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Project Site numbers will be proceeded by the following:

Municipal Brownfields - B
Superfund - HW
Spills - SP
ERP - E
VCP - V
BCP - C

Olin

P. O. BOX 248, 1186 LOWER RIVER ROAD, NW, CHARLESTON, TN 37310-0248

(423) 336-4000 FAX: (423) 336-4166

June 6, 2003

Mr. Michael J. Hinton, P.E.
Environmental Engineer
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203-2999

Subject: Charles Gibson Site
(Pine and Tuscarora Site)
Niagara Falls, New York
NYSDEC Registry No. 9-32-063
Semi-Annual Ground Water Sampling Report
April 2003

Dear Mr. Hinton:

In accordance with the approved sampling plan for the above referenced Site, enclosed are three copies of the first Semi-Annual Ground Water Report, April 20032. The analytical data summary for ground water is listed in Table 1. Analytical results for the annual leachate sampling at Manhole B are listed in Table 2. The laboratory data summary package (Appendix A), and the field logs (Appendix B) for this sampling event are also attached. The Quarterly Site Inspection Forms and the Quarterly Ground Water Elevation Forms are included in Appendices C and D respectively. The analytical data has been validated and found to be acceptable.

If you have any questions, please call me at 423/ 336-4381.

Sincerely,
OLIN CORPORATION

Lorraine M. Miller

Lorraine M. Miller
Principal Environmental Specialist

cc: C.M. Richards (letter only, via e-mail)
T. E. Tirabassi (letter only, via e-mail)
M. Walker (1 copy)

bcc: B. H. Brayley (1 copy)

TABLE 1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING

April 1-2, 2003

	MW-1R	MW-1R (dup)	MW-2	MW-4	MW-5	MW-A3
PARAMETER						
alpha-BHC	.015J	.014J	.050U	.049U	.048U	.048U
beta-BHC	.053	.052	.050U	.049U	.048U	.048U
delta-BHC	.049U	.049U	.050U	.049U	.048U	.048U
gamma-BHC	.049U	.049U	.050U	.049U	.048U	.048U
Hexachlorobenzene	NR	NR	NR	NR	NR	NR

Notes:

Concentration in ug/l

U Undetected at associated value

J Estimated value

Field blank was non-detect for all parameters of interest.

Data has been validated and judged acceptable as qualified.

NR Not required for this event.

Next sampling for hexachlorobenzene is scheduled for October 2004.

TABLE 2

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
ANNUAL LEACHATE SAMPLING

April 1, 2003

	MANHOLE B
PARAMETER	
alpha-BHC	.048U
beta-BHC	.33
delta-BHC	.60
gamma-BHC	.048U
Hexachlorobenzene	NR

Notes:
Concentration in ug/l
Field blank was non-detect for all parameters of interest.
Data has been validated and judged acceptable as qualified.
NR Not required for this event.
Next sampling for hexachlorobenzene is scheduled for October 2005.

APPENDIX A

LABORATORY DATA SUMMARY PACKAGE

SEMI-ANNUAL GROUND WATER SAMPLING

AND

ANNUAL LEACHATE SAMPLING OF MANHOLE B

APRIL 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

SEVERN TRENT STL

ANALYTICAL REPORT

Job#: A03-3028

STL Project#: NY3A9025
Site Name: OLIN Corporation - Charles Gibson site
Task: Olin Corp. - Charles Gibson Site

Ms. Lorraine Miller
Olin Corporation
1186 Lower River Rd.
Charleston, TN 37310

CC: Mr. Michael Walker

STL Buffalo

Brian J. Fischer
Project Manager

Meg Dolan
Analyst

04/17/2003

This report contains 173 pages which are individually numbered.

Severn Trent Laboratories, Inc.
STL Buffalo • 10 Hazelwood Drive, Suite 106, Amherst, NY 14228
Tel 716 691 2600 Fax 716 691 7991 • *www.stl-inc.com*

A part of Severn Trent plc

SAMPLE DATA SUMMARY PACKAGE

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A3302801	MHB-040103	04/01/2003	10:30	04/02/2003	13:20
A3302802	MW-1R-040103	04/01/2003	11:50	04/02/2003	13:20
A3302803	MW-2-040103	04/01/2003	15:00	04/02/2003	13:20
A3302803MS	MW-2MS-040103	04/01/2003	15:00	04/02/2003	13:20
A3302803SD	MW-2SD-040103	04/01/2003	15:00	04/02/2003	13:20
A3302804	MW-4-040103	04/01/2003	15:50	04/02/2003	13:20
A3302805	MW-5-040103	04/01/2003	16:30	04/02/2003	13:20
A3302806	MW-7-040103	04/01/2003	12:50	04/02/2003	13:20
A3302807	MW-8-040203	04/02/2003	11:00	04/02/2003	13:20
A3302808	MWA-3-040203	04/02/2003	10:30	04/02/2003	13:20

METHODS SUMMARY

Job#: A03-3028

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

PARAMETER	ANALYTICAL METHOD
ASP 2000- METHOD 8081 BHC'S	ASP00 8081

References:

ASP00 "Analytical Services Protocol", New York State Department of Conservation, June 2000.

NON-CONFORMANCE SUMMARY

Job#: A03-3028

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-3028
Sample Cooler(s) were received at the following temperature(s); 2 @ 2.0 °C
All samples were received in good condition.

GC Extractable Data

No deviations from protocol were encountered during the analytical procedures.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

4-17-03
Date

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NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: SEVERN TRENT LABORATORIES, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS						
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	TCLP HERB	WATER QUALITY
MHB-040103	A3302801	-	-	-	ASP00	-	-	-
MW-1R-040103	A3302802	-	-	-	ASP00	-	-	-
MW-2-040103	A3302803	-	-	-	ASP00	-	-	-
MW-4-040103	A3302804	-	-	-	ASP00	-	-	-
MW-5-040103	A3302805	-	-	-	ASP00	-	-	-
MW-7-040103	A3302806	-	-	-	ASP00	-	-	-
MW-8-040203	A3302807	-	-	-	ASP00	-	-	-
MWA-3-040203	A3302808	-	-	-	ASP00	-	-	-

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MHB-040103	LEACH	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-1R-040103	GW	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-2-040103	GW	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-4-040103	GW	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-5-040103	GW	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-7-040103	GW	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-8-040203	GW	04/02/2003	04/02/2003	4/5/2003	4/9/2003
MWA-3-040203	GW	04/02/2003	04/02/2003	4/5/2003	4/9/2003

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILIARY CLEAN UP	DIL/CONC FACTOR
MHB-040103	LEACH	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-1R-040103	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-2-040103	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-4-040103	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-5-040103	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-7-040103	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-8-040203	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MWA-3-040203	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED

DATA COMMENT PAGE

ORGANIC DATA QUALIFIERS

ND or U	Indicates compound was analyzed for, but not detected at or above the reporting limit.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS.
B	This flag is used when the analyte is found in the associated blank, as well as in the sample.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at the secondary dilution factor.
N	Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.
P	This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the data page and flagged with a "P".
A	This flag indicates that a TIC is a suspected aldol-condensation product.
1	Indicates coelution.
*	Indicates analysis is not within the quality control limits.

INORGANIC DATA QUALIFIERS

ND or U	Indicates element was analyzed for, but not detected at or above the reporting limit.
J or B	Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
N	Indicates spike sample recovery is not within the quality control limits.
K	Indicates the post digestion spike recovery is not within the quality control limits.
S	Indicates value determined by the Method of Standard Addition.
M	Indicates duplicate injection results exceeded quality control limits.
W	Post digestion spike for Furnace AA analysis is out of quality control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.
E	Indicates a value estimated or not reported due to the presence of interferences.
H	Indicates analytical holding time exceedance. The value obtained should be considered an estimate.
*	Indicates analysis is not within the quality control limits.
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: MHB-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302801

Sample wt/vol: 1030.00 (g/mL) ML Lab File ID: RA24460.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.33	
319-86-8	delta-BHC	0.60	
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-1R-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302802

Sample wt/vol: 1025.00 (g/mL) ML Lab File ID: RA24461.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.015	J
319-85-7	beta-BHC	0.053	
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-2-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302803

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: RA24462.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-4-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302804

Sample wt/vol: 1025.00 (g/mL) ML Lab File ID: RA24465.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.049	U
319-85-7	beta-BHC	0.049	U
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: MW-5-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302805

Sample wt/vol: 1030.00 (g/mL) ML Lab File ID: RA24466.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-7-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302806

Sample wt/vol: 1020.00 (g/mL) ML Lab File ID: RA24467.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.014	J
319-85-7	beta-BHC	0.052	
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U

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OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MWA-3-040203

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302808

Sample wt/vol: 1035.00 (g/mL) ML Lab File ID: RA24472.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/02/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER SURROGATE RECOVERY

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): RTXCLPI ID: 0.32 (mm)

	Client Sample ID	DCBP %REC	#	TCMX %REC	#							TOT OUT
1	Matrix Spike Blank	62		94								0
2	Method Blank	66		86								0
3	MHB-040103	78		129								0
4	MW-1R-040103	106		90								0
5	MW-2-040103	98		92								0
6	MW-2MS-040103	92		98								0
7	MW-2SD-040103	108		87								0
8	MW-4-040103	60		80								0
9	MW-5-040103	72		84								0
10	MW-7-040103	76		96								0
11	MW-8-040203	63		94								0
12	MWA-3-040203	86		96								0

QC LIMITS

(DCBP) = Decachlorobiphenyl (28-132)
(TCMX) = Tetrachloro-m-xylene (36-132)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: STL Buffalo Contract: _____ Lab Samp ID: A3302803

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - Client Sample No.: MW-2-040103

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	MS CONCENTRATION UG/L	MS % REC #	QC LIMITS REC.	+
gamma-BHC (Lindane)_____	0.476	0	0.376	79	56 - 123	=

COMPOUND	SPIKE ADDED UG/L	MSD CONCENTRATION UG/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.	+
gamma-BHC (Lindane)_____	0.476	0.344	72	9	15	56 - 123	=

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: ____0 out of ____1 outside limits
Spike recovery: ____0 out of ____2 outside limits

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER MATRIX SPIKE BLANK RECOVERY

Lab Name: STL Buffalo Contract: _____ Lab Samp ID: A3B0355802

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - Client Sample No.: Method Blank

COMPOUND	SPIKE ADDED UG/L	MSB CONCENTRATION UG/L	MSB % REC #	QC LIMITS REC.	+ =
gamma-BHC (Lindane)_____	0.500	0.391	78	56 - 123	

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike recovery: ____0 out of ____1 outside limits

Comments: _____

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OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
METHOD BLANK SUMMARY

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: A3B0355802 Lab File ID: RA24474.TX0

Matrix: (soil/water) WATER Extraction: SEPF

Sulfur Cleanup: (Y/N): N Date Extracted: 04/05/2003

Date Analyzed (1): 04/09/2003 Date Analyzed (2): _____

Time Analyzed (1): 13:34 Time Analyzed (2): _____

Instrument ID (1): HP5890-18 Instrument ID (2): _____

GC Column (1): RTXCLPI Dia: 0.32(mm) GC Column (2): _____ Dia: ____(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	Matrix Spike Blank	A3B0355801	04/09/2003	
2	MHB-040103	A3302801	04/09/2003	
3	MW-1R-040103	A3302802	04/09/2003	
4	MW-2-040103	A3302803	04/09/2003	
5	MW-2MS-040103	A3302803MS	04/09/2003	
6	MW-2SD-040103	A3302803SD	04/09/2003	
7	MW-4-040103	A3302804	04/09/2003	
8	MW-5-040103	A3302805	04/09/2003	
9	MW-7-040103	A3302806	04/09/2003	
10	MW-8-040203	A3302807	04/09/2003	
11	MWA-3-040203	A3302808	04/09/2003	

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3B0355802

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: RA24474.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: _____ _____

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 5.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U

SAMPLE DATA PACKAGE

SDG NARRATIVE

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A3302801	MHB-040103	04/01/2003	10:30	04/02/2003	13:20
A3302802	MW-1R-040103	04/01/2003	11:50	04/02/2003	13:20
A3302803	MW-2-040103	04/01/2003	15:00	04/02/2003	13:20
A3302803MS	MW-2MS-040103	04/01/2003	15:00	04/02/2003	13:20
A3302803SD	MW-2SD-040103	04/01/2003	15:00	04/02/2003	13:20
A3302804	MW-4-040103	04/01/2003	15:50	04/02/2003	13:20
A3302805	MW-5-040103	04/01/2003	16:30	04/02/2003	13:20
A3302806	MW-7-040103	04/01/2003	12:50	04/02/2003	13:20
A3302807	MW-8-040203	04/02/2003	11:00	04/02/2003	13:20
A3302808	MWA-3-040203	04/02/2003	10:30	04/02/2003	13:20

METHODS SUMMARY

Job#: A03-3028

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

PARAMETER	ANALYTICAL METHOD
ASP 2000- METHOD 8081 BHC'S	ASP00 8081

References:

ASP00 "Analytical Services Protocol", New York State Department of Conservation, June 2000.

NON-CONFORMANCE SUMMARY

Job#: A03-3028

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-3028
Sample Cooler(s) were received at the following temperature(s); 2 @ 2.0 °C
All samples were received in good condition.

GC Extractable Data

No deviations from protocol were encountered during the analytical procedures.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

4-17-03
Date

CHAIN OF CUSTODY DOCUMENTATION

Chain of Custody Record

SEVERN TRENT SERVICES — **Severn Trent Laboratories, Inc.**

STL-4124 (1200)

Client	Project Manager	Date	Chain of Custody Number
OLIN CORP	Lorraine Miller - OLIN	4-2-03	097653
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 1
1185 Lower River Road	423-336		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Charleston / TN / 37310	Mike Walker 284 0431	Brian Fischer	
Project Name and Location (State)	**Carrier/Waybill Number**		
Charles Gibson Site - Niagara Falls NY.			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNOS	HCl	NaOH	ZnAc/ NaOH	Analysis: BNA 8270	# Bottles	Special Instructions/ Conditions of Receipt
MHB 040103	4-1-03	1030		X			X						X	2	1 liter amber
MW2 040103	4-1-03	1500		X			X						X	2	"
MW2MS 040103	4-1-03	1500		X			X						X	2	"
MW2SD 040103	4-1-03	1500		X			X						X	2	"
MW7 040103	4-1-03	1250		X			X						X	2	"
MW1R 040103	4-1-03	1150		X			X						X	2	"
															Please Send Copies of Results to Mike Walker and Lorraine Miller Thank You

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	4-2-03	1315	1. Received By STL	4-2-03	1315
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: 2@2.0°C

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

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Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (1200)

Client: OLIN CORP.	Project Manager: Lorraine Miller	Date: 4-2-03	Chain of Custody Number: 097654
Address: 1186 Lower River Road	Telephone Number (Area Code)/Fax Number: 423-336-	Lab Number:	Page 1 of 1
City: Charleston / State: TN / Zip Code: 37310	Site Contact: Mike Walker 284 0431	Lab Contact: Brian Fischer	
Project Name and Location (State): Charles Gibson Site, Niagara Falls NY (Pine + Tuscarora St.)	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: BNA	# of Bottles	Special Instructions/ Conditions of Receipt
MW8 [redacted] 040203	4-2-03	1100		X			X						X	2	1 Liter AMBER
MW5 040103	4-1-03	1630		X			X						X	2	"
MW4 040103	4-1-03	1550		X			X						X	2	"
MWA-3-040203	4-2-03	1030		X			X						X		Please Send Results to:
		(CM)													Skenenson c/o Mike Walker 2149 Lockport Rd Niagara Falls NY 14305 and Lorraine Miller @ Olin Address ABOVE

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By	4-2-03	1320	1. Received By STL	4-2-03	13:20
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: 2@2.0°C

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

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APPENDIX B

FIELD LOGS

SEMI-ANNUAL GROUND WATER SAMPLING
AND
ANNUAL LEACHATE SAMPLING AT MANHOLE B

April 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: MHB-040103
SAMPLING EVENT/DATE: 4/1/03 spring
MONITORING WELL: Man Hole B
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: 13.3 (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= (GALS)

PURGE METHOD: **Grab sample**
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/1/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT

SAMPLE TIME: 1150

LOCATION: Man Hole "B"

SAMPLE METHOD: Took a grab sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS: Clear, no odor or sheen

QC SAMPLES TAKEN: no

OTHER OBSERVATIONS/COMMENTS: Water samples were split with Brian Sydowski of the NYSDEC.

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: **MW1R-040103 and MW7-040103**
SAMPLING EVENT/DATE: 4/1/03 spring
MONITORING WELL: MW1R and blind duplicate/MW7
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/1/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **12.1** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **4.15** (FT.)
WATER COLUMN: **7.95** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.272** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME 1115 STOP TIME: 1150
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	8.14	1120	7.3	Clear,No Odor
2	7.99	1034	6.9	"
3	7.69	1073	6..8	"
4				
5				

TOTAL VOLUME PURGED: 3.75 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/1/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1150

LOCATION: MW1R
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS: Clear, no odor or sheen
QC SAMPLES TAKEN: Blind duplicate samples were taken and labeled MW7 on the COC.
OTHER OBSERVATIONS/COMMENTS: Water samples were split with Brian Sydowski of the NYSDEC.

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: MW2-040103
SAMPLING EVENT/DATE: 4/1/03 spring
MONITORING WELL: MW-2
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/1/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **12.13** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **4.1** (FT.)
WATER COLUMN: **8.03** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.2848** (GALS)

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1430 STOP TIME: 1500
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.78	1405	7.3	Clear,No Odor
2	7.54	1386	6.5	"
3	7.35	1298	6.5	"
4				
5				

TOTAL VOLUME PURGED: 4 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/1/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1500

LOCATION: MW-2

SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS: Clear, no odor or sheen

QC SAMPLES TAKEN: MS/MSD samples were also taken.

OTHER OBSERVATIONS/COMMENTS: BHC's only

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: **MW4-040103**
SAMPLING EVENT/DATE: 4/1/03 spring
MONITORING WELL: MW4
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/1/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **13.75** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **6.3** (FT.)
WATER COLUMN: **7.45** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.192** (GALS)

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1525 STOP TIME: 1550
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.88	1.98	7.6	Black water/Sulfur
2	7.63	1719	6.8	Grey water Smell
3	7.47	1837	6.9	"
4				
5				

TOTAL VOLUME PURGED: 3.5 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/1/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1550

LOCATION: MW-4

SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS: Black water came out at first, then turned grey as purge continued..

QC SAMPLES TAKEN:

OTHER OBSERVATIONS/COMMENTS: BHC's only Water also has a sulfury smell to it

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: **MW5-040103**
SAMPLING EVENT/DATE: 4/1/03 spring
MONITORING WELL: MW5
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/1/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **15.28** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **7.1** (FT.)
WATER COLUMN: **8.18** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.3088** (GALS)

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1600 STOP TIME: 1630
PURGE OBSERVATIONS: Grey water no odor

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.78	2.57	7.5	Grey water/ No odor
2	6.67	2.56	7.1	Lt. Rusty/ " "
3	6.65	2.57	7.2	Yellow Tint "
4				
5				

TOTAL VOLUME PURGED: 4 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/1/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1630

LOCATION: MW5

SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS: Purge water started out grey in color then turned to a rusty color then became yellowish / clear.

QC SAMPLES TAKEN: No.

OTHER OBSERVATIONS/COMMENTS: BHC's only

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= $\frac{\text{SC measured}}{\{\{T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: MW8-040203
SAMPLING EVENT/DATE: 4/2/03 spring
MONITORING WELL: MW8 / Field Blank
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT:
ONE WELL VOLUME= (GALS)

PURGE METHOD:
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED: gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/2/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1100

LOCATION: Drive way in front of main gate

SAMPLE METHOD: Poured pure water supplied by the lab into bottles labeled MW8-040203

SAMPLING OBSERVATIONS: MW-8 = Field Blank

QC SAMPLES TAKEN: No.

OTHER OBSERVATIONS/COMMENTS: BHC's only

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: **MWA3-040203**
SAMPLING EVENT/DATE: 4/2/03 spring
MONITORING WELL: MWA3
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/2/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **11.95** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **5.3** (FT.)
WATER COLUMN: **6.65** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.064** (GALS)

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1000 STOP TIME: 1030
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.9	593	7.1	Clear/No odor
2	7.66	561	6.1	" "
3	7.59	575	5.9	" "
4				
5				

TOTAL VOLUME PURGED: 3.25 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/2/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1030

LOCATION: MWA3

SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN: No.

OTHER OBSERVATIONS/COMMENTS: BHC's only

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= $\frac{\text{SC measured}}{\{\{T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER SAMPLING FIELD PARAMETERS
FIELD INSTRUMENTATION CALIBRATION FORM

DATE: 3/31/2003 SEMI-ANNUAL SAMPLING EVENT: Spring 2003

PERSON CALIBRATING METERS: M. Walker

pH METER USED: MANUFACTURER: Oakton
MODEL: pH Tester 3
IDENTIFICATION/CONTROL NUMBER: E780

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: 7
STANDARD 4.00 METER READ: #NAME?
STANDARD 10.00 METER READ:

METER CALIBRATION COMMENTS: New battery

SPECIFIC CONDUCTIVITY METER USED:
MANUFACTURER: Oakton
MODEL: Specific Cond. Meter
IDENTIFICATION/CONTROL NUMBER: 35607-10

CALIBRATION STANDARDS USED:

STANDARD 0 READ:
(STANDARD 0 USED: ____AIR, ____WATER)
STANDARD ____447____ READ: 468
STANDARD ____ READ:

METER CALIBRATION COMMENTS:

THERMOMETER USED: TYPE: Fisher Scientific Digital
MANUFACTURER: F/S
IDENTIFICATION/CONTROL NUMBER: 21115741

COMMENTS: (DOES THERMOMETER TEMPERATURE AGREE WITH SPECIFIC CONDUCTIVITY METER TEMPERATURE ?) yes

OTHER:

OTHER INSTRUMENTS USED: TYPE:
MANUFACTURER:
IDENTIFICATION/CONTROL NUMBER:

CALIBRATIONS PERFORMED:

OTHER CALIBRATION COMMENTS:

APPENDIX C

QUARTERLY SITE INSPECTION FORMS

January - June 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 2/19/2003 TIME: 2:00

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly Inspection

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: The site was secure and looked good upon arrival.

The readout on the front of the flow meter was blank. Power to the manhole from the power panel checked out OK, I suspect the LCD readout on the face of the meter could be frozon and shorted.

The Fax delivery system still functions properly. I will contact Carrier Controls to get their suggestions and advise.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 4/2/2003 TIME: 1145

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: 40 F, Cloudy and Windy

REASON FOR INSPECTION (QUARTERLY OR OTHER): Spring Sample Event

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	Weld is cracked on fence gate latch assembly
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: Even though the gate latch has a cracked weld, it did not compromise the integrity of the locking mechanism. I can repair the broken weld and re-adjust the gate. I will send you a picture of the repair for the files.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 4/14/2003 TIME: 1000

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Repair Flow meter

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: Met with Steve Frank of Carrier Controls to install the repaired flow meter face. We also tested the pumping system using the level switches. (tested OK). We have discovered that face of the flow meter, which is accurate according to our calculations, is not in sync. With the readout on the fax sheets. We are working to re-calibrate, and correct this situation. We have pumped 5,230 gallons during the test, the fax read out showed 15,977.

APPENDIX D

QUARTERLY GROUNDWATER ELEVATION /PUMPING FORMS

January - June 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 2/19/2003 TIME: 2:00

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: Cloudy 33 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.99	564.73	OK
P-2	574.89	9.45	565.44	OK
P-3	574.16	7.65	566.51	OK
P-4	576.14	10.8	565.34	OK
P-5	575.05	5.95	569.1	OK
P-6	578.28	10.4	567.88	OK
MANHOLE A	575.22	11.15	564.07	OK
MANHOLE B	577.34	13.2	564.14	OK

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS: All wells and manholes looked OK.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 4/2/2003 TIME: 1200

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: 40 F, Cloudy, Windy

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.4	565.32	
P-2	574.89	9.35	565.54	
P-3	574.16	6.6	567.56	
P-4	576.14	10.85	565.29	
P-5	575.05	5.2	569.85	
P-6	578.28	10	568.28	
MANHOLE A	575.22	11.25	563.97	
MANHOLE B	577.34	13.3	564.04	

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS:

Olin

P. O. BOX 248, 1186 LOWER RIVER ROAD, NW, CHARLESTON, TN 37310-0248

(423) 336-4000 FAX: (423) 336-4166

February 19, 2004

Mr. Michael J. Hinton, P.E.
Environmental Engineer II
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Subject: **Charles Gibson Site**
NYSDEC Registry No. 9-32-063
Eleventh Annual Report - 2003

Dear Mr. Hinton:

Enclosed are three copies of the Eleventh Annual Report - 2003 for the referenced site. This report summarizes the activities performed during 2003 for the operation and maintenance of the containment remedy for the site and the ground water monitoring program outside of the containment area.

The following is a summary of major activities that occurred during 2003.

- Semi-annual groundwater sampling events were performed during April and September 2003.
- The annual sediment sampling was performed in September.
- The annual sampling and analysis of leachate was completed in September. There were 5,230 gallons of Leachate discharged to the City of Niagara Falls Wastewater Treatment Facility during 2003.
- The NYSDEC conducted a site inspection on April 1, 2003.

The Semi-Annual Ground Water Sampling and Annual Sediment Sampling Report - September 2003, is included as Appendix A to this report.

Please call me at 423/336-4381 to discuss any information concerning this report.

Sincerely,
OLIN CORPORATION

Lorraine M. Miller

Lorraine M. Miller
Principal Environmental Specialist

cc: C. M. Richards via e-mail
Tom Tirabassi via e-mail
Mike Walker via e-mail

dm:sites/P&T(Gibson)/ENV4060/O&M/Eleventh Annual Report 2003

ELEVENTH ANNUAL REPORT

2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063

PREPARED BY OLIN CORPORATION

FEBRUARY 2004

Introduction

This is the Eleventh Annual Report from Olin Corporation (Olin) for the Charles Gibson Site (Pine and Tuscarora Site), located in Niagara Falls, New York. This report summarizes the activities performed during 2003 for the operations and maintenance of the containment remedy for the Site and the ground water monitoring program outside of the containment area.

Background

The Charles Gibson Site (Site) is located approximately four miles east of downtown Niagara Falls, New York. The Site comprises an area of approximately two acres of land in Niagara County bordered on the south by private property, on the west by Tuscarora Road and on the north and east by Cayuga Creek. The Site is a fully remediated waste site currently surrounded by a fence.

Construction of the remedy on the Site concluded in 1990. The remedy consisted of rerouting Cayuga Creek around and away from the waste, installation of a fully circumscribed soil-bentonite slurry wall barrier and installation of a double flexible membrane liner cap with a perimeter collection drain system. The first year of operations and maintenance (O&M) of the containment remedy for the Site and the ground water monitoring program began in 1993.

Waters collected in the Site perimeter collection drain system are managed by direct discharge to the City of Niagara Falls Wastewater Treatment Facility. The Site is classified as a commercial/small industrial/residential user (CSIRU) and does not require a permit.

Reports are submitted as appropriate to the New York State Department of Environmental Conservation (NYSDEC). Records of all environmental monitoring are maintained by Olin Corporation. These records are available for review and inspection by the State upon reasonable notice.

Discussion

The Stipulation and Consent Judgment, CIV 83-1400, and its modification, CIV 83-1400C, (the Agreement) listed the following elements to be included in the required remediation plan for the Site (Plan C):

1. Quarterly ground water monitoring for 30 years (revised in 1997 to semiannual);
2. Sample collection and analysis of creek water and of creek sediments annually for 30 years;
3. Establishment of an upward hydraulic gradient within the containment area, unless Olin can demonstrate by clear and convincing evidence the establishment of the same is unnecessary or inappropriate to the accomplishment of the goals set forth in paragraph 4(a) of the stipulation;
4. Acquisition by Olin of easements which would permit the required monitoring;
5. Provisions for protection of the Site from disturbance which might increase the threat of contamination migration, including regular inspection of the site;
6. Provisions for the design and implementation of a contingency plan in the event that migration of the contaminants occurs despite the implementation of the containment remediation plan;
7. Containment or removal of the contaminants deposited or caused to be deposited by Olin which have migrated off-Site consistent with the goals of paragraph 4(a);
8. Fiscal arrangements, guarantees, or the provision of financial assurances sufficient to ensure that Olin possess the financial ability to perform the containment remedial plan and monitoring.

The Agreement includes a provision in the event that after seven years following the delivery of a Release of Liability (issued December 15, 1992), Olin demonstrates that conditions at the Site are such that the stated frequency or duration of the requirements of elements 1, 2, or 5 are no longer necessary to determine whether the remediation is effective, Olin may reduce the frequency and duration of such monitoring or inspections. Additionally, if after seven years following the Release of Liability, Olin is able to demonstrate that element 8 is no longer necessary to ensure performance, Olin may alter the fiscal arrangements appropriately.

The approved Operation and Maintenance Manual (O&M Manual (June 2000)) provides details on the O&M of the containment remedy on the northern portion of the site and includes provisions for site control and environmental monitoring. The O&M Manual (June 2000) reflects current activities being performed for the operation and maintenance of the containment remedy for the Site and the ground water monitoring program outside the containment area. The yearly inspection and sampling schedule for the Site is attached for reference (Attachment 1).

The O&M Manual (2000) addresses the required elements as set forth in the Agreement. Element 4, acquisition of easements, is a completed task. Element 6, a contingency plan, is addressed in the O&M Manual. Element 7, containment of the contaminants, has been achieved and is being monitored for effectiveness. Element 8, provision of financial assurance, is being met. This report discusses elements 1, 2, 3, and 5 of the Agreement.

Element 1) **Semi-annual ground water monitoring.** Monitor wells MW-A3, MW-1R, MW-2, MW-4, and MW-5 were sampled for the site compounds alpha-BHC, beta-BHC, gamma-BHC, delta-BHC on April 1-2 and on September 23, 2003. Analyses were performed using SW-846 Method 8080. Sampling results indicate that concentrations of site compounds being monitored are similar to previous results. Monitor wells are sampled for hexachlorobenzene (HCB) every other year. The monitor wells were sampled for HCB in September 2002. The next HCB sampling is scheduled for September 2004.

The semi-annual ground water monitoring data summary from 1997 through 2003 is provided in Table 1. The 1997 time period represents the start of the semi-annual events.

Element 2) **Annual creek sediment monitoring.** Annual sediment sampling was performed on September 24, 2003. Upstream and downstream data were similar to the 2002 sampling event for the alpha, beta, delta and gamma BHC isomers. Annual upstream and downstream sediment sampling results for the project-to-date are summarized in Tables 2 and 3 respectively. Sediment monitoring was modified in 2001 from collecting a grab sample to placement of sediment traps at the upstream and downstream locations. Sediment traps were installed for the first time during the April 2001 sampling event. Evaluating results from sediment trap monitoring will require collecting additional data over the next few monitoring events.

Element 3) **Establishment of an upward (inward) hydraulic gradient.** Quarterly ground water elevations were monitored at piezometer pairs P1/P2, P3/P4, and P5/P6 to maintain an inward hydraulic gradient in the containment area of the site. The data collected during each event is recorded on the Sampling Field Form. An evaluation of data from the piezometer pairs at the Site indicates that an inward hydraulic gradient is generally being maintained in the containment area of the site (Table 4). Water level elevation in Manhole A and Manhole B are monitored quarterly (Table 5).

There were 5,230 gallons of leachate discharged to the POTW during 2003 during a test of the discharge system. Drought conditions continued to exist in the region during 2003. A summary of yearly discharge volumes for the Site is provided in Table 6. Between 1991 and 2003, a total of 812,593 gallons of leachate have been removed from the Site. Annual leachate sampling and analysis for BHC's began in 2000 to replace the POTW sampling that was previously performed. HCB will be monitored every five years starting in 2000. The sampling location is Manhole B. Analytical results for 2003 are provided in Table 7.

Element 5) **Site protection.** Quarterly site inspections were conducted to identify any potential problems with the physical structures and to ensure that the remedial measure components are operating effectively. Routine site maintenance included fertilizing, mowing, weeding and mulching the site area.

Other non routine repairs completed in 2003 included: repairing the readout on the flow meter at the site and testing the pumping system in April. Repairs were made to a section of the stockade perimeter fence along the southeast side of fence that was knocked over by high winds in November. General site conditions and security status were noted on the Site Inspection Form and addressed as appropriate.

Conclusions/Recommendations:

The work performed for the Site during 2003 was reviewed and found to be in accordance with the approved O&M Manual (2000). Ground water monitoring indicates there are no increased concentrations of the Site compounds being monitored. Evaluation of the ground water data generated during the 2003 monitoring year indicates that the containment remedy is effective. An evaluation of data from the piezometer pairs at the Site indicates that an inward hydraulic gradient is generally being maintained in the containment area of the site. 2003 data from sediment trap monitoring were similar to the 2002 monitoring.

Table 1

Semi-Annual Ground Water Summary

Monitor Well: MW-A3

	1997	1998		1999		2000		2001		2002		2003	
Parameter	**September (*)**	**April**	**October**	**April**	**October**	**May**	**October**	**April**	**October**	**April**	**September**	**April**	**September**
Alpha-BHC	.059	.016J	.12	.0043J	-	.050U	.054U	.050U	.050U	.050U	.029J	.048U	.035J
Beta-BHC	.028J	.012J	.0092J	.053U	-	.012J	.054U	.050U	.050U	.050U	.016J	.048U	.059U
Gamma-BHC	.050U	.050U	.024J	.053U	-	.050U	.054U	.050U	.050U	.050U	.050U	.048U	.059U
Delta-BHC	.050U	.050U	.053U	.053U	-	.050U	.054U	.050U	.050U	.050U	.050U	.048U	.059U
Hexachlorobenzene	10U	10U	-	11U	-	11U	NR	10U	NR	NR	NR	NR	NR

Monitor Well: MW-1R

	1997	1998		1999		2000		2001		2002		2003	
Parameter	**September (*)**	**April**	**October**	**April**	**October**	**May**	**October**	**April**	**October**	**April**	**September**	**April**	**September**
Alpha-BHC	.058	.085	.18	.072	.057	.028J	.054U/.052U	.050U/.050U	.099/.060	.070/.061	.055/.030J	.014J/.015U	.052U
Beta-BHC	.053	.14	.20	.13	.080	.12	.038J/.052U	.012J/.050U	.19/.15	.10/.050U	.13/.095	.053/.052	.052U
Gamma-BHC	.050U	.050U	.028J	.053U	.050UJ	.051U	.054U/.052U	.050U/.050U	.063J/.058U	.050U/.050U	.055U	.049U	.052U
Delta-BHC	.050U	.0042J	.053U	.0054J	.050U	.051U	.054U/.052U	.050U/.050U	.061U/.058U	.050U/.053	.055U	.049U	.052U
Hexachlorobenzene	10U	10U	11U	11U	10U	10U	NR	10U/10U	NR	NR	NR	NR	NR

Monitor Well: MW-2

	1997	1998		1999		2000		2001		2002		2003	
Parameter	**September (*)**	**April**	**October**	**April**	**October**	**May**	**October**	**April**	**October**	**April**	**September**	**April**	**September**
Alpha-BHC	.050U	.050U	.053U	.053U	.050U	.029J	.053U	.050U	.054U	.050U	.050U	.050U	.050U
Beta-BHC	.050U	.050U	.053U	.053U	.050U	.098	.053U	.050U	.054U	.050U	.050U	.050U	.050U
Gamma-BHC	.050U	.050U	.053U	.053U	.050UJ	.052U	.053U	.050U	.054U	.050U	.050U	.050U	.030J
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.052U	.053U	.050U	.054U	.050U	.050U	.050U	.050U
Hexachlorobenzene	10UJ	10U	11U	10U	10U	10U	NR	10U	NR	NR	NR	NR	NR

Notes: Concentrations in ug/L
(*) Start of semi annual monitoring program
U Not detected
J Estimated value
/ Field Duplicates
- Not enough water for analysis
NR No longer required
Data has been validated

Table 1 (cont.)

Semi-Annual Ground Water Summary

Monitor Well: MW- 4

	1997	1998		1999		2000		2001		2002		2003	
Parameter	**September (*)**	**April**	**October**	**April**	**October**	**May**	**October**	**April**	**October**	**April**	**September**	**April**	**September**
Alpha-BHC	.050/.060	.0030J	.053U	.0031J	.050U	.051U/.052U	.054U	.050U	.0069J	.050U	.050U	.049U	.056
Beta-BHC	.055/.069	.016J	.045J	.017J	.066/.068	.045J/.062	.054U	.050U	.047J	.041J	.033J	.049U	.026J
Gamma-BHC	.050U	.050U	.053U	.053U	.050U	.051U/.052U	.054U	.050U	.050U	.071J	.050U	.049U	.033J
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.051U/.052U	.054U	.050U	.050U	.050U	.050U	.049U	.050U
Hexachlorobenzene	10U	10U	10U	10U	10U	10U	NR	10U	NR	NR	NR	NR	NR

Monitor Well: MW-5

	1997	1998		1999		2000		2001		2002		2003	
Parameter	**September (*)**	**April**	**October**	**April**	**October**	**May**	**October**	**April**	**October**	**April**	**September**	**April**	**September**
Alpha-BHC	.059	.050U/.0066J	.053U	.0071J	.045J	.010J	.054U	.050U	.013J	.050U	.050U	.048U	.049U
Beta-BHC	.050U	.0080J/.0084J	.053U	.053U	.050	.031J	.054U	.050U	.022J	.050U	.050U	.048U	.049U
Gamma-BHC	.050U	.050U	.053U	.053U	.0065J	.052U	.054U	.050U	.055U	.050U	.050U	.048U	.049U
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.052U	.054U	.050U	.055U	.050U	.050U	.048U	.049U
Hexachlorobenzene	10U	10U	11U	11U/11U	10U	10U	NR	10U	NR	NR	NR	NR	NR

Notes: Concentrations in ug/l

(*) Start of semi annual monitoring program
U Not detected
J Estimated value
/ Field Duplicates
- Not enough water for analysis
NR No longer required
Data has been validated

Table 2
Analytical Summary
Cayuga Creek
Annual Upstream Sediment Sampling

Parameter	1993 September	1994 June	1994 September	1995 August	1996 September	1997 September	1998 October	1999 October	2000 October	2001* October	2002 September	2003 September
alpha-BHC	1.5 J	NS	6.1 U	8.1J	2.7J	5.3J	2.1J	8.9/7.4	3.5	55	19/90	28/22J
beta-BHC	2.3 J	NS	2.2 J	12	6.1U	11	5.2	28/19	4.5J	49	37/76	48/30
delta-BHC	6.0 U	NS	6.1 U	21	6.1U	4.0J	5.5	37/31	2.3U	24	31/26	12J/28
gamma-BHC	6.0 U	NS	6.1 U	12 U	6.1U	2.5J	.31UJ	2.9J/.42J	2.3U	3.3J	5.8U/1.6U	1.9J/26U
HCB	500 U	NS	510 U	480 U	500U	330U	470U	480U	NR	NR	NR	NR

Notes:
Concentration in microgram/kilogram (ug/kg)
BHC = Hexachlorocyclohexane
HCB = Hexachlorobenzene
J = Estimated value
U = Undetected at the concentration level specified
NS = Not sampled
NR = No longer required for this event
* Sediment Traps Installed April 2001
Data has been validated

Table 3
Analytical Summary
Cayuga Creek
Annual Downstream Sediment Sampling

Parameter	1993 September	1994 June	1994 September	1995 August	1996 September	1997 September	1998 October	1999 October	2000 October	2001* October	2002 September	2003 September
alpha-BHC	2,200	5,300	720	790	5000	330	4800J/80000J	4800J	9600/13000	16	26	26J
beta-BHC	390	1,800	82	83 J	600	580	1300J/12000J	1800	3000J/2700J	52	34	45
delta-BHC	27 J	80 J	67 U	250 U	41J	60J	53J/5500UJ	190J	1200U/1400U	65	20	97
gamma-BHC	40 U	690	67 U	250 U	35J	44J	300UJ/690J	52J	1200U/1400U	1.4J	6.0U	31U
HCB	800 U	570 UR	550 U	420 U	330U	330U	520U/550U	510U	NR	NR	NR	NR

Notes:
Concentration in microgram/kilogram (ug/kg)
BHC = Hexachlorocyclohexane
HCB = Hexachlorobenzene
J = Estimated value.
U = Undetected at the concentration level specified
R = Sample result rejected due to low surrogate recoveries caused by matrix interference
NR = No longer required for this event
* Sediment Traps Installed April 2001
Data has been validated

Table 4

2003 Quarterly Groundwater Elevations Summary

Piezometer Pair	2/19/2003	4/2/2003	9/23/2003	11/19/2003
P1	564.73 ↑	565.32 ↑	565.65 ↓	565.73 ↓
P2	565.44 ↑	565.54 ↑	565.30 ↓	565.29 ↓
P3	566.51 ↓	567.56 ↓	565.90 ↓	566.16 ↓
P4	565.34 ↓	565.29 ↓	565.29 ↓	565.19 ↓
P5	569.10 ↓	569.85 ↓	567.43 ↓	568.35 ↓
P6	567.88 ↓	568.28 ↓	567.13 ↓	567.78 ↓

Note: Measurement units are in feet.
Piezometers P1, P3, P5 are outside the slurry wall.
Piezometers P2, P4, P6 are located within the containment area.
Discharge system pumped 5,230 gallons during a test of the system on 4/14/2003.

Table 5

Manhole Monitoring
2003 Water Elevations
(ft.)

Date	Manhole A	Manhole B	Comments
2/19/2003	564.07	564.14	
4/2/2003	563.97	564.04	Semi Annual ground water sampling; NYSDEC visit 4/1.
9/23/2003	564.79	564.52	Semi Annual ground water sampling
11/19/2003	563.66	563.73	

Notes:

Manhole monitoring:

- Maintain water level below 565 feet to prevent hydrostatic pressure buildup under concrete slab.
- Pump Manhole B as required to maintain an inward gradient. (This pumping requirement is addressed by the operation of the direct discharge system which became operational in March 1997.)

Table 6

Summary of Yearly Discharge Volumes (gallons)

Date	Volume (gallons)
1991	104,120
1992	76,562
1993	77,797
1994	69,724
1995	56,940
1996	77,512
1997(*)	64,687
1998	51,070
1999	140,860
2000	67,236
2001	20,855
2002	0
2003	**5230**
TOTALS	**812,593**

(*) Represents start of operation of direct discharge system
Discharge system pumped 5,230 gallons during a test of the system on 4/14/2003.

Table 7

Annual Manhole B Sampling

April 1, 2003

Parameter	Concentration (ug/l)
alpha – BHC	.048U
beta - BHC	.33
delta - BHC	.60
gamma - BHC	.048U
Hexachlorobenzene	NR

Notes:
U Undetected at associated value
NR Not required for this event
Field blank was non-detect for all parameters of interest
Data has been validated and judged acceptable as qualified.
Next sampling for hexachlorobenzene is scheduled for October 2005.

ATTACHMENT 1

INSPECTION AND SAMPLING SCHEDULE

GIBSON SITE

GIBSON SITE
NIAGARA FALLS, NEW YORK
2004 INSPECTION AND SAMPLING SCHEDULE

Quarterly	Site Inspection (including Site Cover/Cap, Site Fence, Creek Riprap, Site Structures, CPVC Drain/Sump System).
Quarterly	Piezometer and sump groundwater level elevation measurements.
Semi-Annually	Groundwater monitoring well sampling (April and September) for BHC isomers.
Annually	Cayuga Creek sediment sampling (September) for BHC isomers.
Annually	Leachate sample collection and analysis (Manhole B) for BHC isomers (starting in 2000).
Annually	Annual report to NYSDEC (1st Quarter).
Biennially	Groundwater monitoring well sampling (starting in April 2000) for HCB. The biennial sampling events following 2000 will alternate seasonally between April and September sampling. Next HCB sampling is April 2004.
Every Five Years	Leachate sample collection and analysis (Manhole B) (for HCB) (starting in 2000). Next leachate sampling for HCB is 2005.

APPENDIX A

CHARLES GIBSON SITE
(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063

SEMI-ANNUAL GROUND WATER AND ANNUAL SEDIMENT SAMPLING REPORT

SEPTEMBER 2003

PREPARED BY OLIN CORPORATION

In accordance with the approved sampling plan for the above referenced Site, this report presents a summary of data for the Semi-Annual Ground Water and Annual Sediment Sampling, collected during September 2003.

The analytical data summary for ground water is listed in Table 1. Analytical results for the annual sediment sampling are listed in Table 2. The laboratory data summary package (Appendix 1), and the field logs (Appendix 2) for this sampling event are also attached. The Quarterly Site Inspection Forms and the Quarterly Ground Water Elevation Forms are included in Appendices 3 and 4 respectively. The analytical data has been validated and found to be acceptable.

TABLE 1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING

September 23-24, 2003

	MW-1R	MW-1R (DUP)	MW-2	MW-4	MW-5	MW-A3
PARAMETER						
alpha-BHC	.052U	.052U	.050U	.056	.049U	.035J
beta-BHC	.052U	.052U	.050U	.026J	.049U	.059U
delta-BHC	.052U	.052U	.050U	.050U	.049U	.059U
gamma-BHC	.052U	.052U	.030J	.033J	.049U	.059U
Hexachlorobenzene	NR	NR	NR	NR	NR	NR

Notes:

Concentration in ug/l
U Undetected at associated value
J Estimated value
Field blank was non-detect for all parameters of interest.
Data has been validated and judged acceptable as qualified.
NR Not required for this event.
Next biennial sampling for hexachlorobenzene is scheduled for April 2004.

TABLE 2

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
ANNUAL SEDIMENT SAMPLING

September 24, 2003

	UPSTREAM	DOWNSTREAM
PARAMETER		
alpha-BHC	28/22J	26J
beta-BHC	48/30	45
delta-BHC	12J/28	97
gamma-BHC	1.9J/26U	31U

Notes:
Concentration in ug/kg
Data has been validated and judged acceptable as qualified.
U Compound was analyzed but not detected
J Compound was analyzed and determined to be present in sample. The concentration listed is an estimated value which is less than the specified minimum detection level but greater than zero

APPENDIX 1

LABORATORY DATA SUMMARY PACKAGE

SEMI-ANNUAL GROUND WATER SAMPLING

AND

ANNUAL SEDIMENT SAMPLING

September 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

SEVERN TRENT STL

1/256

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CHARLES GIBSON SITE
(aka Pine & Tuscarora, P&T)
ENV4060 IND
Site Monitoring 2003
SEMI ANNUAL GW MONITORING
SEPTEMBER 2003

ANALYTICAL REPORT

Job#: A03-9186

STL Project#: NY1A8693
Site Name: OLIN CORPORATION
Task: Charles Gibson Site

Ms. Lorraine Miller
Olin Corporation
1186 Lower River Road
Charleston, TN 37310

CC: Mr. Michael Walker

STL Buffalo

Brian J. Fischer
Project Manager

(For Mary Ann Neary)
Mary Ann Neary
Analyst

10/09/2003

Severn Trent Laboratories, Inc.
STL Buffalo • 10 Hazelwood Drive, Suite 106, Amherst, NY 14228
Tel 716 691 2600 Fax 716 691 7991 • www.stl-inc.com

STL Buffalo
Current Certifications

STATE	Program	Cert # / Lab ID
A2LA (ISO 17025)	SDWA, CWA, RCRA	0732-01
Arizona	SDWA, CWA, RCRA	AZ0525
Arkansas	SDWA, CWA, RCRA, SOIL	03-054-D/88-0686
California	NELAP SDWA, CWA, RCRA	01169CA
Canada	GENERAL	SCC 1007-15/10B
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida	NELAP RCRA	E87672
Georgia	SDWA	956
Illinois	NELAP SDWA, CWA, RCRA	200003
Kansas	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	CWA, RCRA	036-999-337
New Hampshire	NELAP SDWA, CWA	233701
New Jersey	SDWA, CWA, RCRA, CLP	NY455
New York	NELAP, AIR, SDWA, CWA, RCRA	10026
North Carolina	CWA	411
North Dakota	SDWA, CWA, RCRA	R-176
Oklahoma	CWA, RCRA	9421
Oregon	NELAP,SDWA, CWA, RCRA	NY200001
Pennsylvania	NELAP, SDWA, CWA, Env. Lab Reg.	68-281
South Carolina	RCRA	91013
Tennessee	SDWA	2970
USDA	FOREIGN SOIL PERMIT	S-4650
Virginia	SDWA	278
Washington	CWA	C254
West Virginia	CWA	252
Wisconsin	CWA	998310390
Wyoming UST	UST	NA

SAMPLE DATA SUMMARY PACKAGE

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A3918606	092303FIELD BLANK	09/23/2003	15:00	09/24/2003	11:00
A3918605	092303MW1R	09/23/2003	12:55	09/24/2003	11:00
A3918604	092303MW2	09/23/2003	13:30	09/24/2003	11:00
A3918604MS	092303MW2 MS	09/23/2003	13:30	09/24/2003	11:00
A3918604SD	092303MW2 SD	09/23/2003	13:30	09/24/2003	11:00
A3918602	092303MW4	09/23/2003	11:50	09/24/2003	11:00
A3918603	092303MW5	09/23/2003	11:30	09/24/2003	11:00
A3918610	092303MW7	09/23/2003	12:55	09/24/2003	11:00
A3918601	092303MWA3	09/23/2003	14:15	09/24/2003	11:00
A3918608	092403BD	09/24/2003	09:30	09/24/2003	11:00
A3918609	092403DS	09/24/2003	09:45	09/24/2003	11:00
A3918607	092403US	09/24/2003	09:30	09/24/2003	11:00

METHODS SUMMARY

Job#: A03-9186

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

PARAMETER	ANALYTICAL METHOD
ASP 2000 - METHOD 8081 BHC'S	ASP00 8081
ASP 2000- METHOD 8081 BHC'S	ASP00 8081

References:

ASP00 "Analytical Services Protocol", New York State Department of Conservation, June 2000.

NON-CONFORMANCE SUMMARY

Job#: A03-9186

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-9186
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
All samples were received in good condition.

GC Extractable Data

No deviations from protocol were encountered during the analytical procedures.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

10-13-03
Date

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: SEVERN TRENT LABORATORIES, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS						
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	TCLP HERB	WATER QUALITY
092303MW1R	A3918605	-	-	-	ASP00	-	-	-
092303MW2	A3918604	-	-	-	ASP00	-	-	-
092303MW4	A3918602	-	-	-	ASP00	-	-	-
092303MW5	A3918603	-	-	-	ASP00	-	-	-
092303MW7	A3918610	-	-	-	ASP00	-	-	-
092303MWA3	A3918601	-	-	-	ASP00	-	-	-
092403BD	A3918608	-	-	-	ASP00	-	-	-
092403DS	A3918609	-	-	-	ASP00	-	-	-
092403US	A3918607	-	-	-	ASP00	-	-	-

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
092303MW1R	WATER	09/23/2003	09/24/2003	09/25/2003	10/01/2003
092303MW2	WATER	09/23/2003	09/24/2003	09/25/2003	10/01/2003
092303MW4	WATER	09/23/2003	09/24/2003	09/25/2003	10/01/2003
092303MW5	WATER	09/23/2003	09/24/2003	09/25/2003	10/01/2003
092303MW7	WATER	09/23/2003	09/24/2003	09/25/2003	10/01/2003
092303MWA3	WATER	09/23/2003	09/24/2003	09/25/2002	10/01/2003
092403BD	SOIL	09/24/2003	09/24/2003	10/01/2003	10/06/2003
092403DS	SOIL	09/24/2003	09/24/2003	10/01/2003	10/06/2003
092403US	SOIL	09/24/2003	09/24/2003	10/01/2003	10/06/2003

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILIARY CLEAN UP	DIL/CONC FACTOR
092303MW1R	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092303MW2	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092303MW4	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092303MW5	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092303MW7	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092303MWA3	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092403BD	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED
092403DS	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED
092403US	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED

DATA COMMENT PAGE

ORGANIC DATA QUALIFIERS

ND or U	Indicates compound was analyzed for, but not detected at or above the reporting limit.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS.
B	This flag is used when the analyte is found in the associated blank, as well as in the sample.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at the secondary dilution factor.
N	Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.
P	This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the data page and flagged with a "P".
A	This flag indicates that a TIC is a suspected aldol-condensation product.
‡	Indicates coelution.
*	Indicates analysis is not within the quality control limits.

INORGANIC DATA QUALIFIERS

ND or U	Indicates element was analyzed for, but not detected at or above the reporting limit.
J or B	Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
N	Indicates spike sample recovery is not within the quality control limits.
K	Indicates the post digestion spike recovery is not within the quality control limits.
S	Indicates value determined by the Method of Standard Addition.
M	Indicates duplicate injection results exceeded quality control limits.
W	Post digestion spike for Furnace AA analysis is out of quality control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.
E	Indicates a value estimated or not reported due to the presence of interferences.
H	Indicates analytical holding time exceedance. The value obtained should be considered an estimate.
*	Indicates analysis is not within the quality control limits.
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

SAMPLE DATA PACKAGE

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000 - METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.
092403BD (US DUP)

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: A3918608

Sample wt/vol: 30.21 (g/mL) G Lab File ID: RA28889.TX0

% Moisture: 69.3 decanted: (Y/N) Y Date Samp/Recv: 09/24/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 10/01/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/06/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	J
319-85-7	beta-BHC	30	
319-86-8	delta-BHC	28	
58-89-9	gamma-BHC (Lindane)	26	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000 - METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: 092403DS

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: A3918609

Sample wt/vol: 30.33 (g/mL) G Lab File ID: RA28891.TX0

% Moisture: 74.5 decanted: (Y/N) Y Date Samp/Recv: 09/24/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 10/01/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/06/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	26	J
319-85-7	beta-BHC	45	
319-86-8	delta-BHC	97	
58-89-9	gamma-BHC (Lindane)	31	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000 - METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: 092403US

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: A3918607

Sample wt/vol: 30.11 (g/mL) G Lab File ID: RA28887.TX0

% Moisture: 69.3 decanted: (Y/N) Y Date Samp/Recv: 09/24/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 10/01/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/06/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	28	
319-85-7	beta-BHC	48	
319-86-8	delta-BHC	12	J
58-89-9	gamma-BHC (Lindane)	1.9	J

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

092303FIELD BLANK

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918606

Sample wt/vol: 1035.00 (g/mL) ML Lab File ID: RA28743.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: 092303MW1R

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918605

Sample wt/vol: 965.00 (g/mL) ML Lab File ID: RA28742.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.052	U
319-85-7	beta-BHC	0.052	U
319-86-8	delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: 092303MW2

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918604

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: RA28739.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.030	J

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: 092303MWA3

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918601

Sample wt/vol: 850.00 (g/mL) ML Lab File ID: RA28736.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.035	J
319-85-7	beta-BHC	0.059	U
319-86-8	delta-BHC	0.059	U
58-89-9	gamma-BHC (Lindane)	0.059	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: 092303MW4

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918602

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: RA28737.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.056	
319-85-7	beta-BHC	0.026	J
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.033	J

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

092303MW5

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918603

Sample wt/vol: 1025.00 (g/mL) ML Lab File ID: RA28738.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.049	U
319-85-7	beta-BHC	0.049	U
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

092303MW7 (MW1Rdy

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918610

Sample wt/vol: 970.00 (g/mL) ML Lab File ID: RA28744.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.052	U
319-85-7	beta-BHC	0.052	U
319-86-8	delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000 - METHOD 8081 BHC'S
SOIL SURROGATE RECOVERY

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): RTXCLPI ID: 0.32 (mm)

Level (low/med): LOW

	Client Sample ID	DCBP %REC	#	TCMX %REC	#							TOT OUT
1	092403BD	124		112								0
2	092403DS	79		77								0
3	092403US	102		88								0
4	Matrix Spike Blank	111		101								0
5	Matrix Spike Blk Dup	106		95								0
6	Method Blank	114		105								0

QC LIMITS

(DCBP) = Decachlorobiphenyl (30-150)
(TCMX) = Tetrachloro-m-xylene (30-150)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER SURROGATE RECOVERY

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): RTXCLPI ID: 0.32 (mm)

	Client Sample ID	DCBP %REC	#	TCMX %REC	#							TOT OUT
1	092303FIELD BLANK	75		104								0
2	092303MW1R	102		102								0
3	092303MW2	92		104								0
4	092303MW2 MS	94		98								0
5	092303MW2 SD	91		98								0
6	092303MW4	66		100								0
7	092303MW5	30		118								0
8	092303MW7	97		98								0
9	092303MWA3	85		101								0
10	Matrix Spike Blank	96		85								0
11	Method Blank	88		90								0

QC LIMITS

(DCBP) = Decachlorobiphenyl (28-132)
(TCMX) = Tetrachloro-m-xylene (36-132)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000 - METHOD 8081 BHC'S
SOIL MATRIX SPIKE BLANK/MATRIX SPIKE BLANK DUPLICATE RECOVERY

Lab Name: STL Buffalo Contract: _____ Lab Samp ID: A3B1112003

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - Client Sample No.: Method Blank Level: (low/med) LOW

COMPOUND	SPIKE ADDED UG/KG	MSB CONCENTRATION UG/KG	MSB % REC #	QC LIMITS REC.	+ =
gamma-BHC (Lindane)_____	16.2	14.2	87	46 - 127	

COMPOUND	SPIKE ADDED UG/KG	MSBD CONCENTRATION UG/KG	MSBD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.	+ =
gamma-BHC (Lindane)_____	16.5	14.0	85	2	50	46 - 127	

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike recovery: 0 out of 2 outside limits

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: STL Buffalo Contract: _____ Lab Samp ID: A3918604

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - Client Sample No.: 092303MW2

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	MS CONCENTRATION UG/L	MS % REC #	QC LIMITS REC.	+ =
gamma-BHC (Lindane)_____	0.523	0.0300	0.429	76	56 - 123	

COMPOUND	SPIKE ADDED UG/L	MSD CONCENTRATION UG/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.	+ =
gamma-BHC (Lindane)_____	0.523	0.446	79	4	15	56 - 123	

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike recovery: 0 out of 2 outside limits

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER MATRIX SPIKE BLANK RECOVERY

Lab Name: STL Buffalo Contract: _____ Lab Samp ID: A3B1089002

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - Client Sample No.: Method Blank

COMPOUND	SPIKE ADDED UG/L	MSB CONCENTRATION UG/L	MSB % REC #	QC LIMITS REC.	+ =
gamma-BHC (Lindane)_____	0.500	0.426	85	56 - 123	

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike recovery: ____0 out of ____1 outside limits

Comments: _____

_____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000 - METHOD 8081 BHC'S
METHOD BLANK SUMMARY

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: A3B1112003 Lab File ID: RA28884.TX0

Matrix: (soil/water) SOIL Extraction: SONC

Sulfur Cleanup: (Y/N): N Date Extracted: 10/01/2003

Date Analyzed (1): 10/06/2003 Date Analyzed (2): _____

Time Analyzed (1): 17:52 Time Analyzed (2): _____

Instrument ID (1): HP5890-18 Instrument ID (2): _____

GC Column (1): RTXCLPI Dia: 0.32(mm) GC Column (2): _____ Dia: ____(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	092403BD	A3918608	10/06/2003	
2	092403DS	A3918609	10/06/2003	
3	092403US	A3918607	10/06/2003	
4	Matrix Spike Blank	A3B1112001	10/06/2003	
5	Matrix Spike Blk Dup	A3B1112002	10/06/2003	

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000 - METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: A3B1112003

Sample wt/vol: 30.64 (g/mL) G Lab File ID: RA28884.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: _____ _____

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 10/01/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/06/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	7.8	U
319-85-7	beta-BHC	7.8	U
319-86-8	delta-BHC	7.8	U
58-89-9	gamma-BHC (Lindane)	7.8	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
METHOD BLANK SUMMARY

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: A3B1089002 Lab File ID: RA28748.TX0

Matrix: (soil/water) WATER Extraction: SEPF

Sulfur Cleanup: (Y/N): N Date Extracted: 09/25/2003

Date Analyzed (1): 10/01/2003 Date Analyzed (2): _____

Time Analyzed (1): 11:45 Time Analyzed (2): _____

Instrument ID (1): HP5890-18 Instrument ID (2): _____

GC Column (1): RTXCLPI Dia: 0.32(mm) GC Column (2): _____ Dia: ____(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	092303FIELD BLANK	A3918606	10/01/2003	
2	092303MW1R	A3918605	10/01/2003	
3	092303MW2	A3918604	10/01/2003	
4	092303MW2 MS	A3918604MS	10/01/2003	
5	092303MW2 SD	A3918604SD	10/01/2003	
6	092303MW4	A3918602	10/01/2003	
7	092303MW5	A3918603	10/01/2003	
8	092303MW7	A3918610	10/01/2003	
9	092303MWA3	A3918601	10/01/2003	
10	Matrix Spike Blank	A3B1089001	10/01/2003	

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3B1089002

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: RA28748.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: _____ _____

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 5.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U

SDG NARRATIVE

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A3918606	092303FIELD BLANK	09/23/2003	15:00	09/24/2003	11:00
A3918605	092303MW1R	09/23/2003	12:55	09/24/2003	11:00
A3918604	092303MW2	09/23/2003	13:30	09/24/2003	11:00
A3918604MS	092303MW2 MS	09/23/2003	13:30	09/24/2003	11:00
A3918604SD	092303MW2 SD	09/23/2003	13:30	09/24/2003	11:00
A3918602	092303MW4	09/23/2003	11:50	09/24/2003	11:00
A3918603	092303MW5	09/23/2003	11:30	09/24/2003	11:00
A3918610	092303MW7	09/23/2003	12:55	09/24/2003	11:00
A3918601	092303MWA3	09/23/2003	14:15	09/24/2003	11:00
A3918608	092403BD	09/24/2003	09:30	09/24/2003	11:00
A3918609	092403DS	09/24/2003	09:45	09/24/2003	11:00
A3918607	092403US	09/24/2003	09:30	09/24/2003	11:00

METHODS SUMMARY

Job#: A03-9186

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

PARAMETER	ANALYTICAL METHOD
ASP 2000 - METHOD 8081 BHC'S	ASP00 8081
ASP 2000- METHOD 8081 BHC'S	ASP00 8081

References:

ASP00 "Analytical Services Protocol", New York State Department of Conservation, June 2000.

NON-CONFORMANCE SUMMARY

Job#: A03-9186

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-9186
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
All samples were received in good condition.

GC Extractable Data

No deviations from protocol were encountered during the analytical procedures.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

10-13-03
Date

CHAIN OF CUSTODY DOCUMENTATION

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (1200)

Client: OLIN CORP.	Project Manager: LORRAINE MILLER	Date: 9-24-03	Chain of Custody Number: 096403
Address: ~~1105~~ 1186 LOWER RIVER ROAD	Telephone Number (Area Code)/Fax Number: 423-336-4766	Lab Number:	Page 1 of 1
City: CHARLESTON / State: TN / Zip Code: 37310	Site Contact: MIKE WALKER	Lab Contact: BRIAN FISCHER	
Project Name and Location (State): CHARLES GIBSON SITE, NIAGARA FALLS, NY	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed): ASPOC/BHC Isomers

Special Instructions/ Conditions of Receipt: (716) 284-0431 COPY RESULTS TO: MIKE WALKER SEVENSON ENVIRONMENTAL 2749 LOCKPORT Rd N. FALLS, NY 14302 MS/MSD

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH
- 092303 MW A3 2x1LGA	9/23/03	1415		X			X					
- 092303 MW 4 2x1LGA	9/23/03	1150		X			X					
- 092303 MW 5 2x1LGA	9/23/03	1130		X			X					
- 092303 MW 2 6x1LGA	9/23/03	1330		X			X					
- 092303 MW 8 JR 2x1LGA	9/23/03	1255		X			X					
092303 Field Blank 2x1LGA	9/23/03	1500		X			X					
092303 MW 7 2x1LGA	9/23/03	1255		X			X					
092403 MS 1x4oz	9/24/03	0930			X		X					
092403 BD 1x4oz	9/24/03	0930			X		X					
092403 DS 1x4oz	9/24/03	0945			X		X					

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other standard

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By	9/24/03	1100	1. Received By	9/25/03	1100
2. Relinquished By			2. Received By STL	9-24-03	11:00
3. Relinquished By			3. Received By		

Comments: 2.0°C

38/250

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

APPENDIX 2

FIELD LOGS

SEMI-ANNUAL GROUND WATER SAMPLING
AND
ANNUAL SEDIMENT SAMPLING

September 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: L.Duminuco
SAMPLED BY: C. Bove
COMPANY: Sevenson

SAMPLE ID: 092303MWA3
SAMPLING EVENT/DATE: 9/23/2003
MONITORING WELL: MWA3
CONDITION: Well casing settled, lid pushed up

GROUNDWATER PURGE DATA PURGE DATE: 9/23/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **11.95** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **10.6** (FT.)
WATER COLUMN: **1.35** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **0.216** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1405 STOP TIME: 1410
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.7	1057	15.5	Clear/No odor
2	6.9	1048	15.2	" "
3	6.9	1052	14.6	" "
4				
5				

TOTAL VOLUME PURGED: 0.65 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/23/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1415

LOCATION: MWA3
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS:
QC SAMPLES TAKEN: No.
OTHER OBSERVATIONS/COMMENTS: BHC's only 2 x 1liter glass amber bottles collected.

Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou Duminuco
SAMPLE ID: MW1R-092303 and MW7-092303
SAMPLED BY: Craig Bove
SAMPLING EVENT/DATE: 9/23/2003
COMPANY: Sevenson
MONITORING WELL: MW1R and blind duplicate/MW7
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/23/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **12.1** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **7.1** (FT.)
WATER COLUMN: **5** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **0.8** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME 1235 STOP TIME: 1250
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.5	1118	18.4	Clear,No Odor
2	7.4	1127	18.1	"
3	7.3	1138	18.4	"
4				
5				

TOTAL VOLUME PURGED: 2.5 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/23/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1255

LOCATION: MW1R

SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS: Clear, no odor or sheen

QC SAMPLES TAKEN: Blind duplicate samples were taken and labeled MW7 on the COC.

OTHER OBSERVATIONS/COMMENTS: Collected 4 x 1 liter amber glass bottles.

Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou Duminuco
SAMPLED BY: C. Bove
COMPANY: Sevenson

SAMPLE ID: 092303MW2
SAMPLING EVENT/DATE: 9/23/2003
MONITORING WELL: MW-2
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/23/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **12.13** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **5.12** (FT.)
WATER COLUMN: **7.01** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.1216** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1315 STOP TIME: 1325
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.8	1250	18.3	Sulfury smell/Clear
2	6.9	1175	18.3	Clear/No Odor
3	6.9	1176	18.5	Clear/NoOdor
4				
5				

TOTAL VOLUME PURGED: 3.6 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/23/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1330

LOCATION: MW-2
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS: Clear, no odor or sheen
QC SAMPLES TAKEN: MS/MSD samples were also taken.
OTHER OBSERVATIONS/COMMENTS: BHC's only 6 x 1liter glass amber bottles were taken.

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou Duminuco
SAMPLED BY: Lou Duminuco
COMPANY: Sevenson

SAMPLE ID: **092303MW4**
SAMPLING EVENT/DATE: 9/23/2003
MONITORING WELL: MW4
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/23/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **13.75** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **7.02** (FT.)
WATER COLUMN: **6.73** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.0768** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1135 STOP TIME: 1145
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.4	1834	16.7	Black water/Sulfur
2	7.1	1733	16.4	Grey water Smell
3	7.1	1750	16.3	"
4				
5				

TOTAL VOLUME PURGED: 3 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/23/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1150

LOCATION: MW-4
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS: Black water came out at first, then turned grey as purge continued.
QC SAMPLES TAKEN: no
OTHER OBSERVATIONS/COMMENTS: BHC's only Water also has a sulfury smell to it
Collected2 x 1 liter glass amber bottles.

Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou duminuco
SAMPLED BY: Craig Bove
COMPANY: Sevenson

SAMPLE ID: 092303MW5
SAMPLING EVENT/DATE: 9/23/2003
MONITORING WELL: MW5
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/23/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **15.28** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **9** (FT.)
WATER COLUMN: **6.02** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **0.9632** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1100 STOP TIME: 1125
PURGE OBSERVATIONS: Grey water no odor

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.6	2550	15.9	Murky
2	6.4	2520	15	murky "
3	6.6	2670	14.7	clear "
4				
5				

TOTAL VOLUME PURGED: 3 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/23/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1130

LOCATION: MW5
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS: Clear water with no color
QC SAMPLES TAKEN: No.
OTHER OBSERVATIONS/COMMENTS: BHC's only Collected 2 x 1liter glass amber

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou Duminuco **SAMPLE ID: 092403DS**

SAMPLED BY: C. Bove SAMPLING EVENT/DATE: 9/24/2003

COMPANY: Sevenson MONITORING WELL: Downstream sediment sample

CONDITION:

GROUNDWATER PURGE DATA PURGE DATE: DNA

DEPTH TO BOTTOM FROM TOP OF RISER: DNA (FT.)

DEPTH TO WATER FROM TOP OF RISER: _____ DNA (FT.)

WATER COLUMN: DNA (FT.)

2" DIA. WELL CONSTANT: DNA

ONE WELL VOLUME= DNA (GALS)

PURGE METHOD: DNA

BOTTOM OF WELL/SILT BUILDUP: DNA

PURGE START TIME: STOP TIME:

PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED: DNA gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/24/2003

MEDIA: GROUNDWATER _____ SAMPLE TIME: 1015

CREEK SEDIMENT XXX

LOCATION: Creek bed Down stream of landfill, in line with 3rd steel fence posts, 3/4 way across steam

SAMPLE METHOD: Composite sample from sediment trap planted 1 year ago

SAMPLING OBSERVATIONS: Brown, black/grey mud

QC SAMPLES TAKEN: no

OTHER OBSERVATIONS/COMMENTS: BHC's only 1 x 4 oz. Bottles collected

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou Duminuco
SAMPLE ID: 092403US & 092403BD
SAMPLED BY: C. Bove
SAMPLING EVENT/DATE: 9/24/2003
COMPANY: Sevenson
MONITORING WELL: Upstream sediment sample
CONDITION:

GROUNDWATER PURGE DATA PURGE DATE: DNA

DEPTH TO BOTTOM FROM TOP OF RISER: DNA (FT.)
DEPTH TO WATER FROM TOP OF RISER: DNA (FT.)
WATER COLUMN: DNA (FT.)
2" DIA. WELL CONSTANT: DNA
ONE WELL VOLUME= DNA (GALS)

PURGE METHOD: DNA
BOTTOM OF WELL/SILT BUILDUP: DNA
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED: DNA gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/24/2003

MEDIA: GROUNDWATER
CREEK SEDIMENT XXX
SAMPLE TIME: 1000

LOCATION: Creek bed Upstream of landfill, in line with steel gate posts, 1/2 way across steam

SAMPLE METHOD: Composite sample from sediment trap planted 1 year ago

SAMPLING OBSERVATIONS: Brown, black/grey mud

QC SAMPLES TAKEN: Blind Duplicate sample taken labeled 092303BD on COC.

OTHER OBSERVATIONS/COMMENTS: BHC's only 2 x 4 oz. Bottles collected

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= $\frac{\text{SC measured}}{\{\{T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER SAMPLING FIELD PARAMETERS
FIELD INSTRUMENTATION CALIBRATION FORM

DATE: 9/23/2003 SEMI-ANNUAL SAMPLING EVENT: Spring 2003

PERSON CALIBRATING METERS: Lou Duminuco

pH METER USED: MANUFACTURER: Oakton
MODEL: pH Tester 2
IDENTIFICATION/CONTROL NUMBER:

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: 6.98
STANDARD 4.00 METER READ: 4.01
STANDARD 10.00 METER READ: 10.02

METER CALIBRATION COMMENTS:

SPECIFIC CONDUCTIVITY METER USED:
MANUFACTURER: Oakton
MODEL: Specific Cond. Meter
IDENTIFICATION/CONTROL NUMBER: 35607-10

CALIBRATION STANDARDS USED:

STANDARD 0 READ: 32
(STANDARD 0 USED: ____AIR, ___DI__WATER)
STANDARD ____1413____ READ: 1396
STANDARD _____ READ:

METER CALIBRATION COMMENTS:

THERMOMETER USED: TYPE: Fisher Scientific Digital
MANUFACTURER: F/S
IDENTIFICATION/CONTROL NUMBER: 21115741

COMMENTS: (DOES THERMOMETER TEMPERATURE AGREE WITH SPECIFIC CONDUCTIVITY METER TEMPERATURE ?) yes
OTHER:

OTHER INSTRUMENTS USED: TYPE:
MANUFACTURER:
IDENTIFICATION/CONTROL NUMBER:

CALIBRATIONS PERFORMED:

OTHER CALIBRATION COMMENTS:

APPENDIX 3

QUARTERLY SITE INSPECTION FORMS

July - December 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 6/30/2003 TIME: 900

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Re-calibrate and test flow meter

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	
SECURITY:		
FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: Met onsite with Steve Franks from Carrier Controls to re-calibrate and reset the flowmeter and check out the auto dialer function.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 9/23/2003 TIME: 1030

INSPECTOR: Craig Bove COMPANY: Sevenson

WEATHER: Cloudy 62F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Fall Sample Event

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS:

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 11/19/2003 TIME: 1300

INSPECTOR: Michael Walker COMPANY: Sevenson

WEATHER: Rain 49 F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly Inspection (4th)

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: A fence panel had blown down in a wind storm this week, I re-installed it and secureed it with both screws, and nails. It should hold now.

APPENDIX 4

QUARTERLY GROUNDWATER ELEVATION /PUMPING FORMS

July - December 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 9/23/2003 TIME: 1045

INSPECTOR: Craig Bove COMPANY: Sevenson

WEATHER: Cloudy 65F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.07	565.65	
P-2	574.89	9.59	565.3	
P-3	574.16	8.26	565.9	
P-4	576.14	10.85	565.29	
P-5	575.05	7.62	567.43	
P-6	578.28	11.15	567.13	
MANHOLE A	575.22	10.43	564.79	
MANHOLE B	577.34	12.82	564.52	

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS:

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 11/19/2003 TIME: 1300

INSPECTOR: Michael Walker COMPANY: Sevenson

WEATHER: Rainy and 49 F

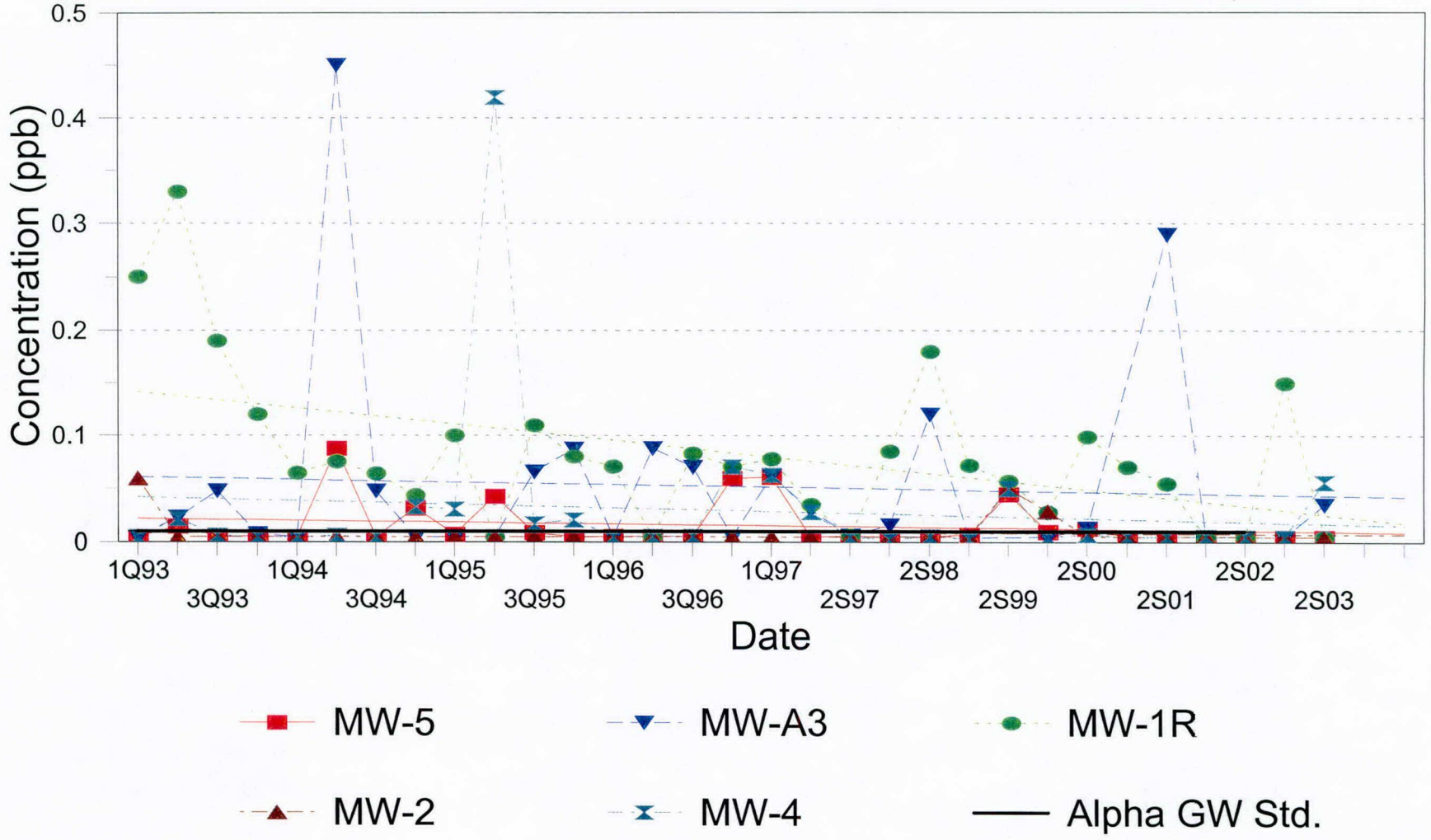
PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	6.99	565.73	
P-2	574.89	9.6	565.29	
P-3	574.16	8	566.16	
P-4	576.14	10.95	565.19	
P-5	575.05	6.7	568.35	
P-6	578.28	10.5	567.78	
MANHOLE A	575.22	11.56	563.66	
MANHOLE B	577.34	13.61	563.73	

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS:

Gibson Site #932063

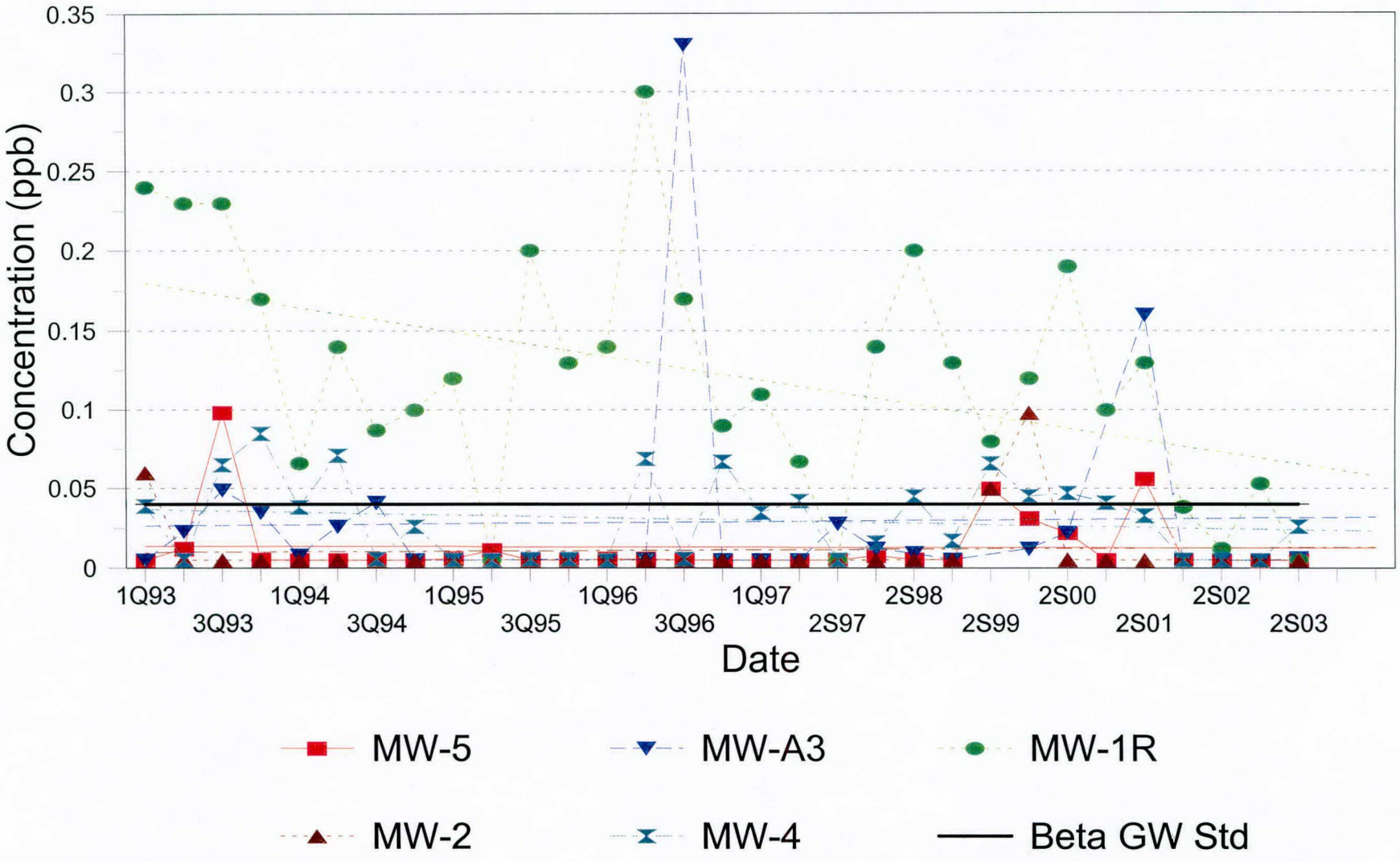
alpha - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

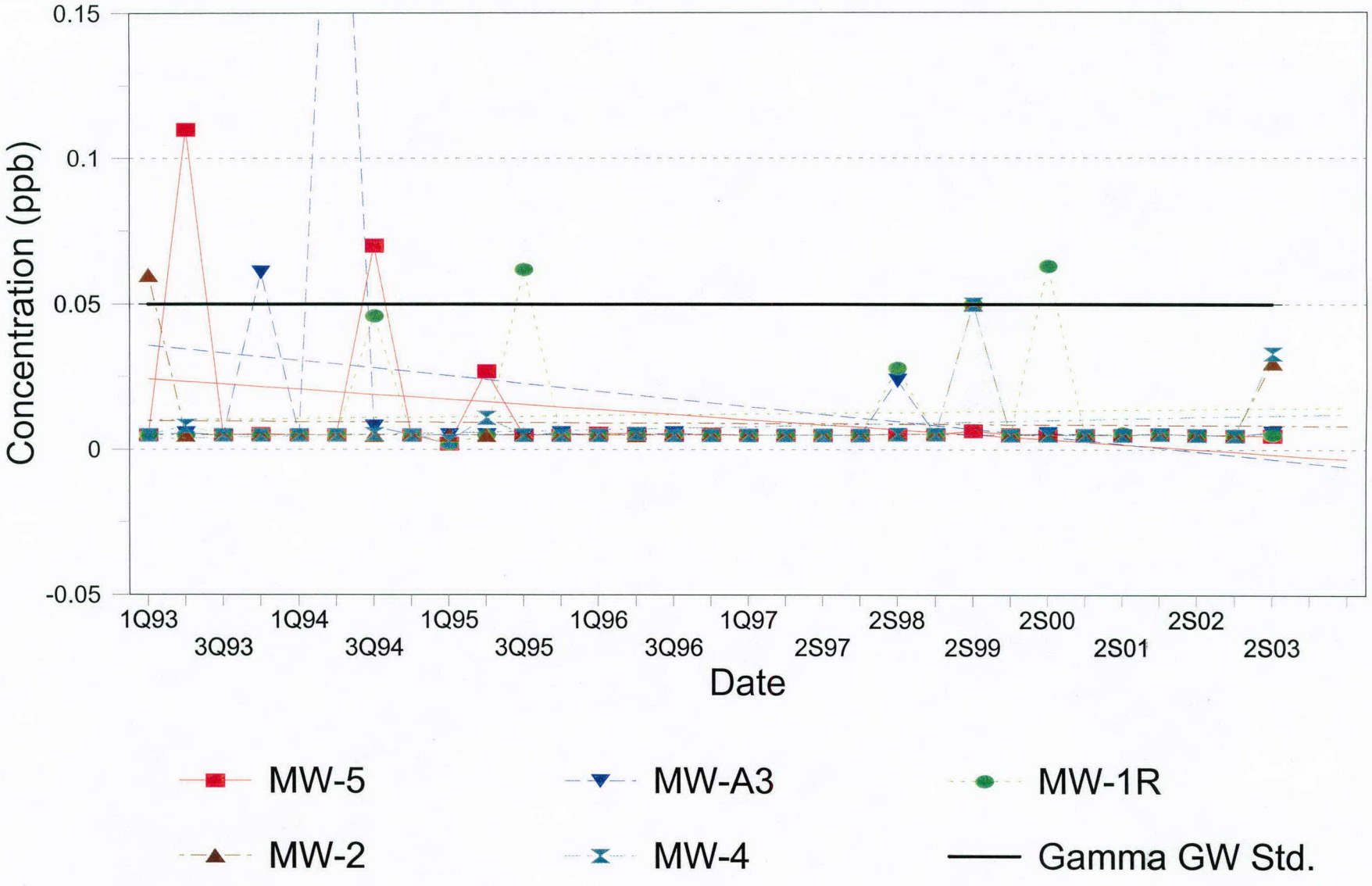
beta - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

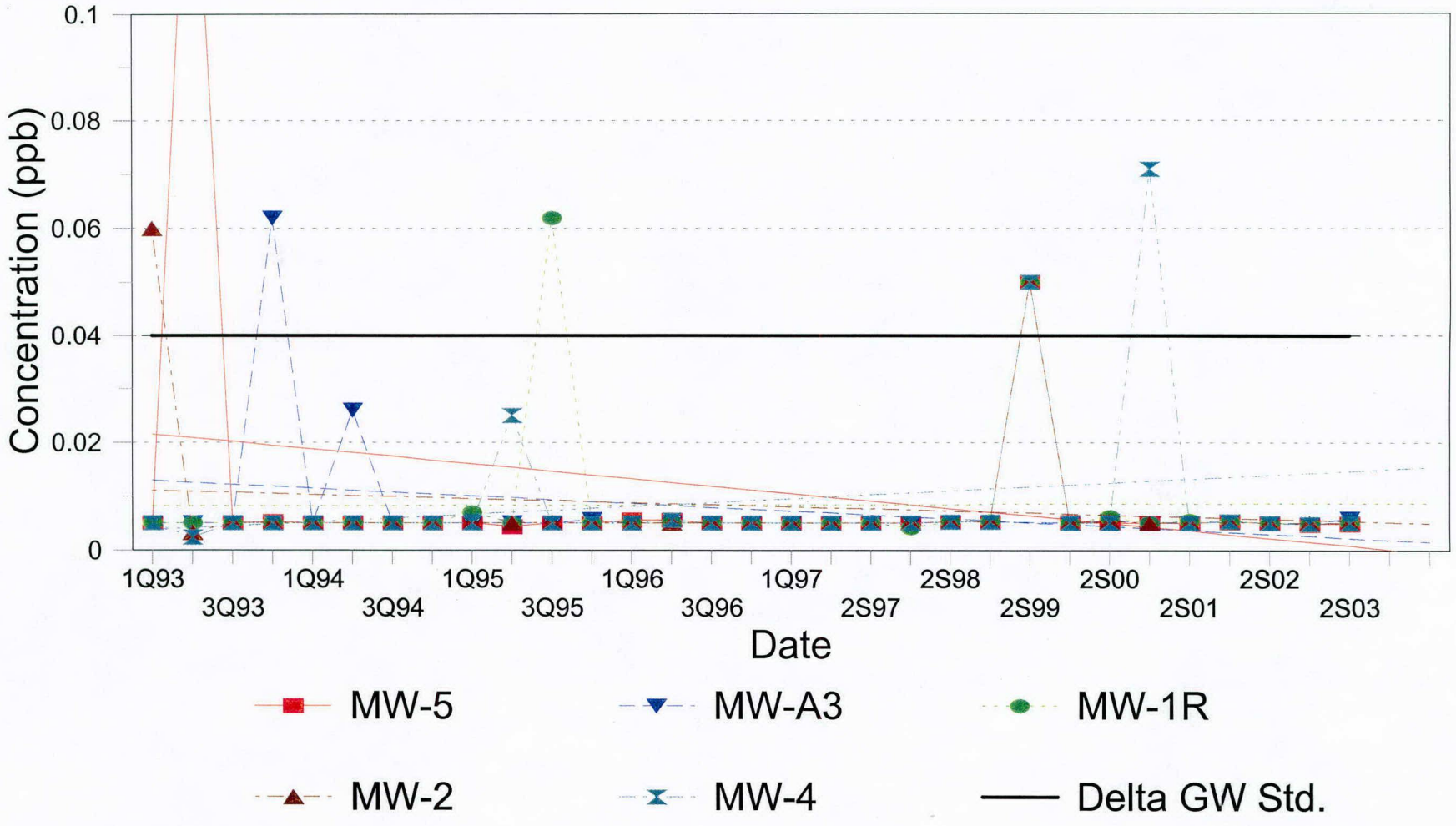
gamma - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

delta -BHC



Non-detects plotted as 1/10th of detection limit

Olin

P. O. BOX 248, 1186 LOWER RIVER ROAD, NW, CHARLESTON, TN 37310-0248

(423) 336-4000 FAX: (423) 336-4166

February 19, 2004

Mr. Michael J. Hinton, P.E.
Environmental Engineer II
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Subject: **Charles Gibson Site**
NYSDEC Registry No. 9-32-063
Eleventh Annual Report - 2003

Dear Mr. Hinton:

Enclosed are three copies of the Eleventh Annual Report - 2003 for the referenced site. This report summarizes the activities performed during 2003 for the operation and maintenance of the containment remedy for the site and the ground water monitoring program outside of the containment area.

The following is a summary of major activities that occurred during 2003.

- Semi-annual groundwater sampling events were performed during April and September 2003.
- The annual sediment sampling was performed in September.
- The annual sampling and analysis of leachate was completed in September. There were 5,230 gallons of Leachate discharged to the City of Niagara Falls Wastewater Treatment Facility during 2003.
- The NYSDEC conducted a site inspection on April 1, 2003.

The Semi-Annual Ground Water Sampling and Annual Sediment Sampling Report - September 2003, is included as Appendix A to this report.

Please call me at 423/336-4381 to discuss any information concerning this report.

Sincerely,
OLIN CORPORATION
Lorraine M. Miller
Lorraine M. Miller
Principal Environmental Specialist

cc: C. M. Richards via e-mail
Tom Tirabassi via e-mail
Mike Walker via e-mail

dm:sites/P&T(Gibson)/ENV4060/O&M/Eleventh Annual Report 2003

ELEVENTH ANNUAL REPORT

2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063

PREPARED BY OLIN CORPORATION

FEBRUARY 2004

Introduction

This is the Eleventh Annual Report from Olin Corporation (Olin) for the Charles Gibson Site (Pine and Tuscarora Site), located in Niagara Falls, New York. This report summarizes the activities performed during 2003 for the operations and maintenance of the containment remedy for the Site and the ground water monitoring program outside of the containment area.

Background

The Charles Gibson Site (Site) is located approximately four miles east of downtown Niagara Falls, New York. The Site comprises an area of approximately two acres of land in Niagara County bordered on the south by private property, on the west by Tuscarora Road and on the north and east by Cayuga Creek. The Site is a fully remediated waste site currently surrounded by a fence.

Construction of the remedy on the Site concluded in 1990. The remedy consisted of rerouting Cayuga Creek around and away from the waste, installation of a fully circumscribed soil-bentonite slurry wall barrier and installation of a double flexible membrane liner cap with a perimeter collection drain system. The first year of operations and maintenance (O&M) of the containment remedy for the Site and the ground water monitoring program began in 1993.

Waters collected in the Site perimeter collection drain system are managed by direct discharge to the City of Niagara Falls Wastewater Treatment Facility. The Site is classified as a commercial/small industrial/residential user (CSIRU) and does not require a permit.

Reports are submitted as appropriate to the New York State Department of Environmental Conservation (NYSDEC). Records of all environmental monitoring are maintained by Olin Corporation. These records are available for review and inspection by the State upon reasonable notice.

Discussion

The Stipulation and Consent Judgment, CIV 83-1400, and its modification, CIV 83-1400C, (the Agreement) listed the following elements to be included in the required remediation plan for the Site (Plan C):

1. Quarterly ground water monitoring for 30 years (revised in 1997 to semiannual);
2. Sample collection and analysis of creek water and of creek sediments annually for 30 years;
3. Establishment of an upward hydraulic gradient within the containment area, unless Olin can demonstrate by clear and convincing evidence the establishment of the same is unnecessary or inappropriate to the accomplishment of the goals set forth in paragraph 4(a) of the stipulation;
4. Acquisition by Olin of easements which would permit the required monitoring;
5. Provisions for protection of the Site from disturbance which might increase the threat of contamination migration, including regular inspection of the site;
6. Provisions for the design and implementation of a contingency plan in the event that migration of the contaminants occurs despite the implementation of the containment remediation plan;
7. Containment or removal of the contaminants deposited or caused to be deposited by Olin which have migrated off-Site consistent with the goals of paragraph 4(a);
8. Fiscal arrangements, guarantees, or the provision of financial assurances sufficient to ensure that Olin possess the financial ability to perform the containment remedial plan and monitoring.

The Agreement includes a provision in the event that after seven years following the delivery of a Release of Liability (issued December 15, 1992), Olin demonstrates that conditions at the Site are such that the stated frequency or duration of the requirements of elements 1, 2, or 5 are no longer necessary to determine whether the remediation is effective, Olin may reduce the frequency and duration of such monitoring or inspections. Additionally, if after seven years following the Release of Liability, Olin is able to demonstrate that element 8 is no longer necessary to ensure performance, Olin may alter the fiscal arrangements appropriately.

The approved Operation and Maintenance Manual (O&M Manual (June 2000)) provides details on the O&M of the containment remedy on the northern portion of the site and includes provisions for site control and environmental monitoring. The O&M Manual (June 2000) reflects current activities being performed for the operation and maintenance of the containment remedy for the Site and the ground water monitoring program outside the containment area. The yearly inspection and sampling schedule for the Site is attached for reference (Attachment 1).

The O&M Manual (2000) addresses the required elements as set forth in the Agreement. Element 4, acquisition of easements, is a completed task. Element 6, a contingency plan, is addressed in the O&M Manual. Element 7, containment of the contaminants, has been achieved and is being monitored for effectiveness. Element 8, provision of financial assurance, is being met. This report discusses elements 1, 2, 3, and 5 of the Agreement.

Element 1) **Semi-annual ground water monitoring.** Monitor wells MW-A3, MW-1R, MW-2, MW-4, and MW-5 were sampled for the site compounds alpha-BHC, beta-BHC, gamma-BHC, delta-BHC on April 1-2 and on September 23, 2003. Analyses were performed using SW-846 Method 8080. Sampling results indicate that concentrations of site compounds being monitored are similar to previous results. Monitor wells are sampled for hexachlorobenzene (HCB) every other year. The monitor wells were sampled for HCB in September 2002. The next HCB sampling is scheduled for September 2004.

The semi-annual ground water monitoring data summary from 1997 through 2003 is provided in Table 1. The 1997 time period represents the start of the semi-annual events.

Element 2) **Annual creek sediment monitoring.** Annual sediment sampling was performed on September 24, 2003. Upstream and downstream data were similar to the 2002 sampling event for the alpha, beta, delta and gamma BHC isomers. Annual upstream and downstream sediment sampling results for the project-to-date are summarized in Tables 2 and 3 respectively. Sediment monitoring was modified in 2001 from collecting a grab sample to placement of sediment traps at the upstream and downstream locations. Sediment traps were installed for the first time during the April 2001 sampling event. Evaluating results from sediment trap monitoring will require collecting additional data over the next few monitoring events.

Element 3) **Establishment of an upward (inward) hydraulic gradient.** Quarterly ground water elevations were monitored at piezometer pairs P1/P2, P3/P4, and P5/P6 to maintain an inward hydraulic gradient in the containment area of the site. The data collected during each event is recorded on the Sampling Field Form. An evaluation of data from the piezometer pairs at the Site indicates that an inward hydraulic gradient is generally being maintained in the containment area of the site (Table 4). Water level elevation in Manhole A and Manhole B are monitored quarterly (Table 5).

There were 5,230 gallons of leachate discharged to the POTW during 2003 during a test of the discharge system. Drought conditions continued to exist in the region during 2003. A summary of yearly discharge volumes for the Site is provided in Table 6. Between 1991 and 2003, a total of 812,593 gallons of leachate have been removed from the Site. Annual leachate sampling and analysis for BHC's began in 2000 to replace the POTW sampling that was previously performed. HCB will be monitored every five years starting in 2000. The sampling location is Manhole B. Analytical results for 2003 are provided in Table 7.

Element 5) **Site protection.** Quarterly site inspections were conducted to identify any potential problems with the physical structures and to ensure that the remedial measure components are operating effectively. Routine site maintenance included fertilizing, mowing, weeding and mulching the site area.

Other non routine repairs completed in 2003 included: repairing the readout on the flow meter at the site and testing the pumping system in April. Repairs were made to a section of the stockade perimeter fence along the southeast side of fence that was knocked over by high winds in November. General site conditions and security status were noted on the Site Inspection Form and addressed as appropriate.

Conclusions/Recommendations:

The work performed for the Site during 2003 was reviewed and found to be in accordance with the approved O&M Manual (2000). Ground water monitoring indicates there are no increased concentrations of the Site compounds being monitored. Evaluation of the ground water data generated during the 2003 monitoring year indicates that the containment remedy is effective. An evaluation of data from the piezometer pairs at the Site indicates that an inward hydraulic gradient is generally being maintained in the containment area of the site. 2003 data from sediment trap monitoring were similar to the 2002 monitoring.

Table 1

Semi-Annual Ground Water Summary

Monitor Well: MW-A3

	1997	1998		1999		2000		2001		2002		2003	
Parameter	**September (*)**	**April**	**October**	**April**	**October**	**May**	**October**	**April**	**October**	**April**	**September**	**April**	**September**
Alpha-BHC	.059	.016J	.12	.0043J	-	.050U	.054U	.050U	.050U	.050U	.029J	.048U	.035J
Beta-BHC	.028J	.012J	.0092J	.053U	-	.012J	.054U	.050U	.050U	.050U	.016J	.048U	.059U
Gamma-BHC	.050U	.050U	.024J	.053U	-	.050U	.054U	.050U	.050U	.050U	.050U	.048U	.059U
Delta-BHC	.050U	.050U	.053U	.053U	-	.050U	.054U	.050U	.050U	.050U	.050U	.048U	.059U
Hexachlorobenzene	10U	10U	-	11U	-	11U	NR	10U	NR	NR	NR	NR	NR

Monitor Well: MW-1R

	1997	1998		1999		2000		2001		2002		2003	
Parameter	**September (*)**	**April**	**October**	**April**	**October**	**May**	**October**	**April**	**October**	**April**	**September**	**April**	**September**
Alpha-BHC	.058	.085	.18	.072	.057	.028J	.054U/.052U	.050U/.050U	.099/.060	.070/.061	.055/.030J	.014J/.015U	.052U
Beta-BHC	.053	.14	.20	.13	.080	.12	.038J/.052U	.012J/.050U	.19/.15	.10/.050U	.13/.095	.053/.052	.052U
Gamma-BHC	.050U	.050U	.028J	.053U	.050UJ	.051U	.054U/.052U	.050U/.050U	.063J/.058U	.050U/.050U	.055U	.049U	.052U
Delta-BHC	.050U	.0042J	.053U	.0054J	.050U	.051U	.054U/.052U	.050U/.050U	.061U/.058U	.050U/.053	.055U	.049U	.052U
Hexachlorobenzene	10U	10U	11U	11U	10U	10U	NR	10U/10U	NR	NR	NR	NR	NR

Monitor Well: MW-2

	1997	1998		1999		2000		2001		2002		2003	
Parameter	**September (*)**	**April**	**October**	**April**	**October**	**May**	**October**	**April**	**October**	**April**	**September**	**April**	**September**
Alpha-BHC	.050U	.050U	.053U	.053U	.050U	.029J	.053U	.050U	.054U	.050U	.050U	.050U	.050U
Beta-BHC	.050U	.050U	.053U	.053U	.050U	.098	.053U	.050U	.054U	.050U	.050U	.050U	.050U
Gamma-BHC	.050U	.050U	.053U	.053U	.050UJ	.052U	.053U	.050U	.054U	.050U	.050U	.050U	.030J
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.052U	.053U	.050U	.054U	.050U	.050U	.050U	.050U
Hexachlorobenzene	10UJ	10U	11U	10U	10U	10U	NR	10U	NR	NR	NR	NR	NR

Notes: Concentrations in ug/L
(*) Start of semi annual monitoring program
U Not detected
J Estimated value
/ Field Duplicates
- Not enough water for analysis
NR No longer required
Data has been validated

Table 1 (cont.)

Semi-Annual Ground Water Summary

Monitor Well: MW- 4

	1997	1998		1999		2000		2001		2002		2003	
Parameter	**September (*)**	**April**	**October**	**April**	**October**	**May**	**October**	**April**	**October**	**April**	**September**	**April**	**September**
Alpha-BHC	.050/.060	.0030J	.053U	.0031J	.050U	.051U/.052U	.054U	.050U	.0069J	.050U	.050U	.049U	.056
Beta-BHC	.055/.069	.016J	.045J	.017J	.066/.068	.045J/.062	.054U	.050U	.047J	.041J	.033J	.049U	.026J
Gamma-BHC	.050U	.050U	.053U	.053U	.050U	.051U/.052U	.054U	.050U	.050U	.071J	.050U	.049U	.033J
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.051U/.052U	.054U	.050U	.050U	.050U	.050U	.049U	.050U
Hexachlorobenzene	10U	10U	10U	10U	10U	10U	NR	10U	NR	NR	NR	NR	NR

Monitor Well: MW-5

	1997	1998		1999		2000		2001		2002		2003	
Parameter	**September (*)**	**April**	**October**	**April**	**October**	**May**	**October**	**April**	**October**	**April**	**September**	**April**	**September**
Alpha-BHC	.059	.050U/.0066J	.053U	.0071J	.045J	.010J	.054U	.050U	.013J	.050U	.050U	.048U	.049U
Beta-BHC	.050U	.0080J/.0084J	.053U	.053U	.050	.031J	.054U	.050U	.022J	.050U	.050U	.048U	.049U
Gamma-BHC	.050U	.050U	.053U	.053U	.0065J	.052U	.054U	.050U	.055U	.050U	.050U	.048U	.049U
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.052U	.054U	.050U	.055U	.050U	.050U	.048U	.049U
Hexachlorobenzene	10U	10U	11U	11U/11U	10U	10U	NR	10U	NR	NR	NR	NR	NR

Notes: Concentrations in ug/l
- (*) Start of semi annual monitoring program
- U Not detected
- J Estimated value
- / Field Duplicates
- \- Not enough water for analysis
- NR No longer required

Data has been validated

Table 2
Analytical Summary
Cayuga Creek
Annual Upstream Sediment Sampling

Parameter	1993 September	1994 June	1994 September	1995 August	1996 September	1997 September	1998 October	1999 October	2000 October	2001* October	2002 September	2003 September
alpha-BHC	1.5 J	NS	6.1 U	8.1J	2.7J	5.3J	2.1J	8.9/7.4	3.5	55	19/90	28/22J
beta-BHC	2.3 J	NS	2.2 J	12	6.1U	11	5.2	28/19	4.5J	49	37/76	48/30
delta-BHC	6.0 U	NS	6.1 U	21	6.1U	4.0J	5.5	37/31	2.3U	24	31/26	12J/28
gamma-BHC	6.0 U	NS	6.1 U	12 U	6.1U	2.5J	.31UJ	2.9J/.42J	2.3U	3.3J	5.8U/1.6U	1.9J/26U
HCB	500 U	NS	510 U	480 U	500U	330U	470U	480U	NR	NR	NR	NR

Notes:
Concentration in microgram/kilogram (ug/kg)
BHC = Hexachlorocyclohexane
HCB = Hexachlorobenzene
J = Estimated value
U = Undetected at the concentration level specified
NS = Not sampled
NR = No longer required for this event
* Sediment Traps Installed April 2001
Data has been validated

Table 3
Analytical Summary
Cayuga Creek
Annual Downstream Sediment Sampling

Parameter	1993 September	1994 June	1994 September	1995 August	1996 September	1997 September	1998 October	1999 October	2000 October	2001* October	2002 September	2003 September
alpha-BHC	2,200	5,300	720	790	5000	330	4800J/80000J	4800J	9600/13000	16	26	26J
beta-BHC	390	1,800	82	83 J	600	580	1300J/12000J	1800	3000J/2700J	52	34	45
delta-BHC	27 J	80 J	67 U	250 U	41J	60J	53J/5500UJ	190J	1200U/1400U	65	20	97
gamma-BHC	40 U	690	67 U	250 U	35J	44J	300UJ/690J	52J	1200U/1400U	1.4J	6.0U	31U
HCB	800 U	570 UR	550 U	420 U	330U	330U	520U/550U	510U	NR	NR	NR	NR

Notes:
Concentration in microgram/kilogram (ug/kg)
BHC = Hexachlorocyclohexane
HCB = Hexachlorobenzene
J = Estimated value.
U = Undetected at the concentration level specified
R = Sample result rejected due to low surrogate recoveries caused by matrix interference
NR = No longer required for this event
* Sediment Traps Installed April 2001
Data has been validated

Table 4

2003 Quarterly Groundwater Elevations Summary

Piezometer Pair	2/19/2003	4/2/2003	9/23/2003	11/19/2003
P1	564.73	565.32	565.65	565.73
P2	565.44	565.54	565.30	565.29
P3	566.51	567.56	565.90	566.16
P4	565.34	565.29	565.29	565.19
P5	569.10	569.85	567.43	568.35
P6	567.88	568.28	567.13	567.78

Note: Measurement units are in feet.
Piezometers P1, P3, P5 are outside the slurry wall.
Piezometers P2, P4, P6 are located within the containment area.
Discharge system pumped 5,230 gallons during a test of the system on 4/14/2003.

Table 5

Manhole Monitoring
2003 Water Elevations
(ft.)

Date	Manhole A	Manhole B	Comments
2/19/2003	564.07	564.14	
4/2/2003	563.97	564.04	Semi Annual ground water sampling; NYSDEC visit 4/1.
9/23/2003	564.79	564.52	Semi Annual ground water sampling
11/19/2003	563.66	563.73	

Notes:

Manhole monitoring:

- Maintain water level below 565 feet to prevent hydrostatic pressure buildup under concrete slab.
- Pump Manhole B as required to maintain an inward gradient. (This pumping requirement is addressed by the operation of the direct discharge system which became operational in March 1997.)

Table 6

Summary of Yearly Discharge Volumes (gallons)

Date	Volume (gallons)
1991	104,120
1992	76,562
1993	77,797
1994	69,724
1995	56,940
1996	77,512
1997(*)	64,687
1998	51,070
1999	140,860
2000	67,236
2001	20,855
2002	0
2003	**5230**
TOTALS	**812,593**

(*) Represents start of operation of direct discharge system
Discharge system pumped 5,230 gallons during a test of the system on 4/14/2003.

Table 7

Annual Manhole B Sampling

April 1, 2003

Parameter	Concentration (ug/l)
alpha – BHC	.048U
beta - BHC	.33
delta - BHC	.60
gamma - BHC	.048U
Hexachlorobenzene	NR

Notes:
U Undetected at associated value
NR Not required for this event
Field blank was non-detect for all parameters of interest
Data has been validated and judged acceptable as qualified.
Next sampling for hexachlorobenzene is scheduled for October 2005.

ATTACHMENT 1

INSPECTION AND SAMPLING SCHEDULE

GIBSON SITE

GIBSON SITE
NIAGARA FALLS, NEW YORK
2004 INSPECTION AND SAMPLING SCHEDULE

Quarterly	Site Inspection (including Site Cover/Cap, Site Fence, Creek Riprap, Site Structures, CPVC Drain/Sump System).
Quarterly	Piezometer and sump groundwater level elevation measurements.
Semi-Annually	Groundwater monitoring well sampling (April and September) for BHC isomers.
Annually	Cayuga Creek sediment sampling (September) for BHC isomers.
Annually	Leachate sample collection and analysis (Manhole B) for BHC isomers (starting in 2000).
Annually	Annual report to NYSDEC (1st Quarter).
Biennially	Groundwater monitoring well sampling (starting in April 2000) for HCB. The biennial sampling events following 2000 will alternate seasonally between April and September sampling. Next HCB sampling is April 2004.
Every Five Years	Leachate sample collection and analysis (Manhole B) (for HCB) (starting in 2000). Next leachate sampling for HCB is 2005.

APPENDIX A

CHARLES GIBSON SITE
(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063

SEMI-ANNUAL GROUND WATER AND ANNUAL SEDIMENT SAMPLING REPORT

SEPTEMBER 2003

PREPARED BY OLIN CORPORATION

In accordance with the approved sampling plan for the above referenced Site, this report presents a summary of data for the Semi-Annual Ground Water and Annual Sediment Sampling, collected during September 2003.

The analytical data summary for ground water is listed in Table 1. Analytical results for the annual sediment sampling are listed in Table 2. The laboratory data summary package (Appendix 1), and the field logs (Appendix 2) for this sampling event are also attached. The Quarterly Site Inspection Forms and the Quarterly Ground Water Elevation Forms are included in Appendices 3 and 4 respectively. The analytical data has been validated and found to be acceptable.

TABLE 1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING

September 23-24, 2003

	MW-1R	MW-1R (DUP)	MW-2	MW-4	MW-5	MW-A3
PARAMETER						
alpha-BHC	.052U	.052U	.050U	.056	.049U	.035J
beta-BHC	.052U	.052U	.050U	.026J	.049U	.059U
delta-BHC	.052U	.052U	.050U	.050U	.049U	.059U
gamma-BHC	.052U	.052U	.030J	.033J	.049U	.059U
Hexachlorobenzene	NR	NR	NR	NR	NR	NR

Notes:

Concentration in ug/l
U Undetected at associated value
J Estimated value
Field blank was non-detect for all parameters of interest.
Data has been validated and judged acceptable as qualified.
NR Not required for this event.
Next biennial sampling for hexachlorobenzene is scheduled for April 2004.

TABLE 2

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
ANNUAL SEDIMENT SAMPLING

September 24, 2003

	UPSTREAM	DOWNSTREAM
PARAMETER		
alpha-BHC	28/22J	26J
beta-BHC	48/30	45
delta-BHC	12J/28	97
gamma-BHC	1.9J/26U	31U

Notes:
Concentration in ug/kg
Data has been validated and judged acceptable as qualified.
U Compound was analyzed but not detected
J Compound was analyzed and determined to be present in sample. The concentration listed is an estimated value which is less than the specified minimum detection level but greater than zero

APPENDIX 1

LABORATORY DATA SUMMARY PACKAGE

SEMI-ANNUAL GROUND WATER SAMPLING

AND

ANNUAL SEDIMENT SAMPLING

September 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

SEVERN TRENT STL

1/256

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CHARLES GIBSON SITE
(aka Pine & Tuscarora, P&T)
ENV4060 IND
Site Monitoring 2003
SEMI ANNUAL GW MONITORING
SEPTEMBER 2003

ANALYTICAL REPORT

Job#: A03-9186

STL Project#: NY1A8693
Site Name: OLIN CORPORATION
Task: Charles Gibson Site

Ms. Lorraine Miller
Olin Corporation
1186 Lower River Road
Charleston, TN 37310

CC: Mr. Michael Walker

STL Buffalo

Brian J. Fischer
Project Manager

(For Mary Ann Neary)
Mary Ann Neary
Analyst

10/09/2003

Severn Trent Laboratories, Inc.
STL Buffalo • 10 Hazelwood Drive, Suite 106, Amherst, NY 14228
Tel 716 691 2600 Fax 716 691 7991 • *www.stl-inc.com*

A part of Severn Trent plc

STL Buffalo
Current Certifications

STATE	Program	Cert # / Lab ID
A2LA (ISO 17025)	SDWA, CWA, RCRA	0732-01
Arizona	SDWA, CWA, RCRA	AZ0525
Arkansas	SDWA, CWA, RCRA, SOIL	03-054-D/88-0686
California	NELAP SDWA, CWA, RCRA	01169CA
Canada	GENERAL	SCC 1007-15/10B
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida	NELAP RCRA	E87672
Georgia	SDWA	956
Illinois	NELAP SDWA, CWA, RCRA	200003
Kansas	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	CWA, RCRA	036-999-337
New Hampshire	NELAP SDWA, CWA	233701
New Jersey	SDWA, CWA, RCRA, CLP	NY455
New York	NELAP, AIR, SDWA, CWA, RCRA	10026
North Carolina	CWA	411
North Dakota	SDWA, CWA, RCRA	R-176
Oklahoma	CWA, RCRA	9421
Oregon	NELAP,SDWA, CWA, RCRA	NY200001
Pennsylvania	NELAP, SDWA, CWA, Env. Lab Reg.	68-281
South Carolina	RCRA	91013
Tennessee	SDWA	2970
USDA	FOREIGN SOIL PERMIT	S-4650
Virginia	SDWA	278
Washington	CWA	C254
West Virginia	CWA	252
Wisconsin	CWA	998310390
Wyoming UST	UST	NA

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A3918606	092303FIELD BLANK	09/23/2003	15:00	09/24/2003	11:00
A3918605	092303MW1R	09/23/2003	12:55	09/24/2003	11:00
A3918604	092303MW2	09/23/2003	13:30	09/24/2003	11:00
A3918604MS	092303MW2 MS	09/23/2003	13:30	09/24/2003	11:00
A3918604SD	092303MW2 SD	09/23/2003	13:30	09/24/2003	11:00
A3918602	092303MW4	09/23/2003	11:50	09/24/2003	11:00
A3918603	092303MW5	09/23/2003	11:30	09/24/2003	11:00
A3918610	092303MW7	09/23/2003	12:55	09/24/2003	11:00
A3918601	092303MWA3	09/23/2003	14:15	09/24/2003	11:00
A3918608	092403BD	09/24/2003	09:30	09/24/2003	11:00
A3918609	092403DS	09/24/2003	09:45	09/24/2003	11:00
A3918607	092403US	09/24/2003	09:30	09/24/2003	11:00

NON-CONFORMANCE SUMMARY

Job#: A03-9186

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-9186
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
All samples were received in good condition.

GC Extractable Data

No deviations from protocol were encountered during the analytical procedures.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: SEVERN TRENT LABORATORIES, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS						
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	TCLP HERB	WATER QUALITY
092303MW1R	A3918605	-	-	-	ASP00	-	-	-
092303MW2	A3918604	-	-	-	ASP00	-	-	-
092303MW4	A3918602	-	-	-	ASP00	-	-	-
092303MW5	A3918603	-	-	-	ASP00	-	-	-
092303MW7	A3918610	-	-	-	ASP00	-	-	-
092303MWA3	A3918601	-	-	-	ASP00	-	-	-
092403BD	A3918608	-	-	-	ASP00	-	-	-
092403DS	A3918609	-	-	-	ASP00	-	-	-
092403US	A3918607	-	-	-	ASP00	-	-	-

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILIARY CLEAN UP	DIL/CONC FACTOR
092303MW1R	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092303MW2	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092303MW4	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092303MW5	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092303MW7	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092303MWA3	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
092403BD	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED
092403DS	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED
092403US	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED

SAMPLE DATA PACKAGE

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000 - METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: 092403DS

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: A3918609

Sample wt/vol: 30.33 (g/mL) G Lab File ID: RA28891.TX0

% Moisture: 74.5 decanted: (Y/N) Y Date Samp/Recv: 09/24/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 10/01/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/06/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	26	J
319-85-7	beta-BHC	45	
319-86-8	delta-BHC	97	
58-89-9	gamma-BHC (Lindane)	31	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

092303FIELD BLANK

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918606

Sample wt/vol: 1035.00 (g/mL) ML Lab File ID: RA28743.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

092303MW2

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918604

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: RA28739.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.030	J

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

092303MW4

Lab Name: SIL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918602

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: RA28737.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.056	
319-85-7	beta-BHC	0.026	J
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.033	J

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

092303MW7 (MW1Rdup)

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3918610

Sample wt/vol: 970.00 (g/mL) ML Lab File ID: RA28744.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/23/2003 09/24/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/25/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/01/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.052	U
319-85-7	beta-BHC	0.052	U
319-86-8	delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER SURROGATE RECOVERY

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): RTXCLPI ID: 0.32 (mm)

	Client Sample ID	DCBP %REC	#	TCMX %REC	#							TOT OUT
1	092303FIELD BLANK	75		104								0
2	092303MW1R	102		102								0
3	092303MW2	92		104								0
4	092303MW2 MS	94		98								0
5	092303MW2 SD	91		98								0
6	092303MW4	66		100								0
7	092303MW5	30		118								0
8	092303MW7	97		98								0
9	092303MWA3	85		101								0
10	Matrix Spike Blank	96		85								0
11	Method Blank	88		90								0

QC LIMITS

(DCBP) = Decachlorobiphenyl (28-132)
(TCMX) = Tetrachloro-m-xylene (36-132)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: STL Buffalo Contract: _____ Lab Samp ID: A3918604

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - Client Sample No.: 092303MW2

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	MS CONCENTRATION UG/L	MS % REC #	QC LIMITS REC.	+ =
gamma-BHC (Lindane)_____	0.523	0.0300	0.429	76	56 - 123	

COMPOUND	SPIKE ADDED UG/L	MSD CONCENTRATION UG/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.	+ =
gamma-BHC (Lindane)_____	0.523	0.446	79	4	15	56 - 123	

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: ____0 out of ____1 outside limits
Spike recovery: ____0 out of ____2 outside limits

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000 - METHOD 8081 BHC'S
METHOD BLANK SUMMARY

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: A3B1112003 Lab File ID: RA28884.TX0

Matrix: (soil/water) SOIL Extraction: SONC

Sulfur Cleanup: (Y/N): N Date Extracted: 10/01/2003

Date Analyzed (1): 10/06/2003 Date Analyzed (2): _____

Time Analyzed (1): 17:52 Time Analyzed (2): _____

Instrument ID (1): HP5890-18 Instrument ID (2): _____

GC Column (1): RTXCLPI Dia: 0.32(mm) GC Column (2): _____ Dia: ____(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	092403BD	A3918608	10/06/2003	
2	092403DS	A3918609	10/06/2003	
3	092403US	A3918607	10/06/2003	
4	Matrix Spike Blank	A3B1112001	10/06/2003	
5	Matrix Spike Blk Dup	A3B1112002	10/06/2003	

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
METHOD BLANK SUMMARY

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: A3B1089002 Lab File ID: RA28748.TX0

Matrix: (soil/water) WATER Extraction: SEPF

Sulfur Cleanup: (Y/N): N Date Extracted: 09/25/2003

Date Analyzed (1): 10/01/2003 Date Analyzed (2): _____

Time Analyzed (1): 11:45 Time Analyzed (2): _____

Instrument ID (1): HP5890-18 Instrument ID (2): _____

GC Column (1): RTXCLPI Dia: 0.32(mm) GC Column (2): _____ Dia: _____(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	092303FIELD BLANK	A3918606	10/01/2003	
2	092303MW1R	A3918605	10/01/2003	
3	092303MW2	A3918604	10/01/2003	
4	092303MW2 MS	A3918604MS	10/01/2003	
5	092303MW2 SD	A3918604SD	10/01/2003	
6	092303MW4	A3918602	10/01/2003	
7	092303MW5	A3918603	10/01/2003	
8	092303MW7	A3918610	10/01/2003	
9	092303MWA3	A3918601	10/01/2003	
10	Matrix Spike Blank	A3B1089001	10/01/2003	

Comments: _____

SDG NARRATIVE

METHODS SUMMARY

Job#: A03-9186

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

PARAMETER	ANALYTICAL METHOD
ASP 2000 - METHOD 8081 BHC'S	ASP00 8081
ASP 2000- METHOD 8081 BHC'S	ASP00 8081

References:

ASP00 "Analytical Services Protocol", New York State Department of Conservation, June 2000.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

10-13-03
Date

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (1200)

Client: OLIN CORP.	Project Manager: LORRAINE MILLER	Date: 9-24-03	Chain of Custody Number: 096403
Address: ~~1105~~ 1186 LOWER RIVER ROAD	Telephone Number (Area Code)/Fax Number: 423-336-4766	Lab Number:	Page 1 of 1
City: CHARLESTON / State: TN / Zip Code: 37310	Site Contact: MIKE WALKER	Lab Contact: BRIAN FISCHER	
Project Name and Location (State): CHARLES GIBSON SITE, NIAGARA FALLS, NY	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed): ASPOC/BHC Isomers

Special Instructions/ Conditions of Receipt

(716) 284-0431 ●

COPY RESULTS TO: MIKE WALKER

SEVENSON ENVIRONMENTAL

2749 LOCKPORT RD

N. FALLS, NY 14302

MS/MSD

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH
- 092303 MWA3 2x1LGA	9/23/03	1415		X			X					
- 092303 MW4 2x1LGA	9/23/03	1150		X			X					
- 092303 MW5 2x1LGA	9/23/03	1130		X			X					
- 092303 MW2 6x1LGA	9/23/03	1330		X			X					
- 092303 MW8 1R 2x1LGA	9/23/03	1255		X			X					
092303 Field Blank 2x1LGA	9/23/03	1500		X			X					
092303 MW7 2x1LGA	9/23/03	1255		X			X					
092403 US 1x4oz	9/24/03	0930			X		X					
092403 BD 1x4oz	9/24/03	0930			X		X					
092403 DS 1x4oz	9/24/03	0945			X		X					

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Standard

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	9/24/03	1100	1. Received By	9/25/03	1100
2. Relinquished By			2. Received By STL	9-24-03	11:00
3. Relinquished By			3. Received By		

Comments: 2.0°C

38/250

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

APPENDIX 2

FIELD LOGS

SEMI-ANNUAL GROUND WATER SAMPLING
AND
ANNUAL SEDIMENT SAMPLING

September 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: L.Duminuco
SAMPLED BY: C. Bove
COMPANY: Sevenson

SAMPLE ID: **092303MWA3**
SAMPLING EVENT/DATE: 9/23/2003
MONITORING WELL: MWA3
CONDITION: Well casing settled, lid pushed up

GROUNDWATER PURGE DATA PURGE DATE: 9/23/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **11.95** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **10.6** (FT.)
WATER COLUMN: **1.35** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **0.216** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1405 STOP TIME: 1410
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.7	1057	15.5	Clear/No odor
2	6.9	1048	15.2	" "
3	6.9	1052	14.6	" "
4				
5				

TOTAL VOLUME PURGED: 0.65 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/23/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1415

LOCATION: MWA3
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS:
QC SAMPLES TAKEN: No.
OTHER OBSERVATIONS/COMMENTS: BHC's only 2 x 1liter glass amber bottles collected.

Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou Duminuco
SAMPLE ID: MW1R-092303 and MW7-092303
SAMPLED BY: Craig Bove
SAMPLING EVENT/DATE: 9/23/2003
COMPANY: Sevenson
MONITORING WELL: MW1R and blind duplicate/MW7
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/23/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **12.1** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **7.1** (FT.)
WATER COLUMN: **5** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **0.8** (GALS)

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME 1235 STOP TIME: 1250
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.5	1118	18.4	Clear,No Odor
2	7.4	1127	18.1	"
3	7.3	1138	18.4	"
4				
5				

TOTAL VOLUME PURGED: 2.5 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/23/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1255

LOCATION: MW1R
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS: Clear, no odor or sheen
QC SAMPLES TAKEN: Blind duplicate samples were taken and labeled MW7 on the COC.
OTHER OBSERVATIONS/COMMENTS: Collected 4 x 1 liter amber glass bottles.

Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou Duminuco
SAMPLED BY: C. Bove
COMPANY: Sevenson

SAMPLE ID: 092303MW2
SAMPLING EVENT/DATE: 9/23/2003
MONITORING WELL: MW-2
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/23/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **12.13** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **5.12** (FT.)
WATER COLUMN: **7.01** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.1216** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1315 STOP TIME: 1325
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.8	1250	18.3	Sulfury smell/Clear
2	6.9	1175	18.3	Clear/No Odor
3	6.9	1176	18.5	Clear/NoOdor
4				
5				

TOTAL VOLUME PURGED: 3.6 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/23/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1330

LOCATION: MW-2
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS: Clear, no odor or sheen
QC SAMPLES TAKEN: MS/MSD samples were also taken.
OTHER OBSERVATIONS/COMMENTS: BHC's only 6 x 1liter glass amber bottles were taken.

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou Duminuco
SAMPLED BY: Lou Duminuco
COMPANY: Sevenson

SAMPLE ID: 092303MW4
SAMPLING EVENT/DATE: 9/23/2003
MONITORING WELL: MW4
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/23/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **13.75** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **7.02** (FT.)
WATER COLUMN: **6.73** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.0768** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1135 STOP TIME: 1145
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.4	1834	16.7	Black water/Sulfur
2	7.1	1733	16.4	Grey water Smell
3	7.1	1750	16.3	"
4				
5				

TOTAL VOLUME PURGED: 3 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/23/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1150

LOCATION: MW-4
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS: Black water came out at first, then turned grey as purge continued.
QC SAMPLES TAKEN: no
OTHER OBSERVATIONS/COMMENTS: BHC's only Water also has a sulfury smell to it
Collected2 x 1 liter glass amber bottles.

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou duminuco
SAMPLED BY: Craig Bove
COMPANY: Sevenson

SAMPLE ID: 092303MW5
SAMPLING EVENT/DATE: 9/23/2003
MONITORING WELL: MW5
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/23/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **15.28** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **9** (FT.)
WATER COLUMN: **6.02** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **0.9632** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1100 STOP TIME: 1125
PURGE OBSERVATIONS: Grey water no odor

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.6	2550	15.9	Murky
2	6.4	2520	15	murky "
3	6.6	2670	14.7	clear "
4				
5				

TOTAL VOLUME PURGED: 3 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/23/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1130

LOCATION: MW5
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS: Clear water with no color
QC SAMPLES TAKEN: No.
OTHER OBSERVATIONS/COMMENTS: BHC's only Collected 2 x 1liter glass amber

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= $\frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou Duminuco
SAMPLED BY: C. Bove
COMPANY: Sevenson

SAMPLE ID: 092403DS
SAMPLING EVENT/DATE: 9/24/2003
MONITORING WELL: Downstream sediment sample
CONDITION:

GROUNDWATER PURGE DATA PURGE DATE: DNA

DEPTH TO BOTTOM FROM TOP OF RISER: DNA (FT.)
DEPTH TO WATER FROM TOP OF RISER: DNA (FT.)
WATER COLUMN: DNA (FT.)
2" DIA. WELL CONSTANT: DNA
ONE WELL VOLUME= DNA (GALS)

PURGE METHOD: DNA
BOTTOM OF WELL/SILT BUILDUP: DNA
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED: DNA gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/24/2003

MEDIA: GROUNDWATER
CREEK SEDIMENT XXX

SAMPLE TIME: 1015

LOCATION: Creek bed Down stream of landfill, in line with 3rd steel fence posts, 3/4 way across steam

SAMPLE METHOD: Composite sample from sediment trap planted 1 year ago

SAMPLING OBSERVATIONS: Brown, black/grey mud

QC SAMPLES TAKEN: no

OTHER OBSERVATIONS/COMMENTS: BHC's only 1 x 4 oz. Bottles collected

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Lou Duminuco
SAMPLE ID: 092403US & 092403BD
SAMPLED BY: C. Bove
SAMPLING EVENT/DATE: 9/24/2003
COMPANY: Sevenson
MONITORING WELL: Upstream sediment sample
CONDITION:

GROUNDWATER PURGE DATA PURGE DATE: DNA

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

DEPTH TO BOTTOM FROM TOP OF RISER: DNA (FT.)
DEPTH TO WATER FROM TOP OF RISER: _____ DNA (FT.)
WATER COLUMN: DNA (FT.)
2" DIA. WELL CONSTANT: DNA
ONE WELL VOLUME= DNA (GALS)
PURGE METHOD: DNA
BOTTOM OF WELL/SILT BUILDUP: DNA
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED: DNA gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/24/2003

MEDIA: GROUNDWATER _____
CREEK SEDIMENT XXX
SAMPLE TIME: 1000

LOCATION: Creek bed Upstream of landfill, in line with steel gate posts, 1/2 way across steam

SAMPLE METHOD: Composite sample from sediment trap planted 1 year ago

SAMPLING OBSERVATIONS: Brown, black/grey mud

QC SAMPLES TAKEN: Blind Duplicate sample taken labeled 092303BD on COC.

OTHER OBSERVATIONS/COMMENTS: BHC's only 2 x 4 oz. Bottles collected

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER SAMPLING FIELD PARAMETERS
FIELD INSTRUMENTATION CALIBRATION FORM

DATE: 9/23/2003 SEMI-ANNUAL SAMPLING EVENT: Spring 2003

PERSON CALIBRATING METERS: Lou Duminuco

pH METER USED: MANUFACTURER: Oakton
MODEL: pH Tester 2
IDENTIFICATION/CONTROL NUMBER:

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: 6.98
STANDARD 4.00 METER READ: 4.01
STANDARD 10.00 METER READ: 10.02

METER CALIBRATION COMMENTS:

SPECIFIC CONDUCTIVITY METER USED:
MANUFACTURER: Oakton
MODEL: Specific Cond. Meter
IDENTIFICATION/CONTROL NUMBER: 35607-10

CALIBRATION STANDARDS USED:

STANDARD 0 READ: 32
(STANDARD 0 USED: AIR, DI WATER)
STANDARD 1413 READ: 1396
STANDARD READ:

METER CALIBRATION COMMENTS:

THERMOMETER USED: TYPE: Fisher Scientific Digital
MANUFACTURER: F/S
IDENTIFICATION/CONTROL NUMBER: 21115741
COMMENTS: (DOES THERMOMETER TEMPERATURE AGREE WITH SPECIFIC CONDUCTIVITY METER TEMPERATURE ?) yes
OTHER:

OTHER INSTRUMENTS USED: TYPE:
MANUFACTURER:
IDENTIFICATION/CONTROL NUMBER:

CALIBRATIONS PERFORMED:

OTHER CALIBRATION COMMENTS:

APPENDIX 3

QUARTERLY SITE INSPECTION FORMS

July - December 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 6/30/2003 TIME: 900

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Re-calibrate and test flow meter

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: Met onsite with Steve Franks from Carrier Controls to re-calibrate and reset the flowmeter and check out the auto dialer function.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 9/23/2003 TIME: 1030

INSPECTOR: Craig Bove COMPANY: Sevenson

WEATHER: Cloudy 62F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Fall Sample Event

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS:

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 11/19/2003 TIME: 1300

INSPECTOR: Michael Walker COMPANY: Sevenson

WEATHER: Rain 49 F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly Inspection (4th)

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: A fence panel had blown down in a wind storm this week, I re-installed it and secureed it with both screws, and nails. It should hold now.

APPENDIX 4

QUARTERLY GROUNDWATER ELEVATION /PUMPING FORMS

July - December 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 9/23/2003 TIME: 1045

INSPECTOR: Craig Bove COMPANY: Sevenson

WEATHER: Cloudy 65F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.07	565.65	
P-2	574.89	9.59	565.3	
P-3	574.16	8.26	565.9	
P-4	576.14	10.85	565.29	
P-5	575.05	7.62	567.43	
P-6	578.28	11.15	567.13	
MANHOLE A	575.22	10.43	564.79	
MANHOLE B	577.34	12.82	564.52	

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS:

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 11/19/2003 TIME: 1300

INSPECTOR: Michael Walker COMPANY: Sevenson

WEATHER: Rainy and 49 F

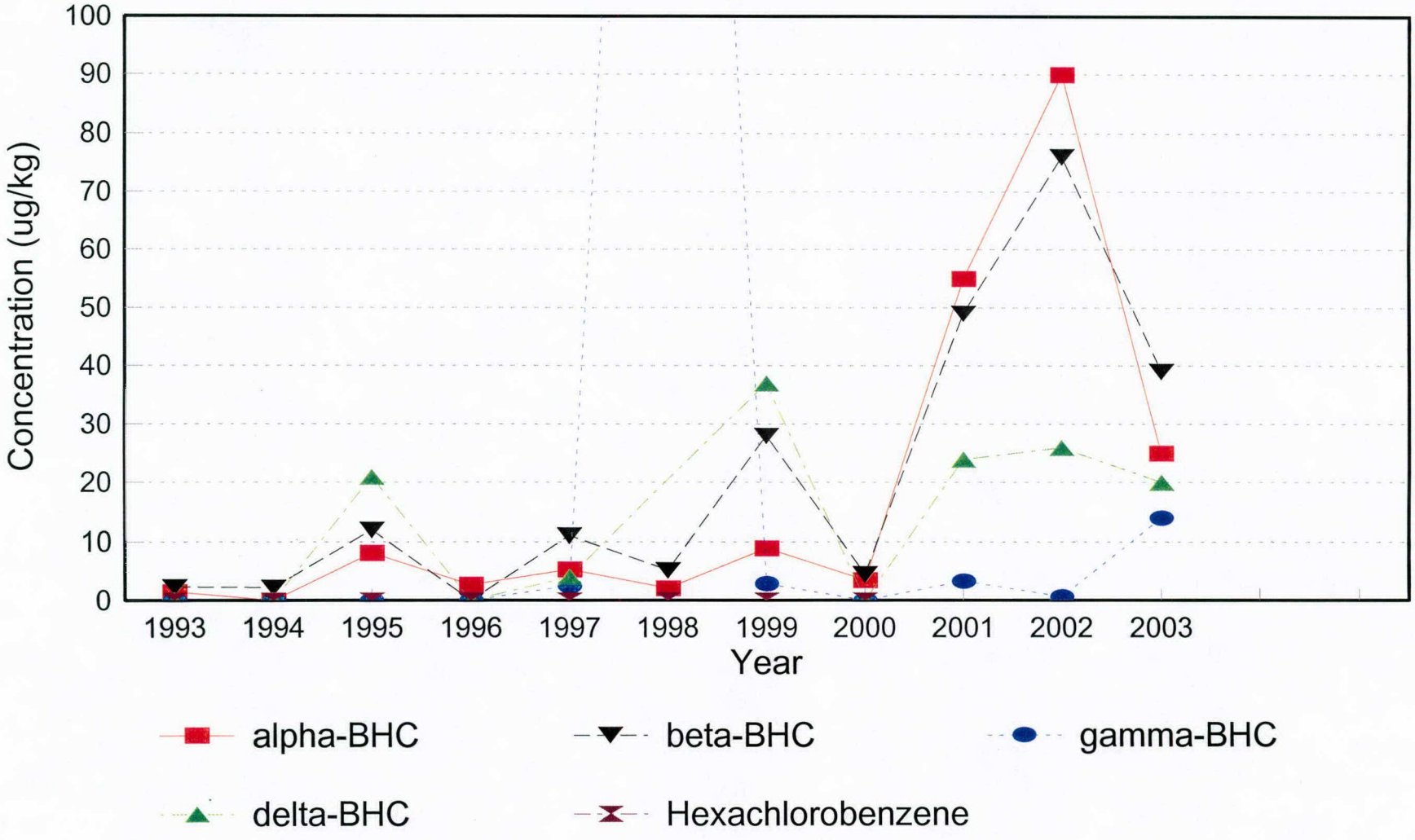
PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	6.99	565.73	
P-2	574.89	9.6	565.29	
P-3	574.16	8	566.16	
P-4	576.14	10.95	565.19	
P-5	575.05	6.7	568.35	
P-6	578.28	10.5	567.78	
MANHOLE A	575.22	11.56	563.66	
MANHOLE B	577.34	13.61	563.73	

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS:

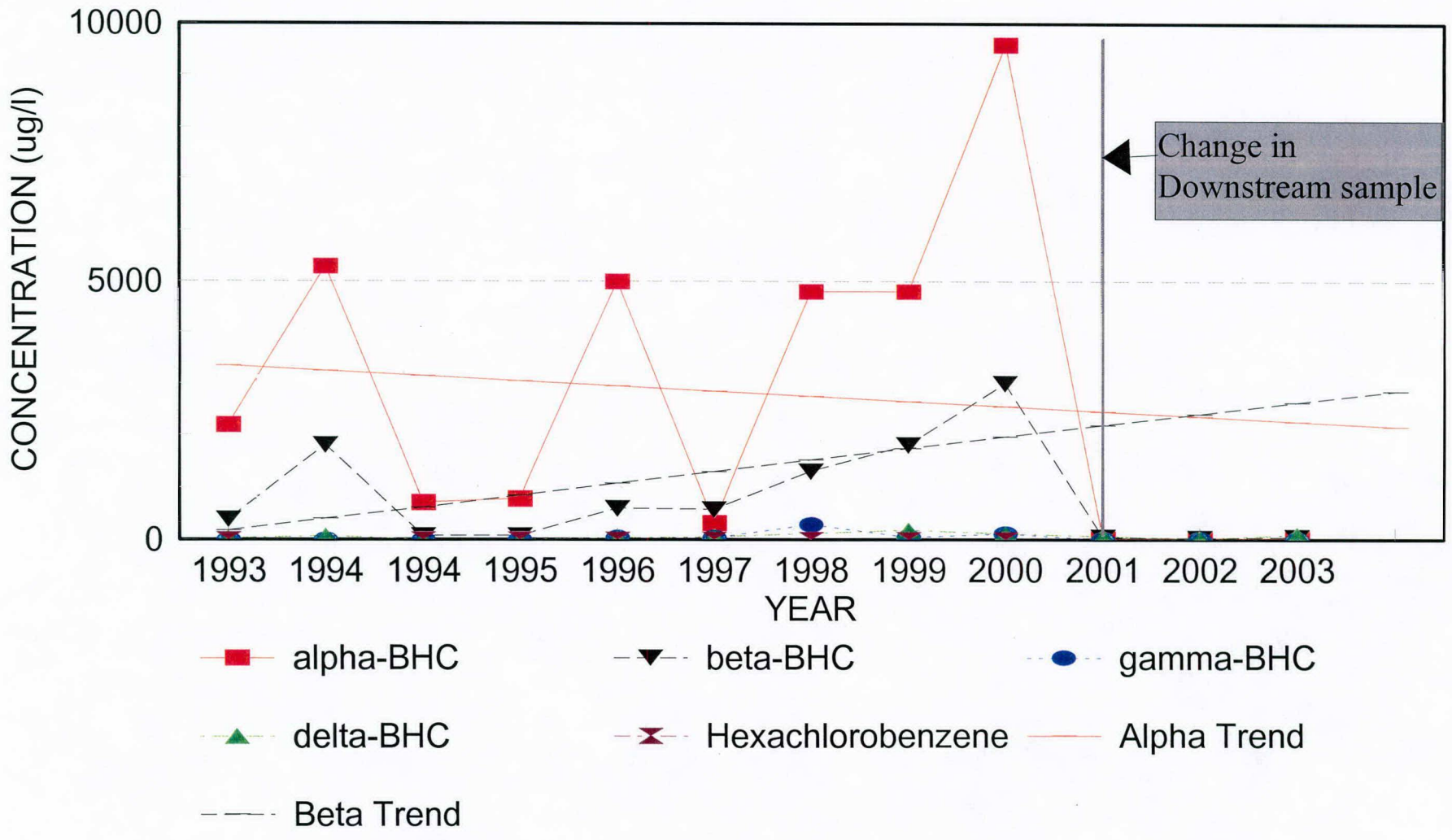
OLIN GIBSON SITE #932063

UPSTREAM SEDIMENT



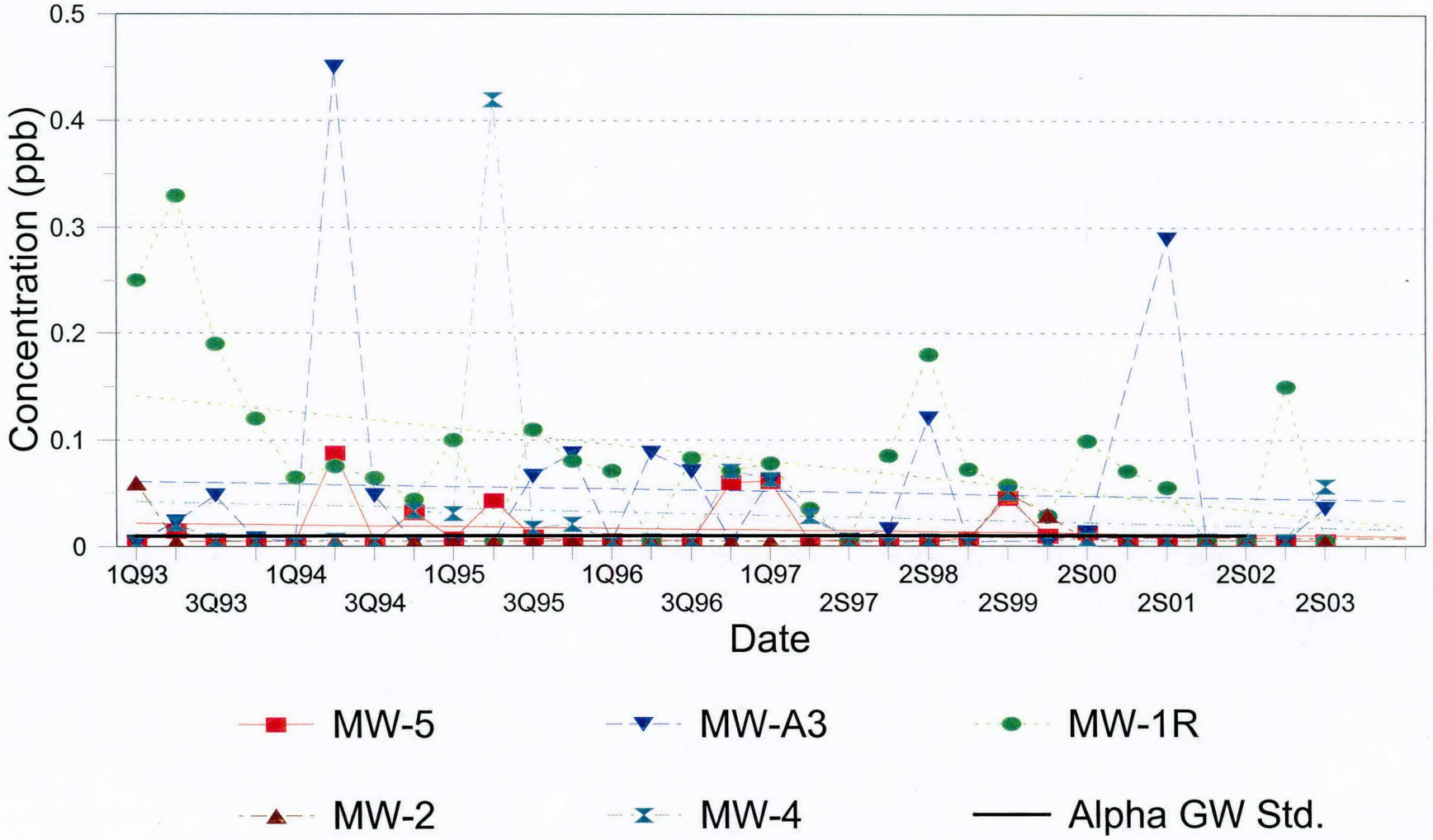
OLIN GIBSON SITE #932063

DOWNSTREAM SEDIMENT



Gibson Site #932063

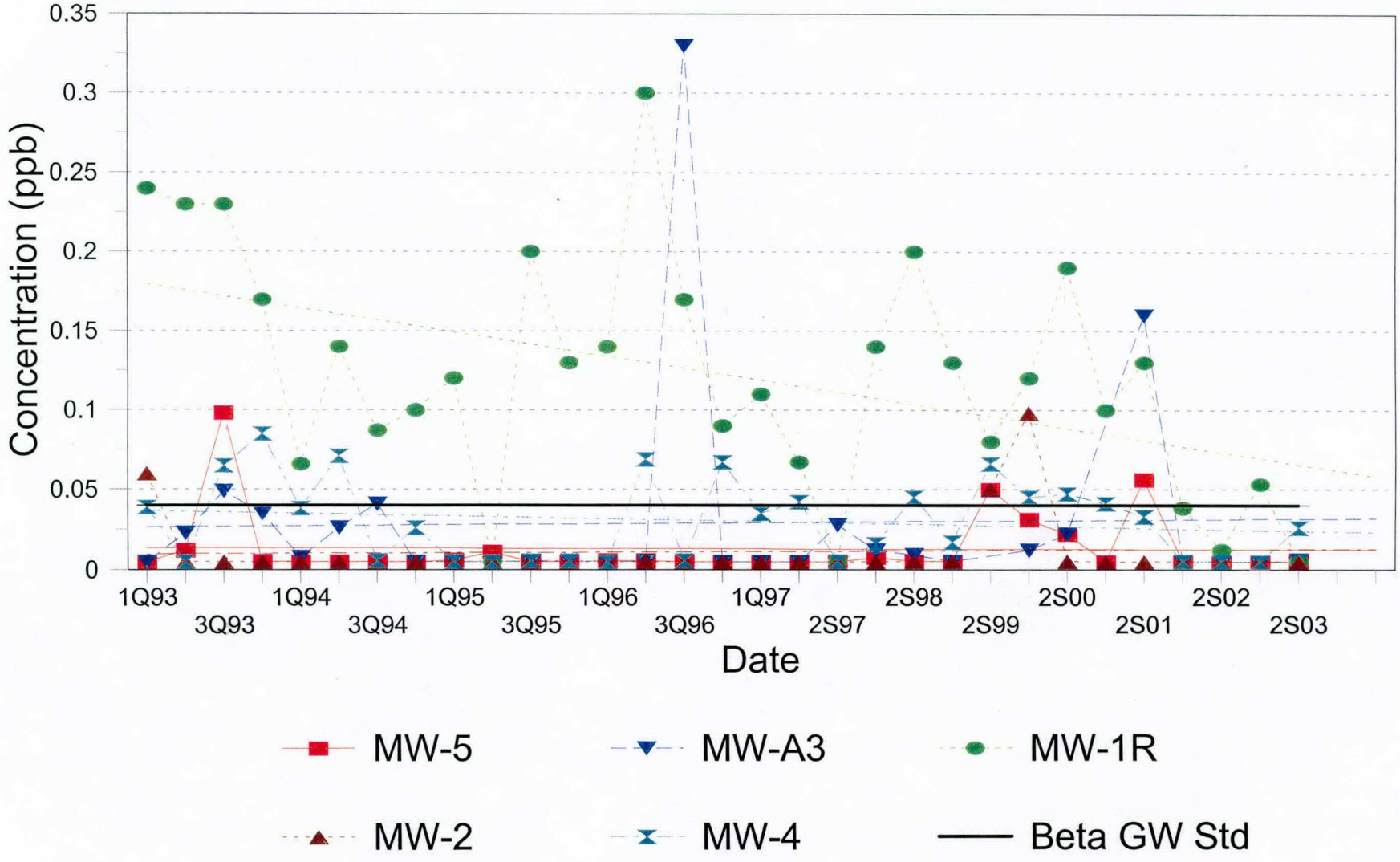
alpha - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

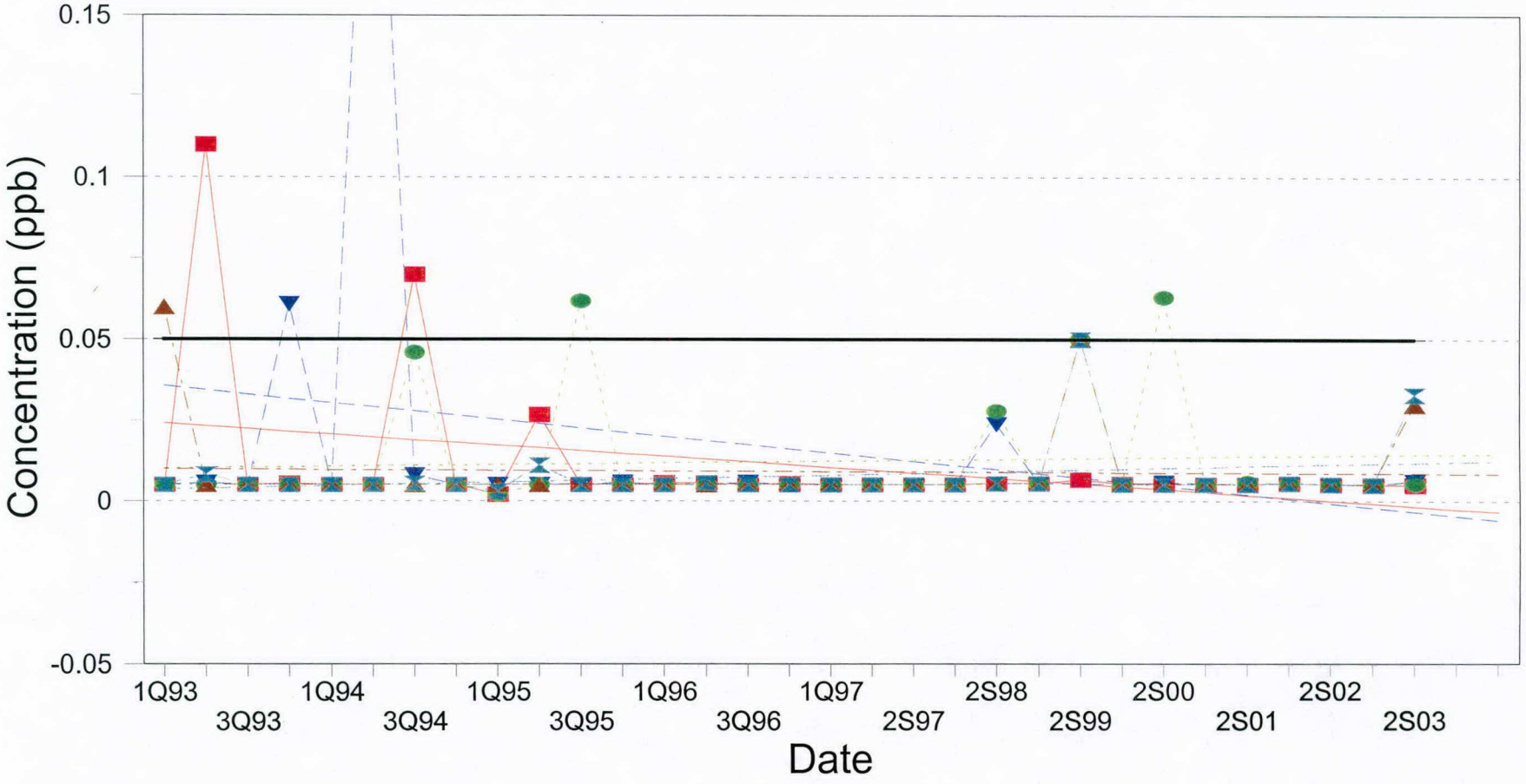
beta - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

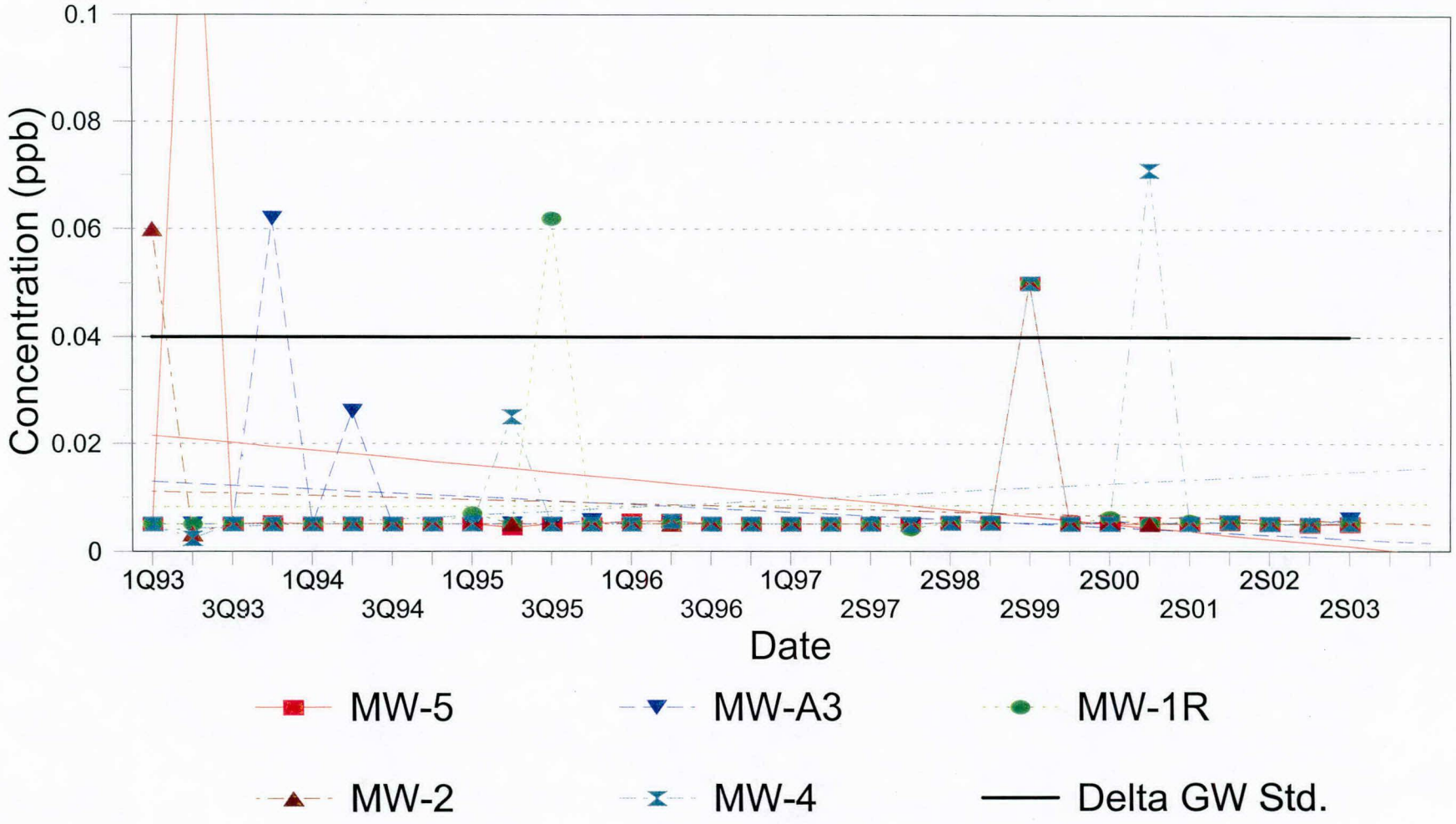
gamma - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

delta -BHC



Non-detects plotted as 1/10th of detection limit

932063
2003 GW Data File

Olin

P. O. BOX 248, 1186 LOWER RIVER ROAD, NW, CHARLESTON, TN 37310-0248

(423) 336-4000 FAX: (423) 336-4166

June 6, 2003

Mr. Michael J. Hinton, P.E.
Environmental Engineer
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203-2999

Subject: Charles Gibson Site
(Pine and Tuscarora Site)
Niagara Falls, New York
NYSDEC Registry No. 9-32-063
Semi-Annual Ground Water Sampling Report
April 2003

Dear Mr. Hinton:

In accordance with the approved sampling plan for the above referenced Site, enclosed are three copies of the first Semi-Annual Ground Water Report, April 20032. The analytical data summary for ground water is listed in Table 1. Analytical results for the annual leachate sampling at Manhole B are listed in Table 2. The laboratory data summary package (Appendix A), and the field logs (Appendix B) for this sampling event are also attached. The Quarterly Site Inspection Forms and the Quarterly Ground Water Elevation Forms are included in Appendices C and D respectively. The analytical data has been validated and found to be acceptable.

If you have any questions, please call me at 423/ 336-4381.

Sincerely,
OLIN CORPORATION

Lorraine M. Miller

Lorraine M. Miller
Principal Environmental Specialist

cc: C.M. Richards (letter only, via e-mail)
T. E.Tirabassi (letter only, via e-mail)
M. Walker (1 copy)

TABLE 1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING

April 1-2, 2003

	MW-1R	MW-1R (dup)	MW-2	MW-4	MW-5	MW-A3
PARAMETER						
alpha-BHC	.015J	.014J	.050U	.049U	.048U	.048U
beta-BHC	.053	.052	.050U	.049U	.048U	.048U
delta-BHC	.049U	.049U	.050U	.049U	.048U	.048U
gamma-BHC	.049U	.049U	.050U	.049U	.048U	.048U
Hexachlorobenzene	NR	NR	NR	NR	NR	NR

Notes:

Concentration in ug/l

U Undetected at associated value

J Estimated value

Field blank was non-detect for all parameters of interest.

Data has been validated and judged acceptable as qualified.

NR Not required for this event.

Next sampling for hexachlorobenzene is scheduled for October 2004.

TABLE 2

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
ANNUAL LEACHATE SAMPLING

April 1, 2003

	MANHOLE B
PARAMETER	
alpha-BHC	.048U
beta-BHC	.33
delta-BHC	.60
gamma-BHC	.048U
Hexachlorobenzene	NR

Notes:
Concentration in ug/l
Field blank was non-detect for all parameters of interest.
Data has been validated and judged acceptable as qualified.
NR Not required for this event.
Next sampling for hexachlorobenzene is scheduled for October 2005.

APPENDIX A

LABORATORY DATA SUMMARY PACKAGE

SEMI-ANNUAL GROUND WATER SAMPLING

AND

ANNUAL LEACHATE SAMPLING OF MANHOLE B

APRIL 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

SEVERN TRENT STL

ANALYTICAL REPORT

Job#: A03-3028

STL Project#: NY3A9025
Site Name: OLIN Corporation - Charles Gibson site
Task: Olin Corp. - Charles Gibson Site

Ms. Lorraine Miller
Olin Corporation
1186 Lower River Rd.
Charleston, TN 37310

CC: Mr. Michael Walker

STL Buffalo

Brian J. Fischer
Project Manager

Meg Dolan
Analyst

04/17/2003

This report contains 173 pages which are individually numbered.

SAMPLE DATA SUMMARY PACKAGE

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A3302801	MHB-040103	04/01/2003	10:30	04/02/2003	13:20
A3302802	MW-1R-040103	04/01/2003	11:50	04/02/2003	13:20
A3302803	MW-2-040103	04/01/2003	15:00	04/02/2003	13:20
A3302803MS	MW-2MS-040103	04/01/2003	15:00	04/02/2003	13:20
A3302803SD	MW-2SD-040103	04/01/2003	15:00	04/02/2003	13:20
A3302804	MW-4-040103	04/01/2003	15:50	04/02/2003	13:20
A3302805	MW-5-040103	04/01/2003	16:30	04/02/2003	13:20
A3302806	MW-7-040103	04/01/2003	12:50	04/02/2003	13:20
A3302807	MW-8-040203	04/02/2003	11:00	04/02/2003	13:20
A3302808	MWA-3-040203	04/02/2003	10:30	04/02/2003	13:20

METHODS SUMMARY

Job#: A03-3028

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

PARAMETER	ANALYTICAL METHOD
ASP 2000- METHOD 8081 BHC'S	ASP00 8081

References:

ASP00 "Analytical Services Protocol", New York State Department of Conservation, June 2000.

NON-CONFORMANCE SUMMARY

Job#: A03-3028

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-3028
Sample Cooler(s) were received at the following temperature(s); 2 @ 2.0 °C
All samples were received in good condition.

GC Extractable Data

No deviations from protocol were encountered during the analytical procedures.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

4-17-03
Date

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: SEVERN TRENT LABORATORIES, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS						
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	TCLP HERB	WATER QUALITY
MHB-040103	A3302801	-	-	-	ASP00	-	-	-
MW-1R-040103	A3302802	-	-	-	ASP00	-	-	-
MW-2-040103	A3302803	-	-	-	ASP00	-	-	-
MW-4-040103	A3302804	-	-	-	ASP00	-	-	-
MW-5-040103	A3302805	-	-	-	ASP00	-	-	-
MW-7-040103	A3302806	-	-	-	ASP00	-	-	-
MW-8-040203	A3302807	-	-	-	ASP00	-	-	-
MWA-3-040203	A3302808	-	-	-	ASP00	-	-	-

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MHB-040103	LEACH	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-1R-040103	GW	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-2-040103	GW	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-4-040103	GW	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-5-040103	GW	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-7-040103	GW	04/01/2003	04/02/2003	4/5/2003	4/9/2003
MW-8-040203	GW	04/02/2003	04/02/2003	4/5/2003	4/9/2003
MWA-3-040203	GW	04/02/2003	04/02/2003	4/5/2003	4/9/2003

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILIARY CLEAN UP	DIL/CONC FACTOR
MHB-040103	LEACH	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-1R-040103	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-2-040103	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-4-040103	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-5-040103	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-7-040103	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-8-040203	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MWA-3-040203	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED

DATA COMMENT PAGE

ORGANIC DATA QUALIFIERS

ND or U	Indicates compound was analyzed for, but not detected at or above the reporting limit.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS.
B	This flag is used when the analyte is found in the associated blank, as well as in the sample.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at the secondary dilution factor.
N	Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.
P	This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the data page and flagged with a "P".
A	This flag indicates that a TIC is a suspected aldol-condensation product.
1	Indicates coelution.
*	Indicates analysis is not within the quality control limits.

INORGANIC DATA QUALIFIERS

ND or U	Indicates element was analyzed for, but not detected at or above the reporting limit.
J or B	Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
N	Indicates spike sample recovery is not within the quality control limits.
K	Indicates the post digestion spike recovery is not within the quality control limits.
S	Indicates value determined by the Method of Standard Addition.
M	Indicates duplicate injection results exceeded quality control limits.
W	Post digestion spike for Furnace AA analysis is out of quality control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.
E	Indicates a value estimated or not reported due to the presence of interferences.
H	Indicates analytical holding time exceedance. The value obtained should be considered an estimate.
*	Indicates analysis is not within the quality control limits.
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: MHB-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302801

Sample wt/vol: 1030.00 (g/mL) ML Lab File ID: RA24460.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.33	
319-86-8	delta-BHC	0.60	
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-1R-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302802

Sample wt/vol: 1025.00 (g/mL) ML Lab File ID: RA24461.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.015	J
319-85-7	beta-BHC	0.053	
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-2-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302803

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: RA24462.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-4-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302804

Sample wt/vol: 1025.00 (g/mL) ML Lab File ID: RA24465.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.049	U
319-85-7	beta-BHC	0.049	U
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: MW-5-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302805

Sample wt/vol: 1030.00 (g/mL) ML Lab File ID: RA24466.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-7-040103

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302806

Sample wt/vol: 1020.00 (g/mL) ML Lab File ID: RA24467.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/01/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.014	J
319-85-7	beta-BHC	0.052	
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

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Client No.

MWA-3-040203

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3302808

Sample wt/vol: 1035.00 (g/mL) ML Lab File ID: RA24472.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/02/2003 04/02/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER SURROGATE RECOVERY

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): RTXCLPI ID: 0.32 (mm)

	Client Sample ID	DCBP %REC	#	TCMX %REC	#							TOT OUT
1	Matrix Spike Blank	62		94								0
2	Method Blank	66		86								0
3	MHB-040103	78		129								0
4	MW-1R-040103	106		90								0
5	MW-2-040103	98		92								0
6	MW-2MS-040103	92		98								0
7	MW-2SD-040103	108		87								0
8	MW-4-040103	60		80								0
9	MW-5-040103	72		84								0
10	MW-7-040103	76		96								0
11	MW-8-040203	63		94								0
12	MWA-3-040203	86		96								0

QC LIMITS

(DCBP) = Decachlorobiphenyl (28-132)
(TCMX) = Tetrachloro-m-xylene (36-132)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: STL Buffalo Contract: _____ Lab Samp ID: A3302803

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - Client Sample No.: MW-2-040103

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	MS CONCENTRATION UG/L	MS % REC #	QC LIMITS REC.	+
gamma-BHC (Lindane)_____	0.476	0	0.376	79	56 - 123	=

COMPOUND	SPIKE ADDED UG/L	MSD CONCENTRATION UG/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.	+
gamma-BHC (Lindane)_____	0.476	0.344	72	9	15	56 - 123	=

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike recovery: 0 out of 2 outside limits

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER MATRIX SPIKE BLANK RECOVERY

Lab Name: STL Buffalo Contract: _____ Lab Samp ID: A3B0355802

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - Client Sample No.: Method Blank

COMPOUND	SPIKE ADDED UG/L	MSB CONCENTRATION UG/L	MSB % REC #	QC LIMITS REC.	+ =
gamma-BHC (Lindane)_____	0.500	0.391	78	56 - 123	

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike recovery: ____0 out of ____1 outside limits

Comments: _____

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OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
METHOD BLANK SUMMARY

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: A3B0355802 Lab File ID: RA24474.TX0

Matrix: (soil/water) WATER Extraction: SEPF

Sulfur Cleanup: (Y/N): N Date Extracted: 04/05/2003

Date Analyzed (1): 04/09/2003 Date Analyzed (2): _____

Time Analyzed (1): 13:34 Time Analyzed (2): _____

Instrument ID (1): HP5890-18 Instrument ID (2): _____

GC Column (1): RTXCLPI Dia: 0.32(mm) GC Column (2): _____ Dia: ____(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	Matrix Spike Blank	A3B0355801	04/09/2003	
2	MHB-040103	A3302801	04/09/2003	
3	MW-1R-040103	A3302802	04/09/2003	
4	MW-2-040103	A3302803	04/09/2003	
5	MW-2MS-040103	A3302803MS	04/09/2003	
6	MW-2SD-040103	A3302803SD	04/09/2003	
7	MW-4-040103	A3302804	04/09/2003	
8	MW-5-040103	A3302805	04/09/2003	
9	MW-7-040103	A3302806	04/09/2003	
10	MW-8-040203	A3302807	04/09/2003	
11	MWA-3-040203	A3302808	04/09/2003	

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.: Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3B0355802

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: RA24474.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: _____ _____

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/05/2003

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/09/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 5.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U

SAMPLE DATA PACKAGE

SDG NARRATIVE

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A3302801	MHB-040103	04/01/2003	10:30	04/02/2003	13:20
A3302802	MW-1R-040103	04/01/2003	11:50	04/02/2003	13:20
A3302803	MW-2-040103	04/01/2003	15:00	04/02/2003	13:20
A3302803MS	MW-2MS-040103	04/01/2003	15:00	04/02/2003	13:20
A3302803SD	MW-2SD-040103	04/01/2003	15:00	04/02/2003	13:20
A3302804	MW-4-040103	04/01/2003	15:50	04/02/2003	13:20
A3302805	MW-5-040103	04/01/2003	16:30	04/02/2003	13:20
A3302806	MW-7-040103	04/01/2003	12:50	04/02/2003	13:20
A3302807	MW-8-040203	04/02/2003	11:00	04/02/2003	13:20
A3302808	MWA-3-040203	04/02/2003	10:30	04/02/2003	13:20

METHODS SUMMARY

Job#: A03-3028

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

PARAMETER	ANALYTICAL METHOD
ASP 2000- METHOD 8081 BHC'S	ASP00 8081

References:

ASP00 "Analytical Services Protocol", New York State Department of Conservation, June 2000.

NON-CONFORMANCE SUMMARY

Job#: A03-3028

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-3028
Sample Cooler(s) were received at the following temperature(s); 2 @ 2.0 °C
All samples were received in good condition.

GC Extractable Data

No deviations from protocol were encountered during the analytical procedures.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

4-17-03
Date

CHAIN OF CUSTODY DOCUMENTATION

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (1200)

Client	Project Manager	Date	Chain of Custody Number
OLIN CORP.	Lorraine Miller - OLIN	4-2-03	097653
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 1
1185 Lower River Road	423-336		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Charleston / TN / 37310	Mike Walker 284 0431	Brian Fischer	
Project Name and Location (State)	**Carrier/Waybill Number**		
Charles Gibson Site - Niagara Falls NY.			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): BNA 8270	# of Bottles	Special Instructions/ Conditions of Receipt
MHB 040103	4-1-03	1030		X			X						X	2	1 liter amber
MW2 040103	4-1-03	1500		X			X						X	2	"
MW2MS 040103	4-1-03	1500		X			X						X	2	"
MW2SD 040103	4-1-03	1500		X			X						X	2	"
MW7 040103	4-1-03	1250		X			X						X	2	"
MW1R 040103	4-1-03	1150		X			X						X	2	"

Please Send Copies of Results to Mike Walker and Lorraine Miller Thank You

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
[signature]	4-2-03	1315	[signature] STL	4-2-03	1315
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments: 2@2.0°C

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

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Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (1200)

Client: OLIN CORP.	Project Manager: Lorraine Miller	Date: 4-2-03	Chain of Custody Number: 097654
Address: 1186 Lower River Road	Telephone Number (Area Code)/Fax Number: 423-336-	Lab Number:	Page 1 of 1
City: Charleston / State: TN / Zip Code: 37310	Site Contact: Mike Walker 284 0431	Lab Contact: Brian Fischer	
Project Name and Location (State): Charles Gibson Site, Niagara Falls NY (PINE + TUSCARORA ST.)	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	BNA	# of Bottles	Special Instructions/ Conditions of Receipt
MW8 [redacted] 040203	4-2-03	1100		X			X						X	2	1 Liter AMBER
MW5 040103	4-1-03	1630		X			X						X	2	"
MW4 040103	4-1-03	1550		X			X						X	2	"
MWA-3-040203	4-2-03	1030		X			X						X	2	"
		(CM)													Please Send Results to: SVENSON c/o Mike Walker 2749 Lockport Rd Niagara Falls NY 14305 and Lorraine Miller @ OLIN Address ABOVE

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By	4-2-03	1320	1. Received By	STL 4-2-03	13:20
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: 2@2.0°C

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

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APPENDIX B

FIELD LOGS

SEMI-ANNUAL GROUND WATER SAMPLING
AND
ANNUAL LEACHATE SAMPLING AT MANHOLE B

April 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: MHB-040103
SAMPLING EVENT/DATE: 4/1/03 spring
MONITORING WELL: Man Hole B
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: 13.3 (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= (GALS)

PURGE METHOD: **Grab sample**
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/1/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT

SAMPLE TIME: 1150

LOCATION: Man Hole "B"

SAMPLE METHOD: Took a grab sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS: Clear, no odor or sheen

QC SAMPLES TAKEN: no

OTHER OBSERVATIONS/COMMENTS: Water samples were split with Brian Sydowski of the NYSDEC.

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: **MW1R-040103 and MW7-040103**
SAMPLING EVENT/DATE: 4/1/03 spring
MONITORING WELL: MW1R and blind duplicate/MW7
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/1/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **12.1** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **4.15** (FT.)
WATER COLUMN: **7.95** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.272** (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME 1115 STOP TIME: 1150
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	8.14	1120	7.3	Clear,No Odor
2	7.99	1034	6.9	"
3	7.69	1073	6..8	"
4				
5				

TOTAL VOLUME PURGED: 3.75 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/1/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1150

LOCATION: MW1R
SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.
SAMPLING OBSERVATIONS: Clear, no odor or sheen
QC SAMPLES TAKEN: Blind duplicate samples were taken and labeled MW7 on the COC.
OTHER OBSERVATIONS/COMMENTS: Water samples were split with Brian Sydowski of the NYSDEC.

Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: **MW2-040103**
SAMPLING EVENT/DATE: 4/1/03 spring
MONITORING WELL: MW-2
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/1/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **12.13** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **4.1** (FT.)
WATER COLUMN: **8.03** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.2848** (GALS)

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1430 STOP TIME: 1500
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.78	1405	7.3	Clear,No Odor
2	7.54	1386	6.5	"
3	7.35	1298	6.5	"
4				
5				

TOTAL VOLUME PURGED: 4 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/1/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT

SAMPLE TIME: 1500

LOCATION: MW-2

SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS: Clear, no odor or sheen

QC SAMPLES TAKEN: MS/MSD samples were also taken.

OTHER OBSERVATIONS/COMMENTS: BHC's only

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: **MW4-040103**
SAMPLING EVENT/DATE: 4/1/03 spring
MONITORING WELL: MW4
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/1/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **13.75** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **6.3** (FT.)
WATER COLUMN: **7.45** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.192** (GALS)

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1525 STOP TIME: 1550
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.88	1.98	7.6	Black water/Sulfur
2	7.63	1719	6.8	Grey water Smell
3	7.47	1837	6.9	"
4				
5				

TOTAL VOLUME PURGED: 3.5 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/1/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1550

LOCATION: MW-4

SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS: Black water came out at first, then turned grey as purge continued.

QC SAMPLES TAKEN:

OTHER OBSERVATIONS/COMMENTS: BHC's only Water also has a sulfury smell to it

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: MW5-040103
SAMPLING EVENT/DATE: 4/1/03 spring
MONITORING WELL: MW5
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/1/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **15.28** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **7.1** (FT.)
WATER COLUMN: **8.18** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.3088** (GALS)

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1600 STOP TIME: 1630
PURGE OBSERVATIONS: Grey water no odor

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.78	2.57	7.5	Grey water/ No odor
2	6.67	2.56	7.1	Lt. Rusty/ " "
3	6.65	2.57	7.2	Yellow Tint "
4				
5				

TOTAL VOLUME PURGED: 4 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/1/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1630

LOCATION: MW5

SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS: Purge water started out grey in color then turned to a rusty color then became yellowish / clear.

QC SAMPLES TAKEN: No.

OTHER OBSERVATIONS/COMMENTS: BHC's only

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: MW8-040203
SAMPLING EVENT/DATE: 4/2/03 spring
MONITORING WELL: MW8 / Field Blank
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT:
ONE WELL VOLUME= (GALS)

PURGE METHOD:
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED: gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/2/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1100

LOCATION: Drive way in front of main gate

SAMPLE METHOD: Poured pure water supplied by the lab into bottles labeled MW8-040203

SAMPLING OBSERVATIONS: MW-8 = Field Blank

QC SAMPLES TAKEN: No.

OTHER OBSERVATIONS/COMMENTS: BHC's only

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= $\frac{\text{SC measured}}{\{\{T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: **MWA3-040203**
SAMPLING EVENT/DATE: 4/2/03 spring
MONITORING WELL: MWA3
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/2/2003

DEPTH TO BOTTOM FROM TOP OF RISER: **11.95** (FT.)
DEPTH TO WATER FROM TOP OF RISER: **5.3** (FT.)
WATER COLUMN: **6.65** (FT.)
2" DIA. WELL CONSTANT: **0.16**
ONE WELL VOLUME= **1.064** (GALS)

PURGE METHOD: 3x w/ parastaltic pump and dedicated hose
BOTTOM OF WELL/SILT BUILDUP: OK/None
PURGE START TIME: 1000 STOP TIME: 1030
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.9	593	7.1	Clear/No odor
2	7.66	561	6.1	" "
3	7.59	575	5.9	" "
4				
5				

TOTAL VOLUME PURGED: 3.25 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/2/2003

MEDIA: GROUNDWATER XXX
CREEK SEDIMENT
SAMPLE TIME: 1030

LOCATION: MWA3

SAMPLE METHOD: Took sample using a parastaltic pump and dedicated hose.

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN: No.

OTHER OBSERVATIONS/COMMENTS: BHC's only

Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER SAMPLING FIELD PARAMETERS
FIELD INSTRUMENTATION CALIBRATION FORM

DATE: 3/31/2003 SEMI-ANNUAL SAMPLING EVENT: Spring 2003

PERSON CALIBRATING METERS: M. Walker

pH METER USED: MANUFACTURER: Oakton
MODEL: pH Tester 3
IDENTIFICATION/CONTROL NUMBER: E780

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: 7
STANDARD 4.00 METER READ: #NAME?
STANDARD 10.00 METER READ:

METER CALIBRATION COMMENTS: New battery

SPECIFIC CONDUCTIVITY METER USED:
MANUFACTURER: Oakton
MODEL: Specific Cond. Meter
IDENTIFICATION/CONTROL NUMBER: 35607-10

CALIBRATION STANDARDS USED:

STANDARD 0 READ:
(STANDARD 0 USED: ____AIR, ____WATER)
STANDARD 447 READ: 468
STANDARD ____ READ:

METER CALIBRATION COMMENTS:

THERMOMETER USED: TYPE: Fisher Scientific Digital
MANUFACTURER: F/S
IDENTIFICATION/CONTROL NUMBER: 21115741

COMMENTS: (DOES THERMOMETER TEMPERATURE AGREE WITH SPECIFIC CONDUCTIVITY METER TEMPERATURE ?) yes
OTHER:

OTHER INSTRUMENTS USED: TYPE:
MANUFACTURER:
IDENTIFICATION/CONTROL NUMBER:

CALIBRATIONS PERFORMED:

OTHER CALIBRATION COMMENTS:

APPENDIX C

QUARTERLY SITE INSPECTION FORMS

January - June 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 2/19/2003 TIME: 2:00

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly Inspection

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: The site was secure and looked good upon arrival.

The readout on the front of the flow meter was blank. Power to the manhole from the power panel checked out OK, I suspect the LCD readout on the face of the meter could be frozon and shorted.

The Fax delivery system still functions properly. I will contact Carrier Controls to get their suggestions and advise.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 4/2/2003 TIME: 1145

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: 40 F, Cloudy and Windy

REASON FOR INSPECTION (QUARTERLY OR OTHER): Spring Sample Event

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	Weld is cracked on fence gate latch assembly
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: Even though the gate latch has a cracked weld, it did not compromise the integrity of the locking mechanism. I can repair the broken weld and re-adjust the gate. I will send you a picture of the repair for the files.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 4/14/2003 TIME: 1000

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Repair Flow meter

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: Met with Steve Frank of Carrier Controls to install the repaired flow meter face. We also tested the pumping system using the level switches. (tested OK). We have discovered that face of the flow meter, which is accurate according to our calculations, is not in sync. With the readout on the fax sheets. We are working to re-calibrate, and correct this situation. We have pumped 5,230 gallons during the test, the fax read out showed 15,977.

APPENDIX D

QUARTERLY GROUNDWATER ELEVATION /PUMPING FORMS

January - June 2003

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 2/19/2003 TIME: 2:00

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: Cloudy 33 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.99	564.73	OK
P-2	574.89	9.45	565.44	OK
P-3	574.16	7.65	566.51	OK
P-4	576.14	10.8	565.34	OK
P-5	575.05	5.95	569.1	OK
P-6	578.28	10.4	567.88	OK
MANHOLE A	575.22	11.15	564.07	OK
MANHOLE B	577.34	13.2	564.14	OK

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS: All wells and manholes looked OK.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 4/2/2003 TIME: 1200

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: 40 F, Cloudy, Windy

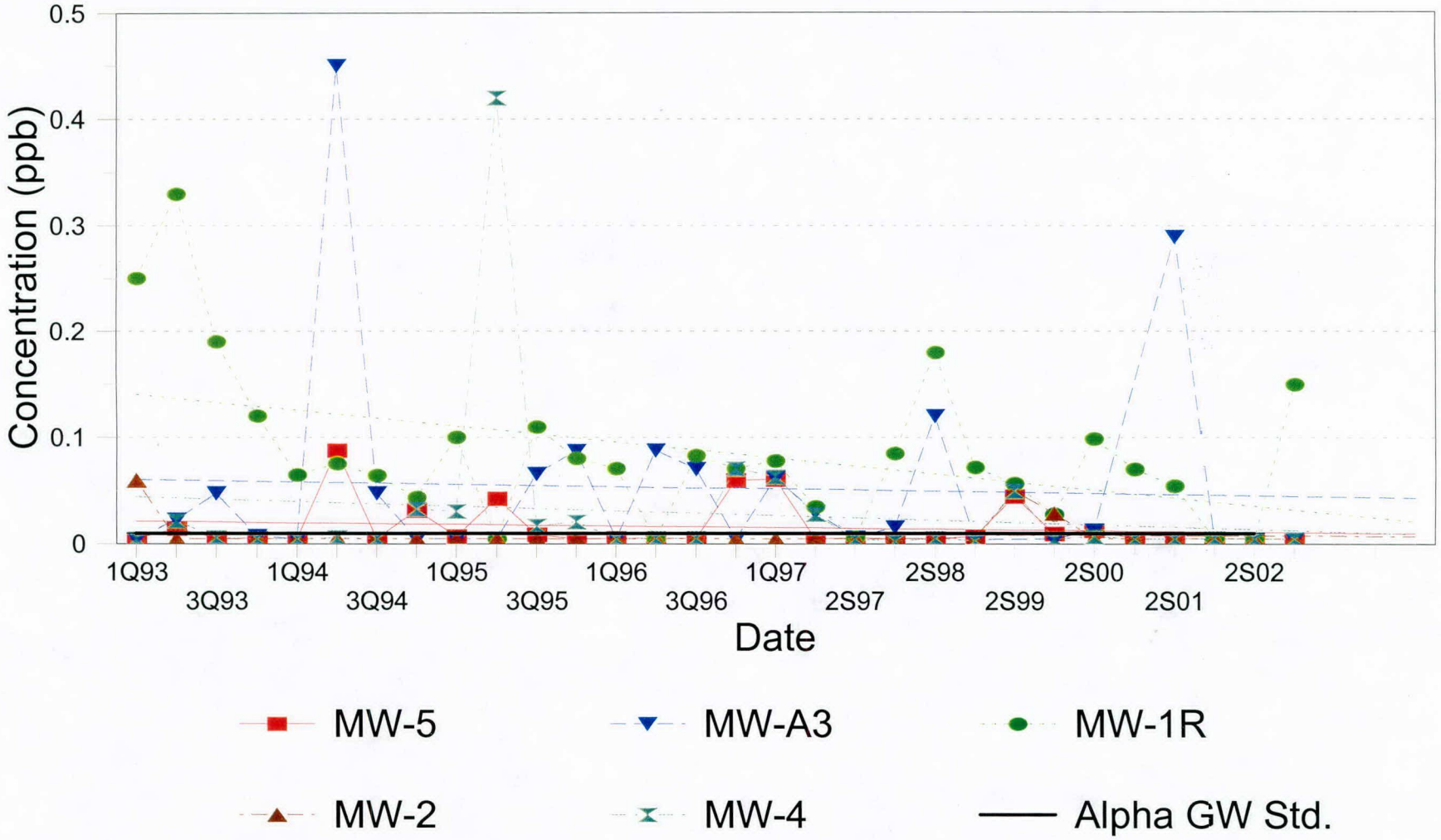
PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.4	565.32	
P-2	574.89	9.35	565.54	
P-3	574.16	6.6	567.56	
P-4	576.14	10.85	565.29	
P-5	575.05	5.2	569.85	
P-6	578.28	10	568.28	
MANHOLE A	575.22	11.25	563.97	
MANHOLE B	577.34	13.3	564.04	

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS:

Gibson Site #932063

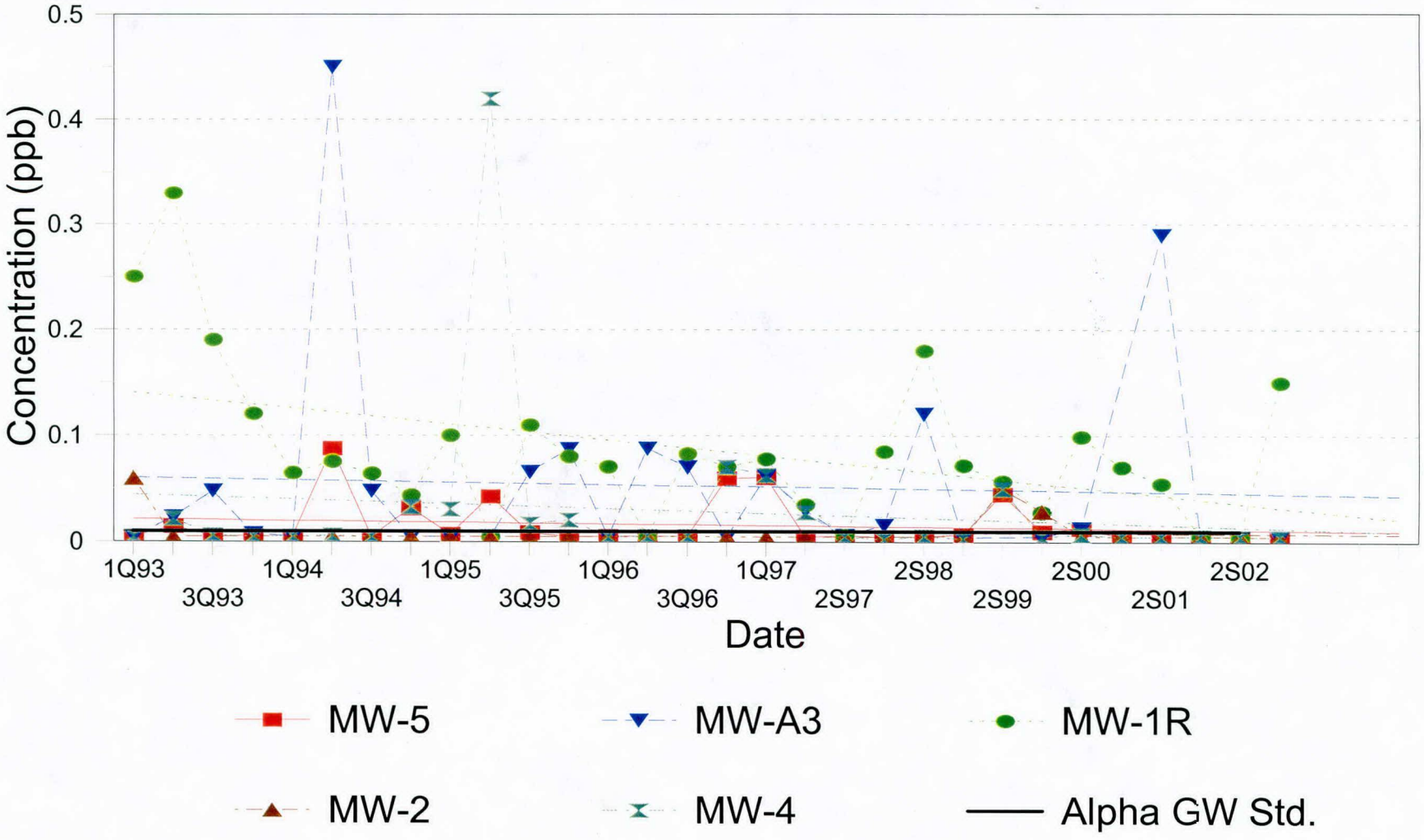
alpha - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

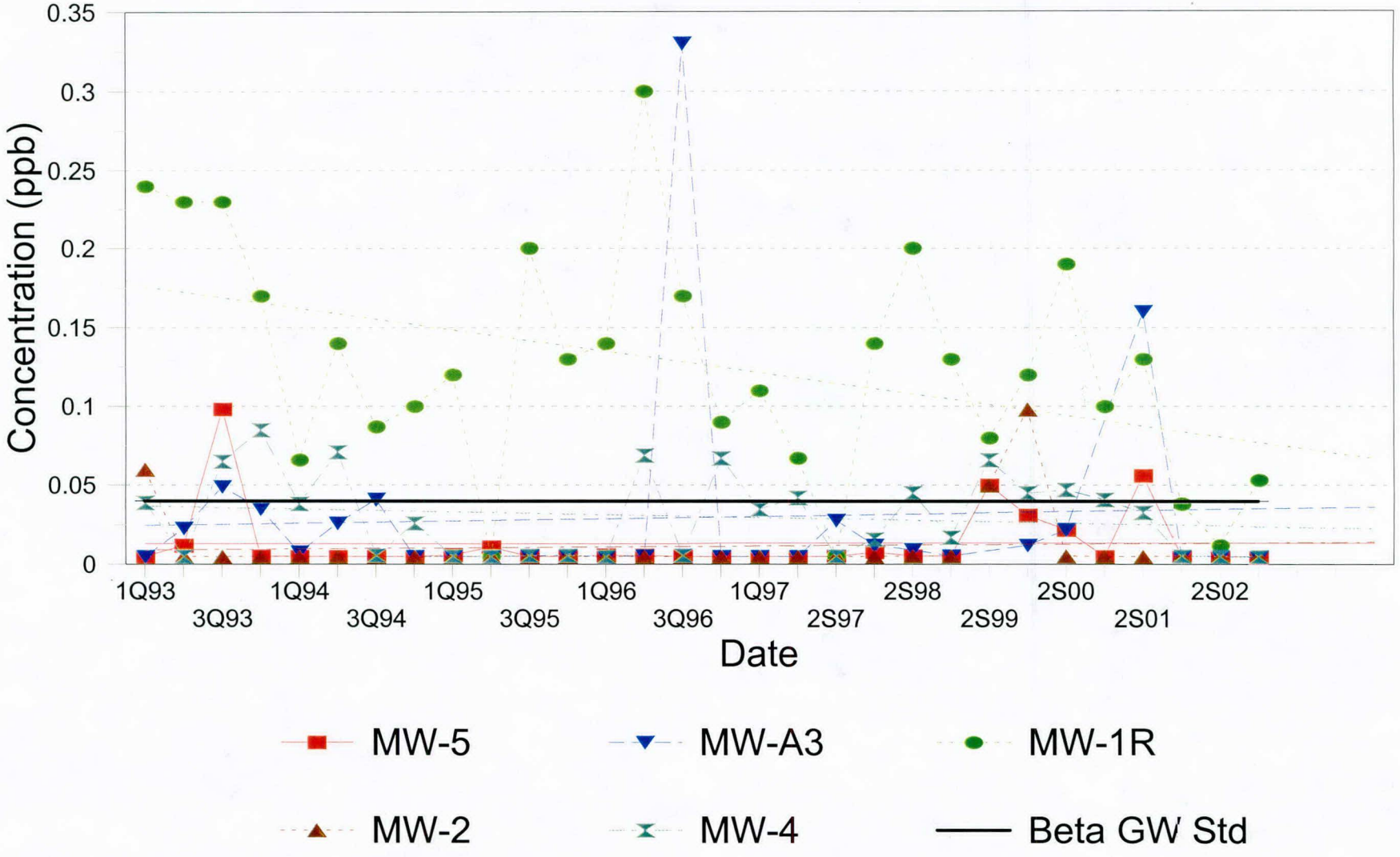
alpha - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

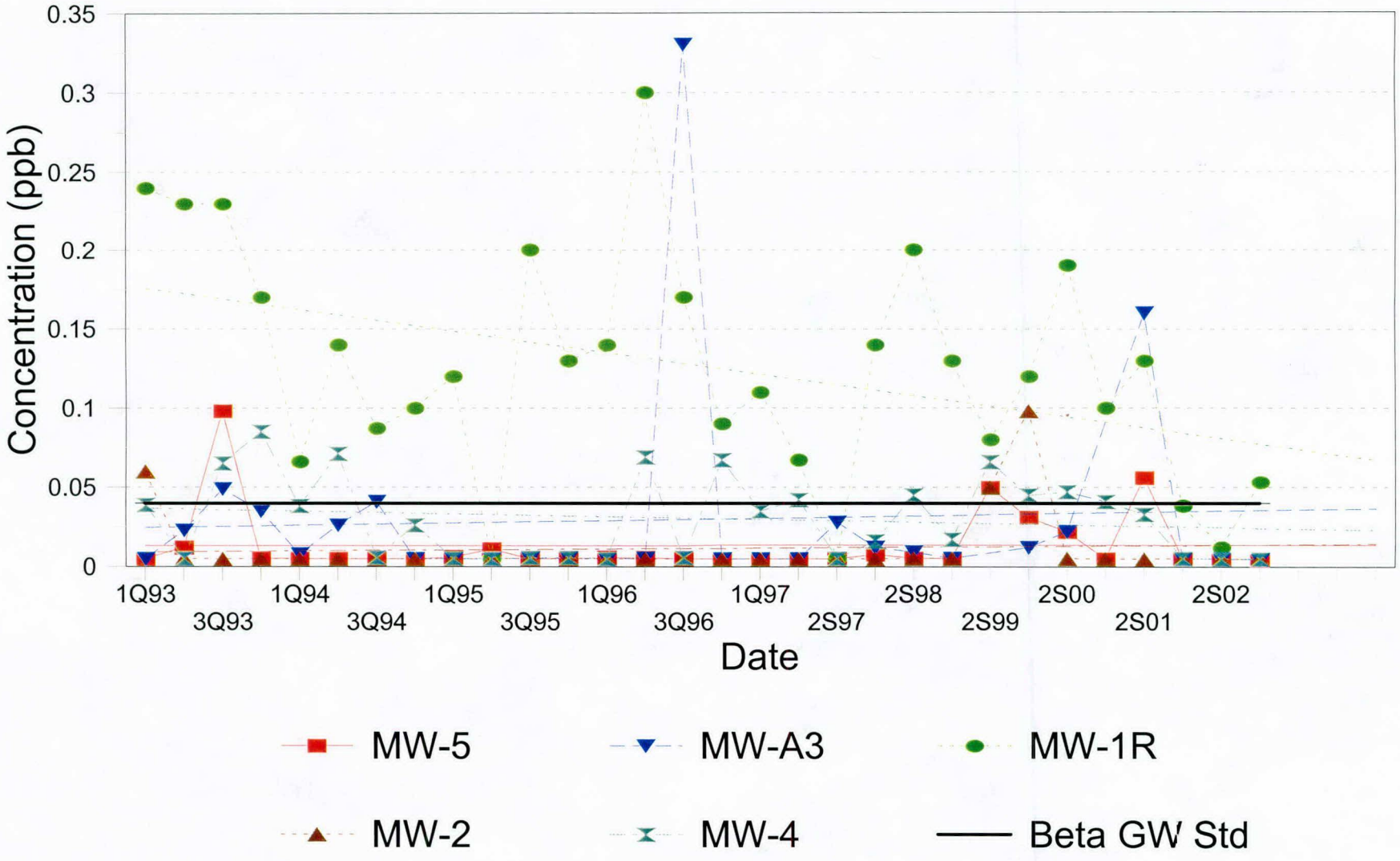
beta - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

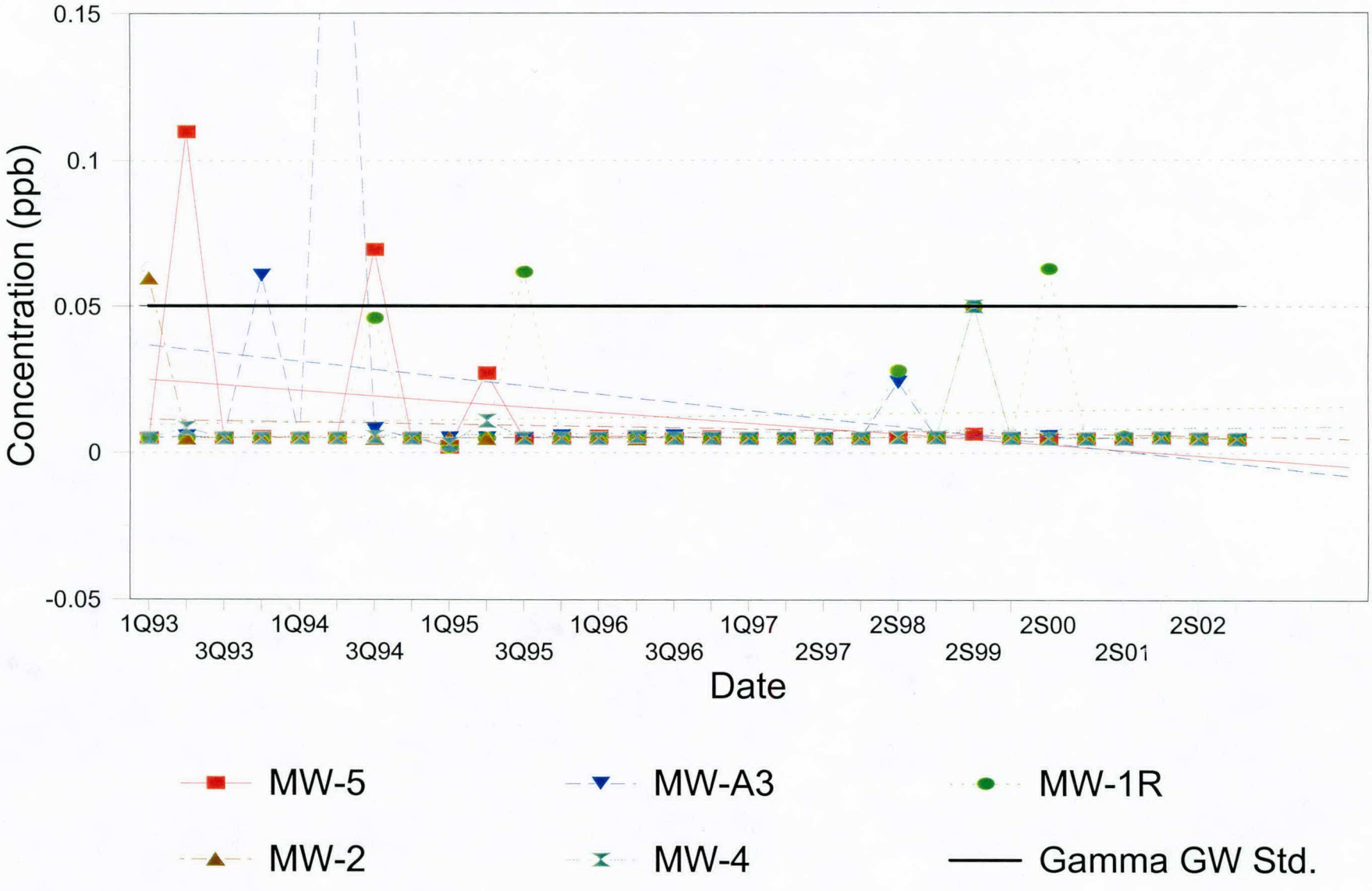
beta - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

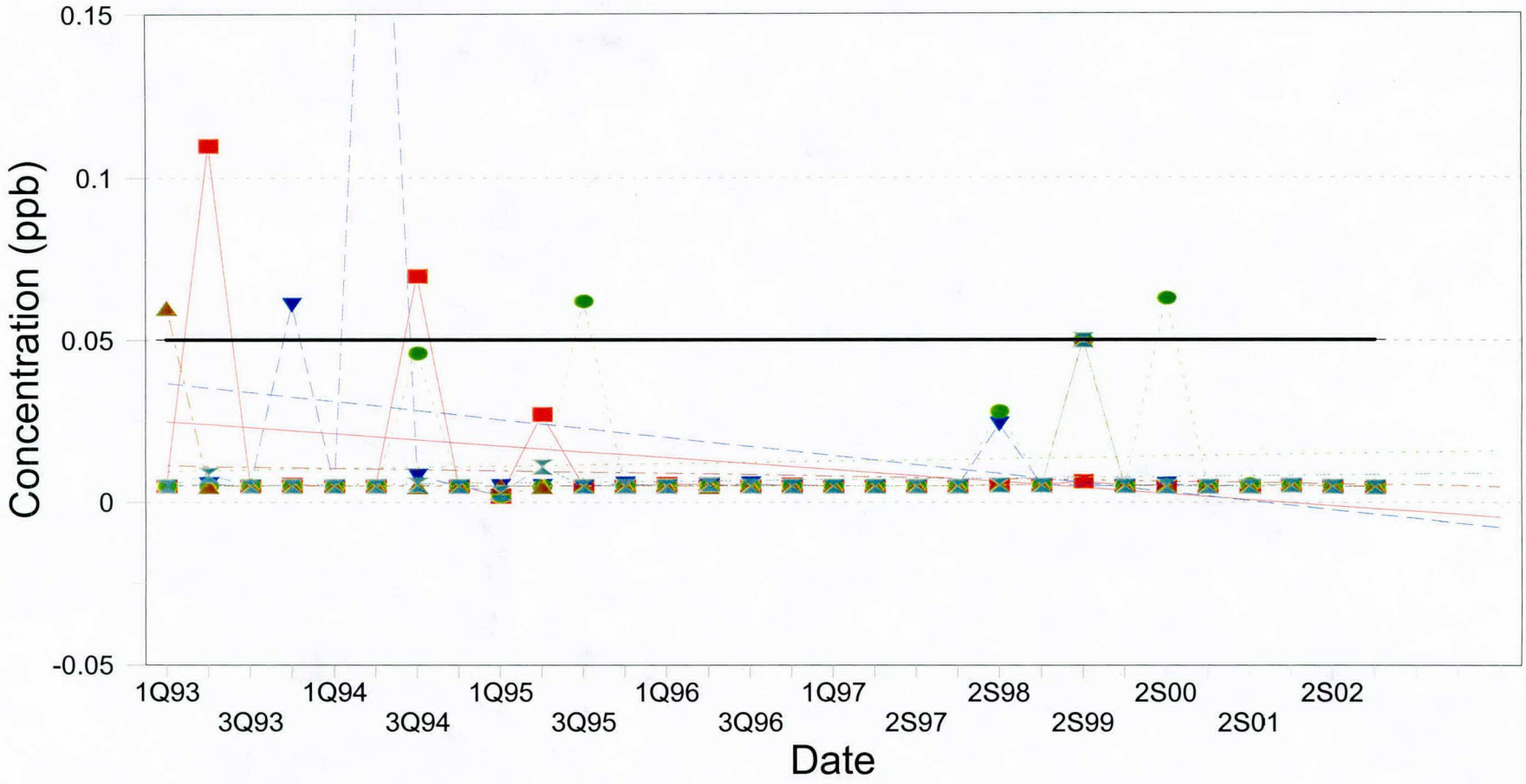
gamma - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

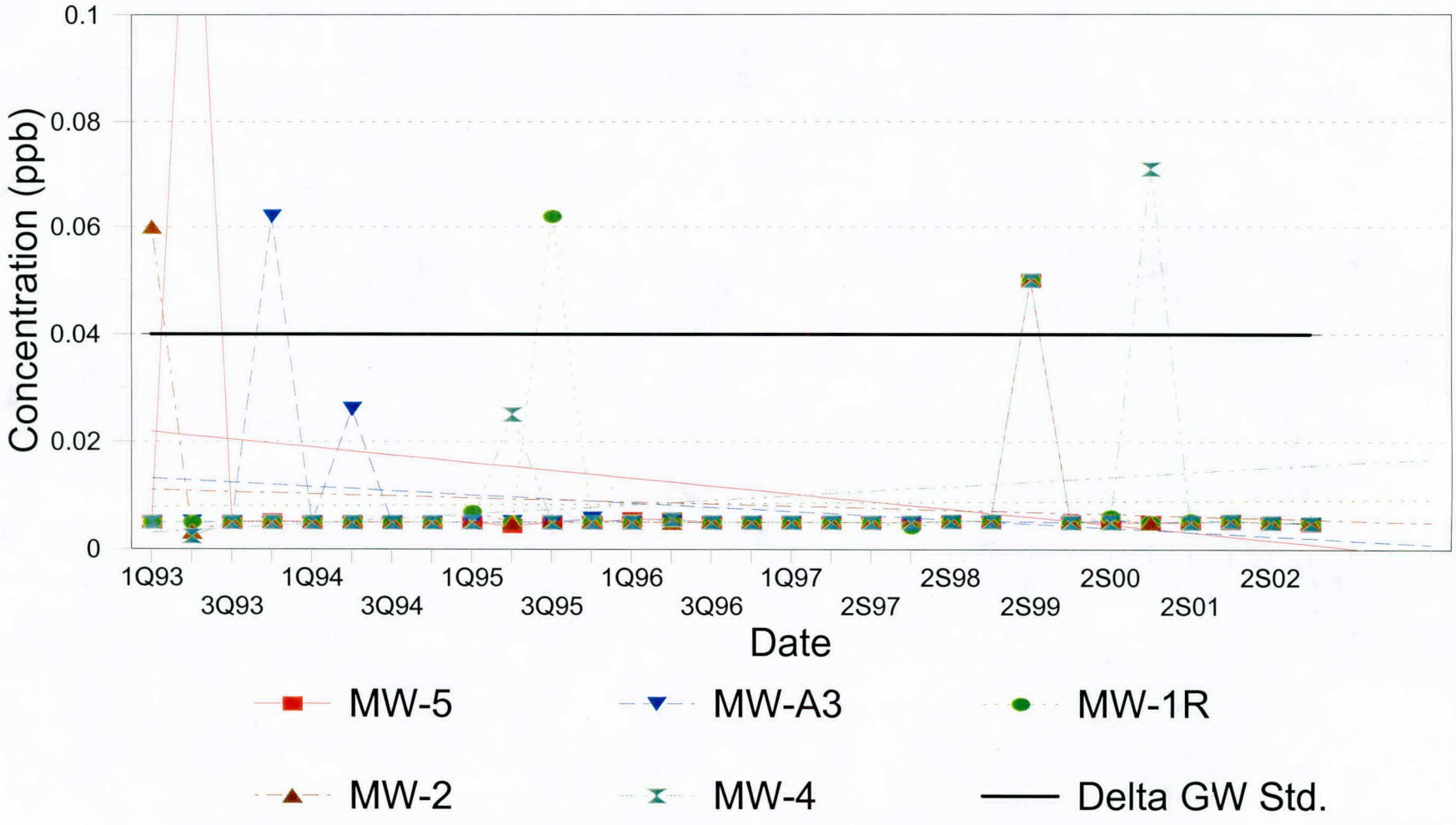
gamma - BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

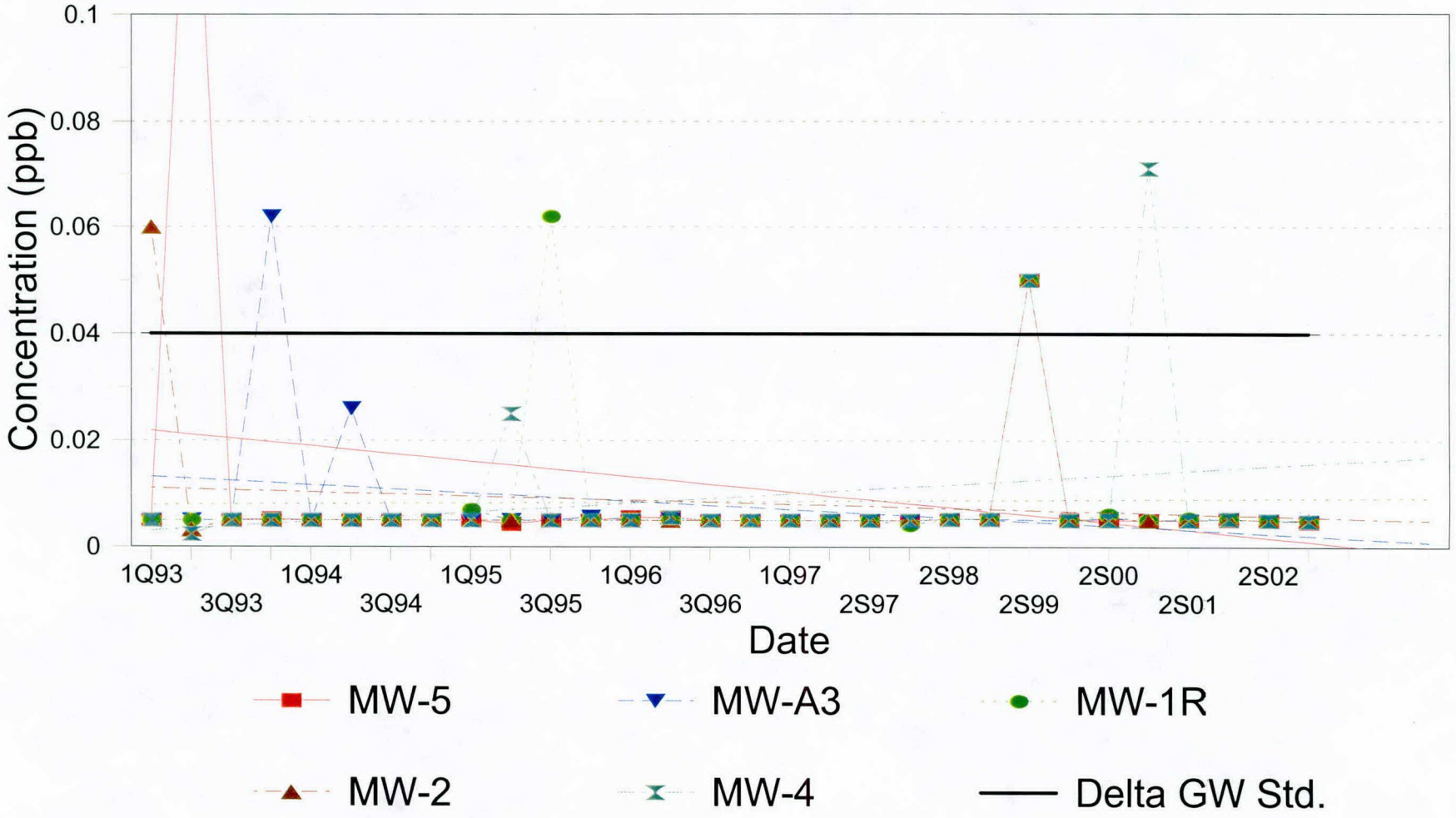
delta -BHC



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

delta -BHC



Non-detects plotted as 1/10th of detection limit