



May 31, 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, Foodtown;
Apple Valley Shopping Center Superfund Site, LaGrange, New York
Index No. II-CERCLA-10224
Conrad Geoscience File #AL030070

Dear Mr. MacCabe:

On April 29, 2005, Conrad Geoscience Corp. conducted vapor intrusion monitoring at the Foodtown supermarket at Apple Valley Shopping Center in LaGrange, New York. Field procedures and results are summarized below.

SUB-SLAB VAPOR AND INDOOR AIR QUALITY MONITORING

On April 27, 2004, Conrad Geoscience installed sub-slab vapor sampling ports in three new locations inside the rear section of the Foodtown building (SVFT-2, SVFT-3, SVFT-4). Sample 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 1-2 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 April 28 and 29, 2005, Conrad Geoscience collected a sub-slab vapor sample from each of the three new locations, and from the original sub-slab port, SVFT-1. 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 photoionization detector (PID) and 4-gas meter: Percent oxygen (% O₂), percent of lower explosive limit (% LEL), carbon monoxide (CO), and hydrogen sulfide (H₂S).

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 the location of sub-slab sample SVFT-1 using an identical summa canister (Sample IA-2).

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 (Sample OA-2).

On April 29, 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:

<u>Sub-Slab Vapor</u>	<u>Indoor Air</u>	<u>Outdoor Air</u>
SVFT-1	IA-2	OA-2
SVFT-2		
SVFT-3		
SVFT-4		

RESULTS

Sample results are summarized in Table 1. Copies of laboratory reports are attached. Sub-slab Sample SVFT-1 contained PCE and TCE at concentrations of 1,400 ug/m³ and 17 ug/m³, respectively. Sub-slab Sample SVFT-2 contained PCE at a concentration of 8.7 ug/m³. Sub-slab Sample SVFT-3 contained PCE and TCE at concentrations of 86 ug/m³ and 3.8 ug/m³, respectively. Sub-slab Sample SVFT-4 contained PCE and TCE at concentrations of 7,200 ug/m³ and 210 ug/m³, respectively; and cis-1,2-dichloroethene at 260 ug/m³.

Tetrachloroethene (PCE) was detected in the indoor air sample (IA-2) at a concentration of 8.6 ug/m³. No VOCs were detected in the ambient outdoor air sample (OA-2).

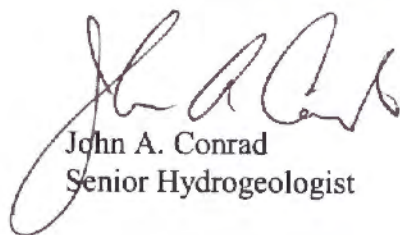


Vapor Intrusion Sampling
Apple Valley Shopping Center
May 31, 2005
Page 3

Conrad Geoscience and Sterling Environmental Engineering are in the process of evaluating mitigation alternatives to address vapors beneath the Foodtown floor slab. It is anticipated that we will submit a proposed mitigation plan to your office on or before July 1, 2005.

Sincerely,

CONRAD GEOSCIENCE CORP.



John A. Conrad
Senior Hydrogeologist

attachments

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



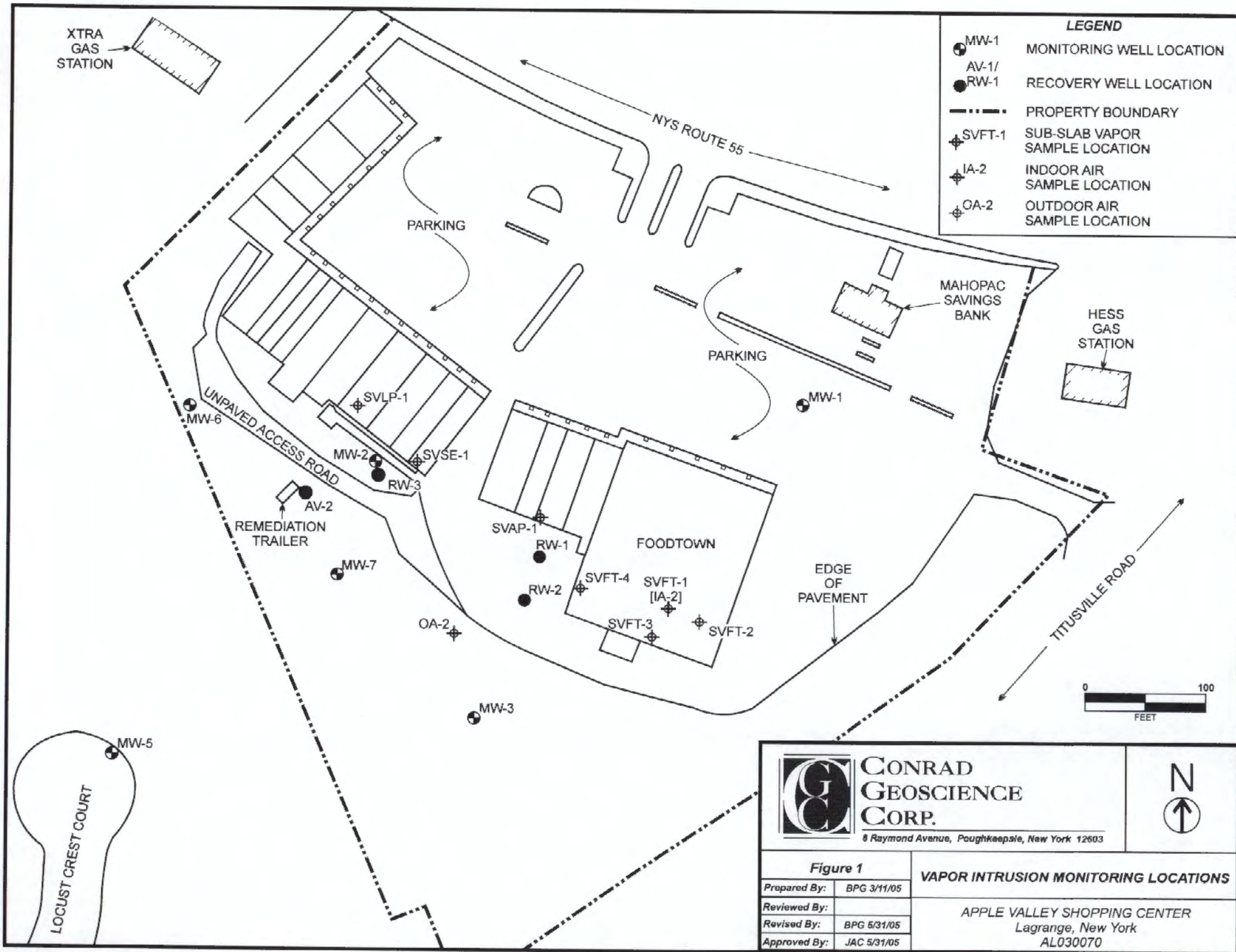


Table 1. **Volatile Organic Compounds (VOCs) in Sub-Slab Vapor, Ambient Indoor Air, and Ambient Outdoor Air Samples; USEPA TO-15; collected April 29, 2005; Apple Valley Shopping Center, Lagrange, New York; Conrad Geoscience File #AL030070**

Constituent	Sample Identification					
	FOODTOWN					QA-2
	SVFT-1	SVFT-2	SVFT-3	SVFT-4	IA-2	
Volatile Organic Compounds						
Vinyl Chloride	ND < 1.2	ND < 0.71	ND < 0.70	ND < 14	ND < 0.74	ND < 0.72
cis-1,2-Dichloroethene	ND < 1.2	ND < 0.71	ND < 0.70	260	ND < 0.74	ND < 0.72
Trichloroethene	17	ND < 0.71	3.8	210	ND < 0.74	ND < 0.72
Tetrachloroethene	1,400	8.7	86	7,200	8.6	ND < 0.72

All units are ug/m³ unless otherwise noted
SV prefix represents sub-slab vapor samples
IA prefix represents ambient indoor air samples
OA prefix represents ambient outdoor air samples

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RESULTS OF ANALYSIS

Page 1 of 1

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

CAS Project ID: **P2500913**
 CAS Sample ID: **P2500913-001**

Test Code: **EPA TO-15**
 Instrument ID: **Tekmar AUTOCAN/HP5973/HP6890/MS3**
 Analyst: **Aristotle Bragasin**
 Sampling Media: **Summa Canister**
 Test Notes:
 Container ID: **AC00160**

Date Collected: **4/29/05**
 Date Received: **5/2/05**
 Date(s) Analyzed: **5/4/05**
 Volume(s) Analyzed: **0.60 Liter(s)**
0.050 Liter(s)

Pi 1 = -2.2 Pf 1 = 3.5

D.F. = 1.46

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	1.2	ND	0.48	
156-59-2	cis-1,2-Dichloroethene	ND	1.2	ND	0.31	
79-01-6	Trichloroethene	17	1.2	3.2	0.23	
127-18-4	Tetrachloroethene	1,400	1.2	210	0.18	

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

Page 1 of 1

Client: **Conrad Geoscience Corporation**
 Client Sample ID: **SVFT-2**
 Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: **P2500913**
 CAS Sample ID: **P2500913-002**

Test Code: **EPA TO-15**
 Instrument ID: **Tekmar AUTOCAN/HP5973/HP6890/MS3**
 Analyst: **Aristotle Bragasin**
 Sampling Media: **Summa Canister**
 Test Notes:
 Container ID: **AC00262**

Date Collected: **4/29/05**
 Date Received: **5/2/05**
 Date(s) Analyzed: **5/5/05**
 Volume(s) Analyzed: **1.00 Liter(s)**

Pi 1 = **-1.9** Pf 1 = **3.5**

D.F. = **1.42**

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.71	ND	0.28	
156-59-2	cis-1,2-Dichloroethene	ND	0.71	ND	0.18	
79-01-6	Trichloroethene	ND	0.71	ND	0.13	
127-18-4	Tetrachloroethene	8.7	0.71	1.3	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.

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RESULTS OF ANALYSIS

Page 1 of 1

Client: Conrad Geoscience Corporation
Client Sample ID: SVFT-3
Client Project ID: Apple Valley Shopping Center/AL030070

CAS Project ID: P2500913
CAS Sample ID: P2500913-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3
Analyst: Aristotle Bragasin
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00012

Date Collected: 4/29/05
Date Received: 5/2/05
Date(s) Analyzed: 5/5/05
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -1.6 Pf 1 = 3.5

D.F. = 1.39

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.70	ND	0.27	
156-59-2	cis-1,2-Dichloroethene	ND	0.70	ND	0.18	
79-01-6	Trichloroethene	3.8	0.70	0.70	0.13	
127-18-4	Tetrachloroethene	86	0.70	13	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.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Page 1 of 1

Client: **Conrad Geoscience Corporation**
 Client Sample ID: **SVFT-4**
 Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500913
 CAS Sample ID: P2500913-004

Test Code: EPA TO-15
 Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3
 Analyst: Aristotle Bragasin
 Sampling Media: Summa Canister
 Test Notes:
 Container ID: AC00161

Date Collected: 4/29/05
 Date Received: 5/2/05
 Date(s) Analyzed: 5/4 - 5/5/05
 Volume(s) Analyzed: 0.050 Liter(s)
 0.010 Liter(s)

Pi 1 = -2.1 Pf 1 = 3.5

D.F. = 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	14	ND	5.6	
156-59-2	cis-1,2-Dichloroethene	260	14	66	3.6	
79-01-6	Trichloroethene	210	14	38	2.7	
127-18-4	Tetrachloroethene	7,200	14	1,100	2.1	

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

Page 1 of 1

Client: Conrad Geoscience Corporation
Client Sample ID: IA-2
Client Project ID: Apple Valley Shopping Center/AL030070

CAS Project ID: P2500913
CAS Sample ID: P2500913-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3
Analyst: Aristotle Bragasin
Sampling Media: Summa Canister
Test Notes:
Container ID: AC00751

Date Collected: 4/29/05
Date Received: 5/2/05
Date(s) Analyzed: 5/5/05
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -2.3 Pf 1 = 3.5

D.F. = 1.47

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.74	ND	0.29	
156-59-2	cis-1,2-Dichloroethene	ND	0.74	ND	0.19	
79-01-6	Trichloroethene	ND	0.74	ND	0.14	
127-18-4	Tetrachloroethene	8.6	0.74	1.3	0.11	

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.

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RESULTS OF ANALYSIS

Page 1 of 1

Client: **Conrad Geoscience Corporation**
 Client Sample ID: **OA-2**
 Client Project ID: **Apple Valley Shopping Center/AL030070**

CAS Project ID: P2500913
 CAS Sample ID: P2500913-006

Test Code: EPA TO-15
 Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3
 Analyst: Aristotle Bragasin
 Sampling Media: Summa Canister
 Test Notes:
 Container ID: AC00420

Date Collected: 4/29/05
 Date Received: 5/2/05
 Date(s) Analyzed: 5/5/05
 Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -2.0 Pf 1 = 3.5

D.F. = 1.43

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.72	ND	0.28	
156-59-2	cis-1,2-Dichloroethene	ND	0.72	ND	0.18	
79-01-6	Trichloroethene	ND	0.72	ND	0.13	
127-18-4	Tetrachloroethene	ND	0.72	ND	0.11	

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.