

January 19, 2006
File No. 21.0056127.00

Mr. Frank Evangelisti
Chief Planner
Broome Co. Dept. Of Planning and Economic Development
44 Hawley Street, 5th Floor
Binghamton, New York 13902



Re: Revised Work Plan Addendum
ERP#B00168-7 -312 Maple St., Endicott, NY
Vapor Intrusion Sampling for Nearby Structures

364 Nagel Drive
Buffalo
New York 14225
716-685-2300
FAX 716-685-3629
<http://www.gza.net>

Dear Mr. Evangelisti:

GZA GeoEnvironmental of New York (GZA) is pleased to provide this proposal and work plan addendum for the vapor intrusion sampling, requested by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH), to be completed at structures located along Maple Street and North and South Duane Avenue (Site).

PURPOSE

The objective of the off-Site air sampling is to assess for potential exposure to volatile organic compounds (VOCs) within the off-Site structures based on soil vapor and groundwater contamination identified in a recently completed Endicott Area Wide Study investigation. The findings of the area study indicated the potential exists for VOC contamination to impact indoor air in the surrounding area structures. Specifically, chlorinated solvent compounds similar to those identified at the Site (including trichloroethylene (TCE)) will be tested for. Air sampling will be done in general accordance with the February 2005 NYSDOH draft "Guidance for Evaluating Soil Vapor Intrusion".

To complete this work, GZA has made the following assumptions.

- Broome County and/or NYSDEC will alert, coordinate and schedule the time for sampling interior locations with the respective occupants, owners or tenants at each sampling facility.
- The structures to be sampled will be accessible to GZA for the required sample collection duration to allow for chemical inventory, sampling and sample retrieval.
- The sample locations will be sampled concurrently.
- Each of the buildings has a basement area requiring indoor air sampling in addition to an occupied first floor area.

An Affiliate of GZA
GeoEnvironmental
Technologies, Inc.

SCOPE OF SERVICES

Project Preparation

GZA assumes the approved health and safety plan (HASP) previously submitted for the on-Site RI/SIR will be acceptable for the off-Site vapor intrusion sampling for protection of GZA workers. Prior to the commencement of field activities, GZA will coordinate with a subcontractor (analytical laboratory) to arrange for the required sampling equipment and analysis. We will inquire about utility information within the respective structure for intrusive air sampling point locations from the respective property owners or occupants who will be required to approve locations prior to the start of work.

Inventory of Chemical Use Within the Facility

Prior to initiating air sampling, GZA will visit the identified off-Site structures to complete an indoor air quality questionnaire and survey of each building for an inventory of various chemicals and products used within the respective structures. The purpose of the survey will be to determine if contaminants of concern (e.g., chlorinated solvent compounds) are present within products currently used at the sampling locations and could have the potential to create interference in the air sampling results.

Indoor, Sub Slab and Background Air Sampling

GZA proposes to collect three types of air samples (subslab, basement and living area) at the designated off-Site sample locations. The samples will be collected via methodology identified in the referenced NYSDOH draft Guidance for Evaluating Soil Vapor Intrusion. Sampling methodology is further discussed below.

One subslab and two indoor air monitoring samples are proposed for each of the off-site buildings. One indoor air sample will be collected from an area of primary occupancy (i.e., first floor work area or residential area) from representative breathing zones inside each of the identified structures. We assume that each structure has a basement; therefore, an additional indoor air sample will be collected from the breathing zone in the basement. One air sample will be collected from beneath the lowest floor (i.e., foundation slab) at each of the locations. The air samples will be collected under the floor slab through an approximate 1/2-inch diameter hole drilled in a competent portion of the floor away from cracks or drains. Clean, dedicated polyethylene tubing will be placed into the hole and sealed at the floor surface with either bee's wax or modeling clay. A one-liter sampling canister will be attached to the tubing with an airtight seal for sample collection.



Three exterior air samples will be collected for background comparative purposes in a representative upwind location from the building sample locations.

Air sampling will be completed for a 24-hour duration in the residential structures and an eight hour duration in single shift commercial/industrial facilities in general accordance with NYSDOH requirements. Air samples collected will be analyzed via USEPA Method TO-15, including the VOC of concern TCE which will be reported to 0.25 ug/m^3 . The analysis will also include perchloroethylene (PCE) which will be reported to a detection limit of 3 ug/m^3 .

The samples collected as part of off-site vapor intrusion sampling will be subject to analytical testing methodologies that follow NYSDEC Analytical Service Protocol (ASP) Category B deliverables and a data usability summary report (DUSR).

Analytical Testing

Assuming each of the identified buildings have a basement with primary occupancy/work areas located on the first floor, GZA proposes to submit the indoor, sub slab and background air samples for the following analysis.

- Indoor air samples and samples for QA/QC testing (e.g., duplicate and matrix spike/matrix spike duplicate (MS/MSD)) will be analyzed for VOCs via TO-15.
- Sub slab air samples and samples for QA/QC testing (e.g., duplicate and matrix spike/matrix spike duplicate (MS/MSD)) will be analyzed for VOCs via TO-15.
- Background air samples will be analyzed for VOCs via TO-15.
- One trip blank will be submitted for VOC analysis via TO-15.

Sample selection will be dependant upon access of locations, engineering judgment, visual observations and information provided by the NYSDOH, NYSDEC and current occupant/owner of each identified structure. GZA assumes a ten-business day turn around time after sample collection before the draft analytical test results will be available.

Data Analysis/Report Preparation

GZA will prepare a report summarizing the work conducted as part of air sampling and assessment. The report will present the analytical data generated, and provide an opinion regarding the potential of worker/occupant exposure.

SCHEDULE

GZA is prepared to start work within five to ten business days from written authorization/notice-to-proceed and/or scheduling and coordinating with the respective occupants. Analytical testing will be completed using a minimum 10-business day turn time for receipt of draft results. Therefore, GZA anticipates that a report can be issued



within about six to eight weeks from notice to proceed. GZA will expedite the work under our control, as much as possible.

We look forward continuing our association with Broome County on this project. Please call if you should need any additional information or have any questions.



Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK


Daniel Troy, P.E.
Project Manager


Ernest R. Hanna, P.E.
Principal

Attachments: TO-15 compounds/detection limits

Centek Laboratories, LLC

Date: 19-Jan-06

Test Code: 0.25TCE_TO15
 Test Number: TO-15
 Test Name: 1ug/m3 w/ 0.25ug/M3 TCE by Method TO15
 Matrix: Air Units: ppbV

**METHOD DETECTION /
 REPORTING LIMITS**

Updated:

Type	Analyte	MDL	PQL
A	1,1,1-Trichloroethane	0.03	0.15
A	1,1,2,2-Tetrachloroethane	0.03	0.15
A	1,1,2-Trichloroethane	0.03	0.15
A	1,1-Dichloroethane	0.06	0.15
A	1,1-Dichloroethene	0.06	0.15
A	1,2,4-Trichlorobenzene	0.06	0.15
A	1,2,4-Trimethylbenzene	0.13	0.15
A	1,2-Dibromoethane	0.03	0.15
A	1,2-Dichlorobenzene	0.06	0.15
A	1,2-Dichloroethane	0.06	0.15
A	1,2-Dichloropropane	0.06	0.15
A	1,3,5-Trimethylbenzene	0.06	0.15
A	1,3-butadiene	0.06	0.15
A	1,3-Dichlorobenzene	0.03	0.15
A	1,4-Dichlorobenzene	0.03	0.15
A	1,4-Dioxane	0.16	0.3
A	2,2,4-trimethylpentane	0.03	0.15
A	4-ethyltoluene	0.06	0.15
A	Acetone	0.06	0.3
A	Allyl chloride	0.03	0.15
A	Benzene	0.03	0.15
A	Benzyl chloride	0.06	0.15
A	Bromodichloromethane	0.03	0.15
A	Bromoform	0.03	0.15
A	Bromomethane	0.09	0.15
A	Carbon disulfide	0.06	0.15
A	Carbon tetrachloride	0.03	0.15
A	Chlorobenzene	0.03	0.15
A	Chloroethane	0.06	0.15
A	Chloroform	0.06	0.15
A	Chloromethane	0.06	0.15
A	cis-1,2-Dichloroethene	0.06	0.15
A	cis-1,3-Dichloropropene	0.03	0.15
A	Cyclohexane	0.03	0.15
A	Dibromochloromethane	0.03	0.15
A	Ethyl acetate	0.13	0.25
A	Ethylbenzene	0.03	0.15
A	Freon 11	0.06	0.15
A	Freon 113	0.03	0.15
A	Freon 114	0.06	0.15
A	Freon 12	0.03	0.15
A	Heptane	0.03	0.15

Centek Laboratories, LLC

Date: 19-Jan-06

Test Code: 0.25TCE_TO15
 Test Number: TO-15
 Test Name: 1ug/m3 w/ 0.25ug/M3 TCE by Method TO15
 Matrix: Air Units: ppbV

**METHOD DETECTION /
 REPORTING LIMITS**

Updated:

Type	Analyte	MDL	PQL
A	Hexachloro-1,3-butadiene	0.06	0.15
A	Hexane	0.06	0.15
A	Isopropyl alcohol	0.13	0.15
A	m&p-Xylene	0.07	0.3
A	Methyl Butyl Ketone	0.13	0.3
A	Methyl Ethyl Ketone	0.13	0.3
A	Methyl Isobutyl Ketone	0.09	0.3
A	Methyl tert-butyl ether	0.03	0.15
A	Methylene chloride	0.03	0.15
A	o-Xylene	0.03	0.15
A	Propylene	0.09	0.15
A	Styrene	0.03	0.15
A	Tetrachloroethylene	0.03	0.15
A	Tetrahydrofuran	0.06	0.15
A	Toluene	0.03	0.15
A	trans-1,2-Dichloroethene	0.06	0.15
A	trans-1,3-Dichloropropene	0.13	0.15
A	Trichloroethene	0.019	0.04
A	Vinyl acetate	0.06	0.15
A	Vinyl Bromide	0.06	0.15
A	Vinyl chloride	0.09	0.15
I	1,4-Difluorobenzene	0	0
I	Bromochloromethane	0	0
I	Chlorobenzene-d5	0	0
S	Bromofluorobenzene	0	0
	1,1,1-Trichloroethane	0.06	0.15
	1,1,2-Trichloroethane	0.06	0.15

1 ug/m3

Centek Laboratories, LLC

Date: [REDACTED]

CLIENT: [REDACTED]
 Lab Order: [REDACTED]
 Project: [REDACTED]
 Lab ID: [REDACTED]

Client Sample ID: [REDACTED]
 Tag Number: 200, 123
 Collection Date: 2/10/2005
 Matrix: AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS						
Vacuum Reading "Hg		0		ug/m3		2/10/2005
AIR TOXIC TO15_1UG/M3						
				TO-15		Analyst: RJP
1,1,1-Trichloroethane	[REDACTED]	0.83		ug/m3	1	2/13/2005
1,1,2,2-Tetrachloroethane	[REDACTED]	1.0		ug/m3	1	2/13/2005
1,1,2-Trichloroethane	[REDACTED]	0.83		ug/m3	1	2/13/2005
1,1-Dichloroethane	[REDACTED]	0.62		ug/m3	1	2/13/2005
1,1-Dichloroethane	[REDACTED]	0.60		ug/m3	1	2/13/2005
1,2,4-Trichlorobenzene	[REDACTED]	1.1		ug/m3	1	2/13/2005
1,2,4-Trimethylbenzene	[REDACTED]	0.75		ug/m3	1	2/13/2005
1,2-Dibromoethane	[REDACTED]	1.2		ug/m3	1	2/13/2005
1,2-Dichlorobenzene	[REDACTED]	0.92		ug/m3	1	2/13/2005
1,2-Dichloroethane	[REDACTED]	0.82		ug/m3	1	2/13/2005
1,2-Dichloropropane	[REDACTED]	0.70		ug/m3	1	2/13/2005
1,3,5-Trimethylbenzene	[REDACTED]	0.75		ug/m3	1	2/13/2005
1,3-butadiene	[REDACTED]	0.34		ug/m3	1	2/13/2005
1,3-Dichlorobenzene	[REDACTED]	0.92		ug/m3	1	2/13/2005
1,4-Dichlorobenzene	[REDACTED]	0.92		ug/m3	1	2/13/2005
1,4-Dioxene	[REDACTED]	1.1		ug/m3	1	2/13/2005
2,2,4-trimethylpentane	[REDACTED]	0.71		ug/m3	1	2/13/2005
4-ethyltoluene	[REDACTED]	0.75		ug/m3	1	2/13/2005
Acetone	[REDACTED]	0.72		ug/m3	5	2/13/2005
Allyl chloride	[REDACTED]	0.48		ug/m3	1	2/13/2005
Benzene	[REDACTED]	0.49		ug/m3	1	2/13/2005
Benzyl chloride	[REDACTED]	0.88		ug/m3	1	2/13/2005
Bromodichloromethane	[REDACTED]	1.0		ug/m3	1	2/13/2005
Bromoform	[REDACTED]	1.6		ug/m3	1	2/13/2005
Bromomethane	[REDACTED]	0.69		ug/m3	1	2/13/2005
Carbon disulfide	[REDACTED]	0.47		ug/m3	1	2/13/2005
Carbon tetrachloride	[REDACTED]	0.96		ug/m3	1	2/13/2005
Chlorobenzene	[REDACTED]	0.70		ug/m3	1	2/13/2005
Chloroethane	[REDACTED]	0.40		ug/m3	1	2/13/2005
Chloroform	[REDACTED]	0.74		ug/m3	1	2/13/2005
Chloromethane	[REDACTED]	0.31		ug/m3	1	2/13/2005
cis-1,2-Dichloroethane	[REDACTED]	0.60		ug/m3	1	2/13/2005
cis-1,3-Dichloropropane	[REDACTED]	0.69		ug/m3	1	2/13/2005
Cyclohexane	[REDACTED]	0.52		ug/m3	1	2/13/2005
Dibromochloromethane	[REDACTED]	1.3		ug/m3	1	2/13/2005
Ethyl acetate	[REDACTED]	0.92		ug/m3	1	2/13/2005
Ethylbenzene	[REDACTED]	0.66		ug/m3	1	2/13/2005

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 J Analyte detected at or below quantization limits
 JN Non-routine analyte. Quantitation estimated.
 ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 E Value above quantitation range

Centek Laboratories, LLC

Date: [REDACTED]

CLIENT: [REDACTED]

Client Sample ID: [REDACTED]

Lab Order: [REDACTED]

Tag Number: 205, 125

Project: [REDACTED]

Collection Date: 2/10/2005

Lab ID: [REDACTED]

Matrix: AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15_1UG/M3				TO-15		Analyst: RJP
Freon 11	[REDACTED]	0.66		ug/m3	1	2/13/2005
Freon 113	[REDACTED]	1.2		ug/m3	1	2/13/2005
Freon 114	[REDACTED]	1.1		ug/m3	1	2/13/2005
Freon 12	[REDACTED]	0.75		ug/m3	1	2/13/2005
Heptane	[REDACTED]	0.62		ug/m3	1	2/13/2005
Hexachloro-1,3-butadiene	[REDACTED]	1.6		ug/m3	1	2/13/2005
Hexane	[REDACTED]	0.54		ug/m3	1	2/13/2005
Isopropyl alcohol	[REDACTED]	0.37		ug/m3	1	2/13/2005
m-Xylene	[REDACTED]	0.66		ug/m3	1	2/13/2005
Methyl Butyl Ketone	[REDACTED]	1.2		ug/m3	1	2/13/2005
Methyl Ethyl Ketone	[REDACTED]	0.90		ug/m3	1	2/13/2005
Methyl Isobutyl Ketone	[REDACTED]	1.2		ug/m3	1	2/13/2005
Methyl tert-butyl ether	[REDACTED]	0.55		ug/m3	1	2/13/2005
Methylene chloride	[REDACTED]	0.53		ug/m3	1	2/13/2005
o-Xylene	[REDACTED]	0.66		ug/m3	1	2/13/2005
p-Xylene	[REDACTED]	0.66		ug/m3	1	2/13/2005
Propylene	[REDACTED]	0.26		ug/m3	1	2/13/2005
Styrene	[REDACTED]	0.65		ug/m3	1	2/13/2005
Tetrachloroethylene	[REDACTED]	1.0		ug/m3	1	2/13/2005
Tetrahydrofuran	[REDACTED]	0.45		ug/m3	1	2/13/2005
Toluene	[REDACTED]	0.57		ug/m3	1	2/13/2005
trans-1,2-Dichloroethene	[REDACTED]	0.60		ug/m3	1	2/13/2005
trans-1,3-Dichloropropene	[REDACTED]	0.69		ug/m3	1	2/13/2005
Trichloroethane	[REDACTED]	0.82		ug/m3	1	2/13/2005
Vinyl acetate	[REDACTED]	0.54		ug/m3	1	2/13/2005
Vinyl Bromide	[REDACTED]	0.57		ug/m3	1	2/13/2005
Vinyl chloride	[REDACTED]	0.39		ug/m3	1	2/13/2005

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
IN Non-routine analyte. Quantitation estimated.
S Spike Recovery outside accepted recovery limits

E Value above quantitation range
J Analyte detected at or below quantitation limits
ND Not Detected at the Reporting Limit