

O'Neill, Christopher (DEC)

From: O'Neill, Christopher (DEC)
Sent: Monday, October 01, 2018 12:44 PM
To: 'FES'; Smith, James J.
Cc: Lauren P. Alterman; Bogardus, Sara (HEALTH); McLaughlin, Scarlett E (HEALTH); Deming, Justin H (HEALTH); Mustico, Richard X (DEC); Wilkie, Henry (DEC); Tinsley, Dusty R (DEC)
Subject: FW: Revised Supplemental Site Investigation Plan, Norton Company, HW#401010
Attachments: Workplan.hw401010.2018-09-24.pdf

The NYSDEC hereby approves of the Revised Supplemental Site Investigation Workplan, dated 9-24-2018 and attached for reference, for the additional groundwater monitoring wells outside the slurry wall perimeter, and additionally identified site activities, for the Norton Company site in the Town of Colonie (site # 401010).

Please proceed with the workplan, and please notify me at least 3 business days ahead of the workplan's field activities to enable potential site visits by NYSDEC and/or NYSDOH.

Chris O'Neill
NYSDEC – Schenectady
518-357-2394

From: FES [mailto:forensic@chesco.com]
Sent: Monday, September 24, 2018 1:49 PM
To: O'Neill, Christopher (DEC) <christopher.oneill@dec.ny.gov>
Cc: Smith, James J. <James.J.Smith@saint-gobain.com>; Lauren P. Alterman <Lauren.P.Alterman@saint-gobain.com>; Bogardus, Sara (HEALTH) <Sara.Bogardus@health.ny.gov>; McLaughlin, Scarlett E (HEALTH) <scarlett.mclaughlin@health.ny.gov>; Deming, Justin H (HEALTH) <justin.deming@health.ny.gov>; Tinsley, Dusty R (DEC) <Dusty.Tinsley@dec.ny.gov>; Mustico, Richard X (DEC) <richard.mustico@dec.ny.gov>; Wilkie, Henry (DEC) <henry.wilkie@dec.ny.gov>; Bogardus, Sara (HEALTH) <Sara.Bogardus@health.ny.gov>
Subject: Revised Supplemental Investigation Plan, Norton Company, HW#401010

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Chris:

Attached is the Revised Supplemental Site Investigation Workplan for the Norton Company Restoration Site. Let us know if you have any questions/comments. Thanks.

Bryan

Bryan J. Machella
Project Manager
Forensic Environmental Services Inc.
Office: 610-594-3940

Forensic Environmental Services, Inc.

113 John Robert Thomas Drive
The Commons at Lincoln Center
Exton, Pennsylvania 19341

Telephone: (610) 594-3940

Telecopier: (610) 594-3943

September 24, 2018

Christopher O'Neill, P.E.
NYS Dept. of Environmental Conservation
Division of Environmental Remediation
1130 North Westcott Road
Schenectady, NY 12306-2014

**RE: Revised Supplemental Site Investigation Workplan
Former Norton Company (Restoration Site) - NYSDEC No. 401010
Crabapple Lane, Colonie, NY 12212
EPA ID No.: NYD 002083954**

Dear Mr. O'Neill

Forensic Environmental Services, Inc. (FES), on behalf of Saint-Gobain Corporation (Saint-Gobain), has prepared this revised letter report to: 1) summarize the proposed Supplemental Site Investigation activities as discussed during a conference call between the New York State Department of Environmental Conservation (NYSDEC), the New York State Department of Health (NYSDOH), Saint-Gobain, and FES on August 9, 2018; and 2) incorporate the technical review comments outlined in your August 30, 2018 correspondence. Proposed activities include: 1) the installation of two additional shallow (overburden) groundwater monitoring wells to further investigate soil and groundwater conditions proximal to two prior Geoprobe soil borings (GP-2 and GP-3); 2) two rounds of groundwater sampling; and 3) preparation of a supplemental site investigation summary report. Relevant soil and groundwater analytical data and a tentative project implementation schedule are presented in Tables 1 through 3. Site location, In-Situ Chemical Oxidation (ISCO) pilot testing area, and proposed monitoring well location maps are presented in Figures 1 through 3. A monitoring well construction diagram is presented in Figure 4.

As described in the *Supplemental Investigation and Sampling Report* (FES, May 2016) and the *Summary of ISCO Sampling Results and Landfill Compliance Activities Report* (FES, June 2018), elevated concentrations of selected volatile organic compounds (VOCs) were detected in soil and groundwater in the northeastern portion of the site (see Tables 1 and 2 and Figure 3). Specifically, benzene, toluene, ethylbenzene, xylenes (BTEX), methylcyclohexane, and/or 1,2-dichloroethane (1,2-DCA) were detected in selected soil and/or groundwater samples at concentrations above applicable NYSDEC soil/groundwater cleanup objectives (see Tables 1 and 2).

A sample of a weathered latex-type material was collected from soil boring GP-3A (installed immediately adjacent to boring GP-3) in August 2017 (see Figure 2). Although the weathered latex sample reported elevated concentrations of benzene, toluene, and xylenes (see Table 1), it is not presently clear whether the latex-type material or the adjacent soil was the source of the VOCs. Moreover, as discussed during the August 9, 2018 conference call, there does not appear to be a direct correlation between the presence/absence of the latex-type material and the occurrence of elevated VOC concentrations in groundwater. For example, there was no latex material found in the soils surrounding/upgradient of the well reporting the highest VOC concentrations (W-421).

Groundwater samples obtained during the January 2016 investigation were “one-time” samples obtained from temporary monitoring wells installed with a Geoprobe drilling rig. To collect more representative groundwater samples from the two locations previously reporting the presence of latex-type material in soils and elevated VOCs in groundwater (i.e., GP-2 and GP-3), Saint-Gobain and FES are proposing to install and sample two conventional groundwater monitoring wells (see Figure 3). Monitoring well installation and sampling procedures are outlined below.

Proposed Supplemental Well installation and Associated Soil Sampling Activities

Based on currently available information, no underground utilities are present in the proposed drilling areas (see Figure 3); however, utility clearances will be obtained from the Dig Safely New York program prior to conducting any subsurface work. Prior to well installation, a Geoprobe soil boring will be installed at each location and continuous Geoprobe recovery “sleeves” will be collected to facilitate subsurface characterization and to collect soil samples for laboratory analysis. Each soil sample field description will include a description of the following soil parameters: 1) composition, 2) consistency and density, 3) color, 4) moisture content, 5) grain size/sorting, and 6) presence/absence of staining, discoloration, odors, and/or historic fill materials (i.e., weathered latex or other recognizable waste materials). Additionally, each soil sample will be field-screened with a PID. Based on field-screening results and visual observations, up to two soil samples will be collected from each boring and submitted for laboratory analysis of VOCs via EPA Method 8260 and 1,4-Dioxane via EPA Method 8260B Selected Ion Monitoring (SIM).

Monitoring wells will be installed via standard hollow-stem auger (HSA) drilling methods to a depth of approximately 20 feet (or bedrock refusal if less). All drill cuttings will be temporarily stored in 55-gallon drums prior to off-site disposal (see below). Wells will be constructed of approximately 15 feet of Schedule 40, 2-inch diameter PVC well screen (0.010 inch slot) installed across the water table (approximate depth 6 to 10 feet) to allow for any seasonal fluctuations, and completed with solid Schedule 40, 2-inch diameter PVC well riser to the surface. Clean silica sand (#1 or #2) will be used to fill the well annulus to at least one foot above the top of the screened interval. A one to two-foot thick bentonite seal will be installed above the gravel pack to prevent surface infiltration, and the remaining well annulus will be grouted to surface. Each wellhead will be finished with a bolt-down, flush-mount vault secured by a 2-foot by 2-foot concrete skirt and equipped with a locking gripper-plug to prevent unauthorized access. A typical well construction diagram is presented in Figure 4.

Subsequent to installation, the newly installed monitoring wells will be properly developed to remove fine-grained sediments from the sand pack and screen, and to establish communication between the well and the aquifer. Well development will be performed by surging and pumping utilizing a submersible or peristaltic pump. The well will be considered developed when the discharge is clear, after five well volumes have been removed, or after 30 minutes of surging and pumping, whichever comes first. Water generated during of well development will be containerized in properly-labeled 55-gallon drums prior to off-site disposal (see below). In addition, each well will be surveyed to establish horizontal position and vertical elevation to the nearest 0.01 foot by a New York-licensed surveyor.

Groundwater Sampling Activities

Following a minimum, 2-week equilibration period after well development, two rounds of groundwater samples will be collected from the newly-installed monitoring wells (see Table 3). Wells will be sampled via the micropurge sampling method using a pump capable of a flow rate of approximately 0.1 to 0.5 liters per minute (i.e., peristaltic/bladder pump) will be used to minimize turbulence in the well bore and hydraulic stress on the formation. The pump will be positioned slightly above the middle of the saturated portion of the screened interval of each well. Water quality indicator parameters: temperature, pH, specific conductivity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and turbidity will be monitored during purging with a continuous “flow-through” cell device (YSI-600XL).

Purge water readings will be taken every five minutes until the following stabilization rates are achieved: temperature $\pm 3\%$, pH ± 0.1 standard units, specific conductivity $\pm 3\%$, ORP ± 10 millivolts (mVs), DO $\pm 10\%$, and turbidity $\pm 10\%$ or less than 10 nephelometric turbidity units (NTUs). After the water quality parameters have stabilized, groundwater samples will be collected directly from the pump effluent line using dedicated tubing and pump bladders at each well in a manner that minimizes turbulence in the samples. Groundwater samples will be collected in appropriate laboratory bottleware, properly labeled, logged on a chain-of-custody form, and maintained at 4°C until laboratory receipt via courier. All groundwater samples will be analyzed for VOCs via EPA Method 8260 and 1,4-Dioxane via EPA Method 8260B SIM and will include Category B laboratory deliverables (Note: the laboratory method detection limit [MDL] for 1,4-Dioxane will be no higher than 0.35 micrograms per liter [$\mu\text{g/L}$]).

Waste Disposal

All soil cuttings and monitoring well purge/development water generated during the supplemental soil boring and monitoring well installation activities will be containerized in properly labeled 55-gallon drums and moved to a central staging area adjacent to the on-site Control Building (see Figure 1).

Waste characterization soil sampling conducted during the supplemental investigation activities in February 2016 indicated that investigation-derived waste (IDW) materials were characteristically non-hazardous. Based on these sampling data, a Request for "Contained-In" Determination was submitted to the NYSDEC on June 9, 2016, which was subsequently approved by the NYSDEC on June 15, 2016. However, according to the August 30, 2018 NYSDEC technical review correspondence, a new Contained-In Determination will be required for the IDW generated during the supplemental site investigation activities.

It is currently anticipated that one to two drums of soil cuttings and one to two drums of purge/development water will be generated during the supplemental site investigation activities. Based on a discussion with Mr. Henry Wilkie of the NYSDEC on September 19, 2018, one to two soil samples and one to two groundwater samples will be collected and submitted for laboratory analysis. Soil samples will be analyzed for VOCs via EPA Method 8260 and Toxicity Characteristic Leaching Procedure (TCLP) benzene. IDW groundwater samples will be analyzed for VOCs via EPA Method 8260. Based on the soil and groundwater analytical results and the NYSDEC review of the "Contained-In" Determination request, IDW generated during the supplemental site investigation activities will be handled accordingly.

With respect to the disposal of purge water that will be generated during the proposed monitoring well installation and sampling activities, based on the presence of a listed waste (toluene), as well as the previously observed concentrations in soil borings GP-2 and GP-3 (see Table 1), water generated during the well development and sampling activities will be considered "hazardous" and disposed of accordingly at the Tradebe wastewater treatment facility in Bridgeport, Connecticut. Waste manifest documentation will be presented to the NYSDEC in a Supplemental site Investigation Summary Report (see Table 3).

Additional Site-Related Investigation, Sampling, and Reporting Activities

The proposed supplemental site investigation activities outlined above will be conducted subsequent to NYSDEC/NYSDOH review of this revised workplan. Scheduled investigation and sampling activities at the site through the First Quarter 2019 also include: 1) a post-Enhanced Fluid Recovery (EFR) groundwater sampling event; and 2) a 2018 Landfill Compliance groundwater sampling and gauging event (Note: per NYSDEC/NYSDOH requirements, groundwater samples collected during these two sampling events will also be analyzed for 1,4-Dioxane via EPA Method 8260B SIM with a laboratory MDL no higher than 0.35 µg/L). In addition, landfill inspections will be conducted during scheduled site visits and a landfill cap maintenance (grass cutting) will be conducted in October/November 2018. FES will notify NYSDEC/NYSDOH in advance of any proposed field/sampling activities.

Reporting requirements through the First Quarter 2019 include: 1) a Landfill Compliance summary report; and 2) a final ISCO/EFR Pilot Testing report (incorporating the July 2, 2018 NYSDEC/NYSDOH technical review comments and results of the EFR and post-EFR groundwater sampling). These activities will be conducted in accordance with the following documents: 1) *ISCO Pilot Testing and Contingent EFR Work Plan* (FES, January 10, 2017); 2) *Revised ISCO and Contingent Enhanced Fluid Recovery (EFR) Pilot Testing Work Plan and Response to December 19, 2016 and February 3, 2017 NYSDEC Correspondence*

Chris O'Neill
September 24, 2018
Page 5

Memorandum (FES, March 31, 2017); 3) *ISCO and Contingent EFR Pilot Testing Work Plan Addendum* (FES, May 11, 2017); and 4) technical review comments from the NYSDEC and NYSDOH dated July 2, 2018. A tentative project implementation schedule is presented in Table 3.

Community Air Monitoring Plan (CAMP) Activities

Community Air Monitoring Plan (CAMP) activities will be conducted during all applicable ground intrusive and sampling activities (i.e., soil boring and monitoring well installation) in accordance with the procedures outlined in the NYSDEC-approved *In-Situ Chemical Oxidation (ISCO) and Contingent Enhanced Fluid Recovery Pilot Testing Work Plan Addendum* (FES, May 11, 2017), as well as the NYSDOH and NYSDEC technical review correspondence dated June 1 and June 6, 2017, respectively. Any CAMP exceedances will be immediately reported to the NYSDEC and NYSDOH and appropriate corrective measures will be taken to reduce the potential for exposure. A summary of the CAMP monitoring activities will be presented in the supplemental site investigation summary report.

If you would like to discuss the proposed activities or have any questions, please call us at (610) 594-3940 or Jim Smith of Saint-Gobain at (610) 893-5667.

Sincerely,

FORENSIC ENVIRONMENTAL SERVICES, INC.



Bryan J. Machella
Project Manager



Thomas F. Maguire, PG, LSP, LEP, LSRP
President

cc: Lauren Alterman, Saint-Gobain
James Smith, Saint-Gobain
Rick Mustico, P.E., NYSDEC
Dusty Tinsley, NYSDEC
Bridget Boyd, NYSDOH
Sara Bogardus, NYSDOH
S. McLaughlin, NYSDOH
J. Deming, NYSDOH

TABLES

Table 1
Soil Analytical Results - Volatile Organic Compounds
Former Norton Company Restoration Site
Colonie, New York

Soil Sample Designation	Depth (feet)	Sampling Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	m,p-Xylenes (mg/kg)	o-Xylene (mg/kg)	n-Heptane (mg/kg)	Acetone (mg/kg)	2-Butanone (mg/kg)	1,2-DCA (mg/kg)	PCE (mg/kg)	Isopropyl-benzene (mg/kg)	Methyl-cyclohexane (mg/kg)	MIBK (mg/kg)	VOC TICs (mg/kg)
GP-1	9.5 - 10	1/12/2016	0.002 J	<0.001	<0.001	<0.001	<0.001	<0.003	0.039	<0.004	<0.001	0.050	<0.001	<0.001	<0.003	0.130 J
GP-3	14.0 - 14.5	1/12/2016	11 J	4,500	46	230	52	<18	<42	<24	<5.9	<5.9	<5.9	<5.9	<18	100 J
GP-5	4.5 - 5.0	1/12/2016	<0.025	0.490	0.064 J	0.072 J	<0.049	<0.150	<0.340	<0.200	0.140 J	<0.049	<0.049	<0.049	<0.150	0.890 J
GP-3a (Latex Material)	11.5 - 11.7	8/15/2017	4 J	1,600	25	0.160	32	110	<12	<7.1	<1.8	<1.8	5.4 J	9.8	<5.3	560 J
<i>Industrial Restricted Use SCO</i>			89	1,000	780	1,000	1,000	1,000	1,000	1,000	60	300	1,000	1,000	1,000	1,000
<i>Unrestricted Use SCO</i>			0.06	0.7	1	0.26	100	0.05	0.12	0.02	1.3	100	100	100	100	100
<i>Protection of Groundwater SCO</i>			0.06	0.7	1	1.6	1,000	0.05	0.12	0.02	1.3	1,000	1,000	1,000	1,000	1,000

Notes:

1. mg/kg = milligrams per kilogram; MIBK = methyl isobutyl ketone (4-methyl-2-pentanone); 1,2-DCA = 1,2-dichloroethane; PCE = tetrachloroethylene
ND = not detected; < ("less than") = analyte not detected above the laboratory method detection limit (MDL);
J = estimated concentration, SCO = Soil Cleanup Objectives (6 NYCRR Part 375).
2. Samples analyzed for VOCs and tentatively identified compounds (TICs) via EPA Method 8260B.
3. Only detected analytes are listed above. All other analytes were ND. For a complete list of analytes, see the laboratory reports. MDLs for samples GP-3 and GP-3A were elevated due to sample dilution factors.
4. A shaded cell indicates concentration exceeds NYSDEC Protection of Groundwater SCO.

Table 2
Groundwater Analytical Results (Most Recent Data as of March 2018)
Norton Company Restoration Site
Colonie, New York

Well Designation	Sampling Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	m,p-Xylenes (µg/L)	o-Xylene (µg/L)	Acetone (µg/L)	2-Butanone (µg/L)	Isopropyl-benzene (µg/L)	Methyl-cyclohexane (µg/L)	Methyl Isobutyl ketone (µg/L)	VOC TICs (µg/L)	Notes
Geoprobe Samples													
GP-1	1/12/2016	<0.5	<0.5	<0.5	<0.5	<0.5	<6	<3	<1	<1	<3	7	1,1-DCA - 2 µg/L
GP-2	1/12/2016	51	280	7	67	9	<6	<3	3 J	7	<3	86	
GP-3	1/12/2016	40	2,400	14	86	13	<30	<15	<5	<5	42 J	ND	
GP-5	1/12/2016	1	51	6	58	7	<6	<3	<1	<1	<3	16	
GP-7	1/12/2016	<0.5	3	<0.5	<0.5	<0.5	<6	<3	<1	<1	<3	ND	
GP-9	1/13/2016	<0.5	<0.5	<0.5	<0.5	<0.5	7 J	<3	<1	<1	<3	25	
GP-11	1/13/2016	10	11	2	9	<0.5	<6	<3	<1	2 J	<3	ND	
GP-13	1/13/2016	0.5 J	6	4	0.8 J	<0.5	<6	<3	<1	1 J	<3	14	PCE - 0.9 J µg/L
GP-14	1/13/2016	<0.5	<0.5	<0.5	<0.5	<0.5	<6	<3	<1	<1	<3	ND	
Monitoring Well Samples													
MW-16	9/20/2017	<0.5	<0.5	<0.5	<0.5	<0.5	<6	<3	<1	<1	<3	ND	Chloroethane - 16 µg/L; 1,1-DCA - 4 µg/L
MW-17	9/20/2017	<0.5	<0.5	<0.5	<0.5	<0.5	<6	<3	<1	<1	<3	ND	
MW-18	9/19/2017	<0.5	<0.5	<0.5	<0.5	<0.5	<6	<3	<1	<1	<3	ND	
MW-19S	9/20/2017	2	2	83	580	100	<6	<3	<1	<1	<3	ND	
MW-20S	9/20/2017	<0.5	<0.5	<0.5	<0.5	<0.5	<6	<3	<1	<1	<3	ND	
W-411	1/13/2016	<0.5	<0.5	<0.5	<0.5	<0.5	<6	<3	<1	<1	<3	ND	
W-421	3/1/2018	100	23,000	72	320	42 J	<300	<150	<50	<50	<150	ND	
TWP-1	3/1/2018	43	190	7 J	69	<5	<60	<30	<10	<10	<30	190 J	
TWP-2	12/11/2017	2	<0.5	<0.5	1	<0.5	<6	<3	2 J	2 J	<3	55 J	
TWP-3	12/11/2017	<0.5	<0.5	<0.5	<0.5	<0.5	<6	<3	<1	<1	<3	ND	
TWP-4	12/11/2017	20	<0.5	<0.5	1	<0.5	9 J	<3	<1	2 J	<3	ND	
<i>Standard/Guidance Value</i>		1.0	5.0	5.0	5.0	5.0	50	50	5.0	5.0	-	-	

Notes:

µg/L = micrograms per liter; 1,1-DCA = 1,1-dichloroethane; PCE = tetrachloroethene; MIBK = methyl isobutyl ketone (4-methyl-2-pentanone);

ND = not detected; < ("less than") = analyte not detected above the laboratory method detection limit (MDL);

J = estimated concentration, analyte detected below the MDL; detected analyte concentrations in boldface.

Samples analyzed for VOCs and tentatively identified compounds (TICs) via EPA Method 8260B.

Only detected analytes are listed above. All other analytes were ND. For a complete list of analytes, see the laboratory reports.

A shaded cell indicates analyte exceeds applicable NYSDEC criteria.

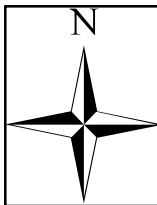
Table 3
Tentative Project Implementation Schedule
Norton Company Restoration Site
Colonie, New York

	3Q2018			4Q 2018			1Q 2019		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Supplemental Site Investigation Activities									
Submit Supplemental Site Investigation Workplan									
NYSDEC/NYSDOH Review									
Submit Revised Supplemental Site Investigation Workplan									
NYSDEC/NYSDOH Review									
Monitoring Well Installation and Associated Sampling Activities									
Two Rounds of Groundwater Sampling									
Submit Supplemental Site Investigation Report									
NYSDEC/NYSDOH Review									
Meeting/Call to Discuss Data and Proposed Future Activities									
Other Site-Related Investigation/Sampling Activities									
Conduct EFR Event									
Post-EFR and Landfill Compliance Sampling Event									
Submit Revised ISCO and EFR Pilot Testing Report									
Submit Landfill Compliance Summary Report									
Landfill Inspections									
NYSDEC/NYSDOH Review									
Meeting/Call to Discuss Data and Proposed Future Activities									






Notes:

1. All field activity dates contingent upon contractor availability and weather conditions.
2. ISCO = In-Situ Chemical Oxidation; EFR = Enhanced Fluid Recovery.

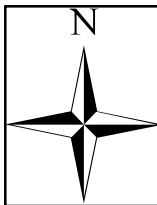
FIGURES



Legend

-  Monitoring Well
-  SW Sample
-  Air Vent
-  Water Withdrawal Well Pad or Vault
-  Slurry Wall

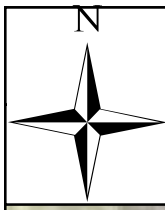
Forensic Environmental Services, Inc.	Fig: 1
Site Plan Former Norton Co. Restoration Site - Colonie, NY	
0 45 90 180 Feet	Drawn By: KP Date: 6/13/18
	Approved By: BM









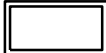
Legend

- geoprobe-2
- Pilot Test Area
- Surface Water Sample
- Temporary Monitoring Point
- Geoprobe Point
- ISCO Injection Point
- Water Withdrawal Well Pad or Vault
- Monitoring Well
- Air Vent
- Slurry Wall

Forensic Environmental Services, Inc.	Fig: 2
ISCO Pilot Test Activities Former Norton Co. Restoration Site Colonie, NY	
0 5 10 20 Feet	Drawn By: KDP 6/11/2018
	Approved By: BJM



Legend

-  TempPts
-  Proposed Monitoring Well
-  Geoprobe Point
-  Most Recent Toluene Concentration (ug/L)
-  Monitoring Well
-  Air Vent
-  Slurry Wall

Forensic Environmental Services, Inc.	Fig: 3
Proposed Monitoring Well Locations Norton Co. Restoration Site - Colonie, NY	
0 10 20 40 Feet	Drawn By: KP Date: 8/9/18
	Approved By: BM

FIGURE 4
MONITORING WELL CONSTRUCTION DIAGRAM
 NORTON COMPANY RESTORATION SITE
 COLONIE, NEW YORK

DATE OF INSTALLATION _____

WELL DESIGNATION _____

DRILLING COMPANY _____

WELL DESCRIPTION _____

