SOIL VAPOR INTRUSION AND ADDITIONAL SUBSURFACE INVESTIGATION WORK PLAN
SENECA FALLS FORMER MGP SITE, SITE NO. 8-50-010
SENECA FALLS, NEW YORK

by

Haley & Aldrich of New York
Rochester, New York

for

New York State Electric and Gas Company
Binghamton, New York

File No. 34507-005
11 February 2008

Allen, Doug

From: Douglas MacNeal [dkmacnea@gw.dec.state.ny.us]
Sent: 11 February 2008 9:58 AM
To: Allen, Doug
Cc: Douglas MacNeal; Gross, Kristina; dam20@health.state.ny.us; Tracy Blazicek
Subject: Re: Seneca Falls Former MGP Site - response to comments

After review of your comment responses, the New York State Department of Environmental Conservation (the Department) and the New York State Department of Health (NYSDOH) find your responses acceptable and approves the referenced work plan with the noted changes. Please submit one hard copy and one electronic copy of the work plan to NYSDOH. The Department asks for only an amended electronic copy.

This email is to serve as the work plan approval. No further correspondence will be sent unless requested.

Douglas MacNeal, P.E.
Environmental Engineer 2
Central Office
DER, Bureau C, Section C

>>> "Allen, Doug" <DAllen@haleyaldrich.com> 2/8/2008 4:21 PM >>>
Doug,

On behalf of NYSEG, please find attached responses to comments provided in the 6 February 2008 letter regarding the Soil Vapor Intrusion and Additional Subsurface Investigation Work Plan for the Seneca Falls Former MGP Site. Please give me a call if you have any questions.

A hard copy of the response letter has been mailed to you.

Thank you,
Doug

Douglas C. Allen, P.G.
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HALEY & ALDRICH

11 February 2008
File No. 34507-005

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway
Albany, New York 12233-7014

Attention: Mr. Douglas MacNeal, P.E.

Subject: Soil Vapor Intrusion and Additional Subsurface Investigation Work Plan
Seneca Falls Former MGP Site, Site No. 8-50-010
Seneca Falls, New York

Dear Mr. MacNeal:

New York State Electric & Gas Corporation (NYSEG) retained Haley & Aldrich of New York (Haley & Aldrich) to prepare this Soil Vapor Intrusion Investigation (SVII) Work Plan (Work Plan) for indoor air and sub-slab soil vapor sampling at the Seneca Falls Former Manufactured Gas Plant (MGP) Site (the Site). The preparation of this work plan applies to our understanding of the environmental and occupational characteristics of the Site as a means to supplement ongoing Preliminary Site Assessment (PSA) work performed in accordance with the PSA Work Plan submitted July 2007 by Haley & Aldrich.

BACKGROUND

The Seneca Falls Former MGP Site is located at 187 Fall Street, Seneca Falls, New York. The Site is an approximately 1.2 acre parcel of land owned by NYSEG and located in a mixed residential/commercial area. The developed portion of the parcel consists of a building currently occupied by Pick-a-Flick Video, a movie rental and cosmetic tanning business, and a paved parking lot located immediately west of the building. The building was built over portions of the former MGP, including coal sheds, the retorts, and the gas holder. Figure 1 shows the layout of the building relative to historic MGP structures.

SOIL VAPOR INTRUSION SAMPLING PROGRAM

The purpose of the SVII is to determine:

- If MGP related volatile organic compounds (VOCs) are present in the soil vapor at the Site; and,
- If MGP related VOCs are present in the soil vapor, determine if MGP related VOC's are affecting indoor air quality within the on-site building.

We propose installation of up to four (4) sub-slab vapor sampling points and subsequent sub-slab vapor sample collection, collection of four (4) co-located indoor air samples, and collection of one (1) background outdoor air sample. The soil vapor intrusion sampling and analysis program was developed based on guidance provided by the New York State Department of Health (NYSDOH) "Guidance for Evaluating Soil Vapor Intrusion in New York State", October 2006.

Proposed sample locations are shown on Figure 1. Actual locations may be adjusted at the time of installation to minimize impacts to the current tenant's business.

SVII Scope of Work

Haley & Aldrich conducted a preliminary walkover to assess general building layout and locations relative to the current understanding of known environmental impacts. The following scope of work is proposed to determine whether a potential for a complete soil vapor intrusion pathway exists at the on-site building:

1. NYSEG personnel will review underground utilities prior to implementation of the sampling program.

2. Haley & Aldrich will conduct a building inventory, including completion of a building inventory form, to document potential sources of volatile chemicals in indoor air prior to implementation of the sampling program.

3. Haley & Aldrich will install of up to four (4) temporary soil vapor sampling probes beneath the concrete floor slab within the building. The temporary probes will be constructed with ¼-inch Teflon tubing extending no further than two (2) inches into the sub-slab material, pursuant to construction protocols described in Section 2.7.2 of the NYSDOH October 2006 guidance document. Hydrated bentonite will be used to seal the sub-slab probes. Sub-slab conditions will be noted at the time of installation, including the presence of water or excess moisture. Air monitoring and personal protective equipment will be used during sampling activities in accordance with the requirements of the project Health and Safety Plan.

4. Haley & Aldrich will collect up to four (4) sub-slab vapor samples using 24-hour flow controllers and batch certified 6-liter Summa canisters. A helium tracer gas test will be completed at each location to verify the integrity of the sub-slab vapor probe seal. A portable monitoring device will be used to analyze a sample of soil vapor for the tracer gas. The helium tracer gas application will follow Figure 2.4 (B), Section 2.7.5 of the NYSDOH October 2006 guidance document. If high concentrations (>10%) of the tracer gas is observed in a sample, the probe seal will be modified to reduce the infiltration of outdoor air. Up to three sample probe and tubing volumes will be purged from the installed points at a flow rate not to exceed 0.2 liters per minute. Sub-slab vapor samples will be collected in accordance with the NYSDOH October 2006 guidance document.

5. Haley & Aldrich will collect up to four (4) indoor air samples using 24-hour flow controllers and batch certified 6-liter Summa canisters. The Summa canisters will be

placed approximately 3 ft. above the floor. Indoor air samples will be collected in accordance with the NYSDOH October 2006 guidance document. These samples will be collected concurrently with the co-located sub-slab vapor samples.

6. One (1) outdoor air sample will be collected concurrently with the sub-slab and indoor air samples at an appropriate outdoor background location using a Summa canister at the location shown on Figure 1. The outdoor air sample will be collected in a pre-cleaned Summa canister placed approximately 3 to 5 ft. above ground surface.

7. Haley & Aldrich will record sampling parameters (including sample identification, date and time of sample collection, sample depth, purge volumes, etc.) pursuant to Section 2.7.2 of the NYSDOH October 2006 guidance document.

8. Each sampling location will have dedicated sampling equipment. The use of dedicated equipment will minimize the potential for cross-contamination between sampling locations. Haley & Aldrich will avoid Summa canister fluid uptake during sampling. If soil or groundwater is drawn into the sampling train and sub-slab vapor points, the equipment will be replaced.

9. The canisters and flow controllers will be provided by the analytical laboratory. After collection, the samples will be kept at ambient temperature prior to shipping.

The samples will be shipped at ambient temperature under chain-of-custody to a NYSDOH certified analytical laboratory and analyzed for Target Compound List (TCL) VOCs by EPA Method TO-15 plus the following compounds:

<u>N-Alkanes:</u>

- n-Butane
- n-Decane
- n-Dodecane
- n-Heptane
- n-Hexane
- Nonane
- n-Octane
- Pentane
- n-Undecane

<u>Tentatively Identified Compounds (TICs):</u>

- Butylcyclohexane
- 2,3-Dimethylheptane
- 2,3-Dimethylpentane
- Isopentane
- 2,2,4-Trimethylpentane
- Indane
- Indene
- Tetramethylbenzene isomers

- Thiopenes
- 1,2,3-Trimethylbenzene
- 1-Methylnapthalene
- 2-Methylnaphthalene

Laboratory reporting limits, submitted by the analytical laboratory, are provided as Table 1. Data evaluation will include a review of the Quality Control and Quality Assurance samples performed by the laboratory. These results will be used to qualify the data, if necessary, in accordance with guidance provided by the USEPA Function Guidelines for Evaluating Organic Analyses (July 1999). After completion of data verification and validation procedures, the final analytical results will be compared with available screening guidance provided by NYSDOH.

NYSEG is a Gas Technology Institute (GTI) member company. GTI is currently initiating experimental research that may eventually help to evaluate the source of volatile compounds in soil gas and indoor air. As part of this effort, GTI is seeking to obtain soil gas and indoor air samples from member companies MGP sites from across the country. To support this research, Haley & Aldrich, on behalf of NYSEG, will be collecting approximately ten (10) soil gas and indoor air samples on charcoal tubes that will be shipped to GTI for analysis and evaluation. It is expected that this sampling activity will be collected subsequent to the SVII described above.

FORMER GAS HOLDER INVESTIGATION

Test pits excavated in the vicinity of the former gas holder during the September 2007 field investigation indicated the majority of the structure is likely beneath the on-site building floor slab. Brick and debris likely related to the former MGP structures were encountered in test pits adjacent to the building in the vicinity of the former gas holder, however identifiable gas holder side walls were not encountered. To further investigate the construction and contents of the former gas holder presumably located beneath the on-site building, Haley & Aldrich proposes completing up to three (3) soil borings inside the on-site building with one (1) monitoring well constructed at a soil boring location. Work will be completed pursuant to the July 2007 PSA Work Plan.

Proposed boring locations are shown on Figure 1. Actual locations may be adjusted at the time of installation to minimize impacts to the current tenant's business operations and to facilitate drilling equipment access within the building.

Gas Holder Investigation Scope of Work

The following scope of work is proposed to investigate the construction and contents of the former gas holder:

1. Haley & Aldrich will subcontract the completion of up to three (3) indoor soil borings in the vicinity of the former gas holder. Based on the historical location of the gas holder, two (2) borings are proposed for inside the structure footprint and one (1) boring is proposed outside the structure footprint in the assumed down-gradient direction. Soil borings will be completed to a maximum depth of thirty (30) feet

below the floor slab. If non-aqueous phase liquid (NAPL) is encountered during drilling, field personnel will follow Section 4 (DNAPL Contingency Plan) of the July 2007 PSA Work Plan.

2. It is anticipated that a minimum of two (2) subsurface soil samples may be collected from each soil boring. Soil samples will be analyzed for TCL VOCs, TCL semi-volatile organic compounds (SVOCs), and Target Analyte List (TAL) Metals (including cyanide). Soil sample collection criteria and methods will adhere to Section 3.2.4.2 of the July 2007 PSA Work Plan.

3. If groundwater is encountered, one (1) piezometer will be installed inside the holder, and at least one (1) monitoring well will be installed outside the holder. The monitoring well location and screened interval depth will be determined based on field observations, following the decision process presented on Figure 2. The groundwater monitoring well will be installed and developed pursuant to Section 3.3.2 of the July 2007 Work Plan.

4. To assess the potential presence of dissolved MGP-related and/or non-MGP related chemical constituents in groundwater, the monitoring well will be sampled. Groundwater sampling will occur a minimum of two (2) weeks after completion of well development. Sampling will be completed pursuant to Section 3.3.3 of the July 2007 PSA Work Plan. A groundwater sample will be submitted for laboratory analysis for TCL VOCs, TCL SVOCs, and TAL Metals (including cyanide). Field parameters collected during groundwater sampling will consist of pH, oxidation/reduction potential (ORP), turbidity, temperature, conductivity, and dissolved oxygen. Depth to groundwater will be measured at other Site monitoring wells (MW-07-02 through MW-07-06) at the time of sampling. A complete round of groundwater elevation monitoring and sampling will be completed in spring 2008, approximately three to six months after the December 2007 groundwater monitoring event.

Gas Holder Investigation Air Monitoring

The work area is located in the southwest portion of the building and is separated from the video rental store by an interior wall and closed doorway. Prior to initiation of indoor drilling activities, plastic sheeting will be taped over the interior doorway (i.e. the door between the work area and the video rental area) to minimize air or odor migration out of the work area. Interior air quality monitoring activities will include the work area (vacant storage rooms) and the video rental area which is occupied by store employees and customers.

Air monitoring for VOCs and particulates will follow guidelines established in Appendix F (Community Air Quality Assurance Project Plan) and Appendix G (Health and Safety Plan) of our Preliminary Site Assessment (PSA) Work Plan, dated July 2007 and revised September 2007. The action level (fifteen-minute average concentration below 5 ppm above background) and response actions for VOCs are described in Section 2.4.1 of the PSA Community Air Quality Assurance Project Plan and Section 6 of the PSA Health and Safety Plan. The action level (PM-10 particulate level 100 micrograms per cubic meter greater than background for a 15 minute monitoring period, or if airborne dust is observed leaving the work area) and

response actions for particulates are described in Section 2.4.2 of the PSA Community Air Quality Assurance Project Plan.

The work area is accessible by a separate exterior doorway on the western building exterior wall. Subcontractor equipment that will complete the interior subsurface drilling is powered by a remote internal combustion gasoline engine which will be placed outside the building to minimize the potential for indoor air problems associated with carbon monoxide. As an extra precaution, a multiple gas detector will be used to monitor levels of carbon monoxide during drilling operations. Areas to be monitored include both the work area and video rental store portions of the building. If ambient air concentrations of carbon monoxide exceed 25 ppm, the drilling operations will cease and engineering control measures will be implemented, such as work area ventilation and repositioning of the remote power source further from the exterior of the building.

REPORTING

Results of the SVII and gas holder investigation will be included in the Preliminary Site Assessment Report. Soil vapor and indoor air analytical results will be tabulated and submitted to NYSDOH immediately following receipt from the analytical laboratory. Tabulated and interpreted soil vapor and indoor air analytical results will be transmitted to the current building tenant within thirty (30) days of receiving a final, validated laboratory report.

SCHEDULE

We anticipate conducting the SVII in early to mid-February, during what is typically the peak heating season in upstate New York. Indoor drilling activities will begin after the SVII work is complete. If you have any questions or require additional information, please call Douglas Allen (Haley & Aldrich) at 603.391.3320 or Tracy Blazicek (NYSEG) at 607.762.8839.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Douglas C. Allen
Senior Hydrogeologist

Jeffrey A. Klaiber, P.E.
Senior Vice President

Attachments:
- Figure 1 – Building Plan and Proposed Investigation Locations
- Figure 2 – Monitoring Well Location Decision Flow Chart
- Table 1 – Laboratory Reporting Limits Summary Table

c: NYSEG; Attn: T. Blazicek
NYSDOH; Attn: D. McNaughton

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Table 1
Laboratory Reporting Limits Summary Table, TO-15 Target Compound List
Seneca Falls Former MGP Site
Seneca Falls, New York

Compound	RL (ppb/v)	RL (ug/m3)
1,1,1-Trichloroethane	0.08	0.44
1,1,2,2-Tetrachloroethane	0.08	0.55
1,1,2-Trichloroethane	0.08	0.44
1,1,2-Trichlorotrifluoroethane	0.08	0.61
1,1-Dichloroethane	0.08	0.32
1,1-Dichloroethene	0.08	0.32
1,2,4-Trichlorobenzene	0.4	3.0
1,2,4-Trimethylbenzene	0.08	0.39
1,2-Dibromoethane (EDB)	0.08	0.62
1,2-Dichlorobenzene	0.08	0.48
1,2-Dichloroethane	0.08	0.32
1,2-Dichloropropane	0.08	0.37
1,2-Dichlorotetrafluoroethane	0.08	0.56
1,3,5-Trimethylbenzene	0.08	0.39
1,3-Dichlorobenzene	0.08	0.48
1,4-Dichlorobenzene	0.08	0.48
2,2,4-Trimethylpentane	0.2	0.94
2-Methylbutane	0.2	0.59
Benzene	0.08	0.26
Bromomethane	0.08	0.31
Carbon Tetrachloride	0.08	0.50
Chlorobenzene	0.08	0.37
Chloroethane	0.08	0.21
Chloroform	0.08	0.39
Chloromethane	0.2	0.41
cis-1,2-Dichloroethene	0.08	0.32
cis-1,3-Dichloropropene	0.08	0.36
Cumene	0.16	0.79
Decane	0.4	2.3
Dichlorodifluoromethane	0.08	0.40
Ethylbenzene	0.08	0.35
Hexachlorobutadiene	0.08	0.85
m/p-Xylene	0.08	0.35
Methylene Chloride	0.2	0.70
Methyl-t-Butyl ether	0.16	0.58
Naphthalene	0.16	0.84
n-Butane	0.16	0.38
n-Dodecane	0.4	2.8
n-Heptane	0.2	0.82
n-Hexane	0.2	0.70
n-Octane	0.16	0.75
Nonane	0.16	0.84
n-Undecane	0.4	2.6
o-Xylene	0.08	0.35

Compound	RL (ppb/v)	RL (ug/m3)
Pentane	0.32	0.94
Styrene	0.08	0.34
Tetrachloroethene	0.08	0.54
Toluene	0.08	0.30
trans-1,3-Dichloropropene	0.08	0.36
Trichloroethene	0.08	0.43
Trichlorofluoromethane	0.08	0.45
Vinyl Chloride	0.08	0.20
1-Methylnaphthalene	1	5.8
2-Methylnaphthalene	1	5.8
Indene	0.16	0.76
1,2,3-Trimethylbenzene	0.08	0.39
Indane	0.08	0.39
Thiophene	0.08	0.28
2,3-Dimethyl pentane	TIC	TIC
2,3-Dimethyl heptane	TIC	TIC
Butycyclohexane	TIC	TIC

NOTE:
1. Reporting limits provided by TestAmerica Knoxville, Knoxville, TN.

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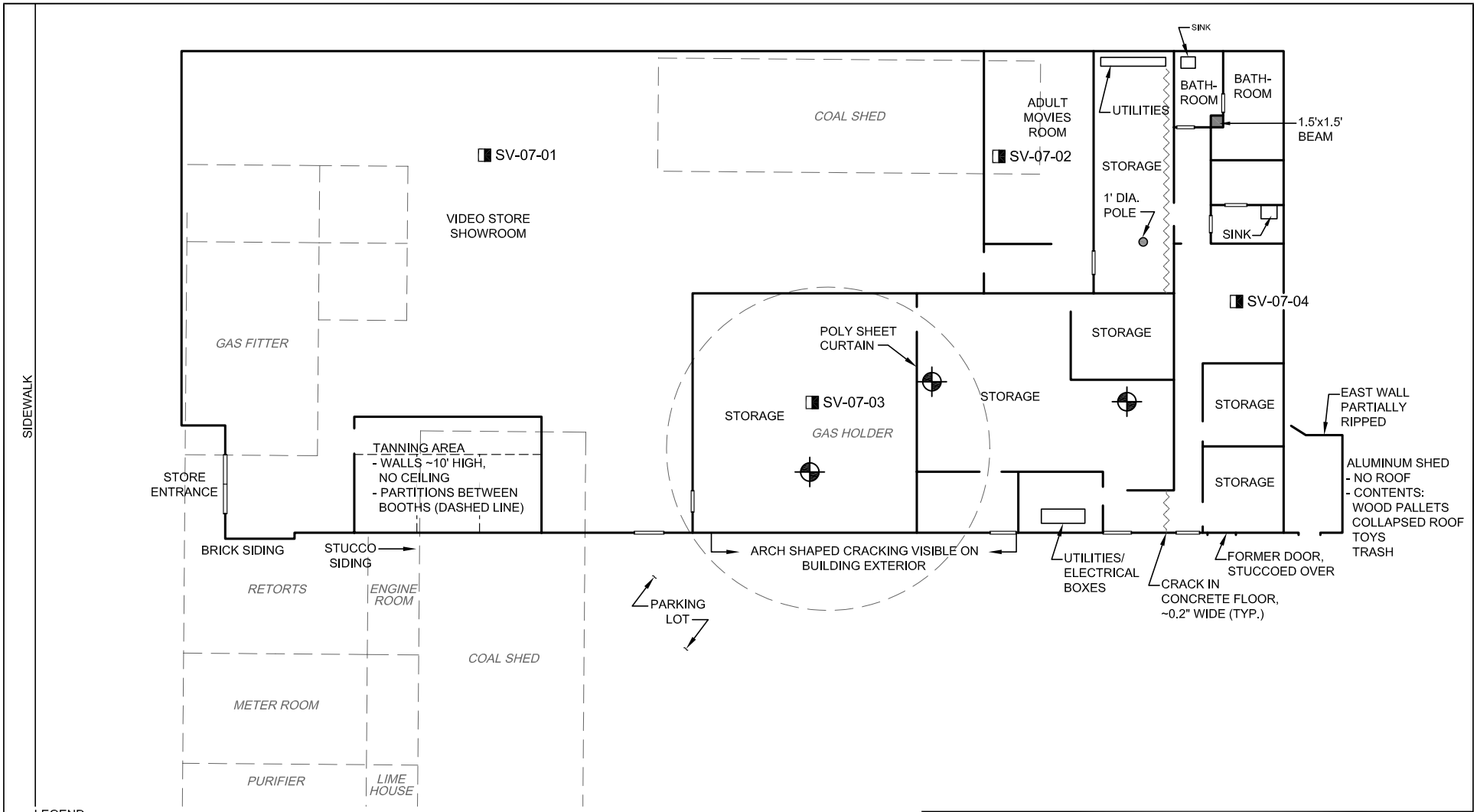


LEGEND:

INDICATES HISTIRIC MGP STRUCTURES DEMOLISHED

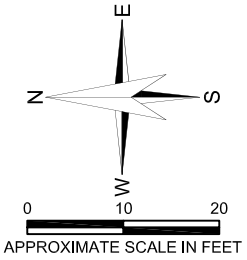
SV-07-04 PROPOSED SUB-SLAB VAPOR MONITORING POINT

PROPOSED SOIL BORING LOCATION

NOTE:

1. LOCATIONS OF FORMER MGP SITE TAKEN FROM ELECTRONIC FILE SENFMGP.DWG TITLED "SENECA FALLS FORMER MGP SITE VILLAGE OF SENECA FALLS SENECA COUNTY, NEW YORK" RECEIVED FROM TRACY BLAZICEK ON 18 MAY 2007.

2. SUB-SLAB MONITORING POINT LOCATIONS APPROXIMATE.



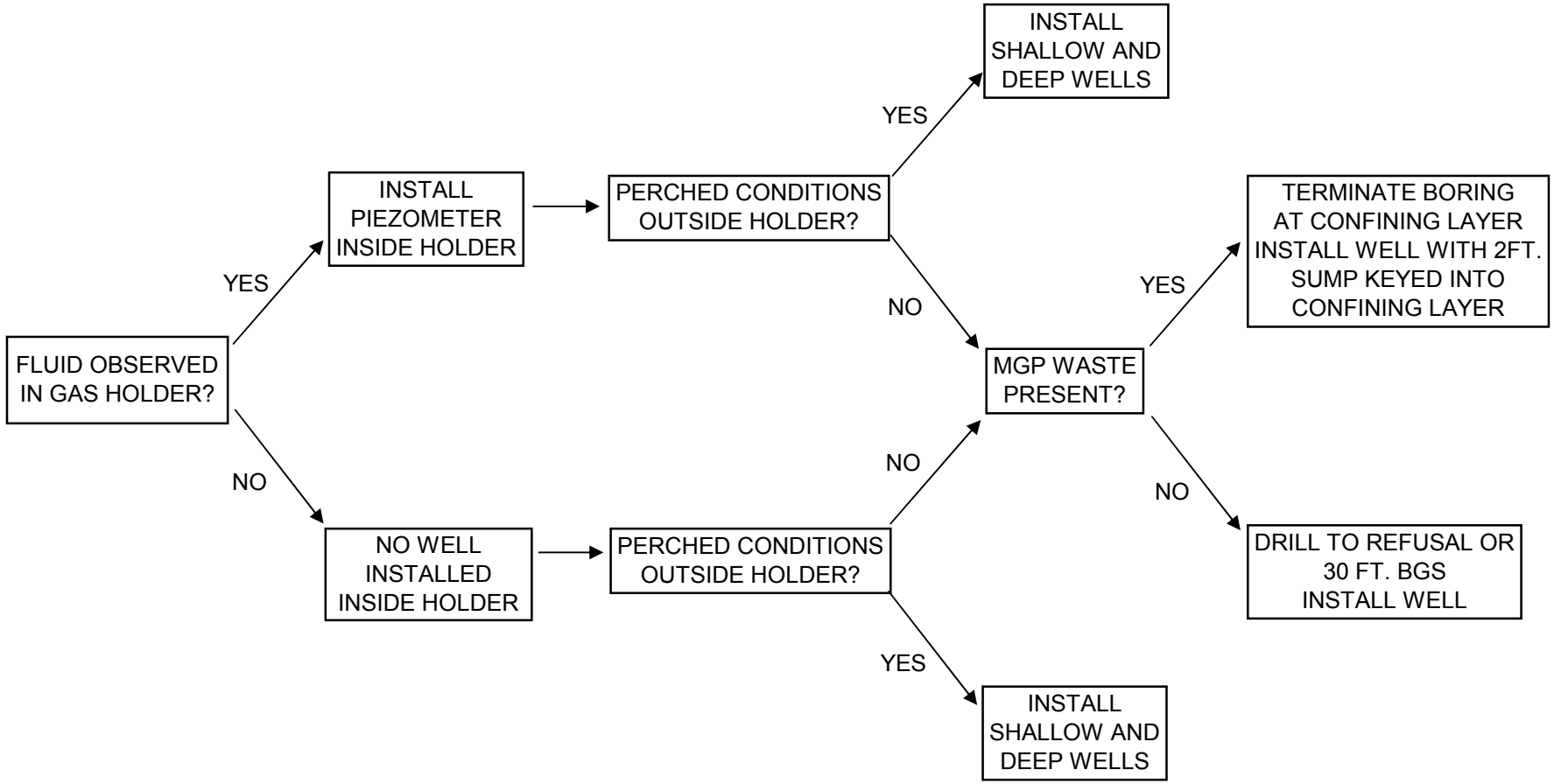
HALEY & ALDRICH

SENECA FALLS FORMER MGP SITE
SENECA FALLS, NEW YORK

PROPOSED SUB-SLAB INVESTIGATION LOCATIONS

SCALE: AS SHOWN
FEBRUARY 2008

FIGURE 1



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SENECA FALLS FORMER MGP SITE
SENECA FALLS, NEW YORK

MONITORING WELL LOCATION
DECISION FLOW CHART

FEBRUARY 2008

FIGURE 2