAND, trace Clayey Silt (PID=0ppm)
25		5 7						

ELEVATION (FT.): 591.0, 586.0, 581.0, 576.0, 571.0

REMARKS:

BORING LOG 6310.01.GPJ TECTONIC ENG.GDT 8/17/15

TECTONIC *ENGINEERING & SURVEYING CONSULTANTS P.C.*

PROJECT No. **6310.01**
PROJECT: **Horace Nye Nursing Home**
LOCATION: **Elizabethtown, NY**

BORING No. B-1

CLIENT: **Essex County**
CONTRACTOR: **QCQA Laboratories, Inc.**

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOV. LENGTH (IN.)	SAMPLES: RECOV. RQD (%)	SAMPLES: MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
26	13	6 6	S-13	21		W	SP	Same (PID=0ppm)		
27	6	WOH 2 4 11	S-14	24		W	SP	Gy m-f SAND, trace Clayey Silt (PID=0ppm)		
29	9	3 4 5 5	S-15	20.5		W	SP	Same (PID=0ppm)		
30										566.0
31								End of Boring at 30'		
35										561.0
40										556.0
45										551.0
50										546.0
55										541.0

UNCONFINED COMPRESS. STRENGTH (TONS/FT)
1 2 3 4 5

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %
10 20 30 40 50

STANDARD PENETRATION (BLOWS/FT.)
10 20 30 40 50

REMARKS:

BORING LOG 6310.01.GPJ TECTONIC ENG.GDT 8/17/15

TECTONIC *ENGINEERING & SURVEYING CONSULTANTS P.C.*

PROJECT No. **6310.01**
PROJECT: **Horace Nye Nursing Home**
LOCATION: **Elizabethtown, NY**

BORING No. B-2

SHEET No. 1 of 2

CLIENT: **Essex County**
CONTRACTOR: **QCQA Laboratories, Inc.**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **4 1/4"** | **0** TO **30'**
ROT. DRILL: | | TO
CASING: | | TO
SPLIT SPOON: | 2" | 0 TO 30'
550X Central Mine Equipment equipped w/ safety hammer

GROUND WATER

DATE	TIME	DEPTH
7/21/15	**11:05 AM**	**18.75'**
7/21/15	**12:53**	**29.45'**

MON. WELL ☒ YES ☐ NO
SCREEN DEPTH: **15'** TO **30'**
WEATHER: **Clear** TEMP: **80° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Chris Callinan**
DRILLER: **John Leonhardt**
SURFACE ELEVATION: **594.0**
DATUM: **Google Earth estimate**
DATE START: **7/21/15**
DATE FINISH: **7/21/15**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % × — WATER CONTENT % ⊗ — LIQUID LIMIT % △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLE NUMBER	RECOV. LENGTH (IN.)	RECOV. RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	8	WOH 3 5 8	S-1	9		M	SM	3" Asphalt Rd-bwn c-f SAND, little c-f Gravel, trace Clayey Silt (PID=0ppm)		
3	49	13 17 32 25	S-2	16		M	SM	Bwn c-f SAND, some c-f Gravel, trace Clayey Silt Bottom 3" (PID=0ppm)		
5	55	24 26 29 22	S-3	17		M	SM	Bwn c-f SAND, little c-f Gravel, trace Silty Clay, rock powder from Gravel (PID=0ppm)		589.0
7	61	33 29 32 22	S-4	6		M	SM	Same (PID=0ppm)		61
9	23	10 11 12 11	S-5	5		M	SM	Same (PID=0ppm)		
11	19	6 10 9 8	S-6	7		M	SP	Bwn m-f SAND, trace Clayey Silt (PID=0ppm)		584.0
13	10	4 4 6 6	S-7	17.5		M	SP	Bwn-gy m-f SAND, trace Clayey Silt (PID=0ppm)		
15	12	3 5 7 7	S-8	17		M	SP	Same (PID=0ppm)		579.0
17	13	6 6 7 13	S-9	19		M W	SP	Same		
19	16	2 6 10 7	S-10	17		W	SP	Gy m-f SAND, trace Clayey Silt (PID=0ppm) ▼		574.0
21	11	5 4 7 8	S-11	24		W	SP	Same (PID=0ppm)		
23	10	4 5 5 6	S-12	19		W	SP	Same (PID=0ppm)		
25		4 5								569.0

REMARKS: NOTE: The first 18 to 24 inches of soil in this boring is likely re-worked native material due to its proximity to the surface.

BORING LOG 6310.01.GPJ TECTONIC ENG.GDT 8/17/15

TECTONIC *ENGINEERING & SURVEYING CONSULTANTS P.C.*

PROJECT No. **6310.01**
PROJECT: **Horace Nye Nursing Home**
LOCATION: **Elizabethtown, NY**

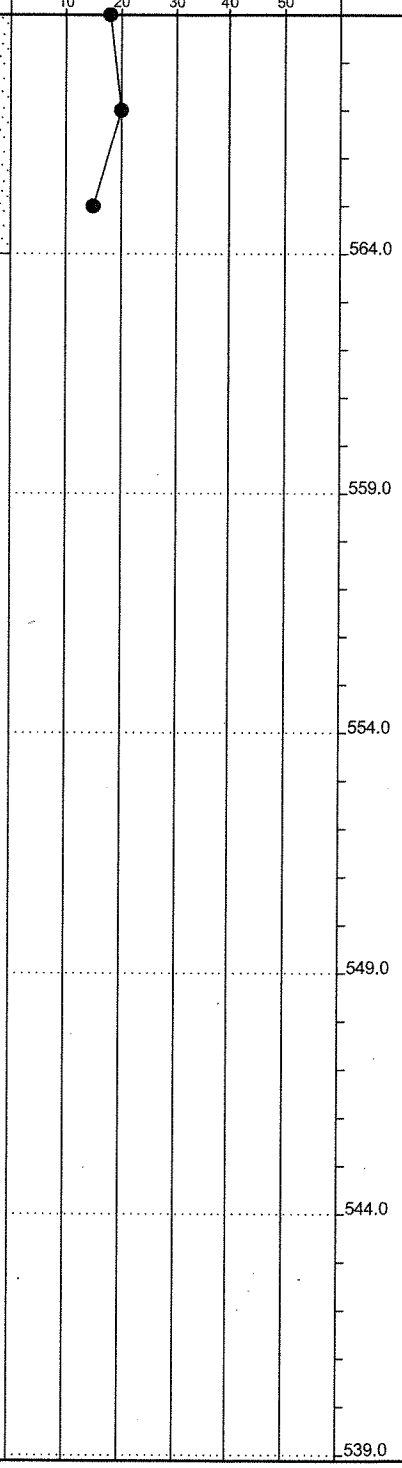
BORING No. B-2

SHEET No. 2 of 2

CLIENT: **Essex County**
CONTRACTOR: **QCQA Laboratories, Inc.**

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOV. LENGTH (IN.)	SAMPLES: RECOV. RQD (%)	SAMPLES: MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
26	18	13 12	S-13	18		W	SP	Same (PID=0ppm)		
27	20	15 10 10 13	S-14	24		W	SP	Same (PID=0ppm)		
28										
29	15	3 8 7 11	S-15	19		W	SP	Same (PID=0ppm) ▽		
30										564.0
31								End of Boring at 30'		
32										
33										
34										
35										559.0
36										
37										
38										
39										
40										554.0
41										
42										
43										
44										
45										549.0
46										
47										
48										
49										
50										544.0
51										
52										
53										
54										
55										539.0

UNCONFINED COMPRESS. STRENGTH (TONS/FT)
1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT %
10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.)
10 20 30 40 50



REMARKS:

BORING LOG 6310.01.GPJ TECTONIC ENG.GDT 8/17/15

TECTONIC *ENGINEERING & SURVEYING CONSULTANTS P.C.*

PROJECT No. **6310.01**

PROJECT: **Horace Nye Nursing Home**

LOCATION: **Elizabethtown, NY**

BORING No. B-3

SHEET No. 1 of 2

CLIENT: **Essex County**

CONTRACTOR: **QCQA Laboratories, Inc.**

METHOD OF ADVANCING BORING	DIA.	DEPTH
POWER AUGER:	4 1/4"	0 TO 30'
ROT. DRILL:		TO
CASING:		TO
SPLIT SPOON:	2"	0 TO 30'

550X Central Mine Equipment equipped w/ safety hammer

GROUND WATER	DATE	TIME	DEPTH
	7/20/15	12:50	20.85'

MON. WELL ☒ YES ☐ NO

SCREEN DEPTH: 15' TO 30'

WEATHER: Clear TEMP: 80° F

DEPTH TO ROCK: Not Encountered'

*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Chris Callinan**

DRILLER: **John Leonhardt**

SURFACE ELEVATION: **594.0**

DATUM: **Google Earth estimate**

DATE START: **7/20/15**

DATE FINISH: **7/20/15**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5

PLASTIC LIMIT % × — WATER CONTENT % ⊗ — LIQUID LIMIT % △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV. LENGTH (IN.)	RECOV. RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	9	WOH 5 4 4	S-1	9		M	SM	Bwn c-f SAND, little c-f Gravel, trace Clayey Silt (PID=0ppm)		
3	32	10 17 15 5	S-2	11		M	SM	Bwn c-f SAND, little c-f Gravel, trace Clayey Silt (PID=0ppm)		
5	9	6 5 4 3	S-3	7		M W	SM	Same (PID=0ppm)		589.0
7	27	6 11 16 20	S-4	7		W	GM	Gy c-f GRAVEL, some c-f Sand, trace Clayey Silt (PID=0ppm)		
9	16	5 9 7 6	S-5	12		M	SM	Bwn-gy c-f SAND, some c-f Gravel, trace Clayey Silt (PID=0ppm)		584.0
11	16	10 8 8 7	S-6	15		M	SM	Same		
13	10	3 4 6 7	S-7	16		M	SP	Gy c-f SAND, trace f Gravel, trace Clayey Silt (PID=0ppm)		
15	10	2 5 5 6	S-8	17		M W	SP	Same (PID=0ppm)		579.0
17	15	7 7 8 8	S-9	17		M	SP	Same (PID=0ppm)		
19	24	6 12 12 10	S-10	17		M	SP	Lgt bwn c-f SAND, trace Clayey Silt (PID=0ppm)		574.0
21	18	7 8 10 10	S-11	19		M W	SP SP	Top 3" Same Bottom 16" Gy c-f SAND, trace Clayey Silt		
23	12	3 6 6 6	S-12	17		W	SP	Gy c-f SAND, trace Clayey Silt (PID=0ppm)		
25		3 4								569.0

REMARKS: NOTE: The first 18 to 24 inches of soil in this boring is likely re-worked native material due to its proximity to the surface.

BORING LOG 6310.01.GPJ TECTONIC ENG.GDT 8/17/15

TECTONIC *ENGINEERING & SURVEYING CONSULTANTS P.C.*

PROJECT No. **6310.01**
PROJECT: **Horace Nye Nursing Home**
LOCATION: **Elizabethtown, NY**

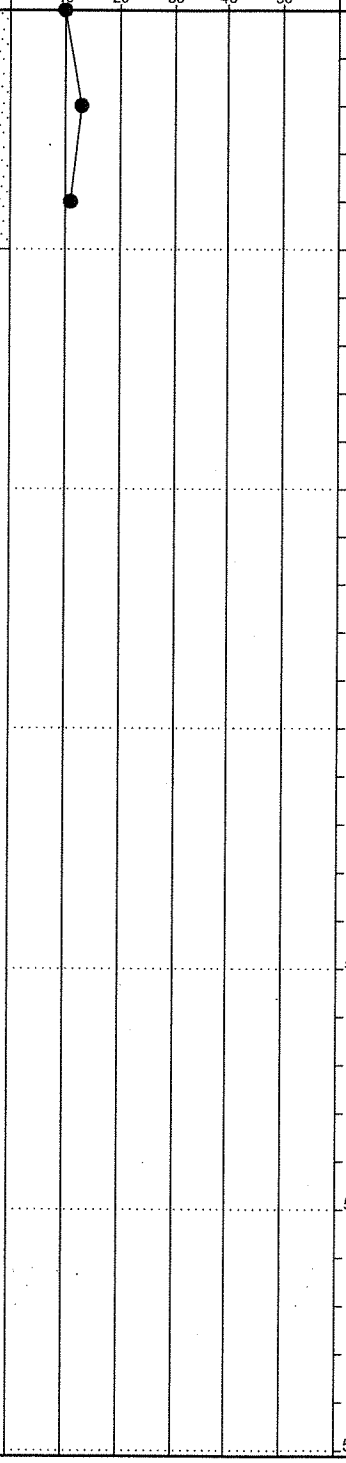
BORING No. B-3

SHEET No. 2 of 2

CLIENT: **Essex County**
CONTRACTOR: **QCQA Laboratories, Inc.**

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOV. LENGTH (IN.)	SAMPLES: RECOV. RQD (%)	SAMPLES: MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
26	10	6 7	S-13	12		W	SP	Bwn c-f SAND, trace Clayey Silt (PID=0ppm)		
27	13	6 6 7 8	S-14	23		W	SP	Gy c-f SAND, trace Clayey Silt (PID=0ppm)		
28										
29	11	5 5 6 8	S-15	18		W	SP	Same (PID=0ppm)		
30										564.0
31								End of Boring at 30'		
32										
33										
34										
35										559.0
36										
37										
38										
39										
40										554.0
41										
42										
43										
44										
45										549.0
46										
47										
48										
49										
50										544.0
51										
52										
53										
54										
55										539.0

UNCONFINED COMPRESS. STRENGTH (TONS/FT)
1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT %
10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.)
10 20 30 40 50



REMARKS:

BORING LOG 6310.01.GPJ TECTONIC ENG.GDT 8/17/15

TECTONIC *ENGINEERING & SURVEYING CONSULTANTS P.C.*

PROJECT No. **6310.01**

PROJECT: **Horace Nye Nursing Home**

LOCATION: **Elizabethtown, NY**

BORING No. B-4

SHEET No. 1 of 2

CLIENT: **Essex County**

CONTRACTOR: **QCQA Laboratories, Inc.**

METHOD OF ADVANCING BORING	DIA.	DEPTH
POWER AUGER:	4 1/4"	0 TO 36'
ROT. DRILL:		TO
CASING:		TO
SPLIT SPOON:	2"	0 TO 36'

550X Central Mine Equipment equipped w/ safety hammer

GROUND WATER	DATE	TIME	DEPTH
	7/30/15	15:57	25.69'

MON. WELL ☒ YES ☐ NO

SCREEN DEPTH: **19'** TO **34'**

WEATHER: **Clear** TEMP: **80° F**

DEPTH TO ROCK: **Not Encountered'**

*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Chris Callinan**

DRILLER: **James Burrowbridge**

SURFACE ELEVATION: **602.0**

DATUM: **Google Earth estimate**

DATE START: **7/30/15**

DATE FINISH: **7/30/15**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5

PLASTIC LIMIT % × — WATER CONTENT % ⊗ — LIQUID LIMIT % △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV.: LENGTH (IN.)	RECOV.: RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1–4			S-1			M	SM	Bwn c-f SAND, little c-f Gravel, trace Clayey Silt (PID=0ppm)		
5–6	2	1 1 1 5	S-2	6		M	SM	Same (PID=0ppm)		597.0
7–8	15	7 8 7 7	S-3	18		M	SP	Bwn-tn c-f SAND, trace f Gravel, trace Clayey Silt (PID=0ppm)		
9–10	12	3 5 7 9	S-4	14		M	SM	Bwn-tn c-f SAND, little m-f Gravel, trace Clayey Silt (PID=0ppm)		592.0
11–12	24	14 9 15 16	S-5	14		M	SM	Same (PID=0ppm)		
13–14	34	14 17 17 15	S-6	10		M	SM	Bwn-tn c-f SAND, some c-f Gravel, trace Clayey Silt (PID=0ppm)		
15–16	20	5 10 10 9	S-7	16.5		M M	SM SP	3" Same (PID=0ppm) 13.5" Bwn-tn c-f SAND, trace Clayey Silt (PID=0ppm)		587.0
17–18	27	15 13 14 13	S-8	16		M	SP	Bwn-tn c-f SAND, trace f Gravel, trace Clayey Silt (PID=0ppm)		
19–20	17	5 7 10 14	S-9	20		M	SP	Bwn-tn m-f SAND, trace Clayey Silt (PID=0ppm)		582.0
21–22	34	23 17 17. 17	S-10	17		M	SP	Same (PID=0ppm)		
23–24	21	8 9 12 12	S-11	23		M	SP	Same (PID=0ppm)		
25		7 10								577.0

REMARKS: NOTE: The first 4 feet of this boring were hand excavated; no SPT was performed.

BORING LOG 6310.01.GPJ TECTONIC ENG.GDT 8/17/15

TECTONIC *ENGINEERING & SURVEYING CONSULTANTS P.C.*

PROJECT No. **6310.01**
PROJECT: **Horace Nye Nursing Home**
LOCATION: **Elizabethtown, NY**

BORING No. B-4

SHEET No. 2 of 2

CLIENT: **Essex County**
CONTRACTOR: **QCQA Laboratories, Inc.**

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOV. LENGTH (IN.)	SAMPLES: RECOV. RQD (%)	SAMPLES: MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*
26	21	11 9	S-12	21		M	SP	Same (PID=0ppm) ▼	
27	21	10 11 10 8	S-13	16		M W	SP SP	5" Same 3" Bwn-tn c-f SAND, trace f Gravel, trace Clayey Silt 8" Bwn m-f SAND, trace Clayey Silt (PID=0ppm)	
29	10	3 4 6 11	S-14	24		W	SP	Bwn-tn m-f SAND, trace Clayey Silt (PID=0ppm)	
35	19	8 8 11 10	S-15	17		W	SP	Same (PID=0ppm)	
37								End of Boring at 36'	

UNCONFINED COMPRESS. STRENGTH (TONS/FT)
1 2 3 4 5
PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %
10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.)
10 20 30 40 50

ELEVATION (FT.)
572.0
567.0
562.0
557.0
552.0
547.0

REMARKS: NOTE: Continuous sampling was not performed between the 30' to 34' depth interval.

BORING LOG 6310.01.GPJ TECTONIC ENG.GDT 8/17/15

TECTONIC *ENGINEERING & SURVEYING CONSULTANTS P.C.*

PROJECT No. **6310.01**
PROJECT: **Horace Nye Nursing Home**
LOCATION: **Elizabethtown, NY**

BORING No. B-5

SHEET No. 1 of 2

CLIENT: **Essex County**
CONTRACTOR: **QCQA Laboratories, Inc.**

METHOD OF ADVANCING BORING	DIA.	DEPTH
POWER AUGER:	**4 1/4"**	**0** TO **30'**
ROT. DRILL:		TO
CASING:		TO
SPLIT SPOON:	2"	0 TO 30'

GROUND WATER	DATE	TIME	DEPTH
	7/21/2015	09:05	19.41'

MON. WELL ☒ YES ☐ NO
SCREEN DEPTH: **15'** TO **30'**
WEATHER: **Clear** TEMP: **75° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Chris Callinan**
DRILLER: **John Leonhardt**
SURFACE ELEVATION: **595.0**
DATUM: **Google Earth estimate**
DATE START: **7/20/15**
DATE FINISH: **7/21/15**

550X Central Mine Equipment equipped w/ safety hammer

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV.: LENGTH (IN.)	RECOV.: RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL
1	16	WOH 6 10 5	S-1	11		D	SM	3" Asphalt Bwn c-f SAND, little f Gravel, trace Clayey Silt (PID=0ppm)
3	8	5 4 4 5	S-2	2	0			No Recovery cuttng shoe blocked with gravel pieces
5	27	5 9 18 19	S-3	19		M	SM	Bwn c-f SAND, little c-f Gravel, trace Clayey Silt (PID=0ppm)
7	43	21 25 18 13	S-4	16		M	SM	Same (PID=0ppm)
9	13	5 6 7 6	S-5	19		M	SP	Tn-bwn c-f SAND, trace f Gravel, trace Clayey Silt (PID=0ppm)
11	11	5 5 6 6	S-6	18		M	SP	Gy c-f SAND, trace Clayey Silt (PID=0ppm)
13	11	3 5 6 8	S-7	19		M	SP	Gy c-f SAND, trace f Gravel, trace Clayey Silt (PID=0ppm)
15	16	3 8 8 8	S-8	15.5		M	SM	Bwn-tn c-f SAND, little c-f Gravel, trace Clayey Silt (PID=0ppm)
17	16	10 7 9 11	S-9	15		M	SP	Bwn-tn c-f SAND, trace Clayey Silt (PID=0ppm)
19	11	4 5 6 8	S-10	16		M W	SP SP	Bwn c-f SAND, trace Clayey Silt Bottom 5" Wet (PID=0ppm)
21	9	7 5 4 11	S-11	24		W	SP	Bwn c-f SAND, trace Silty Clay Bottom 10" Gy c-f SAND, trace Silty Clay (PID=0ppm)
23	22	4 8 14 14	S-12	18		W	SP	Gy-bwn m-f SAND, trace Silty Clay (PID=0ppm)
25		2 5						

UNCONFINED COMPRESS. STRENGTH (TONS/FT)
1 2 3 4 5
PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %
10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.)
10 20 30 40 50

ELEVATION (FT.): 590.0, 585.0, 580.0, 575.0, 570.0

REMARKS: NOTE: The first 18 to 24 inches of soil in this boring is likely re-worked native material due to its proximity to the surface.

BORING LOG 6310.01.GPJ TECTONIC ENG.GDT 8/17/15

TECTONIC *ENGINEERING & SURVEYING CONSULTANTS P.C.*

PROJECT No. **6310.01**
PROJECT: **Horace Nye Nursing Home**
LOCATION: **Elizabethtown, NY**

BORING No. B-5

SHEET No. 2 of 2

CLIENT: **Essex County**
CONTRACTOR: **QCQA Laboratories, Inc.**

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOV. LENGTH (IN.)	SAMPLES: RECOV. RQD (%)	SAMPLES: MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
26	11	6 9	S-13	12		W	SP	Same (PID=0ppm)		
27	39	12 18 21 16	S-14	21		W	SP	Bwn-gy c-f SAND, trace f Gravel, trace Clayey Silt (PID=0ppm)		
28										
29	11	2 6 5 6	S-15	20		W	SP	Gy m-f SAND, trace Clayey Silt (PID=0ppm)		
30										565.0
31								End of Boring at 30'		
32										
33										
34										
35										560.0
36										
37										
38										
39										
40										555.0
41										
42										
43										
44										
45										550.0
46										
47										
48										
49										
50										545.0
51										
52										
53										
54										
55										540.0

UNCONFINED COMPRESS. STRENGTH (TONS/FT)
1 2 3 4 5

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %
10 20 30 40 50

STANDARD PENETRATION (BLOWS/FT.)
10 20 30 40 50

REMARKS:

BORING LOG 6310.01.GPJ TECTONIC ENG.GDT 8/17/15

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Office of Environmental Quality, Region 5
1115 State Route 86, PO Box 296, Ray Brook, NY 12977
P: (518) 897-1241 · F: (518) 897-1245
www.dec.ny.gov

March 30, 2016

Joe Corradino
Essex Center for Rehab & HealthCare
PO Box 127
Elizabethtown, NY 12932-0217

RE: Review of Subsurface Investigation Report (SIR)
Essex Center (former Horace Nye Nursing Home)
Wastewater Treatment System; SPDES No. NY 012-9313
Elizabethtown (T), Essex County

Dear Mr. Corradino:

The New York State Department of Environmental Conservation (the "Department") has received (02/19/16 CD) and reviewed the above-referenced SIR. The SIR was provided by the County's consultant and presents the July 2015 sample results from the five monitoring wells which were installed in the perimeter of the Essex Center seepage pits to determine possible impacts of the treatment system on groundwater.

The Department supports the recommendations made in section 5.0 of the SIR in accordance with the following required modifications to the proposed scope of work:

1. The sediments/sludges in the two northwestern seepage pits of Outfall 001 which were not previously investigated must be analyzed for Total Metals, Semivolatile & Volatile Organic compounds and Total Phenolics. **This must be done and results provided to the Department by June 30, 2016.**

2. Sediments/sludges must be removed from all 16 seepage pits which had exceedances of the Department's Protection of Groundwater Soil Cleanup Objectives, including the two aforementioned seepage pits if warranted. **This must be done and confirmed in writing to the Department by September 30, 2016.**

3. After the sediment and sludge removal is completed (**beginning October 1, 2016**), **groundwater monitoring of all wells must be repeated as follows:**

   - Further groundwater sampling must be done using methods approved under 40 CFR 136, rather than Hazardous Waste test methods, in order for the results to be evaluated using 6 NYCRR Parts 700-706 the NYS Ambient Surface Water and Groundwater Classifications and Standards
   - Ongoing groundwater monitoring shall include complete scans for Priority Pollutants Total Metals, Semivolatile & Volatile Organics and Total Phenolics (not restrict analysis to the analytes detected thus far)

- Ongoing monitoring should occur *quarterly* for two years to account for any seasonal fluctuations in the groundwater table with reports of results submitted quarterly to the Department.

4. The Item #7 discussion in the SIR Findings and Conclusions should have acknowledged the historic use of toluene-containing products at the nursing home as a possible source of the detected toluene (as described in correspondence from the nursing home to the Department dated March 20, 2012).

5. The groundwater monitoring well locations were sited based upon topographic location relative to the seepage pits. **The Department advises that future monitoring reports include a groundwater contour map and discussion of to what extent groundwater mounding from the septic system impacts direction of groundwater flow.**

6. **This facility is advised to confirm in writing to the Department by April 30, 2016 that floor drains in the nursing home boiler rooms have been sealed and that any discharges from the Buildings & Grounds Maintenance Facility to onsite seepage pits have ceased.**

Following the conclusion of the two year sampling and analysis program, the Department will consider changes to the sampling frequency, target compound list and the monitoring well list. If you have questions or comments please contact me.

Sincerely,

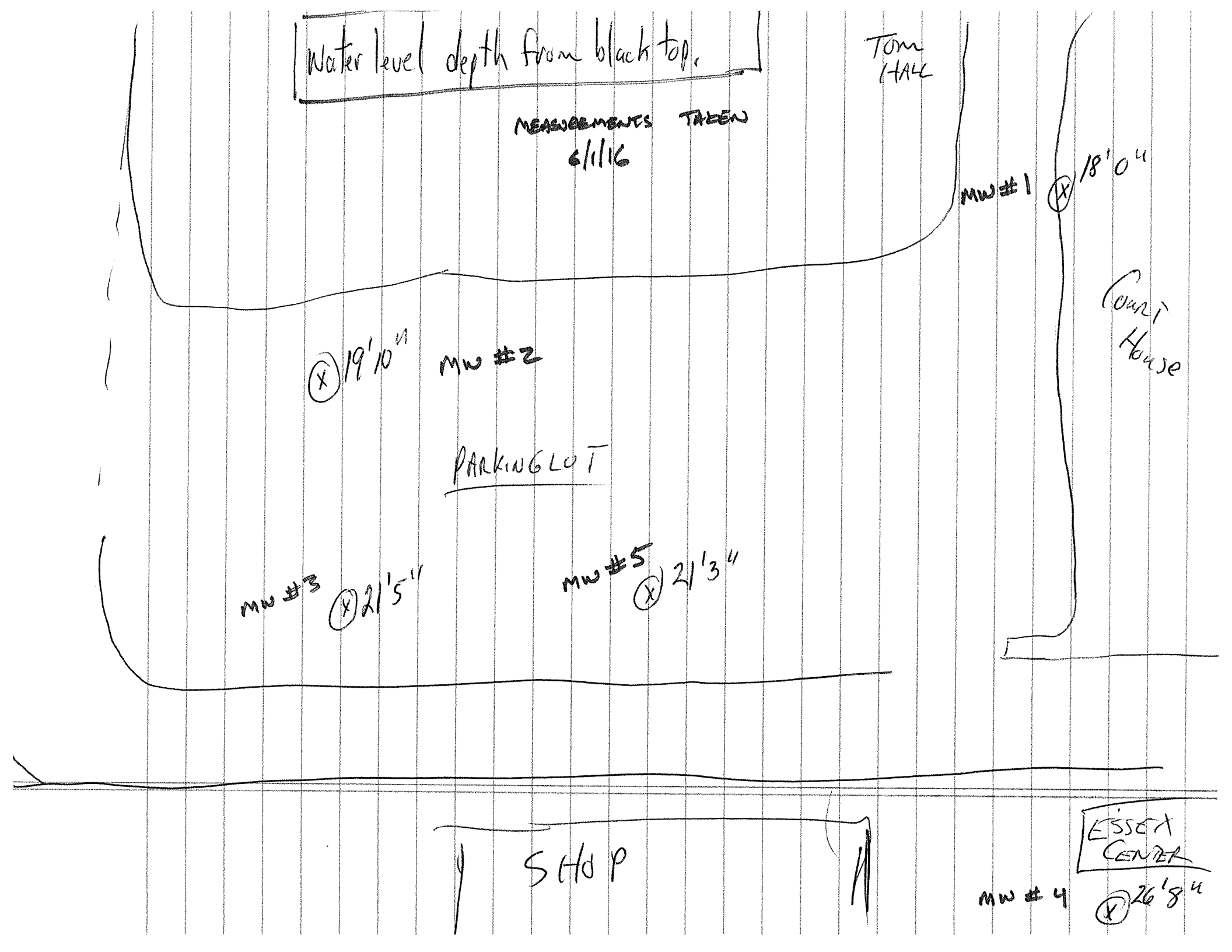
Tamara J. Venne
Environmental Program Specialist 1

c: NYSDEC:
R. Wagner, RE
R. Huyck, PE
T. Waite, EE
R. Garry, EPS

Essex County:
W. Ferebee, Chairman Board of Supervisors
D. Manning, Essex County Attorney
K. Garbarino, Tectonic Engineering

Permittee:
I. Friedenberg, Essex Land Associates, LLC
B. Diamond, Centers for Specialty Care
G. Menegio, Environscience Consultants, Inc.

NYSDOH:
S. Kennedy, PE


Water level depth from black top.
MEASUREMENTS TAKEN
6/1/16
TOM HALL
MW #1
18'0"
COURT HOUSE
19'10"
MW #2
PARKING LOT
MW #3
21'5"
MW #5
21'3"
SHOP
ESSEX CENTER
MW #4
26'8"