CONRAD GEOSCIENCE CORP.
Environmental Scientists
8 Raymond Avenue, Poughkeepsie, New York 12603 • 845/454-2544 • fax: 845/454-2655

March 10, 2005

Michael MacCabe, P.E.
New York State Dept. of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7015

Re: Vapor Intrusion Sampling
Apple Valley Shopping Center Superfund Site, LaGrange, New York
Index No. II-CERCLA-10224
Conrad Geoscience File #AL030070

Dear Mr. MacCabe:

In January 2005, Conrad Geoscience Corp. conducted sub-slab vapor and indoor air sampling at the Apple Valley Shopping Center in accordance with the Interim Remedial Measure Work Plan, as amended January 21, 2005.

SUB-SLAB VAPOR AND INDOOR AIR QUALITY MONITORING

On December 23, 2004, Conrad Geoscience installed sub-slab vapor sampling ports in four indoor locations: Foodtown, Absolute Pizza, Soccer Empire, and the Lagrange Pharmacy. Sample port locations are shown in Figure 1.

Conrad Geoscience installed each sub-slab sampling port by coring a 2-inch diameter "outer" hole into the floor slab to a depth of 1 ½ inches; then drilling a 5/8-inch diameter "inner" hole through the bottom of the floor slab. The concrete slab thickness in each location is nominally 4 inches. We inserted a stainless steel tube into the inner hole and cemented it in place, with the open bottom end of the tube extending approximately 2 inches below the base of the slab. The top end of the tube is fitted with a threaded stainless steel coupling and a removable threaded stainless steel plug. The top of the removable plug is finished flush with floor grade.

On January 26 and 27, 2005, Conrad Geoscience collected a sub-slab vapor sample and an ambient indoor air sample at each of the four locations. Prior to sample collection, we purged each sampling port by attaching a peristaltic sampling pump to the threaded coupling and evacuating the vapors into two 1-liter Tedlar® bags. We screened the Tedlar® bag contents with a 4-gas meter: Percent oxygen (% O_2), percent of lower explosive limit (% LEL), carbon monoxide (CO), and hydrogen sulfide (H_2S).

After purging, Conrad Geoscience collected sub-slab vapor samples by connecting each sampling port to a 6-liter summa canister with dedicated Teflon® tubing and opening the canister valve. The summa canister is fitted with a flow controller, which was set to collect a 6-liter sample over a 24-hour period.

We collected a simultaneous ambient indoor air sample at each of the four locations using identical summa canisters.

We also collected a simultaneous ambient outdoor air sample using a summa canister. This sample was collected from the vicinity of Monitoring Well MW-3, approximately 100 feet south of the Foodtown building.

On January 27, at the end of the 24-hour sampling period, we shipped the summa canisters via overnight delivery to Columbia Analytical Services in Simi Valley, California, a NYSDOH-certified laboratory. Samples were analyzed for tetrachloroethene (PCE); trichloroethene (TCE); cis-1,2-dichloroethene; and vinyl chloride via USEPA Method TO-15. Sample numbers are as follows:

Location	Sub-Slab Vapor	Indoor Air
Foodtown	SVFT-1	AIFT-1
Absolute Pizza	SVAP-1	AIAP-1
Soccer Empire	SVSE-1	AISE-1
LaGrange Pharmacy	SVLP-1	AILP-1

RESULTS

Sample results are summarized in Table 1. Copies of laboratory reports are attached. Three of the four sub-slab vapor samples contained PCE at concentrations which exceed the proposed NYSDOH action levels set forth in the NYSDOH guidance document: *Soil Vapor/Indoor Air Matrices for PCE and TCE* (*Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, Public Comment Draft, February 2005)

Samples SVFT-1 and IAFT-1 (Foodtown) contained PCE at concentrations of 2,500 ug/m^3 (sub-slab) and 9.7 ug/m^3 (indoor) respectively. Samples SVAP-1 and IAAP-1 (Absolute Pizza) contained PCE at concentrations of 160 ug/m^3 (sub-slab) and 26 ug/m^3 (indoor). Samples SVSE-1 and IASE-1 (Soccer Empire) contained PCE at concentration of 14 ug/m^3 (sub-slab) and <0.69 m^3 (indoor). Samples SVLP-1 and IALP-1 (LaGrange Pharmacy) contained PCE at concentrations of 220 ug/m^3 (sub-slab) and 1.5 ug/m^3 (indoor).

Samples SVFT-1 and IAFT-1 (Foodtown) contained TCE at concentrations of 13 ug/m^3 (sub-slab) and <0.97 ug/m^3 (indoor) respectively. Samples SVAP-1 and IAAP-1 (Absolute Pizza) contained TCE at concentrations of 3.6 ug/m^3 (sub-slab) and <0.84 ug/m^3 (indoor). Samples SVSE-1 and IASE-1 (Soccer Empire) contained TCE at concentration of <0.64 ug/m^3 (sub-slab) and <0.69 m^3 (indoor). Samples SVLP-1 and IALP-1 (LaGrange Pharmacy) contained TCE at concentrations of 10 ug/m^3 (sub-slab) and <1.5 ug/m^3 (indoor).

Neither vinyl chloride nor cis-2-dichloroethene were detected in any sub-slab or indoor air samples. No VOCs were detected in the ambient outdoor air sample.

RECOMMENDATIONS

The PCE concentration of 2,500 ug/m^3 detected in the Foodown sub-slab vapor sample is significantly higher than the results obtained proximate to the known source area. Accordingly, this sub-slab sample result is considered potentially anomalous. We recommend, therefore, that the Foodtown location be re-sampled for verification purposes.

On February 23, 2005, NYSDOH issued for Public Comment the "Proposed Guidance for Evaluating Soil Vapor Intrusion in the State of New York." Public comments on the proposed guidance are due to NYSDOH on or before April 23, 2005. Thereafter, it is anticipated that NYSDOH will proceed to adopt the guidance as proposed, or with modifications based on public comments.

Given this regulatory status, it is recommended that a final proposal for further monitoring or mitigation of sub-slab vapors at the Apple Valley Shopping Center site be held in abeyance until NYSDOH issues final guidance.

Sincerely,

CONRAD GEOSCIENCE CORP.

John A. Conrad
Senior Hydrogeologist

JAC/seg

attachments

cc: D. Engel
J. Klein
M. Millspaugh
J. Crua
K. Comerford
D. MacDougal

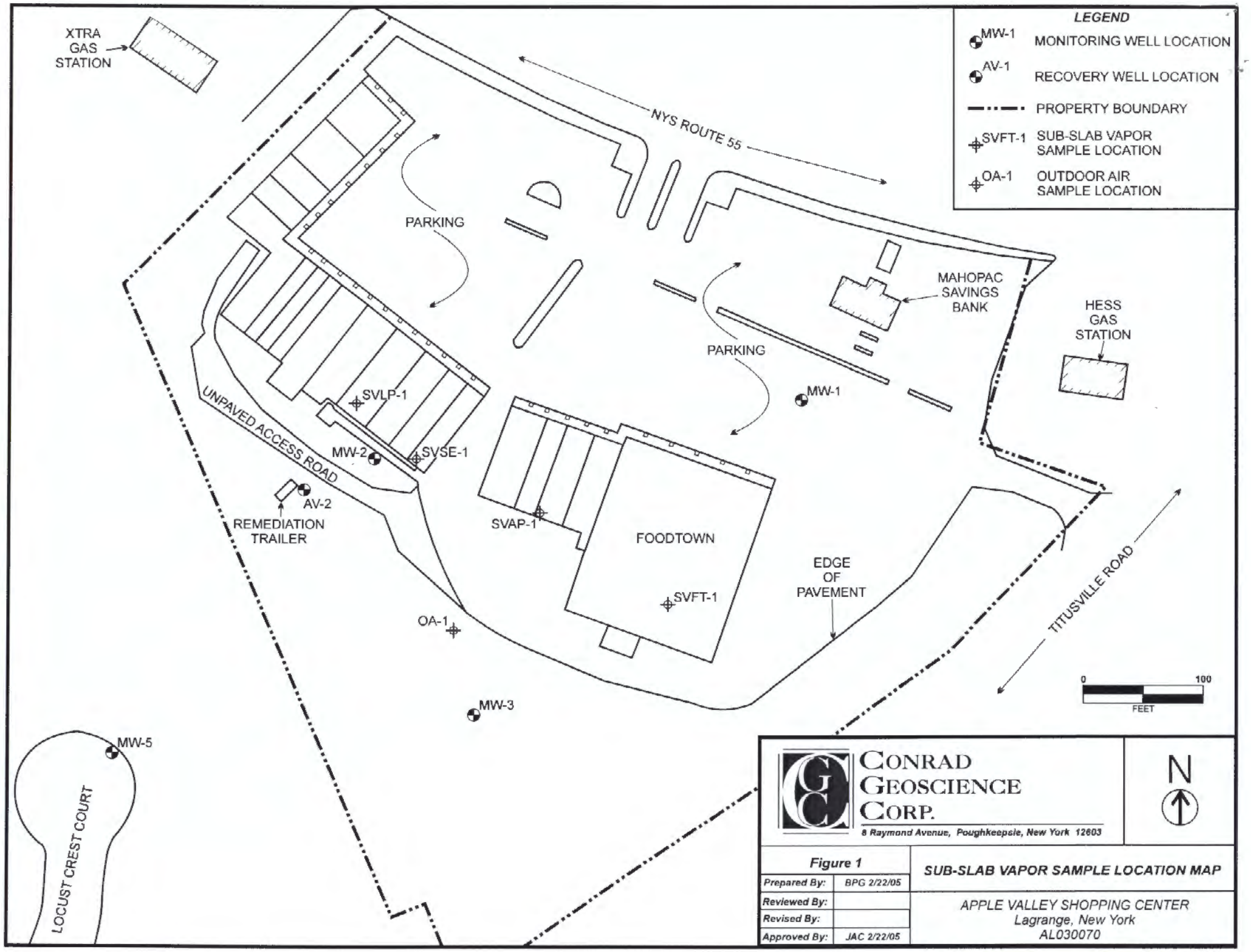
LEGEND
MW-1 MONITORING WELL LOCATION
AV-1 RECOVERY WELL LOCATION
PROPERTY BOUNDARY
SVFT-1 SUB-SLAB VAPOR SAMPLE LOCATION
OA-1 OUTDOOR AIR SAMPLE LOCATION
XTRA GAS STATION
NYS ROUTE 55
PARKING
PARKING
MAHOPAC SAVINGS BANK
HESS GAS STATION
MW-1
SVLP-1
UNPAVED ACCESS ROAD
MW-2
SVSE-1
AV-2
REMEDIATION TRAILER
SVAP-1
FOODTOWN
SVFT-1
EDGE OF PAVEMENT
TITUSVILLE ROAD
OA-1
MW-3
MW-5
LOCUST CREST COURT
0
100
FEET
N
CONRAD GEOSCIENCE CORP.
8 Raymond Avenue, Poughkeepsie, New York 12603
Figure 1
SUB-SLAB VAPOR SAMPLE LOCATION MAP
Prepared By: BPG 2/22/05
Reviewed By:
Revised By:
Approved By: JAC 2/22/05
APPLE VALLEY SHOPPING CENTER
Lagrange, New York
AL030070

Table 1. **Volatile Organic Compounds (VOCs) in Sub-Slab Vapor, Ambient Indoor Air, and Ambient Outdoor Air Samples;** USEPA TO-15; collected **January 26, 2005;** Apple Valley Shopping Center, Lagrange, New York; Conrad Geoscience File #AL030070

Chemical Constituent	Sample Identification								
	FOODTOWN		ABSOLUTE PIZZA		SOCCER EMPIRE		LAGRANGE PHARMACY		OA-1
	SVFT-1	IAFT-1	SVAP-1	IAAP-1	SVSE-1	IASE-1	SVLP-1	IALP-1	
Volatile Organic Compounds									
Vinyl Chloride	ND < 0.82	ND < 0.97	ND < 0.79	ND < 0.84	ND < 0.64	ND < 0.69	ND < 0.85	ND < 1.5	ND < 0.69
cis-1,2-Dichloroethene	ND < 0.82	ND < 0.97	ND < 0.79	ND < 0.84	ND < 0.64	ND < 0.69	ND < 0.85	ND < 1.5	ND < 0.69
Trichloroethene	13	ND < 0.97	3.6	ND < 0.84	ND < 0.64	ND < 0.69	10	ND < 1.5	ND < 0.69
Tetrachloroethene	**2,500**	**9.7**	**160**	**26**	14	ND < 0.69	**220**	1.5	ND < 0.69

All units are ug/m^3 unless otherwise noted;
SV prefix represents sub-slab vapor samples;
IA prefix represents ambient indoor air samples;
OA-1 represents ambient outdoor air;
Boldface type indicates need for ongoing monitoring or other action, as per attached matrix.

Soil Vapor/Indoor Air Matrix for PCE

WORKING DRAFT 12.15.04 SUBJECT TO CHANGE

	INDOOR AIR CONCENTRATION of PCE (mcg/m^3)			
SUB-SLAB VAPOR CONCENTRATION of PCE (mcg/m^3)	< 3	3 to < 30	30 to < 100	100 and above
< 100	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures — and — Monitor	4. MITIGATE — or — Take reasonable and practical actions to identify source(s) and reduce exposures — and — Monitor
100 to < 1,000	5. Monitor	6. Monitor	7. MITIGATE	8. MITIGATE
1,000 and above	9. MITIGATE	10. MITIGATE	11. MITIGATE	12. MITIGATE

No further action: Given that PCE was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take steps to identify source(s) and reduce exposures: The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed).

Monitor: Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is an interim measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

See additional notes on page 2.

ADDITIONAL PCE MATRIX NOTES

This matrix provides guidance on actions that should be taken to address current and potential exposures related to soil vapor intrusion. To use the matrix accurately as a tool in the decision-making process, the following must be noted:

[1] The matrix is generic. As such, it may be necessary to modify recommended actions to accommodate building-specific conditions (e.g., dirt floor in basement, crawl spaces, etc.) and/or site-specific conditions (e.g., proximity of building to identified subsurface contamination) for the protection of public health. Additionally, actions more conservative than those specified within the matrix may be implemented at any time. More conservative actions are often cost-based (e.g., the cost of additional sampling versus the cost of mitigation) rather than health-based.

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude the need to investigate possible sources of vapor contamination, nor does it preclude the need to remediate contaminated soil vapors or the source of soil vapor contamination.

[3] Extreme care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples must be analyzed by methods that can achieve a minimum reporting limit of 3 micrograms PCE per cubic meter.

[4] Sub-slab vapor and indoor air samples (basement and lowest occupied living space) are typically collected during the heating season since soil vapor intrusion is more likely to occur when a building's heating system is in operation and air is being drawn into the building. If samples are collected during other times of the year, it may be necessary to resample during the heating season to evaluate exposures accurately.

[5] When current exposures are attributed to sources other than vapor intrusion, the agencies must be provided documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

Soil Vapor/Indoor Air Matrix for TCE

WORKING DRAFT 10.25.04

SUBJECT TO CHANGE

	INDOOR AIR CONCENTRATION of TCE (mcg/m^3)			
SUB-SLAB VAPOR CONCENTRATION of TCE (mcg/m^3)	< 0.25	0.25 to < 2.5	2.5 to < 5.0	5.0 and above
< 5	1. No further action	2. Take steps to identify source(s) and reduce exposures	3. Take steps to identify source(s) and reduce exposures	4. Take steps to identify source(s) and reduce exposures
5 to < 50	5. No further action	6. Monitor as appropriate	7. Monitor as appropriate	8. MITIGATE
50 to < 250	9. Monitor as appropriate	10. Monitor as appropriate	11. MITIGATE	12. MITIGATE
250 to < 2,500	13. Monitor as appropriate	14. MITIGATE	15. MITIGATE	16. MITIGATE
2,500 or above	17. Monitor as appropriate	18. MITIGATE	19. MITIGATE	20. MITIGATE

No further action: Given that TCE was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take steps to identify source(s) and reduce exposures: The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed).

Monitor as appropriate: Monitoring is needed to confirm concentrations in the indoor air have not increased due to changes in pressure gradients (e.g., deterioration of building foundation) or to evaluate temporal trends for relevant environmental data. Monitoring may also be needed to verify that existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are minimizing potential effects associated with soil vapor intrusion. The type and frequency of monitoring is determined on a site-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

See additional notes on page 2.

ADDITIONAL TCE MATRIX NOTES

This matrix provides guidance on actions that should be taken to address current and potential exposures related to soil vapor intrusion. To use the matrix accurately as a tool in the decision-making process, the following must be noted:

[1] The matrix is generic. As such, it may be necessary to modify recommended actions to accommodate building-specific conditions (e.g., dirt floor in basement, crawl spaces, etc.) and/or site-specific conditions (e.g., proximity of building to identified subsurface contamination) for the protection of public health. Additionally, actions more conservative than those specified within the matrix may be implemented at any time. More conservative actions are often cost-based (e.g., the cost of additional sampling versus the cost of mitigation) rather than health-based.

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude the need to investigate possible sources of vapor contamination, nor does it preclude the need to remediate contaminated soil vapors or the source of soil vapor contamination.

[3] Extreme care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples must be analyzed by methods that can achieve a minimum reporting limit of 0.25 microgram TCE per cubic meter.

[4] Sub-slab vapor and indoor air samples are typically collected during the heating season since soil vapor intrusion is more likely to occur when a building's heating system is in operation and air is being drawn into the building. If samples are collected during other times of the year, it may be necessary to resample during the heating season to evaluate exposures accurately.

[5] When current exposures are attributed to sources other than vapor intrusion, the agencies must be provided documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

2665 Park Center Drive, Suite D Simi Valley, California 93065 (805) 526-7161 ph (805) 526-7270 fax

Columbia Analytical Services INC.
An Employee - Owned Company

LABORATORY REPORT

Client:	CONRAD GEOSCIENCE CORPORATION	Date of Report:	02/16/05
Address:	8 Raymond Avenue, Suite 23	Date Received:	01/28/05
	Poughkeepsie, NY 12603	CAS Project No:	P2500199
Contact:	Mr. Brian Goodwin	Purchase Order:	AL030070
Client Project ID:	Apple Valley Shopping Center/AL030070	New York Lab ID:	11221

Nine (9) Stainless Steel Summa Canisters labeled:

"SVFT-1"	"IAFT-1"	"SVAP-1"	"IAAP-1"	"SVSE-1"
"IASE-1"	"SVLP-1"	"IALP-1"	"OA-1"	

The samples were received at the laboratory under chain of custody on January 28, 2005. The samples were received intact. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time that they were received at the laboratory.

Volatile Organic Compound Analysis

The samples were analyzed by combined gas chromatography/mass spectrometry (GC/MS) for selected volatile organic compounds. The analyses were performed according to the methodology outlined in EPA Method TO-15. The analyses were performed by gas chromatography/mass spectrometry, utilizing a direct cryogenic trapping technique. The analytical system used was comprised of an Agilent Model 5973inert GC/MS/DS interfaced to a Tekmar AutoCan Elite whole air inlet system/cryogenic concentrator. A 100% Dimethylpolysiloxane capillary column (RT_x-1, Restek Corporation, Bellefonte, PA) was used to achieve chromatographic separation.

RECEIVED
FEB 23 2005

Reviewed and Approved:

Svetlana Walsh
Analytical Chemist
Air Quality Laboratory

Reviewed and Approved:

Chris Parnell
GCMS-VOA Team Leader
Air Quality Laboratory

2665 Park Center Drive, Suite D Simi Valley, California 93065 (805) 526-7161 ph (805) 526-7270 fax

Columbia Analytical Services INC.
An Employee - Owned Company

CAS Project No: P2500199

The results of analyses are given on the attached data sheets. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **SVFT-1**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P2500199-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00238

Date Collected: 1/26/05
Date Received: 1/28/05
Date(s) Analyzed: 2/1/05
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Pi 1 = -3.5 Pf 1 = 3.6

D.F. = 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.82	ND	0.32	
156-59-2	cis-1,2-Dichloroethene	ND	0.82	ND	0.21	
79-01-6	Trichloroethene	**13**	0.82	**2.5**	0.15	
127-18-4	Tetrachloroethene	**2,500**	0.82	**370**	0.12	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **IAFT-1**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P2500199-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00773

Date Collected: 1/26/05
Date Received: 1/28/05
Date(s) Analyzed: 2/1/05
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -5.3 Pf 1 = 3.5

D.F. = 1.94

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.97	ND	0.38	
156-59-2	cis-1,2-Dichloroethene	ND	0.97	ND	0.24	
79-01-6	Trichloroethene	ND	0.97	ND	0.18	
127-18-4	Tetrachloroethene	**9.7**	0.97	**1.4**	0.14	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RG Date: 2/10/05

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **SVAP-1**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P2500199-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00206

Date Collected: 1/26/05
Date Received: 1/28/05
Date(s) Analyzed: 2/1/05
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -3.1 Pf 1 = 3.5

D.F. = 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.79	ND	0.31	
156-59-2	cis-1,2-Dichloroethene	ND	0.79	ND	0.20	
79-01-6	Trichloroethene	**3.6**	0.79	**0.68**	0.15	
127-18-4	Tetrachloroethene	**160**	0.79	**24**	0.12	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RG Date: 2/10/05

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **IAAP-1**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P2500199-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00595

Date Collected: 1/26/05
Date Received: 1/28/05
Date(s) Analyzed: 2/1/05
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -3.8 Pf 1 = 3.5

D.F. = 1.67

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.84	ND	0.33	
156-59-2	cis-1,2-Dichloroethene	ND	0.84	ND	0.21	
79-01-6	Trichloroethene	ND	0.84	ND	0.16	
127-18-4	Tetrachloroethene	**26**	0.84	**3.8**	0.12	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RG Date: 2/10/05

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **SVSE-1**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P2500199-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00347

Date Collected: 1/26/05
Date Received: 1/28/05
Date(s) Analyzed: 2/1/05
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -0.5 Pf 1 = 3.5

D.F. = 1.28

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.64	ND	0.25	
156-59-2	cis-1,2-Dichloroethene	ND	0.64	ND	0.16	
79-01-6	Trichloroethene	ND	0.64	ND	0.12	
127-18-4	Tetrachloroethene	**14**	0.64	**2.1**	0.094	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RG Date: 2/10/05

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **IASE-1**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P2500199-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00558

Date Collected: 1/26/05
Date Received: 1/28/05
Date(s) Analyzed: 2/1/05
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -1.4 Pf 1 = 3.5

D.F. = 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.69	ND	0.27	
156-59-2	cis-1,2-Dichloroethene	ND	0.69	ND	0.17	
79-01-6	Trichloroethene	ND	0.69	ND	0.13	
127-18-4	Tetrachloroethene	ND	0.69	ND	0.10	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RG Date: 2/10/05

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **SVLP-1**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P2500199-007

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00074

Date Collected: 1/26/05
Date Received: 1/28/05
Date(s) Analyzed: 2/1 - 2/2/05
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Pi 1 = -4.0 Pf 1 = 3.5

D.F. = 1.70

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.85	ND	0.33	
156-59-2	cis-1,2-Dichloroethene	ND	0.85	ND	0.21	
79-01-6	Trichloroethene	**10**	0.85	**1.9**	0.16	
127-18-4	Tetrachloroethene	**220**	0.85	**32**	0.13	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RG Date: 2/10/05

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **IALP-1**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P2500199-008

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00606

Date Collected: 1/26/05
Date Received: 1/28/05
Date(s) Analyzed: 2/1/05
Volume(s) Analyzed: 0.50 Liter(s)

Pi 1 = -2.2 Pf 1 = 3.5

D.F. = 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	1.5	ND	0.57	
156-59-2	cis-1,2-Dichloroethene	ND	1.5	ND	0.37	
79-01-6	Trichloroethene	ND	1.5	ND	0.27	
127-18-4	Tetrachloroethene	**1.5**	1.5	**0.22**	0.22	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RC Date: 2/10/05

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **OA-1**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P2500199-009

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00262

Date Collected: 1/26/05
Date Received: 1/28/05
Date(s) Analyzed: 2/1/05
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -1.5 Pf 1 = 3.5

D.F. = 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.69	ND	0.27	
156-59-2	cis-1,2-Dichloroethene	ND	0.69	ND	0.17	
79-01-6	Trichloroethene	ND	0.69	ND	0.13	
127-18-4	Tetrachloroethene	ND	0.69	ND	0.10	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RC Date: 2/10/05

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **OA-1**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P2500199-009DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00262

Date Collected: 1/26/05
Date Received: 1/28/05
Date(s) Analyzed: 2/1/05
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -1.5 Pf 1 = 3.5

D.F. = 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.69	ND	0.27	
156-59-2	cis-1,2-Dichloroethene	ND	0.69	ND	0.17	
79-01-6	Trichloroethene	ND	0.69	ND	0.13	
127-18-4	Tetrachloroethene	ND	0.69	ND	0.10	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit.**
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RL Date: 2/10/05

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Conrad Geoscience Corporation**
Client Sample ID: **Method Blank**
Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500199
CAS Sample ID: P050201-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Svetlana Walsh
Sampling Media: Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date(s) Analyzed: 2/1/05
Volume(s) Analyzed: 1.00 Liter(s)

D.F. = 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RC Date: 2/10/05

Columbia Analytical Services, Inc.
Sample Acceptance Check Form

Client: Conrad Geoscience Corporation Work order: P2500199

Project: Apple Valley Shopping Center/AL030070

Sample(s) received on: 1/28/05 Date opened: 1/28/05 by: SM

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client or as required by the method/SOP.

			Yes	No	N/A
1	Were **custody seals** on outside of cooler/Box?		☐	☒	☐
	Location of seal(s)? _____	Sealing Lid?	☐	☐	☒
	Were signature and date included?		☐	☐	☒
	Were seals intact?		☐	☐	☒
	Were custody seals on outside of sample container?		☐	☒	☐
	Location of seal(s)? _____	Sealing Lid?	☐	☐	☒
	Were signature and date included?		☐	☐	☒
	Were seals intact?		☐	☐	☒
2	Were **sample containers** properly marked with client sample ID?		☒	☐	☐
3	Did **sample containers** arrive in good condition?		☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?		☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?		☒	☐	☐
6	Was **sample volume** received adequate for analysis?		☒	☐	☐
7	Are samples within specified holding times?		☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?		☐	☐	☒
	Cooler Temperature NA °C				
	Blank Temperature NA °C				
9	Is pH (acid) **preservation** necessary, according to method/SOP or Client specified information?		☐	☒	☐
	Is there a client indication that the submitted samples are **pH** (acid) preserved?		☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?		☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?		☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?		☐	☐	☒
	Do they contain moisture?		☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?		☐	☐	☒
	Are dual bed badges separated and individually capped and intact?		☐	☐	☒

Lab Sample ID	Required pH	pH (as received, if required)	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2500199-001			NA	
P2500199-002			NA	
P2500199-003			NA	
P2500199-004			NA	
P2500199-005			NA	
P2500199-006			NA	
P2500199-007			NA	
P2500199-008			NA	
P2500199-009			NA	

Explain any discrepancies: (include lab sample ID numbers):

Columbia Analytical Services, Inc.
An Employee Owned Company

Air Quality Laboratory
2665 Park Center Drive, Suite D
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Chain of Custody Record & Analytical Service Request

Requested Turnaround Time by Close of Business Day (Surcharges) Please Circle:
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (15%) 10 Day-Standard

CAS Project No. P2500199

CAS Contact: Jeanette Campbell

Reporting Information (Company Name & Address)
Conrad Geoscience
8 Raymond Avenue
Poughkeepsie, NY 12603
Attention: Brian Goodwin

P.O. # / Billing Information
Same

Project Name: Apple Valley Shopping Center

Project Number: AL030070

Phone: 845-454-2544 Fax: -2655

Email Address for Result Reporting: bgoodwin@conradgeo.com

Sampler (Print & Sign): Brian P. Goodwin Brian P. Goodwin

Analysis Method and/or Analytes

Client Sample ID	Date Collected	Time Collected	Lab Sample No.	Sample Type (Air/Liquid /Solid/Tube)	Canister ID (Bar Code#)	Flow Controller (Bar Code #)	Sample Volume	EPA TO-15				Comments e.g. Preservative or specific instructions
SVFT-1	1-26-05	1250	-1	Air	AC00238	FC00167 ✓	6L	X				
IAFT-1	1-26-05	1251	-2	Air	AC00773	FC00391 ✓	6L	X				
SVAP-1	1-26-05	1335	-3	Air	AC00206	FC00215 ✓	6L	X				
IAAP-1	1-26-05	1336	-4	Air	AC00595	FC00481 ✓	6L	X				
SVSE-1	1-26-05	1057	-5	Air	AC00347	FC00094 ✓	6L	X				
IASE-1	1-26-05	1058	-6	Air	AC00558	FC00484 ✓	6L	X				
SVLP-1	1-26-05	1150	-7	Air	AC00074	FC00190 ✓	6L	X				
IALP-1	1-26-05	1152	-8	Air	AC00606	FC00394 ✓	6L	X				
OA-1	1-26-05	1350	-9	Air	AC00762	FC00480 ✓	6L	X				

Report Tier Levels - please select
Tier I - (default if not specified) ____ Tier III (QC, Raw Data, Spectra) 10% Surcharge ____ EDD required Yes / No
Tier II (QC forms) ____ Other ____ Type: ____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Brian P. Goodwin	1-27-05	17:00	Sharon Malone	1/28/05	11:00
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Project Requirements (MRLs, QAP
See Quote #Q240111
Only report, PCE, TCE, cis-1,2-dichloroethylene, and Vinyl Chloride

Cooler / Blank Temperature ____ °C