APPENDIX N
IMPORTED MATERIALS DOCUMENTATION

Hampton-Clarke
Analytical & Field Services

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800-426-9992 · 973-244-9770
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Project: Weldon Materials Watchung

Client PO: Not Available

Report To: Enterprise Network Resolutions LLC
PO Box 70
Winslow, NJ 08095

Attn: Ted Budzynski

Received Date: 10/26/2015

Report Date: 11/6/2015

Deliverables: NJDEP-R

Lab ID: AC87819

Lab Project No: 5102701

Robin Cousineau - Quality Assurance Director OR **Jean Revolus - Laboratory Director**

NJ (07071) NY (ELAP11408) CT (PH-0671)
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Hampton-Clarke
WBE/DBE/SBE 800-426-9992

Table of Contents

Sample Summary

Client: Enterprise Network Resolutions LLC
Project: Weldon Materials Watchung

HC Project #: 5102701

Lab#	SampleID	Matrix	Collection Date	Receipt Date
AC87819-001	Quarry Material COMP	Soil	10/26/2015	10/26/2015
AC87819-002	Quarry Material GRAB	Soil/Encore	10/26/2015	10/26/2015

HC Case Narrative

Client: Enterprise Network Resolutions LLC
Project: Weldon Materials Watchung

HC Project: 5102701

This case narrative is in the form of an exception report. Method specific and/or QA/QC anomalies related to this report only are detailed below.

Volatile Organic Analysis:

The Method Blank Spike for batch MBS47899 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

The MS/MSD RPD, Matrix Spike and/or Matrix Spike Duplicate for batch MBS47899 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

Base Neutral/Acid Extractable Analysis:

The Method Blank Spike for batch SMB46140 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

The MS/MSD RPD, Matrix Spike and/or Matrix Spike Duplicate for batch SMB46140 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

Samples SMB46140 (MS), AC87816-001, 002 (MS), and 003 (MSD) had a surrogate recovery outside QC limits, but the recovery is greater than 10%, therefore, no corrective action was necessary. Please refer to the applicable Form 2 for the recoveries.

PCB Analysis:

Data conforms to method requirements.

Pesticide Analysis:

Data conforms to method requirements.

Metals Analysis:

The Matrix Spike and/or Matrix Spike Duplicate for batches 47349 and 47350 had recoveries outside QC limits. Please refer to the applicable Form 5/7 for the recoveries.

The RPD between the QC sample and the Method Replicate had recoveries outside QC limits in batch 47349. Please refer to the applicable Form 6/9 for the recoveries.

The MS/MSD RPD had recoveries outside QC limits in batch 47349. Please refer to the applicable Form 6/9 for the recoveries.

The serial dilution for batch 47349 is outside QC limits for one or more analytes. Please refer to the applicable Form 6/9 for the recoveries.

Wet Chemistry Analysis:

The MS Insoluble and MS Soluble for Hexavalent Chromium, batch 326 recovered outside the QC limits. The batch was reset and recoveries confirmed. The results from first analysis are reported.

The Matrix Spike and/or Matrix Spike Duplicate for batch S-1558 recovered outside QC limits. Please refer to the QC section for the recoveries.

Robin Cousineau
Quality Assurance Director

Or

Jean Revolus
Laboratory Director

11/6/2015
Date

11/6/2015

HC Executive Summary

Client: Enterprise Network Resolutions LLC **HC Project #:** 5102701

Project: Weldon Materials Watchung

Lab#: AC87819-001 **Sample ID: Quarry Material COMP**

Analyte	Units	RL	Result	Analytical Method
pH	ph		9.8	9040C/9045D
Aluminum	mg/kg	210	13000	EPA 6010C
Barium	mg/kg	10	29	EPA 6010C
Calcium	mg/kg	1000	14000	EPA 6010C
Chromium	mg/kg	5.2	18	EPA 6010C
Cobalt	mg/kg	2.6	18	EPA 6010C
Copper	mg/kg	5.2	84	EPA 6010C
Iron	mg/kg	210	28000	EPA 6010C
Magnesium	mg/kg	520	14000	EPA 6010C
Manganese	mg/kg	10	360	EPA 6010C
Nickel	mg/kg	5.2	44	EPA 6010C
Sodium	mg/kg	260	1100	EPA 6010C
Vanadium	mg/kg	10	56	EPA 6010C
Zinc	mg/kg	10	39	EPA 6010C
Arsenic	mg/kg	0.21	0.57	EPA 6020A
TotalSemiVolatileTic	mg/kg	NA	44J	EPA 8270D
Eh	mv		160	SM 2580

HC Report of Analysis

Client: Enterprise Network Resolutions LLC
HC Project #: 5102701
Project: Weldon Materials Watchung

Sample ID: Quarry Material COMP
Lab#: AC87819-001
Matrix: Soil
Collection Date: 10/26/2015
Receipt Date: 10/26/2015

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		97

Cr (Hexavalent) 7196A

Analyte	DF	Units	RL	Result
Cr (Hexavalent)	1	mg/kg	1.0	ND

Cyanide (Soil/Waste) 9012B

Analyte	DF	Units	RL	Result
Cyanide	1	mg/kg	0.25	ND

Eh

Analyte	DF	Units	RL	Result
Eh	1	mv		160

Mercury (Soil/Waste) 7471A

Analyte	DF	Units	RL	Result
Mercury	1	mg/kg	0.086	ND

Organochlorine Pesticides 8081

Analyte	DF	Units	RL	Result
a-Chlordane	1	mg/kg	0.0052	ND
Aldrin	1	mg/kg	0.0052	ND
Alpha-BHC	1	mg/kg	0.0010	ND
beta-BHC	1	mg/kg	0.0010	ND
Chlordane (Total)	1	mg/kg	0.0052	ND
delta-BHC	1	mg/kg	0.0052	ND
Dieldrin	1	mg/kg	0.0010	ND
Endosulfan I	1	mg/kg	0.0052	ND
Endosulfan II	1	mg/kg	0.0052	ND
Endosulfan Sulfate	1	mg/kg	0.0052	ND
Endrin	1	mg/kg	0.0052	ND
Endrin Aldehyde	1	mg/kg	0.0052	ND
Endrin Ketone	1	mg/kg	0.0052	ND
gamma-BHC	1	mg/kg	0.0010	ND
Heptachlor	1	mg/kg	0.0052	ND
Heptachlor Epoxide	1	mg/kg	0.0052	ND
Methoxychlor	1	mg/kg	0.0052	ND
p,p'-DDD	1	mg/kg	0.0026	ND
p,p'-DDE	1	mg/kg	0.0026	ND
p,p'-DDT	1	mg/kg	0.0026	ND
Toxaphene	1	mg/kg	0.026	ND
y-Chlordane	1	mg/kg	0.0052	ND

PCB 8082

Analyte	DF	Units	RL	Result
Aroclor (Total)	1	mg/kg	0.026	ND
Aroclor-1016	1	mg/kg	0.026	ND
Aroclor-1221	1	mg/kg	0.026	ND
Aroclor-1232	1	mg/kg	0.026	ND

Sample ID: Quarry Material COMP
Lab#: AC87819-001
Matrix: Soil

Collection Date: 10/26/2015
Receipt Date: 10/26/2015

Aroclor-1242	1	mg/kg	0.026	ND
Aroclor-1248	1	mg/kg	0.026	ND
Aroclor-1254	1	mg/kg	0.026	ND
Aroclor-1260	1	mg/kg	0.026	ND
Aroclor-1262	1	mg/kg	0.026	ND
Aroclor-1268	1	mg/kg	0.026	ND

pH 9040C/9045D

Analyte	DF	Units	RL	Result
pH	1	ph		9.8

Semivolatile Organics + 15 (8270)

Analyte	DF	Units	RL	Result
1,1'-Biphenyl	1	mg/kg	0.034	ND
1,2,4,5-Tetrachlorobenzene	1	mg/kg	0.034	ND
2,3,4,6-Tetrachlorophenol	1	mg/kg	0.034	ND
2,4,5-Trichlorophenol	1	mg/kg	0.034	ND
2,4,6-Trichlorophenol	1	mg/kg	0.034	ND
2,4-Dichlorophenol	1	mg/kg	0.0086	ND
2,4-Dimethylphenol	1	mg/kg	0.0086	ND
2,4-Dinitrophenol	1	mg/kg	0.17	ND
2,4-Dinitrotoluene	1	mg/kg	0.034	ND
2,6-Dinitrotoluene	1	mg/kg	0.034	ND
2-Chloronaphthalene	1	mg/kg	0.034	ND
2-Chlorophenol	1	mg/kg	0.034	ND
2-Methylnaphthalene	1	mg/kg	0.034	ND
2-Methylphenol	1	mg/kg	0.0086	ND
2-Nitroaniline	1	mg/kg	0.034	ND
2-Nitrophenol	1	mg/kg	0.034	ND
3&4-Methylphenol	1	mg/kg	0.0086	ND
3,3'-Dichlorobenzidine	1	mg/kg	0.034	ND
3-Nitroaniline	1	mg/kg	0.034	ND
4,6-Dinitro-2-methylphenol	1	mg/kg	0.17	ND
4-Bromophenyl-phenylether	1	mg/kg	0.034	ND
4-Chloro-3-methylphenol	1	mg/kg	0.034	ND
4-Chloroaniline	1	mg/kg	0.0086	ND
4-Chlorophenyl-phenylether	1	mg/kg	0.034	ND
4-Nitroaniline	1	mg/kg	0.034	ND
4-Nitrophenol	1	mg/kg	0.034	ND
Acenaphthene	1	mg/kg	0.034	ND
Acenaphthylene	1	mg/kg	0.034	ND
Acetophenone	1	mg/kg	0.034	ND
Anthracene	1	mg/kg	0.034	ND
Atrazine	1	mg/kg	0.034	ND
Benzaldehyde	1	mg/kg	0.034	ND
Benzo[a]anthracene	1	mg/kg	0.034	ND
Benzo[a]pyrene	1	mg/kg	0.034	ND
Benzo[b]fluoranthene	1	mg/kg	0.034	ND
Benzo[g,h,i]perylene	1	mg/kg	0.034	ND
Benzo[k]fluoranthene	1	mg/kg	0.034	ND
bis(2-Chloroethoxy)methane	1	mg/kg	0.034	ND
bis(2-Chloroethyl)ether	1	mg/kg	0.0086	ND
bis(2-Chloroisopropyl)ether	1	mg/kg	0.034	ND
bis(2-Ethylhexyl)phthalate	1	mg/kg	0.034	ND
Butylbenzylphthalate	1	mg/kg	0.034	ND
Caprolactam	1	mg/kg	0.034	ND
Carbazole	1	mg/kg	0.034	ND

Sample ID: Quarry Material COMP
Lab#: AC87819-001
Matrix: Soil

Collection Date: 10/26/2015
Receipt Date: 10/26/2015

Chrysene	1	mg/kg	0.034	ND
Dibenzo[a,h]anthracene	1	mg/kg	0.034	ND
Dibenzofuran	1	mg/kg	0.0086	ND
Diethylphthalate	1	mg/kg	0.034	ND
Dimethylphthalate	1	mg/kg	0.034	ND
Di-n-butylphthalate	1	mg/kg	0.0086	ND
Di-n-octylphthalate	1	mg/kg	0.034	ND
Fluoranthene	1	mg/kg	0.034	ND
Fluorene	1	mg/kg	0.034	ND
Hexachlorobenzene	1	mg/kg	0.034	ND
Hexachlorobutadiene	1	mg/kg	0.034	ND
Hexachlorocyclopentadiene	1	mg/kg	0.067	ND
Hexachloroethane	1	mg/kg	0.034	ND
Indeno[1,2,3-cd]pyrene	1	mg/kg	0.034	ND
Isophorone	1	mg/kg	0.034	ND
Naphthalene	1	mg/kg	0.0086	ND
Nitrobenzene	1	mg/kg	0.034	ND
N-Nitroso-di-n-propylamine	1	mg/kg	0.0086	ND
N-Nitrosodiphenylamine	1	mg/kg	0.034	ND
Pentachlorophenol	1	mg/kg	0.17	ND
Phenanthrene	1	mg/kg	0.034	ND
Phenol	1	mg/kg	0.034	ND
Pyrene	1	mg/kg	0.034	ND

Semivolatile Organics + 15 (8270) Library Searches

Analyte	DF	Units	RT	Result
unknown	**1**	**mg/kg**	**3.99**	**0.72JB**
2-Pentanone, 4-hydroxy-4-methyl-	**1**	**mg/kg**	**4.32**	**43JAB**
unknown	**1**	**mg/kg**	**5.01**	**0.24JB**
2-Propanol, 1-butoxy-	**1**	**mg/kg**	**5.21**	**0.13JB**
Benzene, 1-ethyl-2-methyl-	**1**	**mg/kg**	**5.4**	**0.072JB**
Benzene, 1,3,5-trimethyl-	**1**	**mg/kg**	**5.65**	**0.13JB**
TotalSemiVolatileTic	**1**	**mg/kg**	**NA**	**44J**

TAL Metals 6010

Analyte	DF	Units	RL	Result
Aluminum	**1**	**mg/kg**	**210**	**13000**
Barium	**1**	**mg/kg**	**10**	**29**
Calcium	**1**	**mg/kg**	**1000**	**14000**
Chromium	**1**	**mg/kg**	**5.2**	**18**
Cobalt	**1**	**mg/kg**	**2.6**	**18**
Copper	**1**	**mg/kg**	**5.2**	**84**
Iron	**1**	**mg/kg**	**210**	**28000**
Lead	1	mg/kg	5.2	ND
Magnesium	**1**	**mg/kg**	**520**	**14000**
Manganese	**1**	**mg/kg**	**10**	**360**
Nickel	**1**	**mg/kg**	**5.2**	**44**
Potassium	1	mg/kg	520	ND
Sodium	**1**	**mg/kg**	**260**	**1100**
Vanadium	**1**	**mg/kg**	**10**	**56**
Zinc	**1**	**mg/kg**	**10**	**39**

TAL Metals 6020

Analyte	DF	Units	RL	Result
Antimony	1	mg/kg	0.82	ND
Arsenic	**1**	**mg/kg**	**0.21**	**0.57**
Beryllium	1	mg/kg	0.21	ND
Cadmium	1	mg/kg	0.41	ND

Sample ID: Quarry Material COMP
Lab#: AC87819-001
Matrix: Soil

Collection Date: 10/26/2015
Receipt Date: 10/26/2015

Selenium	1	mg/kg	2.1	ND
Silver	1	mg/kg	0.21	ND
Thallium	1	mg/kg	0.41	ND

Sample ID: Quarry Material GRAB
Lab#: AC87819-002
Matrix: Soil/Encore

Collection Date: 10/26/2015
Receipt Date: 10/26/2015

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		98

Volatile Organics + 15 (8260)

Analyte	DF	Units	RL	Result
1,1,1-Trichloroethane	1.02	mg/kg	0.0021	ND
1,1,2,2-Tetrachloroethane	1.02	mg/kg	0.0021	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	1.02	mg/kg	0.0021	ND
1,1,2-Trichloroethane	1.02	mg/kg	0.0021	ND
1,1-Dichloroethane	1.02	mg/kg	0.0021	ND
1,1-Dichloroethene	1.02	mg/kg	0.0021	ND
1,2,3-Trichlorobenzene	1.02	mg/kg	0.0021	ND
1,2,4-Trichlorobenzene	1.02	mg/kg	0.0021	ND
1,2-Dibromo-3-chloropropane	1.02	mg/kg	0.0021	ND
1,2-Dibromoethane	1.02	mg/kg	0.0021	ND
1,2-Dichlorobenzene	1.02	mg/kg	0.0021	ND
1,2-Dichloroethane	1.02	mg/kg	0.0010	ND
1,2-Dichloropropane	1.02	mg/kg	0.0021	ND
1,3-Dichlorobenzene	1.02	mg/kg	0.0021	ND
1,4-Dichlorobenzene	1.02	mg/kg	0.0021	ND
1,4-Dioxane	1.02	mg/kg	0.10	ND
2-Butanone	1.02	mg/kg	0.0021	ND
2-Hexanone	1.02	mg/kg	0.0021	ND
4-Methyl-2-pentanone	1.02	mg/kg	0.0021	ND
Acetone	1.02	mg/kg	0.010	ND
Benzene	1.02	mg/kg	0.0010	ND
Bromochloromethane	1.02	mg/kg	0.0021	ND
Bromodichloromethane	1.02	mg/kg	0.0021	ND
Bromoform	1.02	mg/kg	0.0021	ND
Bromomethane	1.02	mg/kg	0.0021	ND
Carbon disulfide	1.02	mg/kg	0.0021	ND
Carbon tetrachloride	1.02	mg/kg	0.0021	ND
Chlorobenzene	1.02	mg/kg	0.0021	ND
Chloroethane	1.02	mg/kg	0.0021	ND
Chloroform	1.02	mg/kg	0.0021	ND
Chloromethane	1.02	mg/kg	0.0021	ND
cis-1,2-Dichloroethene	1.02	mg/kg	0.0021	ND
cis-1,3-Dichloropropene	1.02	mg/kg	0.0021	ND
Cyclohexane	1.02	mg/kg	0.0021	ND
Dibromochloromethane	1.02	mg/kg	0.0021	ND
Dichlorodifluoromethane	1.02	mg/kg	0.0021	ND
Ethylbenzene	1.02	mg/kg	0.0010	ND
Isopropylbenzene	1.02	mg/kg	0.0010	ND
m&p-Xylenes	1.02	mg/kg	0.0010	ND
Methyl Acetate	1.02	mg/kg	0.0021	ND
Methylcyclohexane	1.02	mg/kg	0.0021	ND
Methylene chloride	1.02	mg/kg	0.0021	ND
Methyl-t-butyl ether	1.02	mg/kg	0.0010	ND
o-Xylene	1.02	mg/kg	0.0010	ND
Styrene	1.02	mg/kg	0.0021	ND
Tetrachloroethene	1.02	mg/kg	0.0021	ND
Toluene	1.02	mg/kg	0.0010	ND
trans-1,2-Dichloroethene	1.02	mg/kg	0.0021	ND
trans-1,3-Dichloropropene	1.02	mg/kg	0.0021	ND
Trichloroethene	1.02	mg/kg	0.0021	ND

Sample ID: Quarry Material GRAB
Lab#: AC87819-002
Matrix: Soil/Encore

Collection Date: 10/26/2015
Receipt Date: 10/26/2015

Trichlorofluoromethane	1.02	mg/kg	0.0021	ND
Vinyl chloride	1.02	mg/kg	0.0021	ND
Xylenes (Total)	1.02	mg/kg	0.0010	ND

Volatile Organics + 15 (8260) Library Searches

Analyte	DF	Units	RT	Result
No Unknown Compounds Detected	1.02	mg/kg	NA	ND
TotalVolatileTic	1.02	mg/kg	NA	ND

HC Reporting Limit Definitions/Data Qualifiers

REPORTING DEFINITIONS

DF = Dilution Factor

MDL = Method Detection Limit

RL* = Reporting Limit

ND = Not Detected

RT = Retention Time

NA = Not Applicable

**Samples with elevated Reporting Limits (RLs) as a result of a dilution may not achieve client reporting limits in some cases. The elevated RLs are unavoidable consequences of sample dilution required to quantitate target analytes that exceed the calibration range of the instrument.*

DATA QUALIFIERS

A- Indicates that the Tentatively Identified Compound (TIC) is suspected to be an aldol-condensation product. These compounds are by-products of acetone and methylene chloride used in the extraction process.

B- Indicates analyte was present in the Method Blank and sample.

d- For Pesticide and PCB analysis, the concentration between primary and secondary columns is greater than 40%. The lower concentration is generally reported.

E- Indicates the concentration exceeded the upper calibration range of the instrument.

J- Indicates the value is estimated because it is either a Tentatively Identified Compound (TIC) or the reported concentration is greater than the MDL but less than the RL. For samples results between the MDL and RL there is a possibility of false positives or misidentification at the quantitation levels. Additionally, the acceptance criteria for QC samples may not be met.

R- Retention Time is out.

Y- Indicates a contaminant found in the blank at less than 10% of the concentration of a contaminant found in the sample.

Laboratory Chronicle

Client: Enterprise Network Resolutions LLC **HC Project #:** 5102701

Project: Weldon Materials Watchung

Lab#: AC87819-001 **Sample ID: Quarry Material COMP**

Test Code	Prep Method	Prep Date	By	Analytical Method	Analysis Date	By
% Solids SM2540G				SM 2540G	10/28/15 00:00	hossain
Cr (Hexavalent) 7196A	EPA 3060A	10/29/15	BCT	EPA 7196A	10/30/15 15:37	BCT
Cyanide (Soil/Waste) 9012B		10/30/15	ndoshi	EPA 9012B	10/30/15 14:55	jw
Eh		10/29/15	BCT/SDL	SM 2580	10/29/15 00:00	BCT
Mercury (Soil/Waste) 7471A	EPA 7471B	10/29/15	snezana	EPA 7471B	10/29/15 10:42	CJA
Organochlorine Pesticides 8081	3510C/3550C	10/29/15	marie	EPA 8081B	10/30/15 03:47	MS/ZM/MLC
PCB 8082	3510C/3550C	10/29/15	marie	EPA 8082A	10/29/15 20:38	MS/MLC/ZM
pH 9040C/9045D		10/29/15	BCT/SDL	9040C/9045D	10/29/15 11:00	BCT/SDL
Semivolatile Organics + 15 (8270)	3510C/3550C	10/30/15	sw	EPA 8270D	10/30/15 17:01	AH/JB
TAL Metals 6010	3005&10/3050	10/29/15	snezana	EPA 6010C	10/29/15 15:20	OA
TAL Metals 6010	3005&10/3050	10/29/15	snezana	EPA 6010C	10/29/15 13:09	SRB
TAL Metals 6020	3005&10/3050	10/29/15	snezana	EPA 6020A	10/29/15 15:22	PC

Lab#: AC87819-002 **Sample ID: Quarry Material GRAB**

Test Code	Prep Method	Prep Date	By	Analytical Method	Analysis Date	By
% Solids SM2540G				SM 2540G	10/28/15 00:00	hossain
Volatile Organics + 15 (8260)	EPA5030/5035			EPA 8260C	11/2/15 17:43	SG

Chain of Custody

5102701 0014

Hampton-Clarke, Inc. (WBE/DBE/SBE)

175 Route 46 West and 2 Madison Road, Fairfield, New Jersey 07004
Ph: 800-426-9992 | 973-244-9770 Fax: 973-244-9787 | 973-439-1458
Service Center: 137-D Gaither Drive, Mount Laurel, New Jersey 08054
Ph (Service Center): 856-780-6057 Fax: 856-780-6056

Hampton-Clarke WBE/DBE/SBE 800-426-9992
A Women-Owned, Disadvantaged, Small Business Enterprise

NELAC/NJ #07071 | PA #68-00463 | NY #11408 | CT #PH-0671 | KY #90124 | DE HSCA Approved

CHAIN OF CUSTODY RECORD

Project # (Lab Use Only): 5102701

Page 1 of 1

3) Reporting Requirements (Please Circle)

Turnaround	Report Type	Electronic Deliv.
When Available:	Data Summary	Hazsite/CSV
1 Business Day (100%)*	Results + QC (Waste)	EnviroData
2 Business Days (75%)*	NJ Reduced	Excel - NJ Regulatory
3 Business Days (50%)*	NY Reduced	Excel - NY Regulatory
4 Business Days (35%)*	PA Reduced	Excel - PA Regulatory
5 Business Days (25%)	Full / Category B	EQuIS (specify below):
10 Business Days (Stand.)	Category A	4-File/EZ/NYS/Reg. 2 or 5
Other:	Electronic (PDF)	Other:

* Expedited TAT Not Always Available. Please Check with Lab.

Customer Information

1a) Customer: ENR-CONTRACTING, LLC
Address: P.O. Box 70
WINSLOW, NJ 08095
1b) Email/Cell/Fax/Ph: tedb@enrcontractingnj.com
1c) Send Invoice to: Same
1d) Send Report to:

Project Information

2a) Project: WERDON MATERIALS
WATCHUNG FACILITY
2b) Project Mgr: N/A
2c) Project Location (City/State): WATCHUNG, NJ
2d) Quote/PO # (If Applicable): —

FOR LAB USE ONLY ↓

Batch # ACB7317

Matrix Codes
DW - Drinking Water | S - Soil | A - Air
GW - Ground Water | SL - Sludge
WW - Waste Water | OL - Oil
OT - Other (please specify under item 9, Comments)

===> Check If Contingent ===>

7) Analysis (specify methods & parameter lists)

<=== Check If Contingent <===

Lab Sample #	4) Customer Sample ID	5) Matrix	6) Sample Date	6) Sample Time	Sample Type: Composite (C)	Sample Type: Grab (G)	TAL ICL +30	UCA	Hg+Cr	8) # of Bottles: None	MeOH	En Core	NaOH	HCl	H2SO4	HNO3	Other:	9) Comments
001	QUARRY MATERIAL	S	10/26	1250	X		X		X									
002	QUARRY MATERIAL	S	10/26	1250		X		X		X								

10) Relinquished by:	Accepted by:	Date	Time
	Andrew Baker	10/26/15	17:00
Andrew Baker		10/27/15	0614
		10/27/15	1150
		10/27/15	15:17

Additional Notes

Comments, Notes, Special Requirements, HAZARDS

Indicate if low-level methods required to meet current groundwater standards (SPLP for soil):
- ☐ BN or BNA (8270D SIM)
- ☐ VOC (8260C SIM or 8011)
- ☐ SPLP (BN, BNA, Metals)

Check if applicable:
- ☐ Project-Specific Reporting Limits
- ☐ High Contaminant Concentrations
- ☐ NJ LSRP Project (also check boxes above/right)

For NNJ LSRP projects, indicate which standards need to be met:
- ☐ NJDEP GWQS
- ☐ NJDEP SRS
- ☐ NJDEP SPLP
- ☐ Other (specify):

Cooler Temperature: 1.5°C

11) Sampler (print name): Tom Ashenfelder Date: 10/26/15

Please note NUMBERED items. If not completed your analytical work may be delayed.
A fee of $5/sample will be assessed for storage should sample not be activated for any analysis.

CONDITION UPON RECEIPT

Batch Number AC87819 Entered By: ned

Date Entered 10/27/2015 7:29:00 AM

1	Yes	Is there a corresponding COC included with the samples?
2	Yes	Are the samples in a container such as a cooler or Ice chest?
3	Yes	Are the COC seals intact?
4	Yes	Please specify the Temperature inside the container (in degC) 4.0 C
5	Yes	Are the samples refrigerated (where required)/have they arrived on ice?
6	Yes	Are the samples within the holding times for the parameters listed on the COC? IF no, list parameters and samples:
7	Yes	Are all of the sample bottles intact? If no, specify sample numbers broken/leaking
8	Yes	Are all of the sample labels or numbers legible? If no specify:
9	Yes	Do the contents match the COC? If no, specify
10	Yes	Is there enough sample sent for the analyses listed on the COC? If no, specify:
11	Yes	Are samples preserved correctly?
12	NO	Was temperature blank present (Place comment below if not)? If not was temperature of samples verified? TEMP TAKEN FROM SAMPLE - NH
13	NA	Other comments ...Specify
14	NA	Corrective actions (Specify item number and corrective action taken).

Internal Chain of Custody

Lab#:	DateTime:	Loc or User	Bot Nu	A/M	Analysis
AC87819-001	10/26/15 17:00	NED	0	M	Received
AC87819-001	10/27/15 07:29	NED	0	M	Login
AC87819-001	10/27/15 21:47	PA	1	A	mix
AC87819-001	10/27/15 21:47	R12	1	A	NONE
AC87819-001	10/28/15 07:20	SDL	1	A	% SOLIDS
AC87819-001	10/28/15 16:25	R12	1	A	NONE
AC87819-001	10/29/15 05:29	SP	1	A	tdsi-hg
AC87819-001	10/29/15 05:30	SP	1	A	r12
AC87819-001	10/29/15 06:06	MSL	1	A	p/p
AC87819-001	10/29/15 07:00	R12	1	A	NONE
AC87819-001	10/29/15 08:18	BCT	1	A	CR6-S
AC87819-001	10/29/15 08:19	BCT	1	A	CR6-S EH/PH
AC87819-001	10/29/15 14:21	R12	1	A	NONE
AC87819-001	10/30/15 03:48	SW	1	A	bna soil
AC87819-001	10/30/15 04:02	R12	1	A	NONE
AC87819-001	10/30/15 10:02	ND	1	A	CNS
AC87819-001	10/30/15 14:49	R12	1	A	NONE
AC87819-002	10/26/15 17:00	NED	0	M	Received
AC87819-002	10/27/15 07:29	NED	0	M	Login
AC87819-002	10/27/15 21:47	R12	1	A	NONE
AC87819-002	10/27/15 21:47	PA	1	A	mix
AC87819-002	10/28/15 07:20	SDL	1	A	% SOLIDS
AC87819-002	10/28/15 16:25	R12	1	A	NONE
AC87819-002	11/02/15 16:14	WP	2	A	voa
AC87819-002	11/02/15 16:25	R30	2	A	NONE

Lab#:	DateTime:	Loc or User	Bot Nu	A/M	Analysis

Samples marked as received are stored in coolers or refrigerator R12, or R24 at 4 deg C until Login

Volatile Data

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC87819-002
Client Id: Quarry Material GRAB
Data File: 6M32694.D
Analysis Date: 11/02/15 17:43
Date Rec/Extracted: 10/26/15-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 8260C
Matrix: Soil
Initial Vol: 4.9g
Final Vol: NA
Dilution: 1.02
Solids: 98

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	0.0021	U	56-23-5	Carbon Tetrachloride	0.0021	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0021	U	108-90-7	Chlorobenzene	0.0021	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	0.0021	U	75-00-3	Chloroethane	0.0021	U
79-00-5	1,1,2-Trichloroethane	0.0021	U	67-66-3	Chloroform	0.0021	U
75-34-3	1,1-Dichloroethane	0.0021	U	74-87-3	Chloromethane	0.0021	U
75-35-4	1,1-Dichloroethene	0.0021	U	156-59-2	cis-1,2-Dichloroethene	0.0021	U
87-61-6	1,2,3-Trichlorobenzene	0.0021	U	10061-01-5	cis-1,3-Dichloropropene	0.0021	U
120-82-1	1,2,4-Trichlorobenzene	0.0021	U	110-82-7	Cyclohexane	0.0021	U
96-12-8	1,2-Dibromo-3-Chloropropa	0.0021	U	124-48-1	Dibromochloromethane	0.0021	U
106-93-4	1,2-Dibromoethane	0.0021	U	75-71-8	Dichlorodifluoromethane	0.0021	U
95-50-1	1,2-Dichlorobenzene	0.0021	U	100-41-4	Ethylbenzene	0.0010	U
107-06-2	1,2-Dichloroethane	0.0010	U	98-82-8	Isopropylbenzene	0.0010	U
78-87-5	1,2-Dichloropropane	0.0021	U	79601-23-1	m&p-Xylenes	0.0010	U
541-73-1	1,3-Dichlorobenzene	0.0021	U	79-20-9	Methyl Acetate	0.0021	U
106-46-7	1,4-Dichlorobenzene	0.0021	U	108-87-2	Methylcyclohexane	0.0021	U
123-91-1	1,4-Dioxane	0.10	U	75-09-2	Methylene Chloride	0.0021	U
78-93-3	2-Butanone	0.0021	U	1634-04-4	Methyl-t-butyl ether	0.0010	U
591-78-6	2-Hexanone	0.0021	U	95-47-6	o-Xylene	0.0010	U
108-10-1	4-Methyl-2-Pentanone	0.0021	U	100-42-5	Styrene	0.0021	U
67-64-1	Acetone	0.010	U	127-18-4	Tetrachloroethene	0.0021	U
71-43-2	Benzene	0.0010	U	108-88-3	Toluene	0.0010	U
74-97-5	Bromochloromethane	0.0021	U	156-60-5	trans-1,2-Dichloroethene	0.0021	U
75-27-4	Bromodichloromethane	0.0021	U	10061-02-6	trans-1,3-Dichloropropene	0.0021	U
75-25-2	Bromoform	0.0021	U	79-01-6	Trichloroethene	0.0021	U
74-83-9	Bromomethane	0.0021	U	75-69-4	Trichlorofluoromethane	0.0021	U
75-15-0	Carbon Disulfide	0.0021	U	75-01-4	Vinyl Chloride	0.0021	U
1330-20-7	Xylenes (Total)	0.0010	U				

Worksheet #: 362859

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Chlordane (Total) is sum of a-Chlordane and y-Chlordane.

Form1e

ORGANICS VOLATILE REPORT
Tentatively Identified Compounds

Sample Number: AC87819-002	Matrix: Soil
Client Id: Quarry Material GRAB	Initial Vol: 4.9g
Data File: 6M32694.D	Final Vol: NA
Analysis Date: 11/02/15 17:43	Dilution: 1.02
Date Rec/Extracted: 10/26/15-NA	Solids: 98
	Method: EPA 8260C

Units: mg/Kg

	Cas #	Compound	RT	Conc
1		No Unknown Compounds Detected	0.00	0 J

Worksheet #: 362859

Total Tentatively Identified Concentration 0

A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.
Y - Indicates the analyte was found in the blank at <10% of the concentration of the sample.
<10% - Indicates the analyte was found in the blank at < 10% of nearest Internal Standard

Quantitation Report (QT/LSC Reviewed)

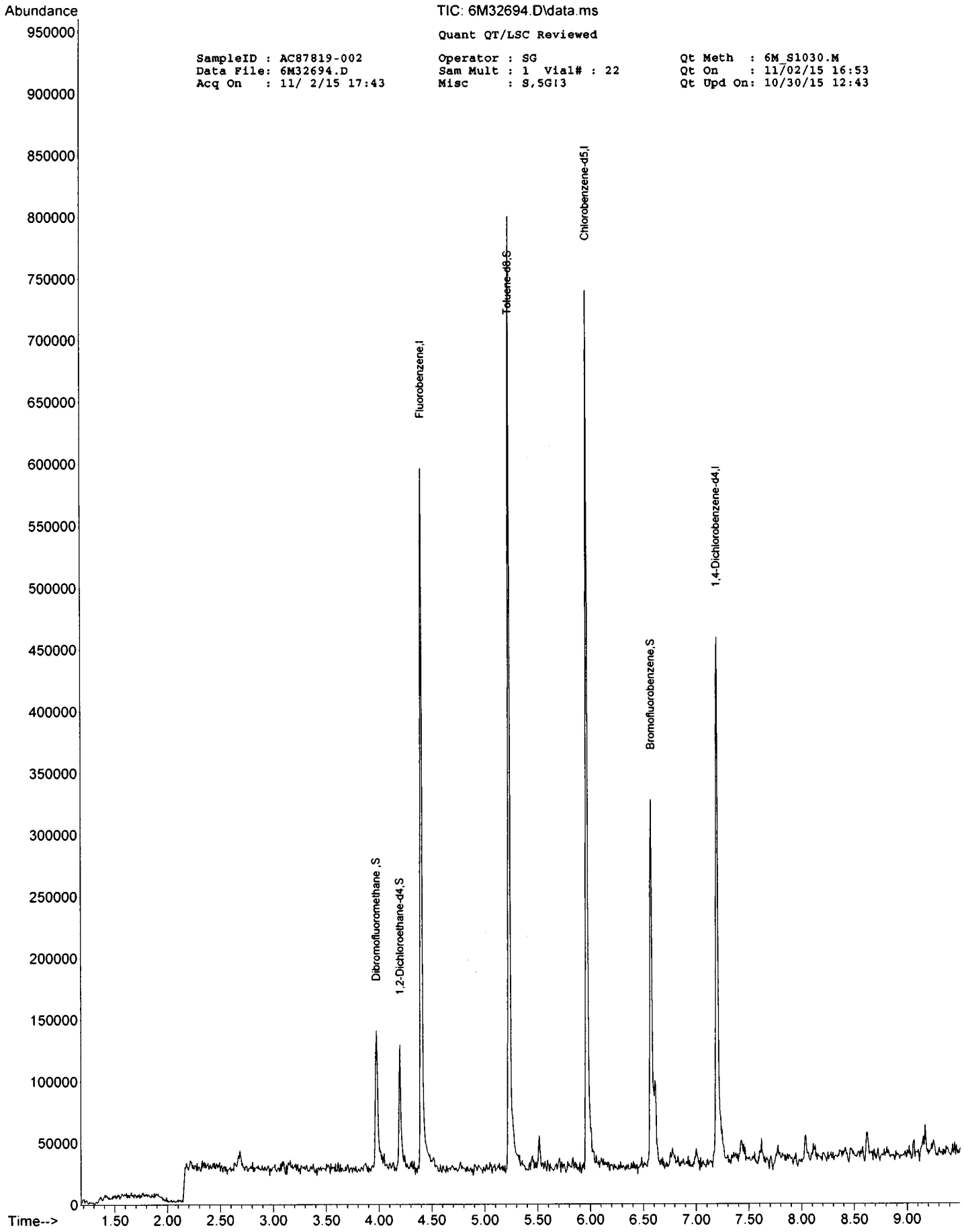
5102701 0020

SampleID : AC87819-002 Operator : SG Qt Meth : 6M_S1030.M
Data File: 6M32694.D Sam Mult : 1 Vial# : 22 Qt On : 11/02/15 16:53
Acq On : 11/ 2/15 17:43 Misc : S,5G!3 Qt Upd On: 10/30/15 12:43

Data Path : G:\GcMsData\2015\GCMS_6\Data\11-02-15\
Qt Path : G:\GcMsData\2015\GCMS_6\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
4) Fluorobenzene	4.402	96	349368	30.00	ug/l	0.00
52) Chlorobenzene-d5	5.965	117	257736	30.00	ug/l	0.00
70) 1,4-Dichlorobenzene-d4	7.197	152	100355	30.00	ug/l	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	3.976	111	66424	33.57	ug/l	0.00
Spiked Amount 30.000			Recovery = 111.90%			
39) 1,2-Dichloroethane-d4	4.198	67	28660	31.05	ug/l	0.00
Spiked Amount 30.000			Recovery = 103.50%			
66) Toluene-d8	5.232	98	336559	25.81	ug/l	0.00
Spiked Amount 30.000			Recovery = 86.03%			
76) Bromofluorobenzene	6.572	174	70647	29.31	ug/l	0.00
Spiked Amount 30.000			Recovery = 97.70%			
Target Compounds						Qvalue
Library Search Internal Standards TIC Results						
1) Fluorobenzene	4.402		796081	30.00	ug/l	--
2) Chlorobenzene-d5	5.965		870994	30.00	ug/l	--
3) 1,4-Dichlorobenzene-d4	7.197		672948	30.00	ug/l	--
Library Search Compounds						

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 6M32694.D\data.ms
Quant QT/LSC Reviewed
SampleID : AC87819-002
Data File: 6M32694.D
Acq On : 11/ 2/15 17:43
Operator : SG
Sam Mult : 1 Vial# : 22
Misc : S,5G13
Qt Meth : 6M_S1030.M
Qt On : 11/02/15 16:53
Qt Upd On: 10/30/15 12:43
Dibromofluoromethane,S
1,2-Dichloroethane-d4,S
Fluorobenzene,I
Toluene-d8,S
Chlorobenzene-d5,I
Bromofluorobenzene,S
1,4-Dichlorobenzene-d4,I
Time-->

Form1

ORGANICS VOLATILE REPORT

Sample Number: DAILY BLANK
Client Id:
Data File: 6M32670.D
Analysis Date: 11/02/15 10:56
Date Rec/Extracted:
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 8260C
Matrix: Soil
Initial Vol: 5g
Final Vol: NA
Dilution: 1.00
Solids: 100

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	0.0020	U	56-23-5	Carbon Tetrachloride	0.0020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0020	U	108-90-7	Chlorobenzene	0.0020	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	0.0020	U	75-00-3	Chloroethane	0.0020	U
79-00-5	1,1,2-Trichloroethane	0.0020	U	67-66-3	Chloroform	0.0020	U
75-34-3	1,1-Dichloroethane	0.0020	U	74-87-3	Chloromethane	0.0020	U
75-35-4	1,1-Dichloroethene	0.0020	U	156-59-2	cis-1,2-Dichloroethene	0.0020	U
87-61-6	1,2,3-Trichlorobenzene	0.0020	U	10061-01-5	cis-1,3-Dichloropropene	0.0020	U
120-82-1	1,2,4-Trichlorobenzene	0.0020	U	110-82-7	Cyclohexane	0.0020	U
96-12-8	1,2-Dibromo-3-Chloropropa	0.0020	U	124-48-1	Dibromochloromethane	0.0020	U
106-93-4	1,2-Dibromoethane	0.0020	U	75-71-8	Dichlorodifluoromethane	0.0020	U
95-50-1	1,2-Dichlorobenzene	0.0020	U	100-41-4	Ethylbenzene	0.0010	U
107-06-2	1,2-Dichloroethane	0.0010	U	98-82-8	Isopropylbenzene	0.0010	U
78-87-5	1,2-Dichloropropane	0.0020	U	79601-23-1	m&p-Xylenes	0.0010	U
541-73-1	1,3-Dichlorobenzene	0.0020	U	79-20-9	Methyl Acetate	0.0020	U
106-46-7	1,4-Dichlorobenzene	0.0020	U	108-87-2	Methylcyclohexane	0.0020	U
123-91-1	1,4-Dioxane	0.10	U	75-09-2	Methylene Chloride	0.0020	U
78-93-3	2-Butanone	0.0020	U	1634-04-4	Methyl-t-butyl ether	0.0010	U
591-78-6	2-Hexanone	0.0020	U	95-47-6	o-Xylene	0.0010	U
108-10-1	4-Methyl-2-Pentanone	0.0020	U	100-42-5	Styrene	0.0020	U
67-64-1	Acetone	0.010	U	127-18-4	Tetrachloroethene	0.0020	U
71-43-2	Benzene	0.0010	U	108-88-3	Toluene	0.0010	U
74-97-5	Bromochloromethane	0.0020	U	156-60-5	trans-1,2-Dichloroethene	0.0020	U
75-27-4	Bromodichloromethane	0.0020	U	10061-02-6	trans-1,3-Dichloropropene	0.0020	U
75-25-2	Bromoform	0.0020	U	79-01-6	Trichloroethene	0.0020	U
74-83-9	Bromomethane	0.0020	U	75-69-4	Trichlorofluoromethane	0.0020	U
75-15-0	Carbon Disulfide	0.0020	U	75-01-4	Vinyl Chloride	0.0020	U

Worksheet #: 362859

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used
Chlordane (Total) is sum of a-Chlordane and y-Chlordane.

Form1e

ORGANICS VOLATILE REPORT
Tentatively Identified Compounds

Sample Number: DAILY BLANK
Client Id:
Data File: 6M32670.D
Analysis Date: 11/02/15 10:56
Date Rec/Extracted:

Matrix: Soil
Initial Vol: 5g
Final Vol: NA
Dilution: 1.00
Solids: 100
Method: EPA 8260C

Units: mg/Kg

	Cas #	Compound	RT	Conc
1		No Unknown Compounds Detected	0.00	0 J

Worksheet #: 362859

Total Tentatively Identified Concentration 0

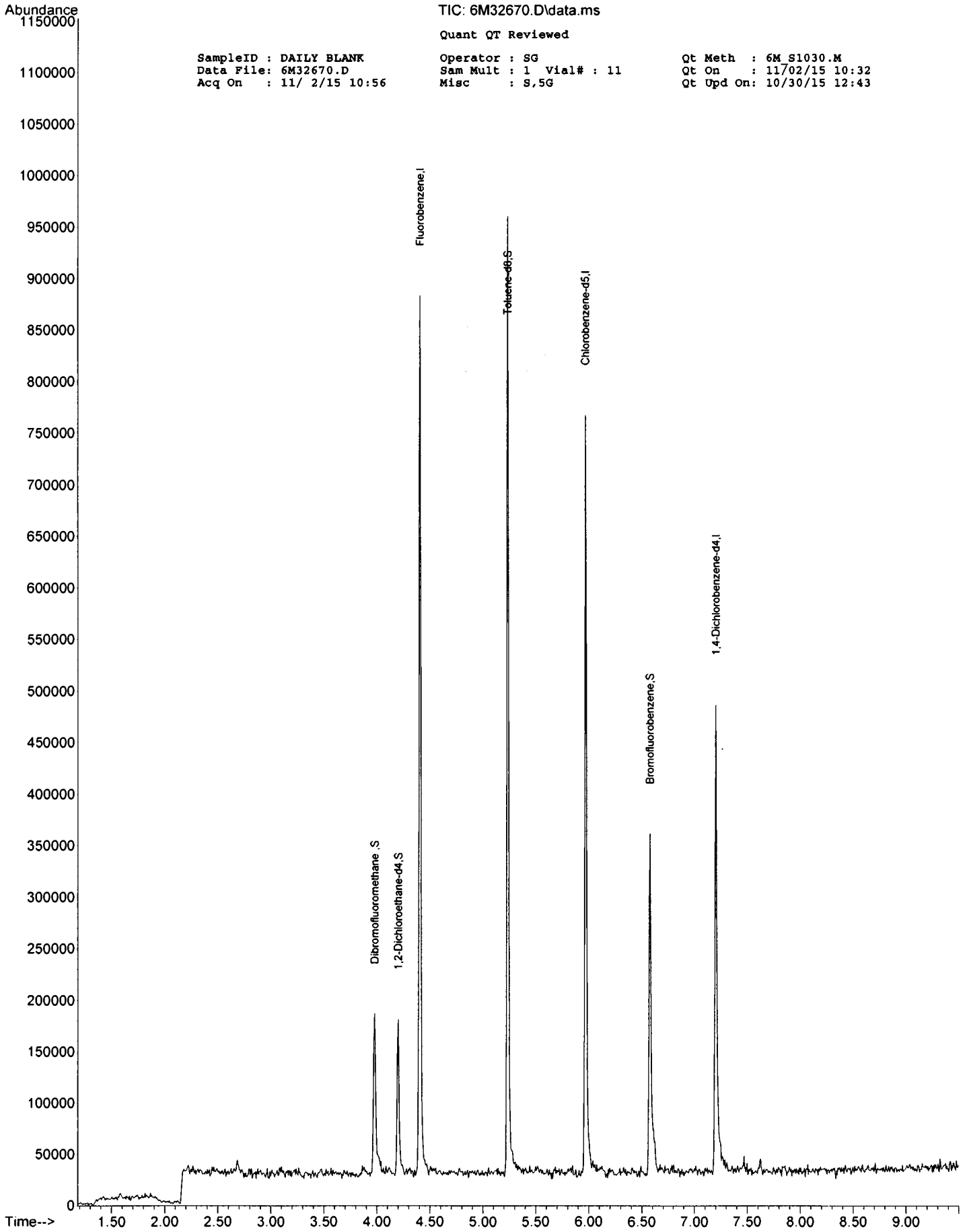
A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.
Y - Indicates the analyte was found in the blank at <10% of the concentration of the sample.
<10% - Indicates the analyte was found in the blank at < 10% of nearest Internal Standard

SampleID : DAILY BLANK Operator : SG Qt Meth : 6M_S1030.M
Data File: 6M32670.D Sam Mult : 1 Vial# : 11 Qt On : 11/02/15 10:32
Acq On : 11/ 2/15 10:56 Misc : S,5G Qt Upd On: 10/30/15 12:43

Data Path : G:\GcMsData\2015\GCMS_6\Data\11-02-15\
Qt Path : G:\GcMsData\2015\GCMS_6\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
4) Fluorobenzene	4.404	96	459519	30.00	ug/l	0.00
52) Chlorobenzene-d5	5.966	117	257733	30.00	ug/l	0.00
70) 1,4-Dichlorobenzene-d4	7.199	152	105560	30.00	ug/l	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	3.977	111	86062	33.07	ug/l	0.00
Spiked Amount 30.000			Recovery = 110.23%			
39) 1,2-Dichloroethane-d4	4.199	67	36673	30.21	ug/l	0.00
Spiked Amount 30.000			Recovery = 100.70%			
66) Toluene-d8	5.233	98	376662	28.89	ug/l	0.00
Spiked Amount 30.000			Recovery = 96.30%			
76) Bromofluorobenzene	6.574	174	77060	30.40	ug/l	0.00
Spiked Amount 30.000			Recovery = 101.33%			
Target Compounds						Qvalue
No Library Search Compounds Found						

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 6M32670.D\data.ms
Quant QT Reviewed
SampleID : DAILY BLANK
Data File: 6M32670.D
Acq On : 11/ 2/15 10:56
Operator : SG
Sam Mult : 1 Vial# : 11
Misc : S,5G
Qt Meth : 6M_S1030.M
Qt On : 11/02/15 10:32
Qt Upd On: 10/30/15 12:43
Dibromofluoromethane,S
1,2-Dichloroethane-d4,S
Fluorobenzene,I
Toluene-d8,S
Chlorobenzene-d5,I
Bromofluorobenzene,S
1,4-Dichlorobenzene-d4,I
Time-->

FORM2

Surrogate Recovery

Method: EPA 8260C

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column1 S2 Recov	Column1 S3 Recov	Column1 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
6M32670.D	DAILY BLANK	S	11/02/15 10:56	1		110	101	96	101		
6M32694.D	AC87819-002	S	11/02/15 17:43	1		112	104	86	98		
6M32671.D	MBS47899	S	11/02/15 11:12	1		101	94	94	94		
6M32697.D	AC87819-002(MS)	S	11/02/15 18:38	1		110	106	93	96		
6M32698.D	AC87819-002(MSD)	S	11/02/15 18:55	1		101	94	90	93		

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8260C

Soil Limits

Compound	Spike Amt	Limits
S1=Dibromofluoromethane	30	70-130
S2=1,2-Dichloroethane-d4	30	70-130
S3=Toluene-d8	30	70-130
S4=Bromofluorobenzene	30	70-130

Form3
Recovery Data
QC Batch: MBS47899

Data File	Sample ID:	Analysis Date
Spike or Dup: 6M32671.D	MBS47899	11/2/2015 11:12:00 AM
Non Spike(If applicable):		
Inst Blank(If applicable):		

Method: 8260C | Matrix: Soil | QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	41.6098	0	50	83	70	130
Dichlorodifluoromethane	1	37.8609	0	50	76	40	160
Chloromethane	1	44.7524	0	50	90	40	160
Bromomethane	1	45.9055	0	50	92	40	160
Vinyl Chloride	1	46.3803	0	50	93	70	130
Chloroethane	1	47.1001	0	50	94	40	160
Trichlorofluoromethane	1	48.3648	0	50	97	40	160
Ethyl ether	1	47.668	0	50	95	70	130
Furan	1	34.1678	0	50	68*	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	60.493	0	50	121	70	130
Methylene Chloride	1	49.3146	0	50	99	70	130
Acrolein	1	249.2452	0	200	125	70	130
Acrylonitrile	1	49.4596	0	50	99	70	130
Iodomethane	1	46.9728	0	50	94	70	130
Acetone	1	196.2372	0	200	98	40	160
Carbon Disulfide	1	47.1577	0	50	94	40	160
t-Butyl Alcohol	1	214.2363	0	200	107	70	130
n-Hexane	1	53.433	0	50	107	70	130
Di-isopropyl-ether	1	45.6286	0	50	91	70	130
1,1-Dichloroethene	1	49.1781	0	50	98	70	130
Methyl Acetate	1	38.0456	0	50	76	70	130
Methyl-t-butyl ether	1	48.4541	0	50	97	70	130
1,1-Dichloroethane	1	46.3082	0	50	93	70	130
trans-1,2-Dichloroethene	1	51.4014	0	50	103	70	130
Ethyl-t-butyl ether	1	42.8018	0	50	86	70	130
cis-1,2-Dichloroethene	1	46.7919	0	50	94	70	130
Bromochloromethane	1	46.4557	0	50	93	70	130
2,2-Dichloropropane	1	47.9547	0	50	96	70	130
Ethyl acetate	1	40.0463	0	50	80	70	130
1,4-Dioxane	1	2008.252	0	2500	80	40	160
1,1-Dichloropropene	1	49.8416	0	50	100	70	130
Chloroform	1	45.0029	0	50	90	70	130
Cyclohexane	1	47.706	0	50	95	70	130
1,2-Dichloroethane	1	43.8767	0	50	88	70	130
2-Butanone	1	44.1583	0	50	88	70	130
1,1,1-Trichloroethane	1	50.1174	0	50	100	70	130
Carbon Tetrachloride	1	51.2309	0	50	102	70	130
Vinyl Acetate	1	45.8685	0	50	92	70	130
Bromodichloromethane	1	46.9685	0	50	94	70	130
Methylcyclohexane	1	52.5632	0	50	105	70	130
Dibromomethane	1	50.8297	0	50	102	70	130
1,2-Dichloropropane	1	46.005	0	50	92	70	130
Trichloroethene	1	47.0108	0	50	94	70	130
Benzene	1	51.0758	0	50	102	70	130
tert-Amyl methyl ether	1	45.8222	0	50	92	70	130
Iso-propylacetate	1	39.2231	0	50	78	70	130
Methyl methacrylate	1	39.876	0	50	80	70	130
Dibromochloromethane	1	42.3188	0	50	85	70	130
2-Chloroethylvinylether	1	31.2383	0	50	62*	70	130
cis-1,3-Dichloropropene	1	43.6686	0	50	87	70	130
trans-1,3-Dichloropropene	1	40.8941	0	50	82	70	130
Ethyl methacrylate	1	37.7553	0	50	76	70	130
1,1,2-Trichloroethane	1	41.853	0	50	84	70	130
1,2-Dibromoethane	1	43.964	0	50	88	70	130
1,3-Dichloropropane	1	41.9564	0	50	84	70	130
4-Methyl-2-Pentanone	1	36.1565	0	50	72	40	160
2-Hexanone	1	34.1757	0	50	68	40	160
Tetrachloroethene	1	46.3572	0	50	93	70	130
Toluene	1	46.8209	0	50	94	70	130
1,1,1,2-Tetrachloroethane	1	43.6316	0	50	87	70	130
Chlorobenzene	1	45.7902	0	50	92	70	130
n-Butyl acrylate	1	35.4577	0	50	71	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS47899

n-Amyl acetate	1	33.2848	0	50	67*	70	130
Bromoform	1	41.0212	0	50	82	70	130
Ethylbenzene	1	49.6568	0	50	99	70	130
1,1,2,2-Tetrachloroethane	1	38.3861	0	50	77	70	130
Styrene	1	46.2771	0	50	93	70	130
m&p-Xylenes	1	93.3664	0	100	93	70	130
o-Xylene	1	47.4822	0	50	95	70	130
trans-1,4-Dichloro-2-butene	1	44.5064	0	50	89	70	130
1,3-Dichlorobenzene	1	47.1797	0	50	94	70	130
1,4-Dichlorobenzene	1	44.0573	0	50	88	70	130
1,2-Dichlorobenzene	1	44.6288	0	50	89	70	130
Isopropylbenzene	1	49.7682	0	50	100	70	130
Cyclohexanone	1	200.3165	0	250	80	70	130
Camphene	1	46.0161	0	50	92	70	130
1,2,3-Trichloropropane	1	42.3247	0	50	85	70	130
2-Chlorotoluene	1	49.4529	0	50	99	70	130
p-Ethyltoluene	1	49.0021	0	50	98	70	130
4-Chlorotoluene	1	50.5544	0	50	101	70	130
n-Propylbenzene	1	49.526	0	50	99	70	130
Bromobenzene	1	42.6761	0	50	85	70	130
1,3,5-Trimethylbenzene	1	43.7308	0	50	87	70	130
Butyl methacrylate	1	35.6634	0	50	71	70	130
t-Butylbenzene	1	50.4739	0	50	101	70	130
1,2,4-Trimethylbenzene	1	45.191	0	50	90	70	130
sec-Butylbenzene	1	47.23	0	50	94	70	130
4-Isopropyltoluene	1	47.8367	0	50	96	70	130
n-Butylbenzene	1	49.1345	0	50	98	70	130
p-Diethylbenzene	1	48.272	0	50	97	70	130
1,2,4,5-Tetramethylbenzene	1	47.3873	0	50	95	70	130
1,2-Dibromo-3-Chloropropane	1	38.1674	0	50	76	40	160
Camphor	1	331.0273	0	500	66*	70	130
Hexachlorobutadiene	1	40.1815	0	50	80	70	130
1,2,4-Trichlorobenzene	1	43.5232	0	50	87	70	130
1,2,3-Trichlorobenzene	1	40.8278	0	50	82	70	130
Naphthalene	1	34.7197	0	50	69	40	160

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS47899

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6M32697.D	AC87819-002(MS)	11/2/2015 6:38:00 PM
Non Spike(If applicable):	6M32694.D	AC87819-002	11/2/2015 5:43:00 PM
Inst Blank(If applicable):			

Method: 8260C | Matrix: Soil | QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	62.7981	0	50	126	70	130
Dichlorodifluoromethane	1	51.6412	0	50	103	40	160
Chloromethane	1	58.4826	0	50	117	40	160
Bromomethane	1	50.1188	0	50	100	40	160
Vinyl Chloride	1	46.4279	0	50	93	70	130
Chloroethane	1	51.6623	0	50	103	40	160
Trichlorofluoromethane	1	52.3433	0	50	105	40	160
Ethyl ether	1	63.6661	0	50	127	70	130
Furan	1	24.8252	0	50	50*	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	68.4981	0	50	137*	70	130
Methylene Chloride	1	55.8307	0	50	112	70	130
Acrolein	1	238.1162	0	200	119	70	130
Acrylonitrile	1	61.4211	0	50	123	70	130
Iodomethane	1	62.9479	0	50	126	70	130
Acetone	1	290.4742	0	200	145	40	160
Carbon Disulfide	1	60.5546	0	50	121	40	160
t-Butyl Alcohol	1	266.6984	0	200	133*	70	130
n-Hexane	1	57.5783	0	50	115	70	130
Di-isopropyl-ether	1	47.1343	0	50	94	70	130
1,1-Dichloroethene	1	64.8252	0	50	130	70	130
Methyl Acetate	1	52.4658	0	50	105	70	130
Methyl-t-butyl ether	1	46.9796	0	50	94	70	130
1,1-Dichloroethane	1	56.6692	0	50	113	70	130
trans-1,2-Dichloroethene	1	71.1222	0	50	142*	70	130
Ethyl-t-butyl ether	1	42.3072	0	50	85	70	130
cis-1,2-Dichloroethene	1	60.9873	0	50	122	70	130
Bromochloromethane	1	49.5911	0	50	99	70	130
2,2-Dichloropropane	1	58.6994	0	50	117	70	130
Ethyl acetate	1	49.101	0	50	98	70	130
1,4-Dioxane	1	3295.893	0	2500	132	40	160
1,1-Dichloropropene	1	57.8363	0	50	116	70	130
Chloroform	1	60.6832	0	50	121	70	130
Cyclohexane	1	57.4802	0	50	115	70	130
1,2-Dichloroethane	1	55.015	0	50	110	70	130
2-Butanone	1	48.1316	0	50	96	70	130
1,1,1-Trichloroethane	1	59.1302	0	50	118	70	130
Carbon Tetrachloride	1	65.4546	0	50	131*	70	130
Vinyl Acetate	1	46.6849	0	50	93	70	130
Bromodichloromethane	1	59.4616	0	50	119	70	130
Methylcyclohexane	1	70.0968	0	50	140*	70	130
Dibromomethane	1	71.9197	0	50	144*	70	130
1,2-Dichloropropane	1	57.4577	0	50	115	70	130
Trichloroethene	1	62.2158	0	50	124	70	130
Benzene	1	66.6156	0	50	133*	70	130
tert-Amyl methyl ether	1	48.9045	0	50	98	70	130
Iso-propylacetate	1	31.6244	0	50	63*	70	130
Methyl methacrylate	1	46.4522	0	50	93	70	130
Dibromochloromethane	1	56.4921	0	50	113	70	130
2-Chloroethylvinylether	1	119.8184	0	50	240*	70	130
cis-1,3-Dichloropropene	1	48.3604	0	50	97	70	130
trans-1,3-Dichloropropene	1	49.1095	0	50	98	70	130
Ethyl methacrylate	1	42.5145	0	50	85	70	130
1,1,2-Trichloroethane	1	50.8111	0	50	102	70	130
1,2-Dibromoethane	1	53.8886	0	50	108	70	130
1,3-Dichloropropane	1	49.8176	0	50	100	70	130
4-Methyl-2-Pentanone	1	43.2701	0	50	87	40	160
2-Hexanone	1	43.3918	0	50	87	40	160
Tetrachloroethene	1	55.9317	0	50	112	70	130
Toluene	1	54.098	0	50	108	70	130
1,1,1,2-Tetrachloroethane	1	54.8986	0	50	110	70	130
Chlorobenzene	1	56.7195	0	50	113	70	130
n-Butyl acrylate	1	47.9306	0	50	96	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS47899

n-Amyl acetate	1	42.5154	0	50	85	70	130
Bromoform	1	52.1775	0	50	104	70	130
Ethylbenzene	1	65.0404	0	50	130	70	130
1,1,2,2-Tetrachloroethane	1	50.9669	0	50	102	70	130
Styrene	1	59.6079	0	50	119	70	130
m&p-Xylenes	1	111.5464	0	100	112	70	130
o-Xylene	1	60.9225	0	50	122	70	130
trans-1,4-Dichloro-2-butene	1	50.5717	0	50	101	70	130
1,3-Dichlorobenzene	1	60.8497	0	50	122	70	130
1,4-Dichlorobenzene	1	55.8038	0	50	112	70	130
1,2-Dichlorobenzene	1	58.1005	0	50	116	70	130
Isopropylbenzene	1	60.3074	0	50	121	70	130
Cyclohexanone	1	265.9298	0	250	106	70	130
Camphene	1	54.0633	0	50	108	70	130
1,2,3-Trichloropropane	1	53.1028	0	50	106	70	130
2-Chlorotoluene	1	62.3906	0	50	125	70	130
p-Ethyltoluene	1	66.4252	0	50	133*	70	130
4-Chlorotoluene	1	62.1569	0	50	124	70	130
n-Propylbenzene	1	58.8171	0	50	118	70	130
Bromobenzene	1	52.6105	0	50	105	70	130
1,3,5-Trimethylbenzene	1	53.2152	0	50	106	70	130
Butyl methacrylate	1	48.3126	0	50	97	70	130
t-Butylbenzene	1	60.799	0	50	122	70	130
1,2,4-Trimethylbenzene	1	55.999	0	50	112	70	130
sec-Butylbenzene	1	55.8974	0	50	112	70	130
4-Isopropyltoluene	1	58.3001	0	50	117	70	130
n-Butylbenzene	1	56.9341	0	50	114	70	130
p-Diethylbenzene	1	60.3838	0	50	121	70	130
1,2,4,5-Tetramethylbenzene	1	61.7902	0	50	124	70	130
1,2-Dibromo-3-Chloropropane	1	51.9322	0	50	104	40	160
Camphor	1	520.9113	0	500	104	70	130
Hexachlorobutadiene	1	44.8172	0	50	90	70	130
1,2,4-Trichlorobenzene	1	57.2364	0	50	114	70	130
1,2,3-Trichlorobenzene	1	51.3098	0	50	103	70	130
Naphthalene	1	55.0181	0	50	110	40	160

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS47899

Data File	Sample ID:	Analysis Date
Spike or Dup: 6M32698.D	AC87819-002(MSD)	11/2/2015 6:55:00 PM
Non Spike(If applicable): 6M32694.D	AC87819-002	11/2/2015 5:43:00 PM
Inst Blank(If applicable):		

Method: 8260C | Matrix: Soil | QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	46.4926	0	50	93	70	130
Dichlorodifluoromethane	1	51.1586	0	50	102	40	160
Chloromethane	1	59.5393	0	50	119	40	160
Bromomethane	1	50.3867	0	50	101	40	160
Vinyl Chloride	1	52.5452	0	50	105	70	130
Chloroethane	1	55.0367	0	50	110	40	160
Trichlorofluoromethane	1	55.1955	0	50	110	40	160
Ethyl ether	1	66.931	0	50	134*	70	130
Furan	1	26.1673	0	50	52*	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	80.7989	0	50	162*	70	130
Methylene Chloride	1	60.0103	0	50	120	70	130
Acrolein	1	285.1274	0	200	143*	70	130
Acrylonitrile	1	59.7463	0	50	119	70	130
Iodomethane	1	65.5197	0	50	131*	70	130
Acetone	1	317.7363	0	200	159	40	160
Carbon Disulfide	1	59.6444	0	50	119	40	160
t-Butyl Alcohol	1	223.5524	0	200	112	70	130
n-Hexane	1	63.6977	0	50	127	70	130
Di-isopropyl-ether	1	52.6755	0	50	105	70	130
1,1-Dichloroethene	1	66.1001	0	50	132*	70	130
Methyl Acetate	1	49.1766	0	50	98	70	130
Methyl-t-butyl ether	1	55.2282	0	50	110	70	130
1,1-Dichloroethane	1	60.1916	0	50	120	70	130
trans-1,2-Dichloroethene	1	69.9102	0	50	140*	70	130
Ethyl-t-butyl ether	1	49.3169	0	50	99	70	130
cis-1,2-Dichloroethene	1	61.7547	0	50	124	70	130
Bromochloromethane	1	46.3909	0	50	93	70	130
2,2-Dichloropropane	1	61.8484	0	50	124	70	130
Ethyl acetate	1	47.7962	0	50	96	70	130
1,4-Dioxane	1	3359.056	0	2500	134	40	160
1,1-Dichloropropene	1	61.5691	0	50	123	70	130
Chloroform	1	61.7311	0	50	123	70	130
Cyclohexane	1	61.2546	0	50	123	70	130
1,2-Dichloroethane	1	56.2099	0	50	112	70	130
2-Butanone	1	56.4279	0	50	113	70	130
1,1,1-Trichloroethane	1	65.961	0	50	132*	70	130
Carbon Tetrachloride	1	66.1198	0	50	132*	70	130
Vinyl Acetate	1	49.9768	0	50	100	70	130
Bromodichloromethane	1	60.6778	0	50	121	70	130
Methylcyclohexane	1	66.3928	0	50	133*	70	130
Dibromomethane	1	71.079	0	50	142*	70	130
1,2-Dichloropropane	1	59.2551	0	50	119	70	130
Trichloroethene	1	67.9859	0	50	136*	70	130
Benzene	1	67.9506	0	50	136*	70	130
tert-Amyl methyl ether	1	53.3604	0	50	107	70	130
Iso-propylacetate	1	35.3965	0	50	71	70	130
Methyl methacrylate	1	48.8602	0	50	98	70	130
Dibromochloromethane	1	57.4798	0	50	115	70	130
2-Chloroethylvinylether	1	114.5099	0	50	229*	70	130
cis-1,3-Dichloropropene	1	51.1933	0	50	102	70	130
trans-1,3-Dichloropropene	1	53.842	0	50	108	70	130
Ethyl methacrylate	1	45.495	0	50	91	70	130
1,1,2-Trichloroethane	1	53.5766	0	50	107	70	130
1,2-Dibromoethane	1	54.286	0	50	109	70	130
1,3-Dichloropropane	1	51.2243	0	50	102	70	130
4-Methyl-2-Pentanone	1	40.831	0	50	82	40	160
2-Hexanone	1	43.7693	0	50	88	40	160
Tetrachloroethene	1	53.1972	0	50	106	70	130
Toluene	1	52.2829	0	50	105	70	130
1,1,1,2-Tetrachloroethane	1	55.3285	0	50	111	70	130
Chlorobenzene	1	53.4778	0	50	107	70	130
n-Butyl acrylate	1	45.1347	0	50	90	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS47899

n-Amyl acetate	1	40.6497	0	50	81	70	130
Bromoform	1	54.8527	0	50	110	70	130
Ethylbenzene	1	57.6738	0	50	115	70	130
1,1,2,2-Tetrachloroethane	1	45.4621	0	50	91	70	130
Styrene	1	55.0339	0	50	110	70	130
m&p-Xylenes	1	104.2816	0	100	104	70	130
o-Xylene	1	55.1014	0	50	110	70	130
trans-1,4-Dichloro-2-butene	1	47.2203	0	50	94	70	130
1,3-Dichlorobenzene	1	53.4206	0	50	107	70	130
1,4-Dichlorobenzene	1	51.0365	0	50	102	70	130
1,2-Dichlorobenzene	1	49.6354	0	50	99	70	130
Isopropylbenzene	1	51.1763	0	50	102	70	130
Cyclohexanone	1	193.2719	0	250	77	70	130
Camphene	1	45.7088	0	50	91	70	130
1,2,3-Trichloropropane	1	50.3714	0	50	101	70	130
2-Chlorotoluene	1	53.4996	0	50	107	70	130
p-Ethyltoluene	1	54.1673	0	50	108	70	130
4-Chlorotoluene	1	55.6498	0	50	111	70	130
n-Propylbenzene	1	52.9943	0	50	106	70	130
Bromobenzene	1	46.8848	0	50	94	70	130
1,3,5-Trimethylbenzene	1	44.5133	0	50	89	70	130
Butyl methacrylate	1	40.9052	0	50	82	70	130
t-Butylbenzene	1	51.5302	0	50	103	70	130
1,2,4-Trimethylbenzene	1	50.0802	0	50	100	70	130
sec-Butylbenzene	1	48.245	0	50	96	70	130
4-Isopropyltoluene	1	48.5049	0	50	97	70	130
n-Butylbenzene	1	48.2009	0	50	96	70	130
p-Diethylbenzene	1	49.3999	0	50	99	70	130
1,2,4,5-Tetramethylbenzene	1	50.4397	0	50	101	70	130
1,2-Dibromo-3-Chloropropane	1	47.1857	0	50	94	40	160
Camphor	1	533.3806	0	500	107	70	130
Hexachlorobutadiene	1	40.5836	0	50	81	70	130
1,2,4-Trichlorobenzene	1	47.946	0	50	96	70	130
1,2,3-Trichlorobenzene	1	46.3527	0	50	93	70	130
Naphthalene	1	47.5367	0	50	95	40	160

Form3
RPD DATA

QC Batch: MBS47899

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6M32698.D	AC87819-002(MSD)	11/2/2015 6:55:00 PM
Duplicate(If applicable):	6M32697.D	AC87819-002(MS)	11/2/2015 6:38:00 PM
Inst Blank(If applicable):			

Method: 8260C Matrix: Soil QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
Chlorodifluoromethane	1	46.4926	62.7981	30	30
Dichlorodifluoromethane	1	51.1586	51.6412	0.94	30
Chloromethane	1	59.5393	58.4826	1.8	30
Bromomethane	1	50.3867	50.1188	0.53	30
Vinyl Chloride	1	52.5452	46.4279	12	30
Chloroethane	1	55.0367	51.6623	6.3	30
Trichlorofluoromethane	1	55.1955	52.3433	5.3	30
Ethyl ether	1	66.931	63.6661	5	30
Furan	1	26.1673	24.8252	5.3	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1	80.7989	68.4981	16	30
Methylene Chloride	1	60.0103	55.8307	7.2	30
Acrolein	1	285.1274	238.1162	18	30
Acrylonitrile	1	59.7463	61.4211	2.8	30
Iodomethane	1	65.5197	62.9479	4	30
Acetone	1	317.7363	290.4742	9	30
Carbon Disulfide	1	59.6444	60.5546	1.5	30
t-Butyl Alcohol	1	223.5524	266.6984	18	30
n-Hexane	1	63.6977	57.5783	10	30
Di-isopropyl-ether	1	52.6755	47.1343	11	30
1,1-Dichloroethene	1	66.1001	64.8252	1.9	30
Methyl Acetate	1	49.1766	52.4658	6.5	30
Methyl-t-butyl ether	1	55.2282	46.9796	16	30
1,1-Dichloroethane	1	60.1916	56.6692	6	30
trans-1,2-Dichloroethene	1	69.9102	71.1222	1.7	30
Ethyl-t-butyl ether	1	49.3169	42.3072	15	30
cis-1,2-Dichloroethene	1	61.7547	60.9873	1.3	30
Bromochloromethane	1	46.3909	49.5911	6.7	30
2,2-Dichloropropane	1	61.8484	58.6994	5.2	30
Ethyl acetate	1	47.7962	49.101	2.7	30
1,4-Dioxane	1	3359.056	3295.893	1.9	30
1,1-Dichloropropene	1	61.5691	57.8363	6.3	30
Chloroform	1	61.7311	60.6832	1.7	30
Cyclohexane	1	61.2546	57.4802	6.4	30
1,2-Dichloroethane	1	56.2099	55.015	2.1	30
2-Butanone	1	56.4279	48.1316	16	30
1,1,1-Trichloroethane	1	65.961	59.1302	11	30
Carbon Tetrachloride	1	66.1198	65.4546	1	30
Vinyl Acetate	1	49.9768	46.6849	6.8	30
Bromodichloromethane	1	60.6778	59.4616	2	30
Methylcyclohexane	1	66.3928	70.0968	5.4	30
Dibromomethane	1	71.079	71.9197	1.2	30
1,2-Dichloropropane	1	59.2551	57.4577	3.1	30
Trichloroethene	1	67.9859	62.2158	8.9	30
Benzene	1	67.9506	66.6156	2	30
tert-Amyl methyl ether	1	53.3604	48.9045	8.7	30
Iso-propylacetate	1	35.3965	31.6244	11	30
Methyl methacrylate	1	48.8602	46.4522	5.1	30
Dibromochloromethane	1	57.4798	56.4921	1.7	30
2-Chloroethylvinylether	1	114.5099	119.8184	4.5	30
cis-1,3-Dichloropropene	1	51.1933	48.3604	5.7	30
trans-1,3-Dichloropropene	1	53.842	49.1095	9.2	30
Ethyl methacrylate	1	45.495	42.5145	6.8	30
1,1,2-Trichloroethane	1	53.5766	50.8111	5.3	30
1,2-Dibromoethane	1	54.286	53.8886	0.73	30
1,3-Dichloropropane	1	51.2243	49.8176	2.8	30
4-Methyl-2-Pentanone	1	40.831	43.2701	5.8	30
2-Hexanone	1	43.7693	43.3918	0.87	30
Tetrachloroethene	1	53.1972	55.9317	5	30
Toluene	1	52.2829	54.098	3.4	30
1,1,1,2-Tetrachloroethane	1	55.3285	54.8986	0.78	30
Chlorobenzene	1	53.4778	56.7195	5.9	30
n-Butyl acrylate	1	45.1347	47.9306	6	30
n-Amyl acetate	1	40.6497	42.5154	4.5	30
Bromoform	1	54.8527	52.1775	5	30

Form3
RPD DATA
QC Batch: MBS47899

Ethylbenzene	1	57.6738	65.0404	12	30
1,1,2,2-Tetrachloroethane	1	45.4621	50.9669	11	30
Styrene	1	55.0339	59.6079	8	30
m&p-Xylenes	1	104.2816	111.5464	6.7	30
o-Xylene	1	55.1014	60.9225	10	30
trans-1,4-Dichloro-2-butene	1	47.2203	50.5717	6.9	30
1,3-Dichlorobenzene	1	53.4206	60.8497	13	30
1,4-Dichlorobenzene	1	51.0365	55.8038	8.9	30
1,2-Dichlorobenzene	1	49.6354	58.1005	16	30
Isopropylbenzene	1	51.1763	60.3074	16	30
Cyclohexanone	1	193.2719	265.9298	32*	30
Camphene	1	45.7088	54.0633	17	30
1,2,3-Trichloropropane	1	50.3714	53.1028	5.3	30
2-Chlorotoluene	1	53.4996	62.3906	15	30
p-Ethyltoluene	1	54.1673	66.4252	20	30
4-Chlorotoluene	1	55.6498	62.1569	11	30
n-Propylbenzene	1	52.9943	58.8171	10	30
Bromobenzene	1	46.8848	52.6105	12	30
1,3,5-Trimethylbenzene	1	44.5133	53.2152	18	30
Butyl methacrylate	1	40.9052	48.3126	17	30
t-Butylbenzene	1	51.5302	60.799	17	30
1,2,4-Trimethylbenzene	1	50.0802	55.999	11	30
sec-Butylbenzene	1	48.245	55.8974	15	30
4-Isopropyltoluene	1	48.5049	58.3001	18	30
n-Butylbenzene	1	48.2009	56.9341	17	30
p-Diethylbenzene	1	49.3999	60.3838	20	30
1,2,4,5-Tetramethylbenzene	1	50.4397	61.7902	20	30
1,2-Dibromo-3-Chloropropane	1	47.1857	51.9322	9.6	30
Camphor	1	533.3806	520.9113	2.4	30
Hexachlorobutadiene	1	40.5836	44.8172	9.9	30
1,2,4-Trichlorobenzene	1	47.946	57.2364	18	30
1,2,3-Trichlorobenzene	1	46.3527	51.3098	10	30
Naphthalene	1	47.5367	55.0181	15	30

* - Indicates outside of limits

NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: DAILY BLANK
Blank Data File: 6M32670.D
Matrix: Soil

Blank Analysis Date: 11/02/15 10:56
Blank Extraction Date: NA
(If Applicable)
Method: EPA 8260C

Sample Number	Data File	Analysis Date
AC87819-002	6M32694.D	11/02/15 17:43
AC87819-002(MSD	6M32698.D	11/02/15 18:55
AC87819-002(MS)	6M32697.D	11/02/15 18:38
MBS47899	6M32671.D	11/02/15 11:12

Form 5

Tune Name: bfb tune
Instrument: GCMS 6
Data File: 6M32585.D
Analysis Date: 10/30/15 07:56
Method: EPA 8260C

Tune Scan/Time Range: Average of 3.823 to 3.852 min

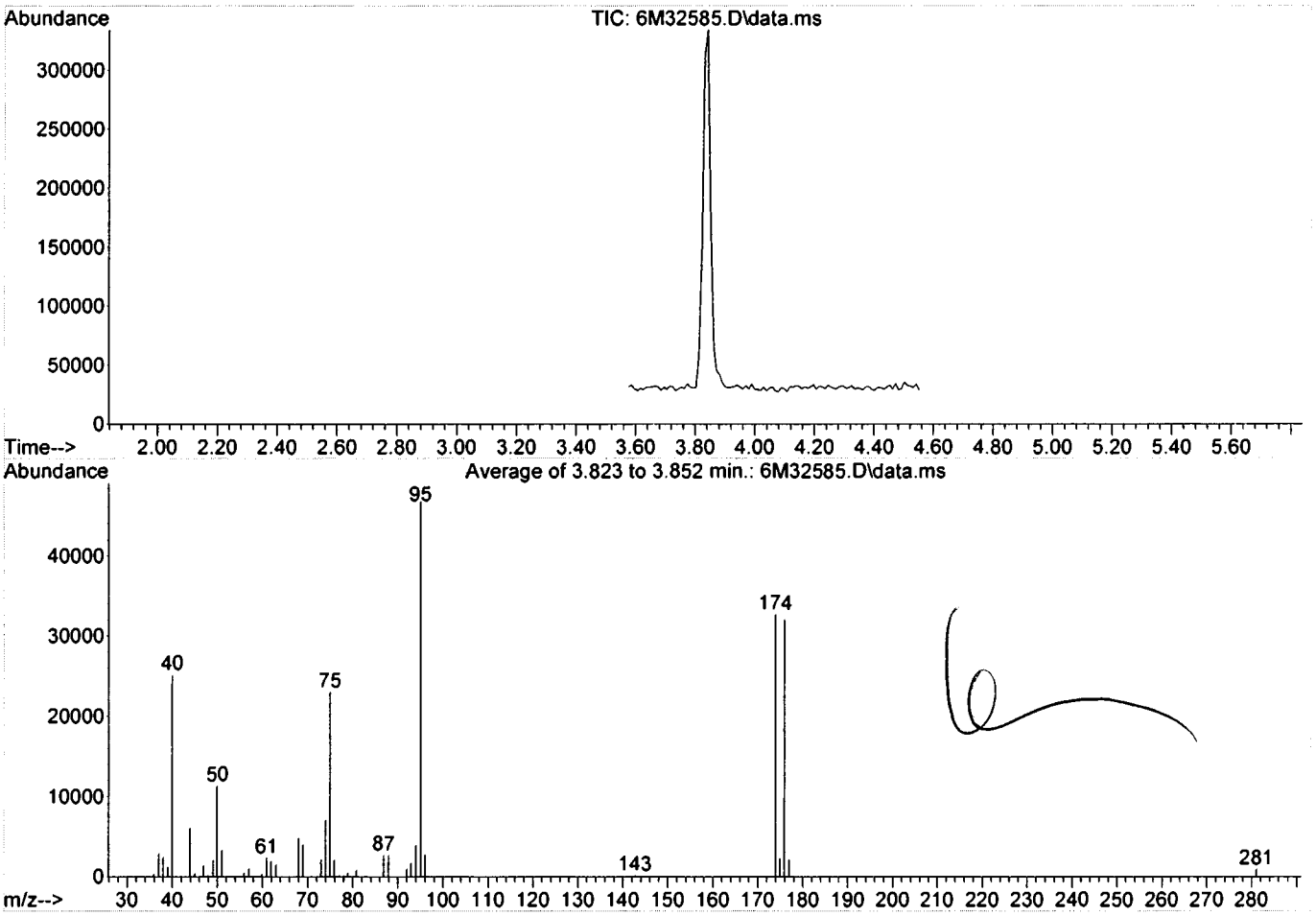
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
50	95	15	40	24.3	11367	PASS
75	95	30	60	49.3	23033	PASS
95	95	100	100	100.0	46764	PASS
96	95	5	9	5.8	2735	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.9	32682	PASS
175	174	5	9	7.0	2303	PASS
176	174	95	101	97.9	32009	PASS
177	176	5	9	6.6	2125	PASS

Data File	Sample Number	Analysis Date:
6M32588.D	CAL @ 0.5 PPB	10/30/15 08:44
6M32589.D	CAL @ 1 PPB	10/30/15 09:01
6M32590.D	CAL @ 2 PPB	10/30/15 09:17
6M32591.D	CAL @ 5 PPB	10/30/15 09:34
6M32592.D	CAL @ 20 PPB	10/30/15 09:51
6M32593.D	CAL @ 50 PPB	10/30/15 10:08
6M32594.D	CAL @ 500 PPB	10/30/15 10:24
6M32596.D	CAL @ 250 PPB	10/30/15 10:58
6M32598.D	CAL @ 100 PPB	10/30/15 11:31
6M32600.D	BLK	10/30/15 12:06
6M32602.D	ICV	10/30/15 12:39
6M32603.D	BLK	10/30/15 12:59
6M32604.D	BLK	10/30/15 13:16
6M32605.D	DAILY BLANK	10/30/15 13:33
6M32606.D	MBS47888	10/30/15 13:49
6M32607.D	BLK	10/30/15 14:06
6M32608.D	AC87752-005	10/30/15 14:23
6M32609.D	AC87752-006	10/30/15 14:44
6M32610.D	AC87752-008	10/30/15 15:00
6M32611.D	AC87752-011	10/30/15 15:18
6M32612.D	AC87752-012	10/30/15 15:34
6M32613.D	AC87752-009	10/30/15 15:51
6M32614.D	AC87752-007	10/30/15 16:08
6M32615.D	AC87752-001	10/30/15 16:25
6M32616.D	AC87752-003	10/30/15 16:42

Data Path : G:\GcMsData\2015\GCMS_6\Data\10-30-15\
Data File : 6M32585.D
Acq On : 30 Oct 2015 7:56
Operator : SG
Sample : bfb tune
Misc : S,5g
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : G:\GcMsData\2015\GCMS_6\MethodQt\6M_S1022.M
Title : @GCMS_6,ug,624,8260
Last Update : Thu Oct 22 15:24:05 2015



Spectrum Information: Average of 3.823 to 3.852 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.3	11367	PASS
75	95	30	60	49.3	23033	PASS
95	95	100	100	100.0	46764	PASS
96	95	5	9	5.8	2735	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.9	32682	PASS
175	174	5	9	7.0	2303	PASS
176	174	95	101	97.9	32009	PASS
177	176	5	9	6.6	2125	PASS

Form 5

Tune Name: BFB TUNE **Data File:** 6M32664.D
Instrument: GCMS 6 **Analysis Date:** 11/02/15 09:21
Method: EPA 8260C
Tune Scan/Time Range: Average of 3.787 to 3.875 min

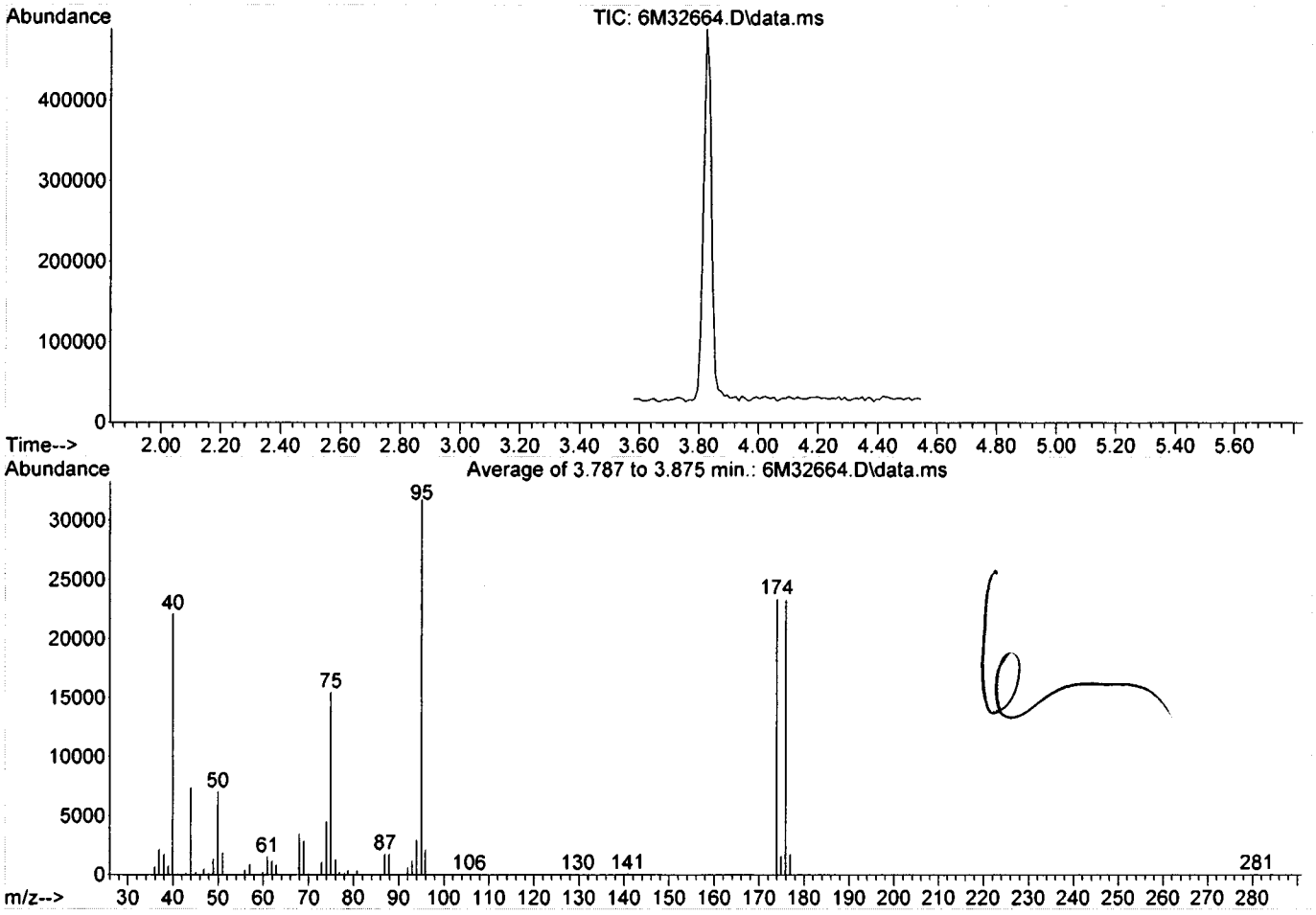
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
50	95	15	40	22.2	7058	PASS
75	95	30	60	48.8	15489	PASS
95	95	100	100	100.0	31761	PASS
96	95	5	9	6.7	2115	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.6	23375	PASS
175	174	5	9	6.7	1568	PASS
176	174	95	101	99.6	23279	PASS
177	176	5	9	7.5	1735	PASS

Data File	Sample Number	Analysis Date:
6M32665.D	BLK	11/02/15 09:31
6M32666.D	50 PPB	11/02/15 09:48
6M32667.D	CAL @ 50 PPB	11/02/15 10:04
6M32668.D	BLK	11/02/15 10:22
6M32669.D	BLK	11/02/15 10:39
6M32670.D	DAILY BLANK	11/02/15 10:56
6M32671.D	MBS47899	11/02/15 11:12
6M32672.D	BLK	11/02/15 11:32
6M32673.D	AC87880-002	11/02/15 11:49
6M32674.D	AC87879-001	11/02/15 12:05
6M32675.D	AC87878-008	11/02/15 12:22
6M32676.D	AC87922-001	11/02/15 12:39
6M32677.D	AC87922-002	11/02/15 12:55
6M32678.D	AC87755-008(5X)	11/02/15 13:12
6M32679.D	BLK	11/02/15 13:29
6M32680.D	AC87878-001	11/02/15 13:45
6M32681.D	AC87837-001	11/02/15 14:02
6M32682.D	AC87861-001	11/02/15 14:19
6M32683.D	AC87876-004	11/02/15 14:37
6M32684.D	AC87877-001	11/02/15 14:53
6M32685.D	AC87766-004	11/02/15 15:12
6M32686.D	AC87792-002	11/02/15 15:28
6M32687.D	BLK	11/02/15 15:45
6M32688.D	AC87878-001	11/02/15 16:02
6M32689.D	AC87824-009	11/02/15 16:18
6M32690.D	AC87768-001	11/02/15 16:35
6M32691.D	AC87792-001	11/02/15 16:51
6M32692.D	MBS47903	11/02/15 17:09
6M32693.D	87878-001	11/02/15 17:26
6M32694.D	AC87819-002	11/02/15 17:43
6M32695.D	AC87768-001(5X)	11/02/15 18:04
6M32696.D	AC87824-009(5X)	11/02/15 18:21
6M32697.D	AC87819-002(MS)	11/02/15 18:38
6M32698.D	AC87819-002(MSD	11/02/15 18:55
6M32699.D	AC87906-001	11/02/15 19:12
6M32700.D	AC87906-002	11/02/15 19:28
6M32701.D	AC87906-003	11/02/15 19:45
6M32702.D	AC87906-004	11/02/15 20:01
6M32703.D	AC87906-005	11/02/15 20:18
6M32704.D	MBS47910	11/02/15 20:35
6M32705.D	BLK	11/02/15 20:51
6M32706.D	BLK	11/02/15 21:08
6M32707.D	BLK	11/02/15 21:25
6M32708.D	BLK	11/02/15 21:41
6M32709.D	BLK	11/02/15 21:58

Data Path : G:\GcMsData\2015\GCMS_6\Data\11-02-15\
Data File : 6M32664.D
Acq On : 2 Nov 2015 9:21
Operator : SG
Sample : BFB TUNE
Misc : S,5G
ALS Vial : 5 Sample Multiplier: 1

Integration File: RTEINT.P

Method : G:\GcMsData\2015\GCMS_6\MethodQt\6M_S1030.M
Title : @GCMS_6,ug,624,8260
Last Update : Fri Oct 30 12:42:44 2015



Spectrum Information: Average of 3.787 to 3.875 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.2	7058	PASS
75	95	30	60	48.8	15489	PASS
95	95	100	100	100.0	31761	PASS
96	95	5	9	6.7	2115	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.6	23375	PASS
175	174	5	9	6.7	1568	PASS
176	174	95	101	99.6	23279	PASS
177	176	5	9	7.5	1735	PASS

Form 6
Initial Calibration

Method: EPA 8260C

Instrument: GCMS_6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6M32592.	CAL @ 20 PPB	10/30/15 09:51	2	6M32591.	CAL @ 5 PPB	10/30/15 09:34
3	6M32590.	CAL @ 2 PPB	10/30/15 09:17	4	6M32593.	CAL @ 50 PPB	10/30/15 10:08
5	6M32598.	CAL @ 100 PPB	10/30/15 11:31	6	6M32596.	CAL @ 250 PPB	10/30/15 10:58
7	6M32594.	CAL @ 500 PPB	10/30/15 10:24	8	6M32589.	CAL @ 1 PPB	10/30/15 09:01
9	6M32588.	CAL @ 0.5 PPB	10/30/15 08:44				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd			Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Chlorodifluoromethane	1	0	Avg	0.6682	0.6876	0.7879	0.6646	0.6820	0.6709	0.7268	-----	-----	0.698	1.24	0.999	1.00	6.4	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Dichlorodifluoromethan	1	0	Qua	0.3641	0.3298	0.1933	0.3525	0.3898	0.3793	0.4056	-----	-----	0.345	1.23	0.999	1.00	21	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Chloromethane	1	0	Avg	0.4230	0.3561	0.3724	0.4189	0.4451	0.4362	0.4718	-----	-----	0.418	1.36	0.999	1.00	9.7	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Bromomethane	1	0	Avg	0.2323	0.1849	0.2672	0.2267	0.2486	0.2382	0.2545	-----	-----	0.236	1.68	0.999	1.00	11	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Vinyl Chloride	1	0	Avg	0.4172	0.3989	0.4046	0.4351	0.4683	0.4614	0.4636	-----	-----	0.436	1.44	1.00	1.00	6.7	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Chloroethane	1	0	Avg	0.2503	0.2136	0.2491	0.2452	0.2691	0.2623	0.2752	-----	-----	0.252	1.75	0.999	1.00	8.0	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Trichlorofluoromethane	1	0	Avg	0.4887	0.4684	0.5327	0.5111	0.5270	0.5161	0.5403	-----	-----	0.512	1.94	1.00	1.00	5.0	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Ethyl ether	1	0	Avg	0.1253	0.1014	0.1167	0.1085	0.1451	0.1446	0.1483	-----	-----	0.127	2.14	0.999	1.00	15	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Furan	1	0	Avg	0.5554	0.5566	0.4448	0.5564	0.5959	0.5662	0.6204	-----	-----	0.557	2.17	0.998	1.00	9.9	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.1.2-Trichloro-1.2.2-tri	1	0	Avg	0.3166	0.2870	0.3040	0.2978	0.3226	0.3086	0.3107	-----	-----	0.307	2.32	1.00	1.00	3.9	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Methylene Chloride	1	0	Avg	0.3017	0.2867	0.2737	0.2856	0.3171	0.3083	0.3266	-----	-----	0.300	2.65	0.999	1.00	6.3	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Acrolein	1	0	Avg	0.0160	0.0160	0.0144	0.0172	0.0189	0.0177	0.0188	-----	-----	0.0170	2.22	0.999	1.00	9.7			100.0	25.00	10.00	250.0	500.0	1250.	2500.		
Acrylonitrile	1	0	Qua	0.0302	0.0154	0.0542	0.0327	0.0385	0.0366	0.0406	-----	-----	0.0355	2.83	0.998	1.00	33			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Iodomethane	1	0	Avg	0.3967	0.3566	0.3765	0.3934	0.4312	0.4301	0.4643	-----	-----	0.407	2.42	0.999	1.00	9.1			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Acetone	1	0	Avg	0.0303	0.0291	0.0368	0.0282	0.0301	0.0269	0.0283	-----	-----	0.0300	2.34	0.999	0.999	11	0.10	a	100.0	25.00	10.00	250.0	500.0	1250.	2500.		
Carbon Disulfide	1	0	Avg	1.3259	1.2775	0.9784	1.3323	1.3944	1.3495	1.4084	-----	-----	1.30	2.49	1.00	1.00	11	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
t-Butyl Alcohol	1	0	Avg	0.0046	0.0044	0.0047	0.0038	0.0041	0.0041	0.0047	-----	-----	0.00440	2.72	0.996	1.00	8.5			100.0	25.00	10.00	250.0	500.0	1250.	2500.		
n-Hexane	1	0	Avg	0.5943	0.5989	0.5830	0.6316	0.6828	0.6489	0.6645	-----	-----	0.629	3.09	1.00	1.00	6.1			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Di-isopropyl-ether	1	0	Avg	1.0090	0.9326	1.0575	1.0009	1.0923	1.0411	1.0319	-----	-----	1.02	3.24	1.00	1.00	4.9			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.1-Dichloroethene	1	0	Avg	0.5917	0.5951	0.5463	0.6248	0.6333	0.6002	0.6562	-----	-----	0.607	2.31	0.998	1.00	5.8	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Methyl Acetate	1	0	Avg	0.1060	0.1232	0.0808	0.1186	0.1209	0.1188	0.1293	-----	-----	0.114	2.58	0.999	1.00	14	0.10	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Methyl-t-butyl ether	1	0	Avg	0.2893	0.2922	0.2918	0.2750	0.3120	0.2935	0.3096	0.2512	-----	0.289	2.86	0.999	1.00	6.7	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
1.1-Dichloroethane	1	0	Avg	0.6590	0.6142	0.5998	0.6172	0.6722	0.6386	0.6752	-----	-----	0.640	3.18	0.999	1.00	4.7	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
trans-1.2-Dichloroether	1	0	Avg	0.3531	0.2984	0.2251	0.3344	0.3607	0.3489	0.3674	-----	-----	0.327	2.87	0.999	1.00	15	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Ethyl-t-butyl ether	1	0	Avg	0.5260	0.5075	0.5256	0.5368	0.5945	0.5836	0.6201	-----	-----	0.556	3.53	0.999	1.00	7.7	0.50		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
cis-1.2-Dichloroethene	1	0	Avg	0.5617	0.5301	0.6223	0.5632	0.6142	0.5832	0.6104	-----	-----	0.584	3.64	1.00	1.00	5.8	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Bromochloromethane	1	0	Avg	0.2877	0.2531	0.2215	0.2499	0.2853	0.2726	0.2952	-----	-----	0.267	3.82	0.999	1.00	9.9			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
2.2-Dichloropropane	1	0	Avg	0.3575	0.3309	0.3987	0.3656	0.4101	0.4129	0.4210	-----	-----	0.385	3.65	1.00	1.00	8.8			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Ethyl acetate	1	0	Qua	0.1175	0.1113	0.0686	0.1141	0.1259	0.1208	0.1365	-----	-----	0.114	3.70	0.997	1.00	19			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.4-Dioxane	1	0	Avg	0.0009	0.0009	0.0009	0.0010	0.0011	0.0009	0.0010	-----	-----	0.00100	4.79	0.998	0.999	7.4			1000.	250.0	100.0	2500.	5000.	1250	2500		
1.1-Dichloropropene	1	0	Avg	0.5914	0.5813	0.5399	0.6055	0.6323	0.5819	0.5638	-----	-----	0.585	4.12	0.999	1.00	5.0			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Chloroform	1	0	Avg	0.5134	0.5188	0.6167	0.5018	0.5339	0.5022	0.5308	-----	-----	0.531	3.87	0.999	1.00	7.5	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Dibromofluoromethane	1	0	Avg	0.1683	0.1709	0.1723	0.1667	0.1691	0.1587	0.1625	0.1788	0.1817	0.170	3.98	-1	-1	4.2			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Cyclohexane	1	0	Avg	0.7417	0.6929	0.7659	0.7543	0.8034	0.7480	0.7435	-----	-----	0.750	4.07	1.00	1.00	4.4	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.2-Dichloroethane-d4	1	0	Avg	0.0821	0.0794	0.0792	0.0779	0.0762	0.0753	0.0742	0.0856	0.0830	0.0792	4.20	-1	-1	4.8			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
1.2-Dichloroethane	1	0	Avg	0.2639	0.2792	0.3186	0.2554	0.2614	0.2411	0.2512	0.3098	-----	0.273	4.25	1.00	1.00	10	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
2-Butanone	1	0	Avg	0.0555	0.0517	0.0372	0.0502	0.0514	0.0457	0.0465	-----	-----	0.0484	3.66	0.999	0.999	12	0.10	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.1.1-Trichloroethane	1	0	Avg	0.4661	0.4180	0.4926	0.4787	0.5233	0.4875	0.5104	-----	-----	0.482	4.02	0.999	1.00	7.1	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Carbon Tetrachloride	1	0	Avg	0.3409	0.3101	0.3010	0.3510	0.3971	0.3781	0.3784	-----	-----	0.351	4.13	1.00	1.00	10	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Vinyl Acetate	1	0	Avg	0.5617	0.4861	0.5189	0.5310	0.5876	0.5556	0.5858	-----	-----	0.547	3.24	0.999	1.00	6.8			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Bromodichloromethane	1	0	Avg	0.3403	0.3167	0.3292	0.3379	0.3523	0.3401	0.3493	-----	-----	0.338	4.85	1.00	1.00	3.6	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		

Avg Rsd: 11.5

Flags

a - failed the min rf criteria

c - failed the minimum correlation coeff criteria(if applicable)

Note:

Corr 1 = Correlation Coefficient for linear Eq.

Corr 2 = Correlation Coefficient for quad Eq.

Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Form 6
Initial Calibration

Method: EPA 8260C

Instrument: GCMS_6

5102701 0041

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6M32592.	CAL @ 20 PPB	10/30/15 09:51	2	6M32591.	CAL @ 5 PPB	10/30/15 09:34
3	6M32590.	CAL @ 2 PPB	10/30/15 09:17	4	6M32593.	CAL @ 50 PPB	10/30/15 10:08
5	6M32598.	CAL @ 100 PPB	10/30/15 11:31	6	6M32596.	CAL @ 250 PPB	10/30/15 10:58
7	6M32594.	CAL @ 500 PPB	10/30/15 10:24	8	6M32589.	CAL @ 1 PPB	10/30/15 09:01
9	6M32588.	CAL @ 0.5 PPB	10/30/15 08:44				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd			Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Methylcyclohexane	1	0	Avg	0.6262	0.5972	0.5638	0.6418	0.6859	0.6319	0.5855	-----	-----	0.619	4.72	0.998	1.00	6.6	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Dibromomethane	1	0	Avg	0.0903	0.0697	0.0838	0.0879	0.0927	0.0869	0.0956	-----	-----	0.0867	4.78	0.998	1.00	9.7			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2-Dichloropropane	1	0	Avg	0.3284	0.3398	0.3824	0.3238	0.3401	0.3111	0.2940	-----	-----	0.331	4.72	0.999	1.00	8.4	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Trichloroethene	1	0	Avg	0.3285	0.3628	0.3908	0.3379	0.3370	0.3414	0.3496	-----	-----	0.350	4.61	1.00	1.00	6.0	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Benzene	1	0	Avg	1.3676	1.2940	1.3529	1.3949	1.4223	1.2812	1.1298	1.2718	-----	1.31	4.25	0.995	1.00	7.0	0.50		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
tert-Amyl methyl ether	1	0	Avg	0.2892	0.2869	0.2953	0.2945	0.3354	0.3185	0.3504	-----	-----	0.310	4.31	0.998	1.00	8.1			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Iso-propyl acetate	1	0	Avg	0.3615	0.3403	0.3017	0.3510	0.3843	0.4284	0.4705	-----	-----	0.377	4.27	0.998	1.00	15	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Methyl methacrylate	1	0	Qua	0.2158	0.1474	0.1468	0.2131	0.2255	0.2398	0.2598	-----	-----	0.207	4.78	0.998	1.00	21	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Dibromochloromethane	1	0	Avg	0.3103	0.2757	0.3268	0.2798	0.2967	0.3236	0.3330	-----	-----	0.307	5.67	0.999	1.00	7.5	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
2-Chloroethylvinylether	1	0	Qua	0.0335	0.0306	0.0204	0.0360	0.0425	0.0607	0.0725	-----	-----	0.0424	5.01	0.990	0.999	43			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
cis-1,3-Dichloropropene	1	0	Avg	0.6944	0.6247	0.6165	0.6556	0.7252	0.7830	0.8085	-----	-----	0.701	5.09	0.999	1.00	11	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
trans-1,3-Dichloroprope	1	0	Qua	0.3995	0.2841	0.3221	0.4217	0.4664	0.5137	0.5599	-----	-----	0.424	5.37	0.998	1.00	23	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Ethyl methacrylate	1	0	Qua	0.2423	0.2292	0.0256	0.2538	0.2799	0.2832	0.3068	-----	-----	0.232	5.40	0.999	1.00	41	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,1,2-Trichloroethane	1	0	Avg	0.2970	0.2525	0.3551	0.2595	0.2754	0.2732	0.2917	-----	-----	0.286	5.46	0.999	1.00	12	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2-Dibromoethane	1	0	Avg	0.2213	0.2241	0.2673	0.2151	0.2290	0.2342	0.2652	-----	-----	0.237	5.74	0.997	1.00	8.9	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,3-Dichloropropane	1	0	Avg	0.5366	0.5647	0.5798	0.5057	0.5162	0.5160	0.5157	-----	-----	0.534	5.55	1.00	1.00	5.3			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
4-Methyl-2-Pentanone	1	0	Avg	0.1872	0.1559	0.1570	0.1809	0.2001	0.2160	0.2371	-----	-----	0.191	5.16	0.998	1.00	16	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
2-Hexanone	1	0	Qua	0.0996	0.0056	0.0190	0.1037	0.1146	0.1315	0.1512	-----	-----	0.0894	5.59	0.996	1.00	62	0.10	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Tetrachloroethene	1	0	Avg	0.5294	0.4667	0.5099	0.5058	0.5174	0.5178	0.4975	-----	-----	0.506	5.55	1.00	1.00	4.0	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Toluene-d8	1	0	Avg	1.5267	1.5050	1.5566	1.5059	1.4873	1.5523	1.5588	1.4755	1.4919	1.52	5.23	-1	-1	2.1			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Toluene	1	0	Avg	1.5316	1.3888	1.4909	1.4533	1.5089	1.4252	1.3621	1.3464	-----	1.44	5.27	0.999	1.00	4.8	0.40		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
1,1,1,2-Tetrachloroetha	1	0	Avg	0.3841	0.3412	0.3972	0.3641	0.3776	0.3834	0.4010	-----	-----	0.378	6.01	1.00	1.00	5.4			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Chlorobenzene	1	0	Avg	1.2870	1.3234	1.4296	1.1751	1.2403	1.3156	1.2674	-----	-----	1.29	5.98	1.00	1.00	6.1	0.50		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
n-Butyl acrylate	1	0	Qua	1.0169	0.5292	0.1132	1.1421	1.2134	1.3298	1.4343	-----	-----	0.968	6.25	0.999	1.00	49	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
n-Amyl acetate	1	0	Qua	0.8359	0.3077	0.2002	0.8727	0.9853	1.1257	1.1274	-----	-----	0.779	6.36	0.999	0.999	48	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Bromoform	1	0	Avg	0.3785	0.3640	0.2972	0.3601	0.3601	0.3871	0.4007	-----	-----	0.364	6.41	0.999	1.00	9.1	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Ethylbenzene	1	0	Avg	1.7232	1.2974	1.4079	1.5714	1.8929	1.7154	1.6553	1.4265	-----	1.59	6.03	0.999	1.00	12	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
1,1,2,2-Tetrachloroetha	1	0	Avg	0.7157	0.6044	0.8950	0.6593	0.7001	0.6909	0.6993	-----	-----	0.709	6.62	1.00	1.00	13	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Bromofluorobenzene	1	0	Avg	0.7237	0.6997	0.6978	0.7196	0.7048	0.7657	0.7124	0.6868	0.7729	0.720	6.57	-1	-1	4.2			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Styrene	1	0	Avg	2.8256	2.4387	2.8026	2.8472	3.0062	2.7991	2.4750	-----	-----	2.74	6.30	0.995	1.00	7.6	0.30		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
m&p-Xylenes	1	0	Avg	2.2000	1.8175	2.1184	1.9984	2.0615	1.9999	1.7114	2.1700	2.5245	2.07	6.09	0.994	1.00	11	0.10		40.00	10.00	4.00	100.0	200.0	500.0	1000.	2.00	1.00
o-Xylene	1	0	Avg	1.9248	1.7174	1.6129	1.9697	1.9686	1.9337	1.6723	1.3393	-----	1.77	6.30	0.994	1.00	13	0.30		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
trans-1,4-Dichloro-2-bu	1	0	Avg	0.4948	0.4213	0.6091	0.5090	0.5416	0.5256	0.5006	-----	-----	0.515	6.65	0.999	1.00	11			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,3-Dichlorobenzene	1	0	Avg	1.8534	1.8221	1.8263	1.8295	1.9333	1.9156	1.6631	-----	-----	1.83	7.16	0.995	1.00	4.8	0.60		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,4-Dichlorobenzene	1	0	Avg	1.8733	1.7576	2.2075	1.7656	1.9497	1.9052	1.8487	-----	-----	1.90	7.21	1.00	1.00	8.0	0.50		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2-Dichlorobenzene	1	0	Avg	1.5238	1.5162	1.4472	1.4746	1.5453	1.5999	1.5546	-----	-----	1.52	7.42	1.00	1.00	3.3	0.40		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Isopropylbenzene	1	0	Avg	5.7676	5.3656	4.9620	5.7295	5.6670	5.6398	4.5013	5.4126	-----	5.38	6.48	0.986	0.999	8.2	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
Cyclohexanone	1	0	Qua	0.0493	0.0482	0.0876	0.0511	0.0525	0.0530	0.0479	-----	-----	0.0557	6.65	0.997	1.00	26			100.0	25.00	10.00	250.0	500.0	1250.	2500.		
Camphene	1	0	Avg	2.1943	2.0530	2.0855	2.2855	2.3120	2.2526	2.1450	-----	-----	2.19	6.65	0.999	1.00	4.6			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2,3-Trichloropropane	1	0	Avg	0.7478	0.7105	0.6446	0.7100	0.7043	0.7062	0.6530	-----	-----	0.697	6.66	0.998	1.00	5.2			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
2-Chlorotoluene	1	0	Avg	4.9566	3.7024	4.0253	4.2658	3.9469	3.7237	3.0262	-----	-----	3.95	6.76	0.987	1.00	15			20.00	5.00	2.00	50.00	100.0	250.0	500.0		

Avg Rsd: 11.5

Flags

a - failed the min rf criteria

c - failed the minimum correlation coeff criteria(if applicable)

Note:

Corr 1 = Correlation Coefficient for linear Eq.

Corr 2 = Correlation Coefficient for quad Eq.

Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Method: EPA 8260C

Form 6
Initial Calibration

Instrument: GCMS_6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6M32592.	CAL @ 20 PPB	10/30/15 09:51	2	6M32591.	CAL @ 5 PPB	10/30/15 09:34
3	6M32590.	CAL @ 2 PPB	10/30/15 09:17	4	6M32593.	CAL @ 50 PPB	10/30/15 10:08
5	6M32598.	CAL @ 100 PPB	10/30/15 11:31	6	6M32596.	CAL @ 250 PPB	10/30/15 10:58
7	6M32594.	CAL @ 500 PPB	10/30/15 10:24	8	6M32589.	CAL @ 1 PPB	10/30/15 09:01
9	6M32588.	CAL @ 0.5 PPB	10/30/15 08:44				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
p-Ethyltoluene	1	0	Avg	5.5809	5.0929	5.4431	5.6800	5.3583	5.3139	4.5472	-----	-----	5.29	6.76	0.993	1.00	7.1		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
4-Chlorotoluene	1	0	Avg	3.9833	3.1415	2.7540	3.6366	4.0782	3.6691	3.1948	-----	-----	3.49	6.81	0.994	1.00	14		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
n-Propylbenzene	1	0	Avg	8.2255	6.7470	7.4484	7.6855	7.6864	7.1757	4.9519	6.2621	-----	7.02	6.70	0.958	0.999	15		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
Bromobenzene	1	0	Avg	2.6599	2.2767	3.0286	2.5522	2.7249	2.6802	2.4656	-----	-----	2.63	6.66	0.998	1.00	8.9		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.3.5-Trimethylbenzene	1	0	Avg	4.6013	3.9865	4.7942	4.3251	4.4450	4.3544	3.3346	4.1636	-----	4.25	6.79	0.980	0.999	10		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
Butyl methacrylate	1	0	Qua	1.2439	0.6988	0.8212	1.2727	1.3461	1.4037	1.3007	-----	-----	1.16	6.81	0.998	1.00	24	0.50	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
t-Butylbenzene	1	0	Avg	4.1099	3.5260	3.4342	4.2700	4.3030	4.3521	3.8109	3.3445	-----	3.89	6.97	0.996	1.00	11		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
1.2.4-Trimethylbenzene	1	0	Avg	4.2610	3.8026	4.5402	4.1355	4.2691	4.1521	3.6325	3.5888	-----	4.05	6.99	0.995	1.00	8.3		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
sec-Butylbenzene	1	0	Avg	6.4063	5.5515	6.2122	6.6858	6.4314	6.2035	4.7197	6.8290	-----	6.13	7.09	0.979	0.999	11		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
4-Isopropyltoluene	1	0	Avg	4.6725	4.0863	4.2966	4.5665	4.7233	4.4317	3.6315	4.0091	-----	4.30	7.16	0.989	1.00	8.7		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
n-Butylbenzene	1	0	Avg	6.1599	5.4227	5.2828	6.3834	6.2856	5.8555	4.7852	6.0791	-----	5.78	7.39	0.988	1.00	9.7		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
p-Diethylbenzene	1	0	Avg	2.4409	2.1174	2.3888	2.6582	2.7716	2.7424	2.4948	-----	-----	2.52	7.37	0.998	1.00	9.1		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.2.4.5-Tetramethylber	1	0	Avg	2.9652	2.4485	2.7783	3.0615	3.2677	3.2064	2.9006	-----	-----	2.95	7.81	0.997	1.00	9.4		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.2-Dibromo-3-Chloropr	1	0	Qua	0.0789	0.0310	0.0582	0.0639	0.0697	0.0686	0.0674	-----	-----	0.0626	7.85	1.00	1.00	24	0.05 a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Camphor	1	0	Qua	0.0338	0.0285	0.0377	0.0362	0.0454	0.0490	0.0516	-----	-----	0.0404	8.27	0.999	1.00	21		200.0	50.00	20.00	500.0	1000.	2500.	5000.		
Hexachlorobutadiene	1	0	Avg	0.7301	0.7577	0.7838	0.7370	0.8083	0.7726	0.7346	-----	-----	0.761	8.42	0.999	1.00	3.8		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.2.4-Trichlorobenzene	1	0	Avg	0.7470	0.7711	0.6918	0.7781	0.8130	0.8253	0.8534	-----	-----	0.783	8.33	1.00	1.00	6.9	0.20	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.2.3-Trichlorobenzene	1	0	Avg	0.5460	0.5532	0.6880	0.5385	0.5735	0.6087	0.5997	-----	-----	0.587	8.62	1.00	1.00	8.9		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Naphthalene	1	0	Avg	0.8936	0.8339	1.0136	0.8520	0.9673	1.0424	0.9704	1.4385	-----	1.00	8.48	0.999	0.999	19		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	

Flags	*Note:* Avg Rsd: 11.5
a - failed the min rf criteria	*Corr 1 = Correlation Coefficient for linear Eq.*
c - failed the minimum correlation coeff criteria(if applicable)	*Corr 2 = Correlation Coefficient for quad Eq.*
	Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Form7

Continuing Calibration

Calibration Name: CAL @ 50 PPB **Data File:** 6M32667.D **Instrument:** GCMS 6

Cont Calibration Date/Time 11/2/2015 10:04:00 Method: EPA 8260C

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Fluorobenzene	1	0	I	4.40	30.00	30	**			0.000	0.00	
Chlorodifluoromethane	1	0		1.23	35.94	50	20	0.1	0.698	0.502	28.12	C1
Dichlorodifluoromethane	1	0		1.23	45.05	50	20	0.1	0.345	0.329	9.91	
Chloromethane	1	0		1.35	47.56	50	20	0.1	0.418	0.397	4.87	
Bromomethane	1	0		1.67	48.89	50	20	0.1	0.236	0.231	2.22	
Vinyl Chloride	1	0		1.43	49.32	50	20	0.1	0.436	0.430	1.36	
Chloroethane	1	0		1.75	49.49	50	20	0.1	0.252	0.250	1.03	
Trichlorofluoromethane	1	0		1.94	47.85	50	20	0.1	0.512	0.490	4.30	
Ethyl ether	1	0		2.13	53.32	50	20	0.5	0.127	0.136	6.63	
Furan	1	0		2.17	34.07	50	20	0.5	0.557	0.379	31.85	C1
1,1,2-Trichloro-1,2,2-trifluoroetha	1	0		2.31	47.65	50	20	0.1	0.307	0.292	4.70	
Methylene Chloride	1	0		2.64	45.71	50	20	0.1	0.300	0.274	8.59	
Acrolein	1	0		2.22	205.75	250	20		0.017	0.014	17.70	
Acrylonitrile	1	0		2.83	45.83	50	20		0.036	0.032	8.34	
Iodomethane	1	0		2.41	48.54	50	20		0.407	0.395	2.93	
Acetone	1	0		2.32	211.99	250	20	0.1	0.030	0.025	15.20	
Carbon Disulfide	1	0		2.47	47.90	50	20	0.1	1.295	1.241	4.19	
t-Butyl Alcohol	1	0		2.71	237.52	250	20		0.004	0.004	4.99	
n-Hexane	1	0		3.08	46.27	50	20		0.629	0.582	7.46	
Di-isopropyl-ether	1	0		3.23	42.65	50	20		1.024	0.873	14.70	
1,1-Dichloroethene	1	0		2.31	48.60	50	20	0.1	0.607	0.590	2.81	
Methyl Acetate	1	0		2.57	40.75	50	20	0.1	0.114	0.093	18.51	
Methyl-t-butyl ether	1	0		2.86	45.48	50	20	0.1	0.289	0.263	9.04	
1,1-Dichloroethane	1	0		3.17	46.29	50	20	0.2	0.640	0.592	7.42	
trans-1,2-Dichloroethene	1	0		2.87	48.90	50	20	0.1	0.327	0.320	2.20	
Ethyl-t-butyl ether	1	0		3.52	44.71	50	20	0.5	0.556	0.497	10.58	
cis-1,2-Dichloroethene	1	0		3.63	44.79	50	20	0.1	0.584	0.523	10.42	
Bromochloromethane	1	0		3.82	45.53	50	20		0.267	0.243	8.94	
2,2-Dichloropropane	1	0		3.64	50.94	50	20		0.385	0.393	1.88	
Ethyl acetate	1	0		3.68	42.54	50	20		0.114	0.096	14.92	
1,4-Dioxane	1	0		4.78	2357.40	2500	20		0.001	0.001	5.70	
1,1-Dichloropropene	1	0		4.12	47.06	50	20		0.585	0.551	5.89	
Chloroform	1	0		3.87	44.89	50	20	0.2	0.531	0.477	10.22	
Dibromofluoromethane	1	0	S	3.97	27.89	75	**		0.170	0.158	7.03	
Cyclohexane	1	0		4.06	45.63	50	20	0.1	0.750	0.685	8.73	
1,2-Dichloroethane-d4	1	0	S	4.19	28.67	75	**		0.079	0.076	4.45	
1,2-Dichloroethane	1	0		4.24	42.01	50	20	0.1	0.273	0.229	15.98	
2-Butanone	1	0		3.64	45.50	50	20	0.1	0.048	0.044	9.01	
1,1,1-Trichloroethane	1	0		4.01	46.42	50	20	0.1	0.482	0.448	7.15	
Carbon Tetrachloride	1	0		4.12	48.87	50	20	0.1	0.351	0.343	2.25	
Vinyl Acetate	1	0		3.23	41.14	50	20		0.547	0.450	17.73	
Bromodichloromethane	1	0		4.85	46.10	50	20	0.2	0.338	0.312	7.79	
Methylcyclohexane	1	0		4.72	50.34	50	20	0.1	0.619	0.623	0.67	
Dibromomethane	1	0		4.78	48.42	50	20		0.087	0.084	3.16	
1,2-Dichloropropane	1	0		4.72	46.60	50	20	0.1	0.331	0.309	6.81	
Trichloroethene	1	0		4.60	44.27	50	20	0.2	0.350	0.310	11.46	
Benzene	1	0		4.24	49.86	50	20	0.5	1.314	1.311	0.27	
tert-Amyl methyl ether	1	0		4.31	44.95	50	20		0.310	0.279	10.10	
Chlorobenzene-d5	1	0	I	5.97	30.00	30	**			0.000	0.00	
Iso-propylacetate	1	0		4.27	41.89	50	20	0.5	0.377	0.316	16.22	
Methyl methacrylate	1	0		4.76	37.87	50	20	0.5	0.207	0.167	24.27	C1
Dibromochloromethane	1	0		5.66	42.88	50	20	0.1	0.307	0.263	14.24	

S-Surrogate Compound I-Internal Standard Compound

N/O or N/Q - Not applicable for this run C1-Compound %Diff exceeds limits ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL @ 50 PPB **Data File:** 6M32667.D **Instrument:** GCMS 6

Cont Calibration Date/Time 11/2/2015 10:04:00 Method: EPA 8260C

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
2-Chloroethylvinylether	1	0		5.01	28.46	50	20		0.042	0.026	43.07	C1
cis-1,3-Dichloropropene	1	0		5.08	46.13	50	20	0.2	0.701	0.647	7.73	
trans-1,3-Dichloropropene	1	0		5.36	43.10	50	20	0.1	0.424	0.400	13.80	
Ethyl methacrylate	1	0		5.40	40.72	50	20	0.5	0.232	0.216	18.56	
1,1,2-Trichloroethane	1	0		5.45	43.18	50	20	0.1	0.286	0.247	13.65	
1,2-Dibromoethane	1	0		5.73	43.64	50	20	0.1	0.237	0.207	12.72	
1,3-Dichloropropane	1	0		5.54	43.08	50	20		0.534	0.460	13.85	
4-Methyl-2-Pentanone	1	0		5.16	42.80	50	20	0.1	0.191	0.163	14.41	
2-Hexanone	1	0		5.58	40.78	50	20	0.1	0.089	0.091	18.44	
Tetrachloroethene	1	0		5.55	47.53	50	20	0.2	0.506	0.481	4.94	
Toluene-d8	1	0	S	5.23	28.18	75	**		1.518	1.426	6.07	
Toluene	1	0		5.26	47.07	50	20	0.4	1.438	1.354	5.87	
1,1,1,2-Tetrachloroethane	1	0		6.02	43.21	50	20		0.378	0.327	13.59	
Chlorobenzene	1	0		5.98	45.04	50	20	0.5	1.291	1.163	9.91	
1,4-Dichlorobenzene-d4	1	0	I	7.19	30.00	30	**			0.000	0.00	
n-Butyl acrylate	1	0		6.24	37.82	50	20	0.5	0.968	0.916	24.36	C1
n-Amyl acetate	1	0		6.36	35.95	50	20	0.5	0.779	0.757	28.10	C1
Bromoform	1	0		6.40	44.29	50	20	0.1	0.364	0.322	11.41	
Ethylbenzene	1	0		6.03	55.52	50	20	0.1	1.586	1.761	11.04	
1,1,2,2-Tetrachloroethane	1	0		6.62	40.95	50	20	0.1	0.709	0.581	18.09	
Bromofluorobenzene	1	0	S	6.57	27.85	75	**		0.720	0.669	7.17	
Styrene	1	0		6.30	47.09	50	20	0.3	2.742	2.582	5.83	
m&p-Xylenes	1	0		6.09	89.53	100	20	0.1	2.067	1.851	10.47	
o-Xylene	1	0		6.29	51.38	50	20	0.3	1.767	1.816	2.77	
trans-1,4-Dichloro-2-butene	1	0		6.64	45.26	50	20		0.515	0.466	9.49	
1,3-Dichlorobenzene	1	0		7.16	47.75	50	20	0.6	1.835	1.752	4.50	
1,4-Dichlorobenzene	1	0		7.21	44.11	50	20	0.5	1.901	1.677	11.77	
1,2-Dichlorobenzene	1	0		7.42	45.60	50	20	0.4	1.523	1.389	8.80	
Isopropylbenzene	1	0		6.48	49.87	50	20	0.1	5.381	5.367	0.26	
Cyclohexanone	1	0		6.63	207.53	250	20		0.056	0.046	16.99	
Camphene	1	0		6.64	46.21	50	20		2.190	2.024	7.59	
1,2,3-Trichloropropane	1	0		6.65	44.79	50	20		0.697	0.624	10.43	
2-Chlorotoluene	1	0		6.75	51.37	50	20		3.950	4.058	2.74	
p-Ethyltoluene	1	0		6.75	51.12	50	20		5.288	5.406	2.23	
4-Chlorotoluene	1	0		6.81	51.47	50	20		3.494	3.597	2.95	
n-Propylbenzene	1	0		6.69	51.48	50	20		7.023	7.230	2.95	
Bromobenzene	1	0		6.66	45.21	50	20		2.627	2.375	9.59	
1,3,5-Trimethylbenzene	1	0		6.78	43.48	50	20		4.251	3.696	13.05	
Butyl methacrylate	1	0		6.80	39.61	50	20	0.5	1.155	1.133	20.77	C1
t-Butylbenzene	1	0		6.96	50.46	50	20		3.894	3.930	0.92	
1,2,4-Trimethylbenzene	1	0		6.99	46.80	50	20		4.048	3.789	6.40	
sec-Butylbenzene	1	0		7.09	48.76	50	20		6.130	5.978	2.48	
4-Isopropyltoluene	1	0		7.16	50.43	50	20		4.302	4.339	0.85	
n-Butylbenzene	1	0		7.39	49.81	50	20		5.782	5.759	0.39	
p-Diethylbenzene	1	0		7.37	48.68	50	20		2.516	2.450	2.64	
1,2,4,5-Tetramethylbenzene	1	0		7.81	48.81	50	20		2.947	2.877	2.38	
1,2-Dibromo-3-Chloropropane	1	0		7.84	44.58	50	20	0.05	0.063	0.062	10.85	
Camphor	1	0		8.26	449.80	500	20		0.040	0.041	10.04	
Hexachlorobutadiene	1	0		8.42	45.69	50	20		0.761	0.695	8.62	
1,2,4-Trichlorobenzene	1	0		8.33	47.35	50	20	0.2	0.783	0.741	5.31	
1,2,3-Trichlorobenzene	1	0		8.61	45.77	50	20		0.587	0.537	8.46	
Naphthalene	1	0		8.47	39.96	50	20		1.002	0.800	20.08	

S-Surrogate Compound I-Internal Standard Compound

N/O or N/Q - Not applicable for this run C1-Compound %Diff exceeds limits ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

FORM8

Internal Standard Areas

Evaluation Std Data File: 6M32592.D Method: EPA 8260C

Analysis Date/Time: 10/30/15 09:51

Lab File ID: CAL @ 20 PPB

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	469576	4.40	237970	5.97	100095	7.20						
Eval File Area Limit:	234788-939152		118985-475940		50048-200190							
Eval File Rt Limit:	3.9-4.9		5.47-6.47		6.7-7.7							

Data File	Sample											
6M32588.D	CAL @ 0.5 PF	409399	4.40	217467	5.97	83873	7.20					
6M32589.D	CAL @ 1 PPB	429549	4.40	227747	5.97	94928	7.20					
6M32590.D	CAL @ 2 PPB	447518	4.40	225539	5.97	97385	7.20					
6M32591.D	CAL @ 5 PPB	457388	4.40	237015	5.97	102587	7.20					
6M32592.D	CAL @ 20 PP	469576	4.40	237970	5.97	100095	7.20					
6M32593.D	CAL @ 50 PP	504160	4.41	273533	5.97	111551	7.20					
6M32594.D	CAL @ 500 P	480928	4.41	251640	5.97	107780	7.19					
6M32596.D	CAL @ 250 P	500809	4.40	258026	5.97	106798	7.19					
6M32598.D	CAL @ 100 P	445767	4.40	247081	5.97	104802	7.19					
6M32600.D	BLK	450248	4.40	236580	5.97	96718	7.20					
6M32602.D	ICV	465482	4.41	251464	5.97	111000	7.20					
6M32603.D	BLK	453059	4.40	235722	5.97	92707	7.20					
6M32604.D	BLK	431125	4.40	223635	5.97	91473	7.20					
6M32605.D	DAILY BLANK	434770	4.41	242670	5.97	94213	7.20					
6M32606.D	MBS47888	494815	4.40	255448	5.97	114810	7.19					
6M32607.D	BLK	464033	4.40	231110	5.97	92853	7.20					
6M32608.D	AC87752-005	495241	4.40	260373	5.97	105636	7.20					
6M32609.D	AC87752-006	429094	4.40	230949	5.97	96402	7.20					
6M32610.D	AC87752-008	456001	4.40	246682	5.97	99616	7.20					
6M32611.D	AC87752-011	464419	4.40	229722	5.97	91928	7.20					
6M32612.D	AC87752-012	468223	4.40	242467	5.97	96370	7.20					
6M32613.D	AC87752-009	412879	4.40	227149	5.97	88602	7.20					
6M32614.D	AC87752-007	462797	4.40	256654	5.97	98567	7.20					
6M32615.D	AC87752-001	310384	4.40	243260	5.97	97246	7.20					
6M32616.D	AC87752-003	300809	4.40	122894	5.97	109602	7.28					

I1 =	Fluorobenzene	I4 =	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Chlorobenzene-d5	I5 =	624/8260 Internal Standard concentration = 30ug/L
I3 =	1.4-Dichlorobenzene-d4	I6 =	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

FORM8

Internal Standard Areas

Evaluation Std Data File: 6M32667.D Method: EPA 8260C

Analysis Date/Time: 11/02/15 10:04

Lab File ID: CAL @ 50 PPB

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	490908	4.40	261994	5.97	111414	7.19						
Eval File Area Limit:	245454-981816		130997-523988		55707-222828							
Eval File Rt Limit:	3.9-4.9		5.47-6.47		6.69-7.69							

Data File	Sample											
6M32665.D	BLK	275196	4.40	250179	5.97	105095	7.19					
6M32666.D	50 PPB	480367	4.40	262108	5.97	117699	7.19					
6M32668.D	BLK	445639	4.40	237810	5.97	94805	7.20					
6M32669.D	BLK	445797	4.40	236083	5.97	97330	7.20					
6M32670.D	DAILY BLANK	459519	4.40	257733	5.97	105560	7.20					
6M32671.D	MBS47899	473674	4.40	268742	5.97	114853	7.19					
6M32672.D	BLK	437049	4.40	229506	5.97	95763	7.19					
6M32673.D	AC87880-002	225514 A	4.40	121281 A	5.97	49414 A	7.20					
6M32674.D	AC87879-001	423464	4.40	237585	5.97	85053	7.19					
6M32675.D	AC87878-008	419668	4.40	229909	5.97	85135	7.20					
6M32676.D	AC87922-001	398470	4.40	212884	5.97	83315	7.20					
6M32677.D	AC87922-002	381463	4.40	214313	5.97	86356	7.20					
6M32678.D	AC87755-008(	386829	4.40	204969	5.97	82055	7.19					
6M32679.D	BLK	467818	4.40	261684	5.97	116924	7.19					
6M32680.D	AC87878-001	0 A	0.00 R	0 A	0.00 R	250 A	7.29					
6M32681.D	AC87837-001	442703	4.40	240454	5.97	96931	7.20					
6M32682.D	AC87861-001	490909	4.40	259306	5.97	102760	7.20					
6M32683.D	AC87876-004	433399	4.40	230591	5.97	95427	7.19					
6M32684.D	AC87877-001	412884	4.40	222746	5.97	86475	7.19					
6M32685.D	AC87766-004	436284	4.40	233056	5.97	94341	7.19					
6M32686.D	AC87792-002	370288	4.40	210676	5.97	86024	7.20					
6M32687.D	BLK	447271	4.40	228447	5.97	90899	7.20					
6M32688.D	AC87878-001	82639 A	4.41	39311 A	5.97	12851 A	7.22					
6M32689.D	AC87824-009	299820	4.40	90632 A	5.97	22279 A	7.22					
6M32690.D	AC87768-001	486596	4.40	272383	5.97	137739	7.19					
6M32691.D	AC87792-001	449722	4.40	245601	5.97	107395	7.19					
6M32692.D	MBS47903	404625	4.40	278366	5.97	115683	7.19					
6M32693.D	87878-001	91930 A	4.40	73357 A	5.97	26083 A	7.20					
6M32694.D	AC87819-002	349368	4.40	257736	5.97	100355	7.20					
6M32695.D	AC87768-001(	262539	4.40	247184	5.97	114305	7.19					
6M32696.D	AC87824-009(	271605	4.40	176230	5.96	46128 A	7.19					
6M32697.D	AC87819-002(	405169	4.40	280287	5.97	119392	7.19					
6M32698.D	AC87819-002(	424685	4.40	273130	5.97	117683	7.19					
6M32699.D	AC87906-001	452994	4.40	246644	5.97	104436	7.19					
6M32700.D	AC87906-002	452104	4.40	241757	5.97	107052	7.19					
6M32701.D	AC87906-003	437374	4.40	242008	5.97	95669	7.20					
6M32702.D	AC87906-004	422778	4.40	238430	5.97	93415	7.19					
6M32703.D	AC87906-005	436169	4.40	239386	5.97	96897	7.19					
6M32704.D	MBS47910	453499	4.40	229058	5.96	109198	7.19					
6M32705.D	BLK	429027	4.40	245962	5.97	102724	7.19					
6M32706.D	BLK	421380	4.40	226875	5.97	89586	7.19					
6M32707.D	BLK	436084	4.40	225781	5.97	98189	7.19					
6M32708.D	BLK	368684	4.40	207031	5.97	80048	7.20					
6M32709.D	BLK	413699	4.40	222380	5.97	95393	7.19					

I1 =	Fluorobenzene	I4 =	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Chlorobenzene-d5	I5 =	624/8260 Internal Standard concentration = 30ug/L
I3 =	1.4-Dichlorobenzene-d4	I6 =	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Semi-Volatile Data

Form1

ORGANICS SEMIVOLATILE REPORT

Sample Number: AC87819-001
Client Id: Quarry Material COMP
Data File: 7M72987.D
Analysis Date: 10/30/15 17:01
Date Rec/Extracted: 10/26/15-10/30/15
Column: DB-5MS 30M 0.250mm ID 0.25um film

Method: EPA 8270D
Matrix: Soil
Initial Vol: 30g
Final Vol: 0.5ml
Dilution: 1
Solids: 97

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
92-52-4	1,1'-Biphenyl	0.034	U	205-99-2	Benzo[b]fluoranthene	0.034	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.034	U	191-24-2	Benzo[g,h,i]perylene	0.034	U
58-90-2	2,3,4,6-Tetrachlorophenol	0.034	U	207-08-9	Benzo[k]fluoranthene	0.034	U
95-95-4	2,4,5-Trichlorophenol	0.034	U	111-91-1	bis(2-Chloroethoxy)methan	0.034	U
88-06-2	2,4,6-Trichlorophenol	0.034	U	111-44-4	bis(2-Chloroethyl)ether	0.0086	U
120-83-2	2,4-Dichlorophenol	0.0086	U	108-60-1	bis(2-chloroisopropyl)ether	0.034	U
105-67-9	2,4-Dimethylphenol	0.0086	U	117-81-7	bis(2-Ethylhexyl)phthalate	0.034	U
51-28-5	2,4-Dinitrophenol	0.17	U	85-68-7	Butylbenzylphthalate	0.034	U
121-14-2	2,4-Dinitrotoluene	0.034	U	105-60-2	Caprolactam	0.034	U
606-20-2	2,6-Dinitrotoluene	0.034	U	86-74-8	Carbazole	0.034	U
91-58-7	2-Chloronaphthalene	0.034	U	218-01-9	Chrysene	0.034	U
95-57-8	2-Chlorophenol	0.034	U	53-70-3	Dibenzo[a,h]anthracene	0.034	U
91-57-6	2-Methylnaphthalene	0.034	U	132-64-9	Dibenzofuran	0.0086	U
95-48-7	2-Methylphenol	0.0086	U	84-66-2	Diethylphthalate	0.034	U
88-74-4	2-Nitroaniline	0.034	U	131-11-3	Dimethylphthalate	0.034	U
88-75-5	2-Nitrophenol	0.034	U	84-74-2	Di-n-butylphthalate	0.0086	U
106-44-5	3&4-Methylphenol	0.0086	U	117-84-0	Di-n-octylphthalate	0.034	U
91-94-1	3,3'-Dichlorobenzidine	0.034	U	206-44-0	Fluoranthene	0.034	U
99-09-2	3-Nitroaniline	0.034	U	86-73-7	Fluorene	0.034	U
534-52-1	4,6-Dinitro-2-methylphenol	0.17	U	118-74-1	Hexachlorobenzene	0.034	U
101-55-3	4-Bromophenyl-phenylether	0.034	U	87-68-3	Hexachlorobutadiene	0.034	U
59-50-7	4-Chloro-3-methylphenol	0.034	U	77-47-4	Hexachlorocyclopentadiene	0.067	U
106-47-8	4-Chloroaniline	0.0086	U	67-72-1	Hexachloroethane	0.034	U
7005-72-3	4-Chlorophenyl-phenylether	0.034	U	193-39-5	Indeno[1,2,3-cd]pyrene	0.034	U
100-01-6	4-Nitroaniline	0.034	U	78-59-1	Isophorone	0.034	U
100-02-7	4-Nitrophenol	0.034	U	91-20-3	Naphthalene	0.0086	U
83-32-9	Acenaphthene	0.034	U	98-95-3	Nitrobenzene	0.034	U
208-96-8	Acenaphthylene	0.034	U	621-64-7	N-Nitroso-di-n-propylamine	0.0086	U
98-86-2	Acetophenone	0.034	U	86-30-6	n-Nitrosodiphenylamine	0.034	U
120-12-7	Anthracene	0.034	U	87-86-5	Pentachlorophenol	0.17	U
1912-24-9	Atrazine	0.034	U	85-01-8	Phenanthrene	0.034	U
100-52-7	Benzaldehyde	0.034	U	108-95-2	Phenol	0.034	U
56-55-3	Benzo[a]anthracene	0.034	U	129-00-0	Pyrene	0.034	U
50-32-8	Benzo[a]pyrene	0.034	U				

Worksheet #: 362777

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

N-Nitrosodiphenylamine decomposes in the GC inlet and is detected as diphenylamine

Chlordane (Total) is sum of a-Chlordane and y-Chlordane.

Form1e

ORGANICS SEMIVOLATILE REPORT
Tentatively Identified Compounds

Sample Number: AC87819-001
Client Id: Quarry Material COMP
Data File: 7M72987.D
Analysis Date: 10/30/15 17:01
Date Rec/Extracted: 10/26/15-10/30/15

Matrix: Soil
Initial Vol: 30g
Final Vol: 0.5ml
Dilution: 1
Solids: 97
Method: EPA 8270D

Units: mg/Kg

	Cas #	Compound	RT	Conc
1		unknown	3.99	0.72 JB
2	123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	4.32	43 JAB
3		unknown	5.01	0.24 JB
4	5131-66-8	2-Propanol, 1-butoxy-	5.21	0.13 JB
5	611-14-3	Benzene, 1-ethyl-2-methyl-	5.40	0.072 JB
6	108-67-8	Benzene, 1,3,5-trimethyl-	5.65	0.13 JB

Worksheet #: 362777

Total Tentatively Identified Concentration 44

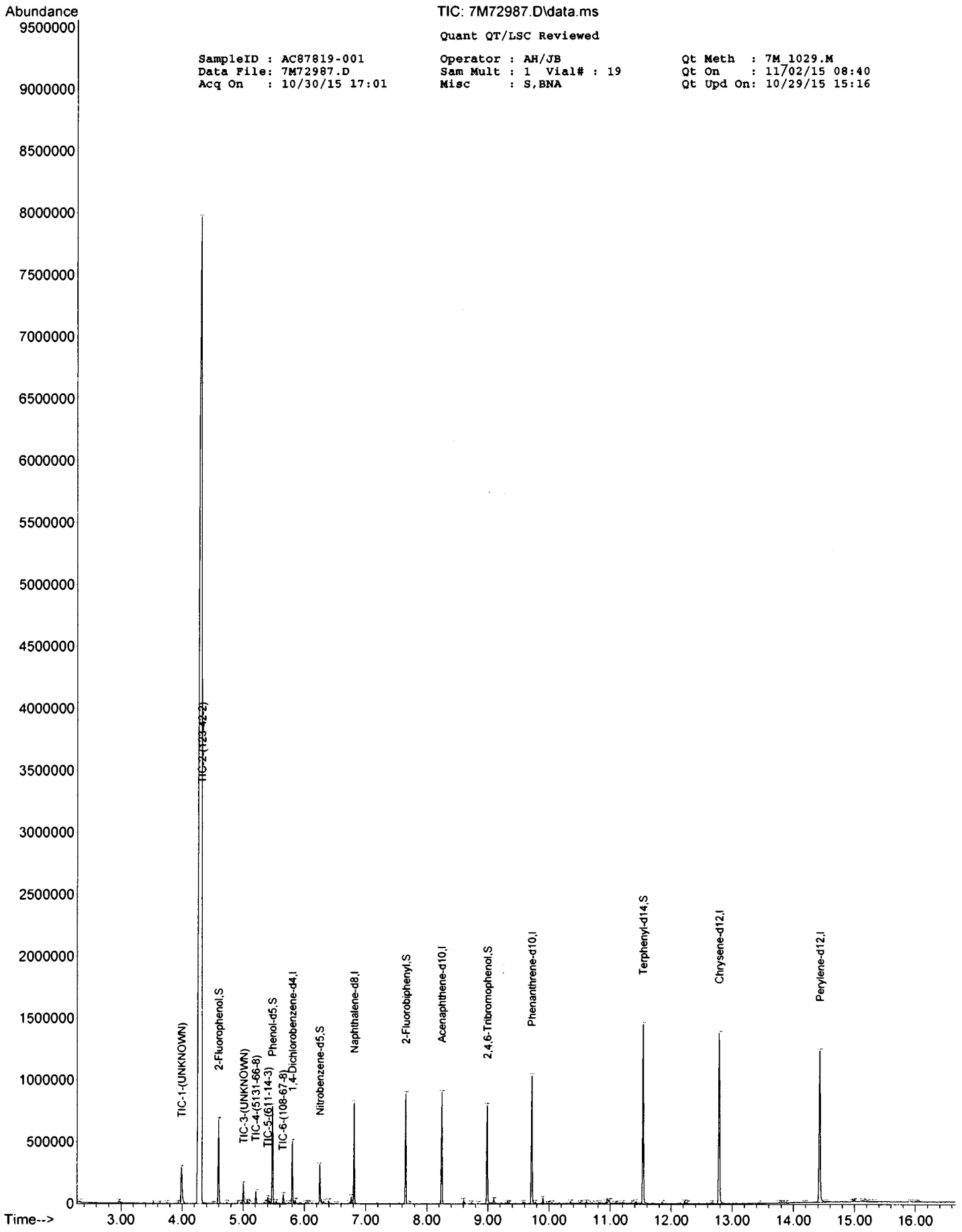
A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.
Y - Indicates the analyte was found in the blank at <10% of the concentration of the sample.
<10% - Indicates the analyte was found in the blank at < 10% of nearest Internal Standard

SampleID : AC87819-001 Operator : AH/JB Qt Meth : 7M_1029.M
Data File: 7M72987.D Sam Mult : 1 Vial# : 19 Qt On : 11/02/15 08:40
Acq On : 10/30/15 17:01 Misc : S,BNA Qt Upd On: 10/29/15 15:16

Data Path : G:\GcMsData\2015\GCMS_7\Data\10-30-15\
Qt Path : G:\GCMSDATA\2015\GCMS_7\METHODQT\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
7) 1,4-Dichlorobenzene-d4	5.802	152	69113	40.00	ng	0.00
29) Naphthalene-d8	6.812	136	301117	40.00	ng	-0.03
47) Acenaphthene-d10	8.244	164	195343	40.00	ng	-0.07
74) Phenanthrene-d10	9.718	188	441513	40.00	ng	-0.05
88) Chrysene-d12	12.785	240	570982	40.00	ng	-0.03
100) Perylene-d12	14.430	264	550961	40.00	ng	-0.05
System Monitoring Compounds						
10) 2-Fluorophenol	4.595	112	189663	77.86	ng	0.00
Spiked Amount 100.000			Recovery = 77.86%			
15) Phenol-d5	5.476	99	271875	76.54	ng	0.00
Spiked Amount 100.000			Recovery = 76.54%			
30) Nitrobenzene-d5	6.251	128	44387	33.69	ng	-0.01
Spiked Amount 50.000			Recovery = 67.38%			
52) 2-Fluorobiphenyl	7.656	172	263191	41.29	ng	-0.06
Spiked Amount 50.000			Recovery = 82.58%			
77) 2,4,6-Tribromophenol	8.992	330	100291	90.01	ng	-0.06
Spiked Amount 100.000			Recovery = 90.01%			
91) Terphenyl-d14	11.535	244	440680	52.13	ng	-0.02
Spiked Amount 50.000			Recovery = 104.26%			
Target Compounds						Qvalue
Library Search Internal Standards TIC Results						
1) 1,4-Dichlorobenzene-d4	5.802		385008	40.00	ng	--
2) Naphthalene-d8	6.812		600684	40.00	ng	--
3) Acenaphthene-d10	8.244		780723	40.00	ng	--
4) Phenanthrene-d10	9.718		1053960	40.00	ng	--
5) Chrysene-d12	12.785		1499040	40.00	ng	--
6) Perylene-d12	14.430		1625690	40.00	ng	--
Library Search Compounds						
1) UNKNOWN	3.990		403525	41.92	ng	--
2) 123-42-2	4.320		23911668	2484.28	ng	74
3) UNKNOWN	5.010		131902	13.70	ng	--
4) 5131-66-8	5.210		75332	7.83	ng	78
5) 611-14-3	5.400		40345	4.19	ng	94
6) 108-67-8	5.650		73012	7.59	ng	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 7M72987.D\data.ms
Quant QT/LSC Reviewed
SampleID : AC87819-001
Data File: 7M72987.D
Acq On : 10/30/15 17:01
Operator : AH/JB
Sam Mult : 1 Vial# : 19
Misc : S,BNA
Qt Meth : 7M_1029.M
Qt On : 11/02/15 08:40
Qt Upd On: 10/29/15 15:16
9500000
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Time-->
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10.00
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13.00
14.00
15.00
16.00
TIC-1-(UNKNOWN)
2-Fluorophenol,S
TIC-3-(UNKNOWN)
TIC-4-(5131-66-8)
TIC-5-(611-14-3)
Phenol-d5,S
TIC-6-(108-67-8)
1,4-Dichlorobenzene-d4,I
Nitrobenzene-d5,S
Naphthalene-d8,I
2-Fluorobiphenyl,S
Acenaphthene-d10,I
2,4,6-Tribromophenol,S
Phenanthrene-d10,I
Terphenyl-d14,S
Chrysene-d12,I
Perylene-d12,I

Form1

ORGANICS SEMIVOLATILE REPORT

Sample Number: SMB46140
Client Id:
Data File: 7M72982.D
Analysis Date: 10/30/15 15:04
Date Rec/Extracted: NA-10/30/15
Column: DB-5MS 30M 0.250mm ID 0.25um film

Method: EPA 8270D
Matrix: Soil
Initial Vol: 30g
Final Vol: 0.5ml
Dilution: 1
Solids: 100

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
92-52-4	1,1'-Biphenyl	0.033	U	205-99-2	Benzo[b]fluoranthene	0.033	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.033	U	191-24-2	Benzo[g,h,i]perylene	0.033	U
58-90-2	2,3,4,6-Tetrachlorophenol	0.033	U	207-08-9	Benzo[k]fluoranthene	0.033	U
95-95-4	2,4,5-Trichlorophenol	0.033	U	111-91-1	bis(2-Chloroethoxy)methan	0.033	U
88-06-2	2,4,6-Trichlorophenol	0.033	U	111-44-4	bis(2-Chloroethyl)ether	0.0083	U
120-83-2	2,4-Dichlorophenol	0.0083	U	108-60-1	bis(2-chloroisopropyl)ether	0.033	U
105-67-9	2,4-Dimethylphenol	0.0083	U	117-81-7	bis(2-Ethylhexyl)phthalate	0.033	U
51-28-5	2,4-Dinitrophenol	0.17	U	85-68-7	Butylbenzylphthalate	0.033	U
121-14-2	2,4-Dinitrotoluene	0.033	U	105-60-2	Caprolactam	0.033	U
606-20-2	2,6-Dinitrotoluene	0.033	U	86-74-8	Carbazole	0.033	U
91-58-7	2-Chloronaphthalene	0.033	U	218-01-9	Chrysene	0.033	U
95-57-8	2-Chlorophenol	0.033	U	53-70-3	Dibenzo[a,h]anthracene	0.033	U
91-57-6	2-Methylnaphthalene	0.033	U	132-64-9	Dibenzofuran	0.0083	U
95-48-7	2-Methylphenol	0.0083	U	84-66-2	Diethylphthalate	0.033	U
88-74-4	2-Nitroaniline	0.033	U	131-11-3	Dimethylphthalate	0.033	U
88-75-5	2-Nitrophenol	0.033	U	84-74-2	Di-n-butylphthalate	0.0083	U
106-44-5	3&4-Methylphenol	0.0083	U	117-84-0	Di-n-octylphthalate	0.033	U
91-94-1	3,3'-Dichlorobenzidine	0.033	U	206-44-0	Fluoranthene	0.033	U
99-09-2	3-Nitroaniline	0.033	U	86-73-7	Fluorene	0.033	U
534-52-1	4,6-Dinitro-2-methylphenol	0.17	U	118-74-1	Hexachlorobenzene	0.033	U
101-55-3	4-Bromophenyl-phenylether	0.033	U	87-68-3	Hexachlorobutadiene	0.033	U
59-50-7	4-Chloro-3-methylphenol	0.033	U	77-47-4	Hexachlorocyclopentadiene	0.065	U
106-47-8	4-Chloroaniline	0.0083	U	67-72-1	Hexachloroethane	0.033	U
7005-72-3	4-Chlorophenyl-phenylether	0.033	U	193-39-5	Indeno[1,2,3-cd]pyrene	0.033	U
100-01-6	4-Nitroaniline	0.033	U	78-59-1	Isophorone	0.033	U
100-02-7	4-Nitrophenol	0.033	U	91-20-3	Naphthalene	0.0083	U
83-32-9	Acenaphthene	0.033	U	98-95-3	Nitrobenzene	0.033	U
208-96-8	Acenaphthylene	0.033	U	621-64-7	N-Nitroso-di-n-propylamine	0.0083	U
98-86-2	Acetophenone	0.033	U	86-30-6	n-Nitrosodiphenylamine	0.033	U
120-12-7	Anthracene	0.033	U	87-86-5	Pentachlorophenol	0.17	U
1912-24-9	Atrazine	0.033	U	85-01-8	Phenanthrene	0.033	U
100-52-7	Benzaldehyde	0.033	U	108-95-2	Phenol	0.033	U
56-55-3	Benzo[a]anthracene	0.033	U	129-00-0	Pyrene	0.033	U
50-32-8	Benzo[a]pyrene	0.033	U				

Worksheet #: 362777

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

N-Nitrosodiphenylamine decomposes in the GC inlet and is detected as diphenylamine

Chlordane (Total) is sum of a-Chlordane and y-Chlordane.

Form1e

ORGANICS SEMIVOLATILE REPORT
Tentatively Identified Compounds

Sample Number: SMB46140
Client Id:
Data File: 7M72982.D
Analysis Date: 10/30/15 15:04
Date Rec/Extracted: NA-10/30/15

Matrix: Soil
Initial Vol: 30g
Final Vol: 0.5ml
Dilution: 1
Solids: 100
Method: EPA 8270D

Units: mg/Kg

	Cas #	Compound	RT	Conc
1		unknown	3.99	0.70 J
2	123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	4.30	48 JA
3		unknown	5.01	0.22 J
4	5131-66-8	2-Propanol, 1-butoxy-	5.21	0.086 J
5	611-14-3	Benzene, 1-ethyl-2-methyl-	5.40	0.069 J
6	108-67-8	Benzene, 1,3,5-trimethyl-	5.65	0.13 J

Worksheet #: 362777

Total Tentatively Identified Concentration 49

A - Indicates an aldol condensate.
J - Indicates an estimated value.
B - Indicates the analyte was found in the blank as well as in the sample.
Y - Indicates the analyte was found in the blank at <10% of the concentration of the sample.
<10% - Indicates the analyte was found in the blank at < 10% of nearest Internal Standard

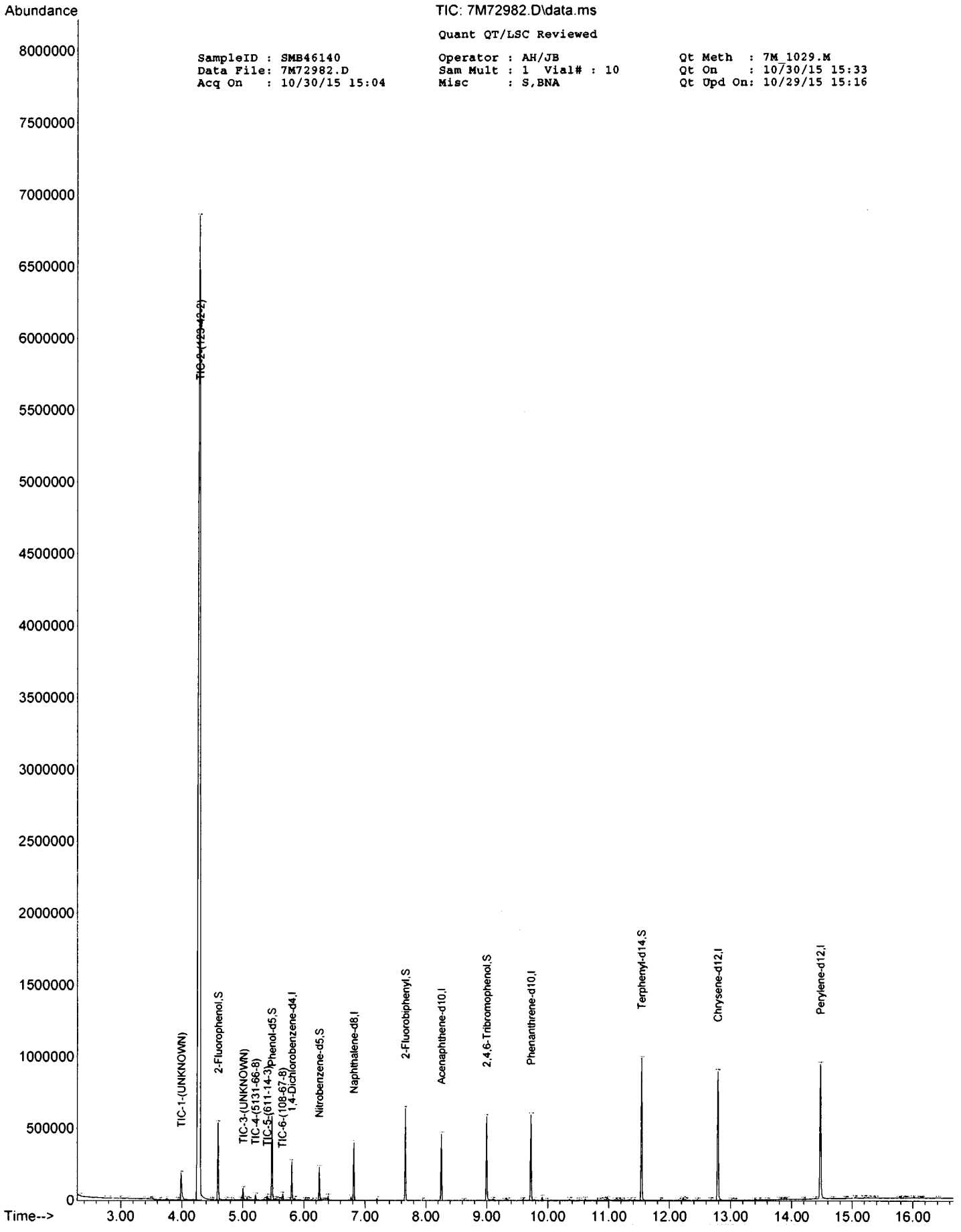
Quantitation Report (QT/LSC Reviewed)

SampleID : SMB46140 Operator : AH/JB Qt Meth : 7M_1029.M
Data File: 7M72982.D Sam Mult : 1 Vial# : 10 Qt On : 10/30/15 15:33
Acq On : 10/30/15 15:04 Misc : S,BNA Qt Upd On: 10/29/15 15:16

Data Path : G:\GcMsData\2015\GCMS_7\Data\10-30-15\
Qt Path : G:\GCMSDATA\2015\GCMS_7\METHODQT\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
7) 1,4-Dichlorobenzene-d4	5.802	152	37590	40.00	ng	0.00
29) Naphthalene-d8	6.817	136	152605	40.00	ng	-0.03
47) Acenaphthene-d10	8.254	164	95638	40.00	ng	-0.06
74) Phenanthrene-d10	9.724	188	239523	40.00	ng	-0.04
88) Chrysene-d12	12.790	240	373437	40.00	ng	-0.02
100) Perylene-d12	14.473	264	407542	40.00	ng	-0.01
System Monitoring Compounds						
10) 2-Fluorophenol	4.595	112	151774	114.56	ng	0.00
Spiked Amount 100.000			Recovery =	114.56%		
15) Phenol-d5	5.476	99	202966	105.06	ng	0.00
Spiked Amount 100.000			Recovery =	105.06%		
30) Nitrobenzene-d5	6.251	128	32481	48.64	ng	-0.01
Spiked Amount 50.000			Recovery =	97.28%		
52) 2-Fluorobiphenyl	7.661	172	175528	56.24	ng	-0.06
Spiked Amount 50.000			Recovery =	112.48%		
77) 2,4,6-Tribromophenol	8.997	330	64718	106.24	ng	-0.05
Spiked Amount 100.000			Recovery =	106.24%		
91) Terphenyl-d14	11.535	244	305123	55.19	ng	-0.02
Spiked Amount 50.000			Recovery =	110.38%		
Target Compounds						Qvalue
Library Search Internal Standards TIC Results						
1) 1,4-Dichlorobenzene-d4	5.802		209387	40.00	ng	--
2) Naphthalene-d8	6.817		306020	40.00	ng	--
3) Acenaphthene-d10	8.254		385096	40.00	ng	--
4) Phenanthrene-d10	9.724		573060	40.00	ng	--
5) Chrysene-d12	12.790		981064	40.00	ng	--
6) Perylene-d12	14.473		1184200	40.00	ng	--
Library Search Compounds						
1) UNKNOWN	3.990		220001	42.03	ng	--
2) 123-42-2	4.300		15129754	2890.29	ng	64
3) UNKNOWN	5.010		68589	13.10	ng	--
4) 5131-66-8	5.210		27035	5.16	ng	90
5) 611-14-3	5.400		21811	4.17	ng	95
6) 108-67-8	5.650		42005	8.02	ng	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 7M72982.D\data.ms
Quant QT/LSC Reviewed
SampleID : SMB46140
Data File: 7M72982.D
Acq On : 10/30/15 15:04
Operator : AH/JB
Sam Mult : 1 Vial# : 10
Misc : S,BNA
Qt Meth : 7M_1029.M
Qt On : 10/30/15 15:33
Qt Upd On: 10/29/15 15:16
8000000
7500000
7000000
6500000
6000000
5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
TIC-1-(UNKNOWN)
2-Fluorophenol,S
TIC-3-(UNKNOWN)
TIC-4-(5131-66-8)
TIC-5-(611-14-3)
Phenol-d5,S
TIC-6-(108-67-8)
1,4-Dichlorobenzene-d4,I
Nitrobenzene-d5,S
Naphthalene-d8,I
2-Fluorobiphenyl,S
Acenaphthene-d10,I
2,4,6-Tribromophenol,S
Phenanthrene-d10,I
Terphenyl-d14,S
Chrysene-d12,I
Perylene-d12,I
Time-->
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
11.00
12.00
13.00
14.00
15.00
16.00

FORM2

Surrogate Recovery

Method: EPA 8270D

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column1 S2 Recov	Column1 S3 Recov	Column1 S4 Recov	Column1 S5 Recov	Column1 S6 Recov
7M72982.D	SMB46140	S	10/30/15 15:04	1		115	105	97	112	106	110
7M72987.D	AC87819-001	S	10/30/15 17:01	1		78	77	67	83	90	104
5M92835.D	SMB46140(MS)	S	10/30/15 11:19	1		92	93	96	105	134 *	129
7M72983.D	AC87816-001(5X)	S	10/30/15 15:27	5	SD 11/3/15	73	74	161 *	114	78	94
7M72984.D	AC87816-002(5X)(MS:A	S	10/30/15 15:50	5	SD	79	81	175 *	114	94	98
7M72985.D	AC87816-003(5X)(MSD:	S	10/30/15 16:14	5	SD	73	77	230 *	111	93	95

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8270D

Soil Limits

Compound	Spike Amt	Limits
S1=2-Fluorophenol	100	30-130
S2=Phenol-d5	100	30-130
S3=Nitrobenzene-d5	50	30-130
S4=2-Fluorobiphenyl	50	30-130
S5=2,4,6-Tribromophenol	100	30-130
S6=Terphenyl-d14	50	30-130

Form3
Recovery Data
QC Batch: SMB46140

	Data File	Sample ID:	Analysis Date
Spike or Dup:	5M92835.D	SMB46140(MS)	10/30/2015 11:19:00 A
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8270D | Matrix: Soil | QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Pyridine	1	34.6823	0	50	69	20	160
N-Nitrosodimethylamine	1	38.6599	0	50	77	20	160
Benzaldehyde	1	45.2414	0	50	90	20	160
Aniline	1	35.2586	0	50	71	20	160
Pentachloroethane	1	41.7518	0	50	84	20	160
bis(2-Chloroethyl)ether	1	37.6977	0	50	75	70	130
Phenol	1	70.7742	0	100	71	20	160
2-Chlorophenol	1	76.0546	0	100	76	70	130
N-Decane	1	38.4458	0	50	77	20	160
1,3-Dichlorobenzene	1	38.5437	0	50	77	70	130
1,4-Dichlorobenzene	1	38.6768	0	50	77	70	130
1,2-Dichlorobenzene	1	38.9759	0	50	78	70	130
Benzyl alcohol	1	39.9163	0	50	80	20	160
bis(2-chloroisopropyl)ether	1	35.5621	0	50	71	70	130
2-Methylphenol	1	74.1224	0	100	74	70	130
Acetophenone	1	42.614	0	50	85	70	130
Hexachloroethane	1	40.358	0	50	81	20	160
N-Nitroso-di-n-propylamine	1	36.6939	0	50	73	70	130
3&4-Methylphenol	1	77.7046	0	100	78	20	160
Nitrobenzene	1	40.7979	0	50	82	70	130
Isophorone	1	35.4714	0	50	71	70	130
2-Nitrophenol	1	79.8208	0	100	80	70	130
2,4-Dimethylphenol	1	75.2616	0	100	75	70	130
Benzoic Acid	1	32.3848	0	100	32	20	160
bis(2-Chloroethoxy)methane	1	41.0059	0	50	82	70	130
2,4-Dichlorophenol	1	78.2863	0	100	78	70	130
1,2,4-Trichlorobenzene	1	41.2415	0	50	82	70	130
Naphthalene	1	41.0024	0	50	82	70	130
4-Chloroaniline	1	23.1279	0	50	46*	70	130
Hexachlorobutadiene	1	41.4575	0	50	83	70	130
Caprolactam	1	40.3412	0	50	81	20	160
4-Chloro-3-methylphenol	1	82.6992	0	100	83	70	130
2-Methylnaphthalene	1	41.2939	0	50	83	70	130
1,1'-Biphenyl	1	40.4377	0	50	81	70	130
1,2,4,5-Tetrachlorobenzene	1	45.9947	0	50	92	70	130
Hexachlorocyclopentadiene	1	35.5637	0	50	71	20	160
2,4,6-Trichlorophenol	1	87.6098	0	100	88	70	130
2,4,5-Trichlorophenol	1	95.0035	0	100	95	70	130
2-Chloronaphthalene	1	44.8962	0	50	90	70	130
1,4-Dimethylnaphthalene	1	43.2283	0	50	86	70	130
Diphenyl Ether	1	47.4031	0	50	95	70	130
2-Nitroaniline	1	50.3188	0	50	101	70	130
Coumarin	1	44.211	0	50	88	70	130
Acenaphthylene	1	45.1731	0	50	90	70	130
Dimethylphthalate	1	44.4321	0	50	89	70	130
2,6-Dinitrotoluene	1	46.2544	0	50	93	70	130
Acenaphthene	1	44.1904	0	50	88	70	130
3-Nitroaniline	1	39.788	0	50	80	70	130
2,4-Dinitrophenol	1	39.2117	0	100	39	20	160
Dibenzofuran	1	47.1756	0	50	94	70	130
2,4-Dinitrotoluene	1	42.3458	0	50	85	70	130
4-Nitrophenol	1	84.8138	0	100	85	20	160
2,3,4,6-Tetrachlorophenol	1	79.0946	0	100	79	70	130
Fluorene	1	43.6362	0	50	87	70	130
4-Chlorophenyl-phenylether	1	45.7399	0	50	91	70	130
Diethylphthalate	1	45.6543	0	50	91	70	130
4-Nitroaniline	1	44.4859	0	50	89	70	130
Atrazine	1	46.6512	0	50	93	70	130
4,6-Dinitro-2-methylphenol	1	61.1438	0	100	61*	70	130
n-Nitrosodiphenylamine	1	39.1268	0	50	78	70	130
1,2-Diphenylhydrazine	1	50.6938	0	50	101	70	130
4-Bromophenyl-phenylether	1	49.53	0	50	99	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB46140

Hexachlorobenzene	1	47.7234	0	50	95	70	130
N-Octadecane	1	54.6168	0	50	109	70	130
Pentachlorophenol	1	93.1699	0	100	93	20	160
Phenanthrene	1	49.2212	0	50	98	70	130
Anthracene	1	49.5682	0	50	99	70	130
Carbazole	1	46.1594	0	50	92	70	130
Di-n-butylphthalate	1	50.669	0	50	101	70	130
Fluoranthene	1	46.7821	0	50	94	70	130
Pyrene	1	50.3037	0	50	101	70	130
Benzidine	1	10.3329	0	50	21	20	160
Butylbenzylphthalate	1	51.5401	0	50	103	70	130
3,3'-Dichlorobenzidine	1	33.1718	0	50	66*	70	130
Benzo[a]anthracene	1	47.1588	0	50	94	70	130
Chrysene	1	49.3278	0	50	99	70	130
bis(2-Ethylhexyl)phthalate	1	51.3287	0	50	103	70	130
Di-n-octylphthalate	1	50.6103	0	50	101	70	130
Benzo[b]fluoranthene	1	49.5594	0	50	99	70	130
Benzo[k]fluoranthene	1	51.8228	0	50	104	70	130
Benzo[a]pyrene	1	48.7737	0	50	98	70	130
Indeno[1,2,3-cd]pyrene	1	49.4253	0	50	99	70	130
Dibenzo[a,h]anthracene	1	49.9663	0	50	100	70	130
Benzo[g,h,i]perylene	1	49.9922	0	50	100	70	130

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Form3
Recovery Data
QC Batch: SMB46140

	Data File	Sample ID:	Analysis Date
Spike or Dup:	7M72984.D	AC87816-002(5X)(MS:AC87816	10/30/2015 3:50:00 PM
Non Spike(If applicable):	7M72983.D	AC87816-001(5X)	10/30/2015 3:27:00 PM
Inst Blank(If applicable):			

Method: 8270D | Matrix: Soil | QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Pyridine	1	21.289	0	50	43	20	160
N-Nitrosodimethylamine	1	25.272	0	50	51	20	160
Benzaldehyde	1	61.418	0	50	123	20	160
Aniline	1	24.0815	0	50	48	20	160
Pentachloroethane	1	29.649	0	50	59	20	160
bis(2-Chloroethyl)ether	1	30.018	0	50	60*	70	130
Phenol	1	51.769	0	100	52	20	160
2-Chlorophenol	1	56.1615	0	100	56*	70	130
N-Decane	1	150.3305	0	50	301*	20	160
1,3-Dichlorobenzene	1	31.791	0	50	64*	70	130
1,4-Dichlorobenzene	1	31.1565	0	50	62*	70	130
1,2-Dichlorobenzene	1	31.0825	0	50	62*	70	130
Benzyl alcohol	1	37.255	0	50	75	20	160
bis(2-chloroisopropyl)ether	1	26.718	0	50	53*	70	130
2-Methylphenol	1	49.8405	0	100	50*	70	130
Acetophenone	1	28.8715	0	50	58*	70	130
Hexachloroethane	1	78.5375	0	50	157	20	160
N-Nitroso-di-n-propylamine	1	431.0555	0	50	862*	70	130
3&4-Methylphenol	1	68.6085	0	100	69	20	160
Nitrobenzene	1	90.361	0	50	181*	70	130
Isophorone	1	253.3855	0	50	507*	70	130
2-Nitrophenol	1	142.594	0	100	143*	70	130
2,4-Dimethylphenol	1	153.6365	0	100	154*	70	130
Benzoic Acid	1	0	0	100	0*	20	160
bis(2-Chloroethoxy)methane	1	73.102	0	50	146*	70	130
2,4-Dichlorophenol	1	107.0475	0	100	107	70	130
1,2,4-Trichlorobenzene	1	32.4165	0	50	65*	70	130
Naphthalene	1	148.5075	0	50	297*	70	130
4-Chloroaniline	1	21.6165	0	50	43*	70	130
Hexachlorobutadiene	1	41.5435	0	50	83	70	130
Caprolactam	1	978.53	0	50	1960*	20	160
4-Chloro-3-methylphenol	1	127.001	0	100	127	70	130
2-Methylnaphthalene	1	47.0005	0	50	94	70	130
1,1'-Biphenyl	1	46.908	0	50	94	70	130
1,2,4,5-Tetrachlorobenzene	1	36.506	0	50	73	70	130
Hexachlorocyclopentadiene	1	18.617	0	50	37	20	160
2,4,6-Trichlorophenol	1	92.7675	0	100	93	70	130
2,4,5-Trichlorophenol	1	87.6335	0	100	88	70	130
2-Chloronaphthalene	1	35.025	0	50	70	70	130
1,4-Dimethylnaphthalene	1	447.7955	0	50	896*	70	130
Diphenyl Ether	1	36.317	0	50	73	70	130
2-Nitroaniline	1	31.5815	0	50	63*	70	130
Coumarin	1	77.3765	0	50	155*	70	130
Acenaphthylene	1	46.8525	0	50	94	70	130
Dimethylphthalate	1	33.0425	0	50	66*	70	130
2,6-Dinitrotoluene	1	55.8265	0	50	112	70	130
Acenaphthene	1	66.069	0	50	132*	70	130
3-Nitroaniline	1	90.432	0	50	181*	70	130
2,4-Dinitrophenol	1	88.555	0	100	89	20	160
Dibenzofuran	1	72.526	0	50	145*	70	130
2,4-Dinitrotoluene	1	66.7345	0	50	133*	70	130
4-Nitrophenol	1	58.508	0	100	59	20	160
2,3,4,6-Tetrachlorophenol	1	54.6535	0	100	55*	70	130
Fluorene	1	78.9485	40.3775	50	77	70	130
4-Chlorophenyl-phenylether	1	37.2865	0	50	75	70	130
Diethylphthalate	1	37.063	0	50	74	70	130
4-Nitroaniline	1	35.529	0	50	71	70	130
Atrazine	1	42.638	0	50	85	70	130
4,6-Dinitro-2-methylphenol	1	51.5635	0	100	52*	70	130
n-Nitrosodiphenylamine	1	101.4555	0	50	203*	70	130
1,2-Diphenylhydrazine	1	41.5925	0	50	83	70	130
4-Bromophenyl-phenylether	1	44.0755	0	50	88	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB46140

Hexachlorobenzene	1	38.4545	0	50	77	70	130
N-Octadecane	1	192.0985	0	50	384*	70	130
Pentachlorophenol	1	60.1375	0	100	60	20	160
Phenanthrene	1	52.721	13.841	50	78	70	130
Anthracene	1	42.3945	0	50	85	70	130
Carbazole	1	35.986	0	50	72	70	130
Di-n-butylphthalate	1	40.1785	0	50	80	70	130
Fluoranthene	1	40.197	0	50	80	70	130
Pyrene	1	38.493	0	50	77	70	130
Benzidine	1	0	0	50	0*	20	160
Butylbenzylphthalate	1	36.312	0	50	73	70	130
3,3'-Dichlorobenzidine	1	30.749	0	50	61*	70	130
Benzo[a]anthracene	1	37.427	0	50	75	70	130
Chrysene	1	40.805	0	50	82	70	130
bis(2-Ethylhexyl)phthalate	1	41.181	0	50	82	70	130
Di-n-octylphthalate	1	34.8205	0	50	70	70	130
Benzo[b]fluoranthene	1	37.1835	0	50	74	70	130
Benzo[k]fluoranthene	1	37.8135	0	50	76	70	130
Benzo[a]pyrene	1	37.3675	0	50	75	70	130
Indeno[1,2,3-cd]pyrene	1	37.524	0	50	75	70	130
Dibenzo[a,h]anthracene	1	36.716	0	50	73	70	130
Benzo[g,h,i]perylene	1	37.313	0	50	75	70	130

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Form3
Recovery Data
QC Batch: SMB46140

	Data File	Sample ID:	Analysis Date
Spike or Dup:	7M72985.D	AC87816-003(5X)(MSD:AC878	10/30/2015 4:14:00 PM
Non Spike(If applicable):	7M72983.D	AC87816-001(5X)	10/30/2015 3:27:00 PM
Inst Blank(If applicable):			

Method: 8270D | Matrix: Soil | QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Pyridine	1	18.9655	0	50	38	20	160
N-Nitrosodimethylamine	1	24.4755	0	50	49	20	160
Benzaldehyde	1	59.1955	0	50	118	20	160
Aniline	1	20.276	0	50	41	20	160
Pentachloroethane	1	33.4065	0	50	67	20	160
bis(2-Chloroethyl)ether	1	29.473	0	50	59*	70	130
Phenol	1	57.222	0	100	57	20	160
2-Chlorophenol	1	57.499	0	100	57*	70	130
N-Decane	1	128.993	0	50	258*	20	160
1,3-Dichlorobenzene	1	30.742	0	50	61*	70	130
1,4-Dichlorobenzene	1	29.8125	0	50	60*	70	130
1,2-Dichlorobenzene	1	30.694	0	50	61*	70	130
Benzyl alcohol	1	39.845	0	50	80	20	160
bis(2-chloroisopropyl)ether	1	20.7055	0	50	41*	70	130
2-Methylphenol	1	51.3075	0	100	51*	70	130
Acetophenone	1	30.1895	0	50	60*	70	130
Hexachloroethane	1	81.6255	0	50	163*	20	160
N-Nitroso-di-n-propylamine	1	356.83	0	50	714*	70	130
3&4-Methylphenol	1	67.661	0	100	68	20	160
Nitrobenzene	1	74.938	0	50	150*	70	130
Isophorone	1	213.384	0	50	427*	70	130
2-Nitrophenol	1	130.1765	0	100	130	70	130
2,4-Dimethylphenol	1	142.9875	0	100	143*	70	130
Benzoic Acid	1	231.8845	0	100	232*	20	160
bis(2-Chloroethoxy)methane	1	47.8075	0	50	96	70	130
2,4-Dichlorophenol	1	97.5295	0	100	98	70	130
1,2,4-Trichlorobenzene	1	35.2335	0	50	70	70	130
Naphthalene	1	131.3675	0	50	263*	70	130
4-Chloroaniline	1	62.4375	0	50	125	70	130
Hexachlorobutadiene	1	39.6925	0	50	79	70	130
Caprolactam	1	879.661	0	50	1760*	20	160
4-Chloro-3-methylphenol	1	111.3525	0	100	111	70	130
2-Methylnaphthalene	1	42.2425	0	50	84	70	130
1,1'-Biphenyl	1	46.471	0	50	93	70	130
1,2,4,5-Tetrachlorobenzene	1	37.334	0	50	75	70	130
Hexachlorocyclopentadiene	1	17.494	0	50	35	20	160
2,4,6-Trichlorophenol	1	95.938	0	100	96	70	130
2,4,5-Trichlorophenol	1	89.4665	0	100	89	70	130
2-Chloronaphthalene	1	39.6	0	50	79	70	130
1,4-Dimethylnaphthalene	1	415.5135	0	50	831*	70	130
Diphenyl Ether	1	38.94	0	50	78	70	130
2-Nitroaniline	1	82.9175	0	50	166*	70	130
Coumarin	1	68.8055	0	50	138*	70	130
Acenaphthylene	1	45.2115	0	50	90	70	130
Dimethylphthalate	1	18.255	0	50	37*	70	130
2,6-Dinitrotoluene	1	45.8185	0	50	92	70	130
Acenaphthene	1	63.6335	0	50	127	70	130
3-Nitroaniline	1	64.7965	0	50	130	70	130
2,4-Dinitrophenol	1	91.2595	0	100	91	20	160
Dibenzofuran	1	68.968	0	50	138*	70	130
2,4-Dinitrotoluene	1	61.5115	0	50	123	70	130
4-Nitrophenol	1	78.5495	0	100	79	20	160
2,3,4,6-Tetrachlorophenol	1	56.95	0	100	57*	70	130
Fluorene	1	75.1575	40.3775	50	70	70	130
4-Chlorophenyl-phenylether	1	38.4875	0	50	77	70	130
Diethylphthalate	1	37.8885	0	50	76	70	130
4-Nitroaniline	1	41.6145	0	50	83	70	130
Atrazine	1	48.0765	0	50	96	70	130
4,6-Dinitro-2-methylphenol	1	0	0	100	0*	70	130
n-Nitrosodiphenylamine	1	109.9185	0	50	220*	70	130
1,2-Diphenylhydrazine	1	41.55	0	50	83	70	130
4-Bromophenyl-phenylether	1	43.9805	0	50	88	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB46140

Hexachlorobenzene	1	38.137	0	50	76	70	130
N-Octadecane	1	167.2245	0	50	334*	70	130
Pentachlorophenol	1	65.9355	0	100	66	20	160
Phenanthrene	1	52.177	13.841	50	77	70	130
Anthracene	1	43.492	0	50	87	70	130
Carbazole	1	37.352	0	50	75	70	130
Di-n-butylphthalate	1	41.366	0	50	83	70	130
Fluoranthene	1	41.6335	0	50	83	70	130
Pyrene	1	38.4045	0	50	77	70	130
Benzidine	1	0	0	50	0*	20	160
Butylbenzylphthalate	1	36.823	0	50	74	70	130
3,3'-Dichlorobenzidine	1	31.242	0	50	62*	70	130
Benzo[a]anthracene	1	38.815	0	50	78	70	130
Chrysene	1	41.2465	0	50	82	70	130
bis(2-Ethylhexyl)phthalate	1	40.987	0	50	82	70	130
Di-n-octylphthalate	1	34.324	0	50	69*	70	130
Benzo[b]fluoranthene	1	36.714	0	50	73	70	130
Benzo[k]fluoranthene	1	38.7445	0	50	77	70	130
Benzo[a]pyrene	1	38.223	0	50	76	70	130
Indeno[1,2,3-cd]pyrene	1	38.726	0	50	77	70	130
Dibenzo[a,h]anthracene	1	37.9515	0	50	76	70	130
Benzo[g,h,i]perylene	1	38.5855	0	50	77	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA

QC Batch: SMB46140

	Data File	Sample ID:	Analysis Date
Spike or Dup:	7M72985.D	AC87816-003(5X)(MSD:AC878	10/30/2015 4:14:00 PM
Duplicate(If applicable):	7M72984.D	AC87816-002(5X)(MS:AC87816	10/30/2015 3:50:00 PM
Inst Blank(If applicable):			

Method: 8270D Matrix: Soil QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
Pyridine	1	18.9655	21.289	12	30
N-Nitrosodimethylamine	1	24.4755	25.272	3.2	30
Benzaldehyde	1	59.1955	61.418	3.7	30
Aniline	1	20.276	24.0815	17	30
Pentachloroethane	1	33.4065	29.649	12	30
bis(2-Chloroethyl)ether	1	29.473	30.018	1.8	30
Phenol	1	57.222	51.769	10	30
2-Chlorophenol	1	57.499	56.1615	2.4	30
N-Decane	1	128.993	150.3305	15	30
1,3-Dichlorobenzene	1	30.742	31.791	3.4	30
1,4-Dichlorobenzene	1	29.8125	31.1565	4.4	30
1,2-Dichlorobenzene	1	30.694	31.0825	1.3	30
Benzyl alcohol	1	39.845	37.255	6.7	30
bis(2-chloroisopropyl)ether	1	20.7055	26.718	25	30
2-Methylphenol	1	51.3075	49.8405	2.9	30
Acetophenone	1	30.1895	28.8715	4.5	30
Hexachloroethane	1	81.6255	78.5375	3.9	30
N-Nitroso-di-n-propylamine	1	356.83	431.0555	19	30
3&4-Methylphenol	1	67.661	68.6085	1.4	30
Nitrobenzene	1	74.938	90.361	19	30
Isophorone	1	213.384	253.3855	17	30
2-Nitrophenol	1	130.1765	142.594	9.1	30
2,4-Dimethylphenol	1	142.9875	153.6365	7.2	30
Benzoic Acid	1	231.8845	0	200*	30
bis(2-Chloroethoxy)methane	1	47.8075	73.102	42*	30
2,4-Dichlorophenol	1	97.5295	107.0475	9.3	30
1,2,4-Trichlorobenzene	1	35.2335	32.4165	8.3	30
Naphthalene	1	131.3675	148.5075	12	30
4-Chloroaniline	1	62.4375	21.6165	97*	30
Hexachlorobutadiene	1	39.6925	41.5435	4.6	30
Caprolactam	1	879.661	978.53	11	30
4-Chloro-3-methylphenol	1	111.3525	127.001	13	30
2-Methylnaphthalene	1	42.2425	47.0005	11	30
1,1'-Biphenyl	1	46.471	46.908	0.94	30
1,2,4,5-Tetrachlorobenzene	1	37.334	36.506	2.2	30
Hexachlorocyclopentadiene	1	17.494	18.617	6.2	30
2,4,6-Trichlorophenol	1	95.938	92.7675	3.4	30
2,4,5-Trichlorophenol	1	89.4665	87.6335	2.1	30
2-Chloronaphthalene	1	39.6	35.025	12	30
1,4-Dimethylnaphthalene	1	415.5135	447.7955	7.5	30
Diphenyl Ether	1	38.94	36.317	7	30
2-Nitroaniline	1	82.9175	31.5815	90*	30
Coumarin	1	68.8055	77.3765	12	30
Acenaphthylene	1	45.2115	46.8525	3.6	30
Dimethylphthalate	1	18.255	33.0425	58*	30
2,6-Dinitrotoluene	1	45.8185	55.8265	20	30
Acenaphthene	1	63.6335	66.069	3.8	30
3-Nitroaniline	1	64.7965	90.432	33*	30
2,4-Dinitrophenol	1	91.2595	88.555	3	30
Dibenzofuran	1	68.968	72.526	5	30
2,4-Dinitrotoluene	1	61.5115	66.7345	8.1	30
4-Nitrophenol	1	78.5495	58.508	29	30
2,3,4,6-Tetrachlorophenol	1	56.95	54.6535	4.1	30
Fluorene	1	75.1575	78.9485	4.9	30
4-Chlorophenyl-phenylether	1	38.4875	37.2865	3.2	30
Diethylphthalate	1	37.8885	37.063	2.2	30
4-Nitroaniline	1	41.6145	35.529	16	30
Atrazine	1	48.0765	42.638	12	30
4,6-Dinitro-2-methylphenol	1	0	51.5635	200*	30
n-Nitrosodiphenylamine	1	109.9185	101.4555	8	30
1,2-Diphenylhydrazine	1	41.55	41.5925	0.1	30
4-Bromophenyl-phenylether	1	43.9805	44.0755	0.22	30
Hexachlorobenzene	1	38.137	38.4545	0.83	30
N-Octadecane	1	167.2245	192.0985	14	30

Form3
RPD DATA
QC Batch: SMB46140

Pentachlorophenol	1	65.9355	60.1375	9.2	30
Phenanthrene	1	52.177	52.721	1	30
Anthracene	1	43.492	42.3945	2.6	30
Carbazole	1	37.352	35.986	3.7	30
Di-n-butylphthalate	1	41.366	40.1785	2.9	30
Fluoranthene	1	41.6335	40.197	3.5	30
Pyrene	1	38.4045	38.493	0.23	30
Benzidine	1	0	0	NA	30
Butylbenzylphthalate	1	36.823	36.312	1.4	30
3,3'-Dichlorobenzidine	1	31.242	30.749	1.6	30
Benzo[a]anthracene	1	38.815	37.427	3.6	30
Chrysene	1	41.2465	40.805	1.1	30
bis(2-Ethylhexyl)phthalate	1	40.987	41.181	0.47	30
Di-n-octylphthalate	1	34.324	34.8205	1.4	30
Benzo[b]fluoranthene	1	36.714	37.1835	1.3	30
Benzo[k]fluoranthene	1	38.7445	37.8135	2.4	30
Benzo[a]pyrene	1	38.223	37.3675	2.3	30
Indeno[1,2,3-cd]pyrene	1	38.726	37.524	3.2	30
Dibenzo[a,h]anthracene	1	37.9515	36.716	3.3	30
Benzo[g,h,i]perylene	1	38.5855	37.313	3.4	30

* - Indicates outside of limits

NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: SMB46140
Blank Data File: 7M72982.D
Matrix: Soil

Blank Analysis Date: 10/30/15 15:04
Blank Extraction Date: 10/30/15
(If Applicable)
Method: EPA 8270D

Sample Number	Data File	Analysis Date
AC87819-001	7M72987.D	10/30/15 17:01
AC87816-003(5X)(	7M72985.D	10/30/15 16:14
AC87816-002(5X)(	7M72984.D	10/30/15 15:50
AC87816-001(5X)	7M72983.D	10/30/15 15:27
SMB46140(MS)	5M92835.D	10/30/15 11:19

Form 5

Tune Name: CAL DFTPP **Data File:** 5M92806.D
Instrument: GCMS 5 **Analysis Date:** 10/29/15 09:57
Method: EPA 8270D

Tune Scan/Time Range: Average of 9.844 to 9.850 min

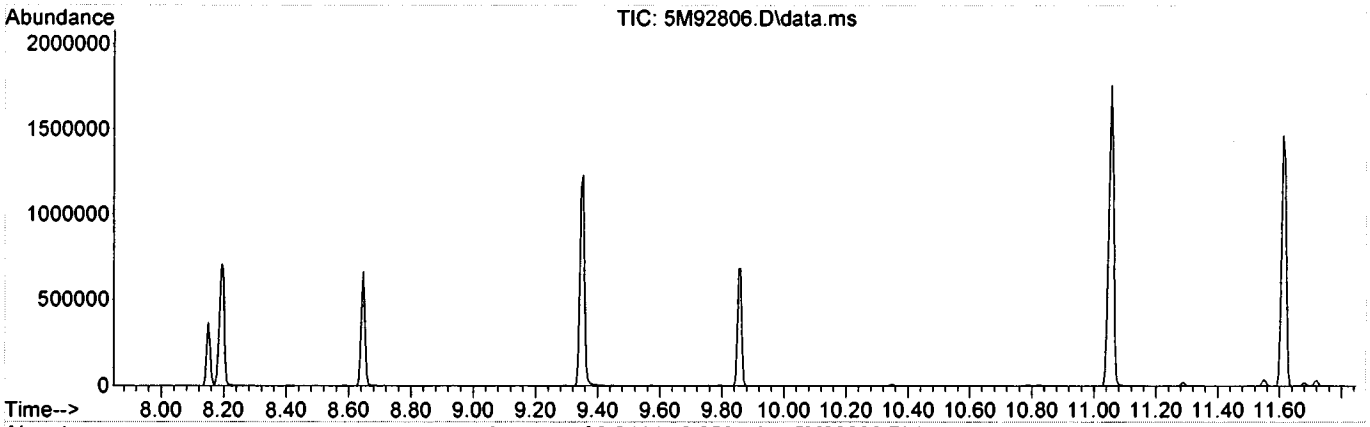
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	38.7	7319	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.5	8220	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	53.7	10144	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	18905	PASS
199	198	5	9	7.4	1398	PASS
275	198	10	30	21.3	4030	PASS
365	198	1	100	1.4	274	PASS
441	443	0.01	100	52.9	923	PASS
442	198	40	100	43.3	8179	PASS
443	442	17	23	21.3	1746	PASS

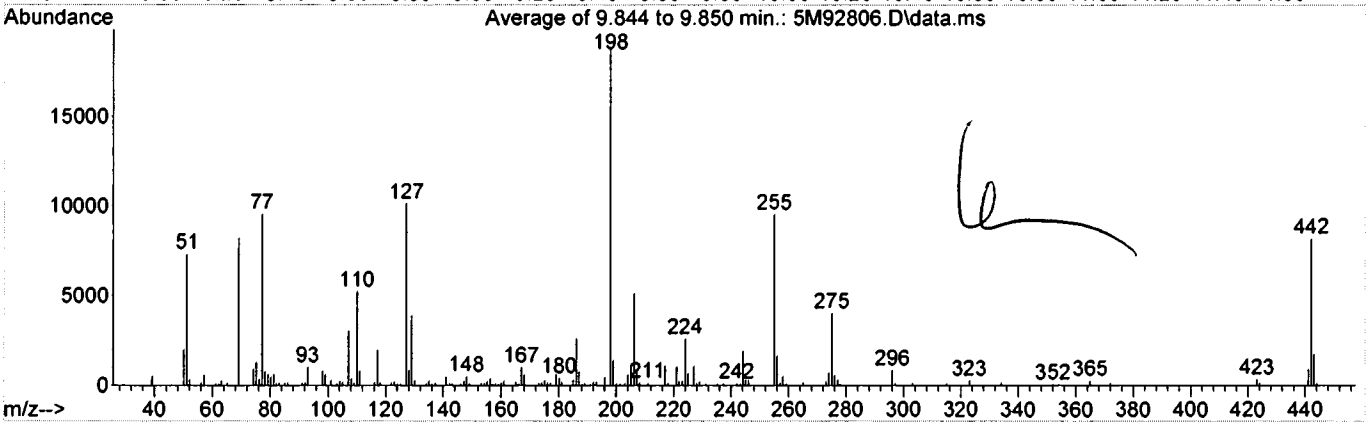
Data File	Sample Number	Analysis Date:
5M92807.D	CAL BNA@10PPM	10/29/15 11:54
5M92808.D	CAL BNA@50PPM	10/29/15 12:32
5M92809.D	CAL BNA@196PP	10/29/15 12:55
5M92810.D	CAL BNA@160PP	10/29/15 13:19
5M92811.D	CAL BNA@120PP	10/29/15 13:42
5M92812.D	CAL BNA@80PPM	10/29/15 14:06
5M92813.D	CAL BNA@20PPM	10/29/15 14:30
5M92814.D	CAL BNA@2PPM	10/29/15 14:53
5M92815.D	CAL BNA@.5PPM	10/29/15 15:17
5M92816.D	ICV BNA@50PPM	10/29/15 15:40
5M92817.D	WMB45306(MS)	10/29/15 16:05
5M92818.D	WMB45306	10/29/15 16:28
5M92819.D	SMB46128	10/29/15 16:52
5M92820.D	AC87725-018	10/29/15 17:15
5M92821.D	AC87725-004	10/29/15 17:39
5M92822.D	AC87725-004(3X)	10/29/15 18:02
5M92823.D	AC87767-003	10/29/15 18:26
5M92824.D	AC87767-003(MS)	10/29/15 18:49
5M92825.D	AC87767-003(MSD	10/29/15 19:12
5M92826.D	AC87852-011	10/29/15 19:36
5M92827.D	AC87852-012	10/29/15 19:59
5M92828.D	AC87767-001	10/29/15 20:22
5M92829.D	AC87767-004	10/29/15 20:45
5M92830.D	AC87760-001	10/29/15 21:09
5M92831.D	AC87760-002	10/29/15 21:32

Data Path : G:\GcMsData\2015\GCMS_5\Data\10-29-15\
Data File : 5M92806.D
Acq On : 29 Oct 2015 9:57
Operator : AH/JB
Sample : CAL DFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GCMSDATA\2015\GCMS_5\MethodQt\5M_1010.M
Title : @GCMS_5,mg,625,8270D
Last Update : Wed Oct 07 14:51:30 2015





Spectrum Information: Average of 9.844 to 9.850 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.7	7319	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.5	8220	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	53.7	10144	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	18905	PASS
199	198	5	9	7.4	1398	PASS
275	198	10	30	21.3	4030	PASS
365	198	1	100	1.4	274	PASS
441	443	0.01	100	52.9	923	PASS
442	198	40	100	43.3	8179	PASS
443	442	17	23	21.3	1746	PASS

Form 5

Tune Name: CALDFTPP **Data File:** 7M72940.D
Instrument: GCMS 7 **Analysis Date:** 10/29/15 10:03
Method: EPA 8270D

Tune Scan/Time Range: Average of 10.002 to 10.007 min

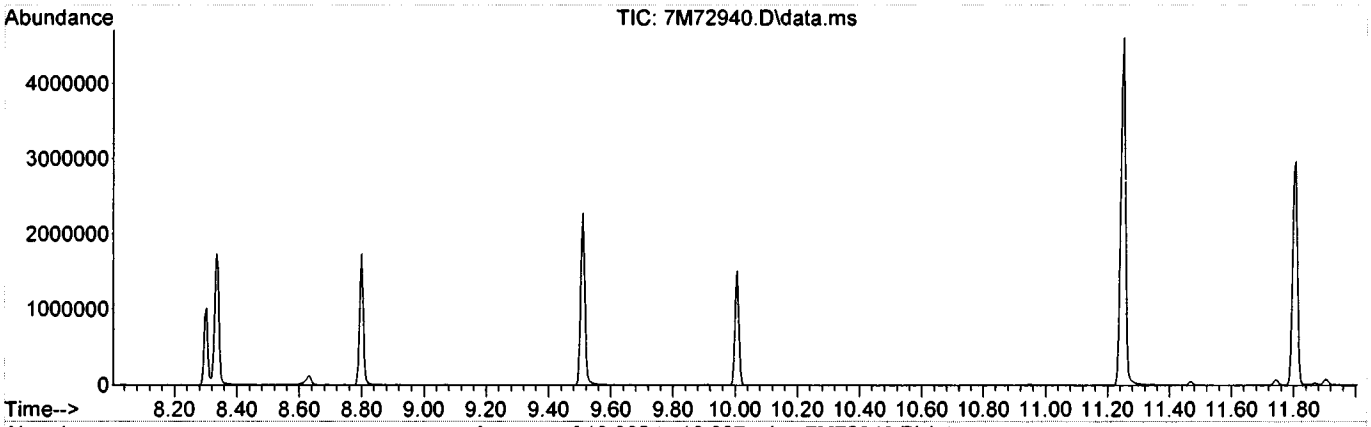
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	31.9	52524	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	35.3	58024	PASS
70	69	0.00	2	0.6	359	PASS
127	198	40	60	48.4	79624	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	164416	PASS
199	198	5	9	6.9	11289	PASS
275	198	10	30	22.4	36824	PASS
365	198	1	100	2.5	4087	PASS
441	443	0.01	100	81.0	15920	PASS
442	198	40	100	67.1	110392	PASS
443	442	17	23	17.8	19655	PASS

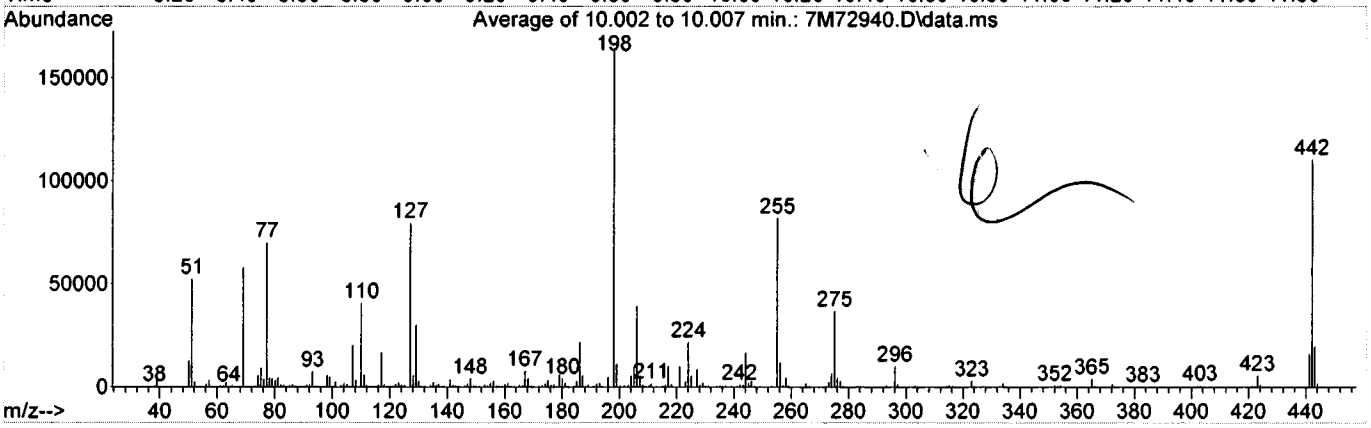
Data File	Sample Number	Analysis Date:
7M72941.D	CAL BNA@10PPM	10/29/15 10:27
7M72942.D	CAL BNA@50PPM	10/29/15 10:58
7M72943.D	CAL BNA@196PP	10/29/15 11:27
7M72944.D	CAL BNA@160PP	10/29/15 11:52
7M72945.D	CAL BNA@120PP	10/29/15 12:17
7M72946.D	CAL BNA@80PPM	10/29/15 12:40
7M72947.D	CAL BNA@20PPM	10/29/15 13:03
7M72948.D	CAL BNA@2PPM	10/29/15 13:27
7M72949.D	CAL BNA@.5PPM	10/29/15 13:50
7M72950.D	ICV BNA@50PPM	10/29/15 14:39
7M72951.D	AC87725-018	10/29/15 15:14
7M72952.D	AC87725-004	10/29/15 15:37
7M72953.D	AC87725-004(3X)	10/29/15 16:00
7M72954.D	AC87845-001	10/29/15 16:23
7M72955.D	AC87845-004	10/29/15 16:46
7M72956.D	AC87845-007	10/29/15 17:10
7M72957.D	SMB46128	10/29/15 17:33
7M72958.D	SMB45302(MS)	10/29/15 17:56
7M72959.D	SMB45302	10/29/15 18:19
7M72960.D	SMB46135	10/29/15 18:42
7M72961.D	WMB45306	10/29/15 19:05
7M72962.D	AC87791-001	10/29/15 19:28
7M72963.D	AC87791-001(MS)	10/29/15 19:52
7M72964.D	AC87791-001(MSD	10/29/15 20:15
7M72965.D	AC87791-002	10/29/15 20:38
7M72966.D	AC87791-003	10/29/15 21:01
7M72967.D	AC87791-004	10/29/15 21:24

Data Path : G:\GcMsData\2015\GCMS_7\Data\10-29-15\
Data File : 7M72940.D
Acq On : 29 Oct 2015 10:03
Operator : AH/JB
Sample : CALDFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GCMSDATA\2015\GCMS_7\METHODQT\7M_1012.M
Title : @GCMS_7,mg,625,8270D
Last Update : Mon Oct 12 15:23:20 2015





Spectrum Information: Average of 10.002 to 10.007 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	31.9	52524	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	35.3	58024	PASS
70	69	0.00	2	0.6	359	PASS
127	198	40	60	48.4	79624	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	164416	PASS
199	198	5	9	6.9	11289	PASS
275	198	10	30	22.4	36824	PASS
365	198	1	100	2.5	4087	PASS
441	443	0.01	100	81.0	15920	PASS
442	198	40	100	67.1	110392	PASS
443	442	17	23	17.8	19655	PASS

Form 5

Tune Name: CAL DFTPP
Instrument: GCMS 5
Data File: 5M92832.D
Analysis Date: 10/30/15 09:18
Method: EPA 8270D

Tune Scan/Time Range: Scan 1451

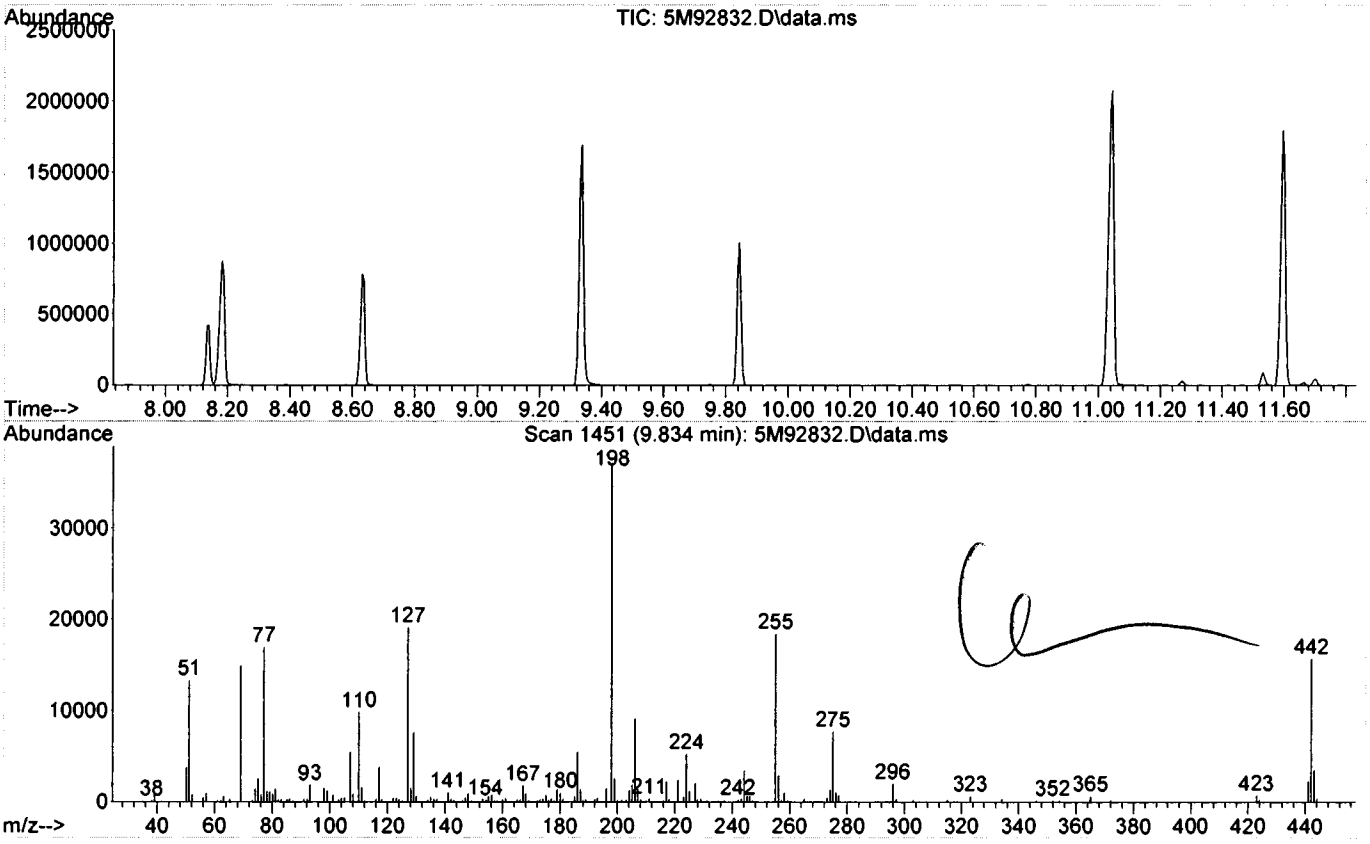
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	35.9	13339	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.3	14966	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	51.4	19104	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	37136	PASS
199	198	5	9	6.9	2570	PASS
275	198	10	30	20.8	7714	PASS
365	198	1	100	1.7	639	PASS
441	443	0.01	100	66.9	2311	PASS
442	198	40	100	42.2	15685	PASS
443	442	17	23	22.0	3456	PASS

Data File	Sample Number	Analysis Date:
5M92833.D	CAL BNA@50PPM	10/30/15 09:45
5M92834.D	SMB46140	10/30/15 10:55
5M92835.D	SMB46140(MS)	10/30/15 11:19

Data Path : G:\GcMsData\2015\GCMS_5\Data\10-30-15\
Data File : 5M92832.D
Acq On : 30 Oct 2015 9:18
Operator : AH/JB
Sample : CAL DFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GCMSDATA\2015\GCMS_5\MethodQt\5M_1029.M
Title : @GCMS_5,mg,625,8270D
Last Update : Thu Oct 29 15:37:49 2015



Spectrum Information: Scan 1451

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	35.9	13339	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.3	14966	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	51.4	19104	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	37136	PASS
199	198	5	9	6.9	2570	PASS
275	198	10	30	20.8	7714	PASS
365	198	1	100	1.7	639	PASS
441	443	0.01	100	66.9	2311	PASS
442	198	40	100	42.2	15685	PASS
443	442	17	23	22.0	3456	PASS

Form 5

Tune Name: CALDFTPP **Data File:** 7M72968.D
Instrument: GCMS 7 **Analysis Date:** 10/30/15 09:19
Method: EPA 8270D

Tune Scan/Time Range: Average of 9.996 to 10.001 min

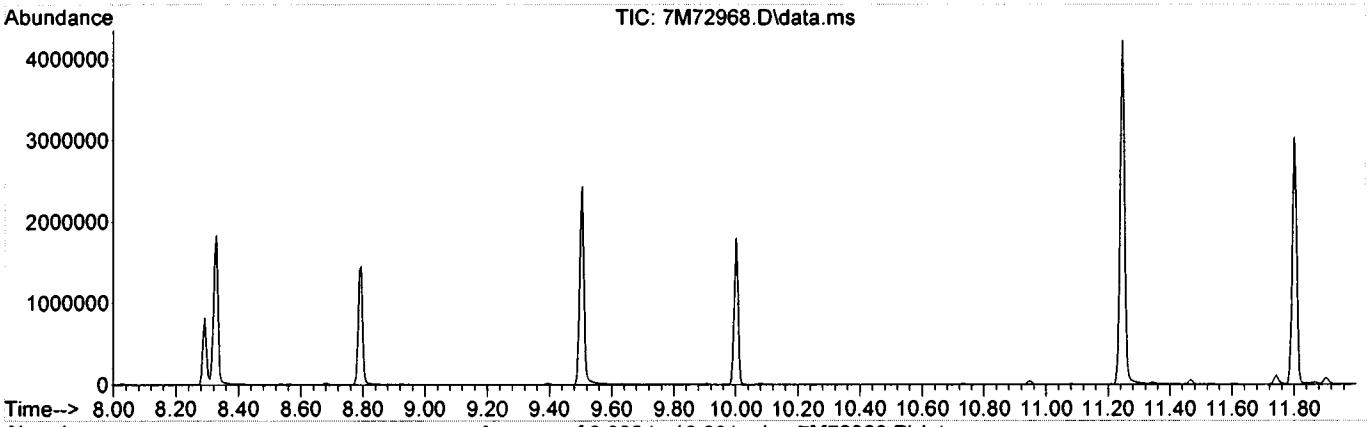
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	32.8	59812	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	36.8	67216	PASS
70	69	0.00	2	0.4	296	PASS
127	198	40	60	49.0	89388	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	182560	PASS
199	198	5	9	6.9	12632	PASS
275	198	10	30	21.8	39716	PASS
365	198	1	100	2.3	4180	PASS
441	443	0.01	100	74.5	17067	PASS
442	198	40	100	66.5	121376	PASS
443	442	17	23	18.9	22921	PASS

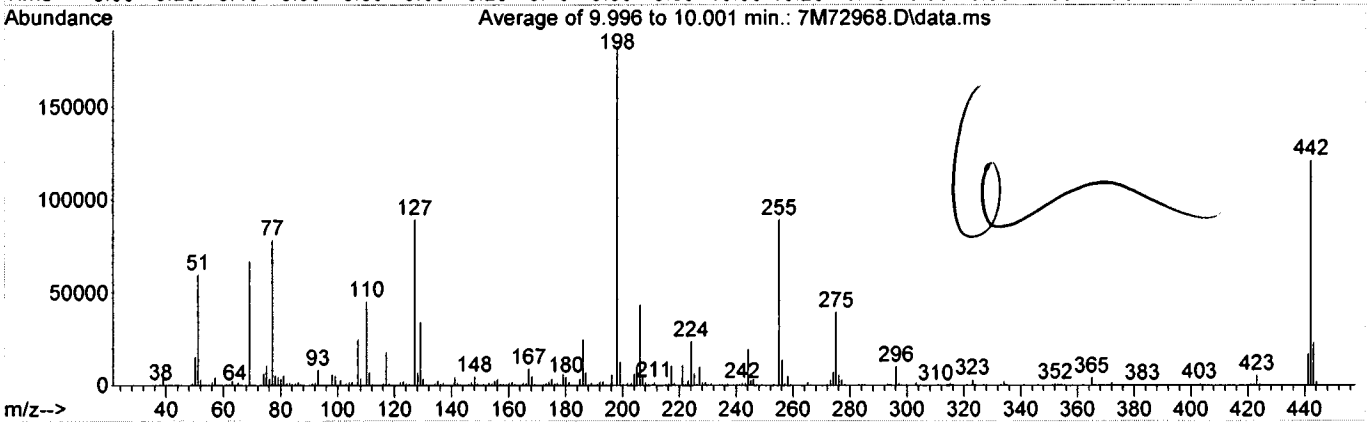
Data File	Sample Number	Analysis Date:
7M72969.D	CAL BNA@50PPM	10/30/15 09:47
7M72970.D	AC87804-001	10/30/15 10:23
7M72971.D	AC87828-001	10/30/15 10:46
7M72972.D	AC87817-001	10/30/15 11:09
7M72973.D	AC87791-001	10/30/15 11:33
7M72974.D	AC87791-002	10/30/15 11:56
7M72975.D	AC87791-003	10/30/15 12:19
7M72976.D	SMB46135	10/30/15 12:43
7M72977.D	SMB46140	10/30/15 13:06
7M72978.D	OMB46139	10/30/15 13:30
7M72979.D	OMB46139(MS)	10/30/15 13:53
7M72980.D	AC87816-001	10/30/15 14:16
7M72981.D	AC87816-004	10/30/15 14:40
7M72982.D	SMB46140	10/30/15 15:04
7M72983.D	AC87816-001(5X)	10/30/15 15:27
7M72984.D	AC87816-002(5X)(	10/30/15 15:50
7M72985.D	AC87816-003(5X)(	10/30/15 16:14
7M72986.D	AC87816-006	10/30/15 16:37
7M72987.D	AC87819-001	10/30/15 17:01
7M72988.D	AC87810-001	10/30/15 17:24
7M72989.D	AC87810-002	10/30/15 17:47
7M72990.D	AC87810-004	10/30/15 18:11
7M72991.D	SMB46146	10/30/15 18:34
7M72992.D	AC87876-003	10/30/15 18:57
7M72993.D	AC87880-005	10/30/15 19:21
7M72994.D	AC87876-004(3X)	10/30/15 19:44
7M72995.D	AC87880-002(3X)	10/30/15 20:07
7M72996.D	AC87880-003(3X)	10/30/15 20:30
7M72997.D	AC87752-001	10/30/15 20:54

Data Path : G:\GcMsData\2015\GCMS_7\Data\10-30-15\
Data File : 7M72968.D
Acq On : 30 Oct 2015 9:19
Operator : AH/JB
Sample : CALDFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GCMSDATA\2015\GCMS_7\METHODQT\7M_1029.M
Title : @GCMS_7,mg,625,8270D
Last Update : Thu Oct 29 15:07:26 2015





Spectrum Information: Average of 9.996 to 10.001 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	32.8	59812	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	36.8	67216	PASS
70	69	0.00	2	0.4	296	PASS
127	198	40	60	49.0	89388	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	182560	PASS
199	198	5	9	6.9	12632	PASS
275	198	10	30	21.8	39716	PASS
365	198	1	100	2.3	4180	PASS
441	443	0.01	100	74.5	17067	PASS
442	198	40	100	66.5	121376	PASS
443	442	17	23	18.9	22921	PASS

Form 6
Initial Calibration

Method: EPA 8270D

Instrument: GCMS_7

5102701 0074

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	7M72942.	CAL BNA@50PPM	10/29/15 10:58	2	7M72948.	CAL BNA@2PPM	10/29/15 13:27
3	7M72941.	CAL BNA@10PPM	10/29/15 10:27	4	7M72947.	CAL BNA@20PPM	10/29/15 13:03
5	7M72946.	CAL BNA@80PPM	10/29/15 12:40	6	7M72945.	CAL BNA@120PPM	10/29/15 12:17
7	7M72944.	CAL BNA@160PPM	10/29/15 11:52	8	7M72943.	CAL BNA@196PPM	10/29/15 11:27
9	7M72949.	CAL BNA@.5PPM	10/29/15 13:50				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Pyridine	1	0	Avg	1.4724	1.6027	1.2776	1.3726	1.4435	1.4790	1.4363	1.4916	-----	1.45	3.03	0.999	0.999	6.5		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Nitrosodimethylamin	1	0	Avg	0.8729	0.8435	0.8252	0.8392	0.8685	0.9263	0.9075	0.9276	-----	0.876	2.96	0.999	1.00	4.6		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Fluorophenol	1	0	Avg	1.3716	1.3220	1.2275	1.2830	1.4457	1.5562	1.5309	1.5411	-----	1.41	4.59	0.998	0.999	9.0		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzaldehyde	1	0	Avg	2.3072	2.4624	2.4133	2.3592	2.2993	2.4280	2.1485	1.9846	-----	2.30	6.14	0.987	0.997	7.0	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Aniline	1	0	Qua	2.1581	1.2727	1.5262	2.1471	2.2542	2.3618	2.2177	2.2449	1.8732	2.01	5.52	0.997	0.998	19		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Pentachloroethane	1	0	Avg	0.4475	0.5460	0.4773	0.4399	0.4503	0.4742	0.4552	0.4568	-----	0.468	5.56	0.999	0.999	7.2	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Chloroethyl)ether	1	0	Qua	1.4715	1.6456	1.5507	1.5050	1.4766	1.5468	1.4535	1.4526	2.1999	1.59	5.58	0.999	1.00	15	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Phenol-d5	1	0	Avg	2.0514	1.8055	1.8759	1.9415	2.1341	2.3198	2.1768	2.1403	-----	2.06	5.48	0.998	0.998	8.3		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Phenol	1	0	Avg	2.2714	2.0991	2.0248	2.1645	2.3247	2.4768	2.3176	2.2658	-----	2.24	5.49	0.998	0.999	6.4	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Chlorophenol	1	0	Avg	1.6087	1.6653	1.4991	1.5331	1.6631	1.7925	1.6950	1.6943	-----	1.64	5.62	0.999	0.999	5.7	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Decane	1	0	Avg	1.1424	1.3689	1.1846	1.1863	1.1143	1.1118	1.0540	1.0654	-----	1.15	5.66	0.999	1.00	8.6	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.3-Dichlorobenzene	1	0	Avg	1.5259	1.8831	1.5727	1.5228	1.5211	1.5766	1.5171	1.5160	-----	1.58	5.75	1.00	1.00	7.9		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.4-Dichlorobenzene	1	0	Avg	1.5666	2.0150	1.6068	1.5555	1.5715	1.6127	1.5302	1.5428	-----	1.63	5.82	0.999	0.999	9.9		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.2-Dichlorobenzene	1	0	Avg	1.5281	1.7554	1.6174	1.5839	1.5389	1.5956	1.5058	1.5251	-----	1.58	5.94	0.999	0.999	5.1		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzyl alcohol	1	0	Avg	1.1420	1.0209	1.0585	1.1208	1.1898	1.2872	1.1971	1.1690	-----	1.15	5.92	0.997	0.998	7.3		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-chloroisopropyl)et	1	0	Avg	1.6629	1.9846	1.6533	1.6606	1.6480	1.7491	1.6455	1.6201	-----	1.70	6.03	0.998	0.999	7.0	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Methylphenol	1	0	Avg	1.5933	1.5276	1.5109	1.5481	1.6185	1.7311	1.6308	1.6015	1.9732	1.64	6.01	0.999	0.999	8.7	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Acetophenone	1	0	Avg	2.4019	2.6752	2.5643	2.5177	2.4431	2.5485	2.2641	2.0998	-----	2.44	6.14	0.994	0.998	7.5	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachloroethane	1	0	Avg	0.5756	0.6358	0.5555	0.5904	0.5727	0.5933	0.5693	0.5841	-----	0.585	6.22	0.999	0.999	4.1	0.30	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Nitroso-di-n-propylan	1	0	Avg	1.1213	1.1707	1.1827	1.1645	1.1277	1.1946	1.0452	0.9699	1.6982	1.19	6.14	0.994	0.997	17	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
3&4-Methylphenol	1	0	Avg	1.6966	1.6421	1.6095	1.6658	1.7198	1.8500	1.6203	1.5078	2.0432	1.71	6.13	0.994	0.997	9.2		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Nitrobenzene-d5	1	0	Avg	0.1638	0.2001	0.1600	0.1685	0.1738	0.1774	0.1760	0.1803	-----	0.175	6.26	0.999	1.00	7.0		25.00	1.00	5.00	10.00	40.00	60.00	80.00	98.00	
Nitrobenzene	1	0	Avg	0.3396	0.3338	0.3281	0.3279	0.3407	0.3476	0.3294	0.3321	-----	0.335	6.28	0.999	1.00	2.1	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Isophorone	1	0	Avg	0.7034	0.7260	0.6810	0.6894	0.7183	0.7382	0.6913	0.6746	-----	0.703	6.47	0.998	0.999	3.2	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Nitrophenol	1	0	Qua	0.1887	0.1632	0.1640	0.1735	0.1991	0.2055	0.2014	0.2027	-----	0.187	6.53	0.999	0.999	9.5	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4-Dimethylphenol	1	0	Avg	0.3768	0.3602	0.3673	0.3767	0.3852	0.3994	0.3753	0.3665	0.4576	0.385	6.56	0.999	0.999	7.7	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Benzoic Acid	1	0	Qua	0.2364	-----	0.0199	0.1154	0.3693	0.4421	0.4566	0.4682	-----	0.301	6.63	0.986	0.994	60		50.00		10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Chloroethoxy)met	1	0	Avg	0.4262	0.4599	0.4201	0.4167	0.4263	0.4334	0.4077	0.4043	-----	0.424	6.64	0.998	1.00	4.1	0.30	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4-Dichlorophenol	1	0	Avg	0.3242	0.2914	0.3118	0.3137	0.3358	0.3502	0.3269	0.3216	0.3440	0.324	6.72	0.998	0.999	5.5	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
1.2.4-Trichlorobenzene	1	0	Avg	0.3309	0.3900	0.3317	0.3323	0.3304	0.3341	0.3196	0.3194	-----	0.336	6.80	1.00	1.00	6.7		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Naphthalene	1	0	Qua	1.0686	1.3303	1.1196	1.0830	1.0745	1.0950	1.0196	1.0120	1.9240	1.19	6.86	0.998	0.999	24	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
4-Chloroaniline	1	0	Qua	0.4363	0.3188	0.3200	0.4330	0.4409	0.3916	0.3027	0.2442	0.4326	0.369	6.90	0.904	0.996	20	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Hexachlorobutadiene	1	0	Avg	0.1646	0.2030	0.1710	0.1684	0.1657	0.1673	0.1599	0.1641	-----	0.171	6.95	1.00	1.00	7.9	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Caprolactam	1	0	Avg	0.1707	0.1870	0.1565	0.1768	0.1796	0.2016	0.1849	0.1770	-----	0.179	7.19	0.994	0.996	7.3	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Chloro-3-methylphen	1	0	Avg	0.3666	0.3312	0.3524	0.3656	0.3789	0.4010	0.3671	0.3501	-----	0.364	7.28	0.994	0.998	5.7	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Methylnaphthalene	1	0	Avg	0.8177	0.8842	0.8163	0.8127	0.8165	0.8377	0.7748	0.7443	-----	0.813	7.42	0.996	0.999	5.1	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Methylnaphthalenes (T	1	0	Qua	1.5615	0.8842	1.5961	1.5562	1.5608	1.6101	1.4850	1.4346	-----	1.46	7.42	0.996	0.999	16		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.1'-Biphenyl	1	0	Avg	1.0502	1.2221	1.1047	1.0770	1.0735	1.1139	1.0144	0.9624	-----	1.08	7.81	0.994	0.998	7.1	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.2.4.5-Tetrachloroben	1	0	Avg	0.5222	0.6330	0.5413	0.5255	0.5228	0.5179	0.5022	0.5163	-----	0.535	7.55	1.00	1.00	7.7	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachlorocyclopentac	1	0	Qua	0.2393	0.1641	0.1793	0.1982	0.2568	0.2549	0.2640	0.2805	-----	0.230	7.54	0.996	0.999	19	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4.6-Trichlorophenol	1	0	Avg	0.3610	0.3116	0.3432	0.3583	0.3698	0.3813	0.3630	0.3743	-----	0.358	7.65	0.999	0.999	6.1	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

Flags	*Note:* Avg Rsd: 9.55
a - failed the min rf criteria	*Corr 1 = Correlation Coefficient for linear Eq.*
c - failed the minimum correlation coeff criteria(if applicable)	*Corr 2 = Correlation Coefficient for quad Eq.*
	Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Form 6
Initial Calibration

Method: EPA 8270D

Instrument: GCMS_7

5102701 0075

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	7M72942.	CAL BNA@50PPM	10/29/15 10:58	2	7M72948.	CAL BNA@2PPM	10/29/15 13:27
3	7M72941.	CAL BNA@10PPM	10/29/15 10:27	4	7M72947.	CAL BNA@20PPM	10/29/15 13:03
5	7M72946.	CAL BNA@80PPM	10/29/15 12:40	6	7M72945.	CAL BNA@120PPM	10/29/15 12:17
7	7M72944.	CAL BNA@160PPM	10/29/15 11:52	8	7M72943.	CAL BNA@196PPM	10/29/15 11:27
9	7M72949.	CAL BNA@.5PPM	10/29/15 13:50				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd			Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
2.4.5-Trichlorophenol	1	0	Avg	0.4018	0.3602	0.3716	0.3697	0.4084	0.4145	0.3977	0.4045	-----	0.391	7.68	0.999	1.00	5.3	0.20		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Fluorobiphenyl	1	0	Avg	1.3025	1.4086	1.3081	1.2771	1.2957	1.2850	1.2607	1.3043	-----	1.31	7.72	1.00	1.00	3.4			25.00	1.00	5.00	10.00	40.00	60.00	80.00	98.00	
2-Chloronaphthalene	1	0	Avg	1.1328	1.3789	1.1672	1.1087	1.1316	1.1172	1.0749	1.0934	-----	1.15	7.83	0.999	1.00	8.4	0.80		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.4-Dimethylnaphthaler	1	0	Avg	0.9561	1.1024	0.9892	0.9603	0.9428	0.9260	0.8469	0.8109	-----	0.942	8.11	0.995	1.00	9.4			50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dimethylnaphthalenes	1	0	Avg	0.9561	1.1024	0.9892	0.9603	0.9428	0.9260	0.8469	0.8109	-----	0.942	8.11	0.995	1.00	9.4			50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Diphenyl Ether	1	0	Avg	0.8171	0.9435	0.8367	0.8144	0.8154	0.8108	0.7736	0.7788	-----	0.824	7.89	0.999	1.00	6.4			50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Nitroaniline	1	0	Avg	0.3709	0.3125	0.3376	0.3577	0.3854	0.3910	0.3647	0.3644	-----	0.361	7.91	0.998	0.999	7.1	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Coumarin	1	0	Avg	0.5367	0.6135	0.5745	0.5676	0.5385	0.5581	0.4933	0.4615	-----	0.543	8.09	0.989	0.997	8.8			50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Acenaphthylene	1	0	Avg	1.7964	1.9075	1.7648	1.7353	1.7796	1.7999	1.7043	1.6888	-----	1.77	8.19	0.999	1.00	3.9	0.90		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dimethylphthalate	1	0	Avg	1.4407	1.6768	1.4842	1.4726	1.4485	1.5001	1.3755	1.3615	-----	1.47	8.06	0.997	0.999	6.6	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.6-Dinitrotoluene	1	0	Avg	0.3182	0.2985	0.3158	0.3252	0.3244	0.3292	0.2968	0.2891	-----	0.312	8.12	0.994	0.999	4.9	0.20		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Acenaphthene	1	0	Avg	1.2136	1.4679	1.2434	1.2072	1.2109	1.2304	1.1433	1.1471	-----	1.23	8.35	0.998	0.999	8.2	0.90		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
3-Nitroaniline	1	0	Avg	0.3608	0.2870	0.3180	0.3550	0.3788	0.3792	0.3257	0.3092	-----	0.339	8.27	0.984	0.997	10	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4-Dinitrophenol	1	0	Qua	0.1240	-----	0.0116	0.0534	0.1690	0.2022	0.2074	0.2071	-----	0.139	8.36	0.996	0.997	57	0.01		50.00		10.00	20.00	80.00	120.0	160.0	196.0	
Dibenzofuran	1	0	Qua	1.7387	2.1082	1.8079	1.7759	1.7417	1.7700	1.6306	1.6208	3.0273	1.91	8.50	0.998	0.999	23	0.80		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
2.4-Dinitrotoluene	1	0	Qua	0.4616	0.3530	0.4002	0.4425	0.4803	0.5152	0.4724	0.4647	-----	0.449	8.47	0.998	0.998	11	0.20		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Nitrophenol	1	0	Avg	0.2621	0.2056	0.2205	0.2480	0.2792	0.3025	0.2724	0.2686	-----	0.257	8.39	0.995	0.997	12	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.3.4.6-Tetrachlorophe	1	0	Avg	0.3595	0.2803	0.3242	0.3422	0.3578	0.3896	0.3545	0.3634	-----	0.346	8.60	0.999	0.999	9.4	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Fluorene	1	0	Avg	1.4568	1.6978	1.5330	1.4837	1.4492	1.4774	1.3484	1.3138	-----	1.47	8.82	0.996	0.999	8.0	0.90		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Chlorophenyl-phenyl	1	0	Avg	0.6837	0.8314	0.7197	0.7024	0.6858	0.6973	0.6407	0.6283	-----	0.699	8.81	0.997	0.999	8.9	0.40		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Diethylphthalate	1	0	Qua	1.5466	2.8359	2.0092	1.6000	1.4998	1.5532	1.4093	1.3927	-----	1.73	8.69	0.997	0.999	28	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Nitroaniline	1	0	Avg	0.4324	0.3749	0.4025	0.4348	0.4513	0.4832	0.4349	0.4310	-----	0.431	8.83	0.998	0.998	7.4	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Atrazine	1	0	Avg	0.3898	0.3651	0.3642	0.3941	0.4076	0.4304	0.3842	0.3744	-----	0.389	9.45	0.997	0.998	5.8	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4.6-Dinitro-2-methylphe	1	0	Qua	0.1123	-----	0.0502	0.0812	0.1266	0.1396	0.1391	0.1425	-----	0.113	8.85	0.998	0.999	31	0.01		50.00		10.00	20.00	80.00	120.0	160.0	196.0	
n-Nitrosodiphenylamine	1	0	Avg	0.5991	0.6287	0.6018	0.5987	0.6110	0.6029	0.5870	0.5850	-----	0.602	8.92	1.00	1.00	2.3	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4.6-Tribromophenol	1	0	Qua	0.0984	0.0806	0.0835	0.0925	0.1021	0.1038	0.1022	0.1067	-----	0.0963	9.05	0.999	1.00	10			50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.2-Diphenylhydrazine	1	0	Avg	0.6808	0.6027	0.6107	0.6015	0.6266	0.6779	0.6558	0.6506	-----	0.638	8.97	0.999	0.999	5.1			50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Bromophenyl-phenyl	1	0	Avg	0.1899	0.1977	0.1777	0.1792	0.1893	0.1907	0.1879	0.1903	-----	0.188	9.30	1.00	1.00	3.5	0.10		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachlorobenzene	1	0	Avg	0.2082	0.2565	0.2116	0.2200	0.2135	0.2135	0.2039	0.2087	-----	0.217	9.35	0.999	0.999	7.7	0.10		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Octadecane	1	0	Avg	0.3421	0.3069	0.3354	0.3289	0.3408	0.3278	0.3166	0.3125	-----	0.326	9.62	0.998	1.00	4.0	0.05		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Pentachlorophenol	1	0	Qua	0.0885	-----	0.0335	0.0588	0.1067	0.1189	0.1191	0.1253	-----	0.0930	9.56	0.996	0.999	38	0.05	a	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
Phenanthrene	1	0	Avg	1.1008	1.3720	1.1560	1.1181	1.1122	1.1210	1.0559	1.0290	-----	1.13	9.79	0.998	1.00	9.2	0.70		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Anthracene	1	0	Avg	1.1101	1.2250	1.1029	1.1092	1.1146	1.1413	1.0689	1.0513	-----	1.12	9.85	0.998	0.999	4.7	0.70		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Carbazole	1	0	Avg	1.0935	1.2093	1.0900	1.1046	1.1136	1.1537	1.0527	1.0321	-----	1.11	10.02	0.996	0.999	5.0	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Di-n-butylphthalate	1	0	Avg	1.2516	1.1281	1.1633	1.2310	1.2873	1.3318	1.2163	1.1810	1.3111	1.23	10.39	0.998	0.999	5.6	0.01		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Fluoranthene	1	0	Avg	1.2885	1.3909	1.2558	1.2992	1.3244	1.3845	1.2688	1.2141	-----	1.30	11.11	0.995	0.998	4.7	0.60		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Pyrene	1	0	Avg	1.1904	1.1381	1.1281	1.1018	1.1974	1.1949	1.1567	1.1911	-----	1.16	11.37	0.999	1.00	3.1	0.60		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzidine	1	0	Qua	0.4979	0.1112	0.1782	0.3698	0.5190	0.4825	0.4271	0.4025	-----	0.374	11.27	0.980	0.998	40			50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Terphenyl-d14	1	0	Avg	0.5895	0.5521	0.5566	0.5477	0.6034	0.6277	0.6096	0.6504	-----	0.592	11.56	0.998	0.999	6.4			25.00	1.00	5.00	10.00	40.00	60.00	80.00	96.00	
4.4'-DDE	1	0	Avg	0.2226	0.2169	0.2078	0.2044	0.2221	0.2275	0.2240	0.2291	-----	0.219	11.49	1.00	1.00	4.1			50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4.4'-DDD	1	0	Avg	0.3978	0.3479	0.3531	0.3646	0.4116	0.4246	0.4105	0.4181	-----	0.391	11.89	0.999	0.999	7.9			50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

Flags	*Note:* Avg Rsd: 9.55
a - failed the min rf criteria	*Corr 1 = Correlation Coefficient for linear Eq.*
c - failed the minimum correlation coeff criteria(if applicable)	*Corr 2 = Correlation Coefficient for quad Eq.*
	Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Method: EPA 8270D

Form 6
Initial Calibration

Instrument: GCMS_7

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	7M72942.	CAL BNA@50PPM	10/29/15 10:58	2	7M72948.	CAL BNA@2PPM	10/29/15 13:27
3	7M72941.	CAL BNA@10PPM	10/29/15 10:27	4	7M72947.	CAL BNA@20PPM	10/29/15 13:03
5	7M72946.	CAL BNA@80PPM	10/29/15 12:40	6	7M72945.	CAL BNA@120PPM	10/29/15 12:17
7	7M72944.	CAL BNA@160PPM	10/29/15 11:52	8	7M72943.	CAL BNA@196PPM	10/29/15 11:27
9	7M72949.	CAL BNA@.5PPM	10/29/15 13:50				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Butylbenzylphthalate	1	0	Qua	0.5213	0.3677	0.4445	0.4717	0.5476	0.5587	0.5324	0.5400	-----	0.498	12.14	0.999	0.999	13	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4,4'-DDT	1	0	Avg	0.3714	0.2705	0.3308	0.3328	0.3831	0.3901	0.3663	0.3716	-----	0.352	12.25	0.999	0.999	11		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
3,3'-Dichlorobenzidine	1	0	Qua	0.3410	0.2365	0.2615	0.3252	0.3817	0.3450	0.2957	0.2804	-----	0.308	12.77	0.976	0.997	16	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[a]anthracene	1	0	Avg	1.1616	1.2293	1.1383	1.1267	1.1969	1.2267	1.1607	1.1612	-----	1.18	12.80	0.999	0.999	3.3	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Chrysene	1	0	Avg	1.0740	1.2807	1.1219	1.0906	1.0778	1.0970	0.9914	0.9992	-----	1.09	12.84	0.997	0.998	8.2	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Ethylhexyl)phthal	1	0	Avg	0.7108	0.5995	0.6488	0.6811	0.7262	0.7128	0.6531	0.6473	-----	0.672	12.84	0.997	0.999	6.4	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Di-n-octylphthalate	1	0	Qua	1.3654	0.8792	1.1066	1.2138	1.3896	1.4163	1.3376	1.3646	-----	1.26	13.62	0.999	0.999	15	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[b]fluoranthene	1	0	Avg	1.1672	1.2414	1.1096	1.1615	1.2267	1.2025	1.2021	1.2050	-----	1.19	14.05	1.00	1.00	3.5	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[k]fluoranthene	1	0	Avg	1.2004	1.2683	1.1774	1.1647	1.1355	1.2167	1.0768	1.1011	-----	1.17	14.08	0.996	0.997	5.4	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[a]pyrene	1	0	Avg	1.1731	1.1349	1.0906	1.1335	1.1703	1.2217	1.1396	1.1504	-----	1.15	14.42	0.999	0.999	3.3	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Indeno[1,2,3-cd]pyrene	1	0	Avg	1.3685	1.4351	1.2959	1.3374	1.4057	1.4763	1.3711	1.3581	-----	1.38	15.84	0.998	0.999	4.1	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dibenzo[a,h]anthracene	1	0	Avg	1.1442	1.1794	1.1223	1.1417	1.1744	1.2267	1.1371	1.1090	-----	1.15	15.86	0.998	0.999	3.3	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[g,h,i]perylene	1	0	Avg	1.1502	1.2683	1.1122	1.1488	1.1868	1.2470	1.1580	1.1413	-----	1.18	16.23	0.999	0.999	4.6	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

Flags	*Note:* Avg Rsd: 9.55
a - failed the min rf criteria	*Corr 1 = Correlation Coefficient for linear Eq.*
c - failed the minimum correlation coeff criteria(if applicable)	*Corr 2 = Correlation Coefficient for quad Eq.*
	Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Form 6
Initial Calibration

Method: EPA 8270D

Instrument: GCMS_5

5102701 0077

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	5M92808.	CAL BNA@50PPM	10/29/15 12:32	2	5M92814.	CAL BNA@2PPM	10/29/15 14:53
3	5M92807.	CAL BNA@10PPM	10/29/15 11:54	4	5M92813.	CAL BNA@20PPM	10/29/15 14:30
5	5M92812.	CAL BNA@80PPM	10/29/15 14:06	6	5M92811.	CAL BNA@120PPM	10/29/15 13:42
7	5M92810.	CAL BNA@160PPM	10/29/15 13:19	8	5M92809.	CAL BNA@196PPM	10/29/15 12:55
9	5M92815.	CAL BNA@.5PPM	10/29/15 15:17				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Pyridine	1	0	Qua	1.2069	0.4610	1.1178	1.0670	1.2061	1.2820	1.1624	1.2821	-----	1.10	2.84	0.998	0.998	24		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Nitrosodimethylamin	1	0	Avg	0.6932	0.5210	0.7090	0.6421	0.7298	0.7419	0.7088	0.7389	-----	0.686	2.76	0.999	0.999	11		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Fluorophenol	1	0	Avg	1.2297	1.1871	1.1941	1.1527	1.2760	1.3330	1.2775	1.2890	-----	1.24	4.46	0.999	0.999	4.9		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzaldehyde	1	0	Qua	0.4344	0.5397	0.4913	0.4610	0.4012	0.3491	0.2819	0.2654	-----	0.403	5.29	0.960	0.999	24	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Aniline	1	0	Qua	1.8473	1.2176	1.3825	1.7854	1.9615	1.9452	1.8313	1.8500	1.5408	1.71	5.39	0.998	0.998	15		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Pentachloroethane	1	0	Avg	0.4292	0.4634	0.4471	0.4286	0.4318	0.4453	0.4192	0.4344	-----	0.437	5.44	0.999	0.999	3.2	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Chloroethyl)ether	1	0	Qua	1.2244	1.4513	1.2986	1.2041	1.1766	1.2044	1.1233	1.1379	1.8529	1.30	5.45	0.999	1.00	18	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Phenol-d5	1	0	Avg	1.6490	1.7495	1.6908	1.5964	1.6765	1.7362	1.6226	1.6441	-----	1.67	5.36	0.999	0.999	3.2		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Phenol	1	0	Avg	1.7738	1.9143	1.7778	1.7516	1.7740	1.8146	1.6764	1.6845	-----	1.77	5.37	0.999	0.999	4.2	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Chlorophenol	1	0	Avg	1.4148	1.4646	1.3882	1.3264	1.4210	1.4584	1.3899	1.4323	-----	1.41	5.50	0.999	0.999	3.1	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Decane	1	0	Avg	1.0258	1.2604	1.0533	1.0307	0.9671	0.9974	0.8885	0.9055	-----	1.02	5.55	0.996	0.998	11	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.3-Dichlorobenzene	1	0	Avg	1.5398	1.8907	1.6380	1.5359	1.5134	1.5861	1.4882	1.5153	-----	1.59	5.63	0.999	0.999	8.2		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.4-Dichlorobenzene	1	0	Avg	1.5221	1.8789	1.6586	1.5480	1.5388	1.5939	1.5047	1.5197	-----	1.60	5.69	0.999	0.999	7.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.2-Dichlorobenzene	1	0	Avg	1.4769	1.8321	1.5800	1.5398	1.4758	1.5288	1.4427	1.4526	-----	1.54	5.82	0.999	0.999	8.2		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzyl alcohol	1	0	Avg	0.8957	0.9534	0.9093	0.9033	0.9099	0.9516	0.8876	0.8995	-----	0.914	5.79	0.999	0.999	2.7		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-chloroisopropyl)et	1	0	Qua	1.0770	1.3810	1.1776	1.1174	1.0301	1.0810	0.9648	0.9757	-----	1.10	5.91	0.997	0.999	12	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Methylphenol	1	0	Qua	1.2588	1.3593	1.2987	1.2298	1.2679	1.2854	1.2011	1.2324	1.8171	1.33	5.89	0.999	1.00	14	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Acetophenone	1	0	Qua	1.9046	2.4009	2.0784	2.0185	1.8638	1.8940	1.7693	1.7741	-----	1.96	6.01	0.999	0.999	11	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachloroethane	1	0	Avg	0.5254	0.6154	0.5461	0.5217	0.5223	0.5472	0.5195	0.5254	-----	0.540	6.10	0.999	0.999	6.0	0.30	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Nitroso-di-n-propylan	1	0	Qua	0.8107	0.9889	0.9025	0.8525	0.7949	0.8012	0.7408	0.7405	1.2823	0.879	6.01	0.998	0.999	19	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
3&4-Methylphenol	1	0	Qua	1.2717	1.3884	1.3640	1.2976	1.2428	1.2513	1.1679	1.1627	1.6700	1.31	6.01	0.998	1.00	12		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Nitrobenzene-d5	1	0	Avg	0.1664	0.1626	0.1599	0.1653	0.1755	0.1774	0.1745	0.1737	-----	0.169	6.13	1.00	1.00	3.9		25.00	1.00	5.00	10.00	40.00	60.00	80.00	98.00	
Nitrobenzene	1	0	Avg	0.3258	0.3571	0.3309	0.3280	0.3187	0.3294	0.3041	0.3118	-----	0.326	6.15	0.998	0.999	4.8	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Isophorone	1	0	Avg	0.6098	0.6480	0.6398	0.6111	0.5933	0.6041	0.5873	0.5946	-----	0.611	6.34	1.00	1.00	3.6	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Nitrophenol	1	0	Avg	0.1908	0.1736	0.1751	0.1838	0.2002	0.2049	0.2017	0.1977	-----	0.191	6.40	0.999	0.999	6.4	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4-Dimethylphenol	1	0	Avg	0.3736	0.3959	0.3772	0.3671	0.3651	0.3711	0.3558	0.3598	0.4523	0.380	6.43	1.00	1.00	7.8	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Benzoic Acid	1	0	Qua	0.2402	-----	0.0867	0.2081	0.4097	0.4318	0.4243	0.4308	-----	0.319	6.52	0.994	0.994	44		50.00		10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Chloroethoxy)met	1	0	Avg	0.3750	0.4306	0.3979	0.3809	0.3742	0.3690	0.3554	0.3620	-----	0.381	6.51	1.00	1.00	6.3	0.30	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4-Dichlorophenol	1	0	Avg	0.3335	0.3390	0.3405	0.3325	0.3360	0.3412	0.3335	0.3279	0.3912	0.342	6.59	1.00	1.00	5.6	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
1.2.4-Trichlorobenzene	1	0	Avg	0.3613	0.4475	0.3848	0.3626	0.3653	0.3680	0.3579	0.3537	-----	0.375	6.65	1.00	1.00	8.2		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Naphthalene	1	0	Qua	1.0611	1.3231	1.1214	1.0681	1.0258	1.0422	0.9851	0.9902	1.7862	1.16	6.71	0.999	1.00	22	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
4-Chloroaniline	1	0	Qua	0.4031	0.2962	0.3123	0.4142	0.3799	0.3303	0.2732	0.2457	0.3761	0.337	6.75	0.951	0.998	18	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Hexachlorobutadiene	1	0	Avg	0.2107	0.2612	0.2231	0.2180	0.2119	0.2185	0.2117	0.2146	-----	0.221	6.80	1.00	1.00	7.5	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Caprolactam	1	0	Avg	0.1270	0.1145	0.1222	0.1253	0.1338	0.1429	0.1416	0.1419	-----	0.131	7.02	0.999	0.999	8.0	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Chloro-3-methylphen	1	0	Avg	0.3250	0.3180	0.3294	0.3181	0.3296	0.3311	0.3280	0.3246	-----	0.326	7.11	1.00	1.00	1.6	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Methylnaphthalene	1	0	Avg	0.7716	0.9000	0.8313	0.7873	0.7688	0.7737	0.7456	0.7369	-----	0.789	7.24	0.999	1.00	6.7	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Methylnaphthalenes (T	1	0	Avg	1.4809	1.7831	1.5966	1.5220	1.4748	1.4945	1.4264	1.4189	-----	1.52	7.32	0.999	1.00	7.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.1'-Biphenyl	1	0	Avg	0.9984	1.1648	1.0761	1.0165	0.9737	0.9839	0.9204	0.9377	-----	1.01	7.61	0.999	1.00	7.8	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.2.4.5-Tetrachloroben	1	0	Avg	0.6308	0.7711	0.6545	0.6303	0.6072	0.6403	0.5744	0.6060	-----	0.639	7.37	0.999	0.999	9.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachlorocyclopentac	1	0	Avg	0.3538	0.2729	0.3290	0.3301	0.3669	0.3924	0.3563	0.3774	-----	0.347	7.37	0.997	0.997	11	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4.6-Trichlorophenol	1	0	Avg	0.3937	0.3634	0.4174	0.4638	0.3992	0.4161	0.3874	0.4019	-----	0.405	7.46	0.998	0.998	7.2	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

Flags

a - failed the min rf criteria

c - failed the minimum correlation coeff criteria(if applicable)

Note: Avg Rsd: 8.83

Corr 1 = Correlation Coefficient for linear Eq.

Corr 2 = Correlation Coefficient for quad Eq.

Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Form 6
Initial Calibration

Method: EPA 8270D

Instrument: GCMS_5

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	5M92808.	CAL BNA@50PPM	10/29/15 12:32	2	5M92814.	CAL BNA@2PPM	10/29/15 14:53
3	5M92807.	CAL BNA@10PPM	10/29/15 11:54	4	5M92813.	CAL BNA@20PPM	10/29/15 14:30
5	5M92812.	CAL BNA@80PPM	10/29/15 14:06	6	5M92811.	CAL BNA@120PPM	10/29/15 13:42
7	5M92810.	CAL BNA@160PPM	10/29/15 13:19	8	5M92809.	CAL BNA@196PPM	10/29/15 12:55
9	5M92815.	CAL BNA@.5PPM	10/29/15 15:17				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
2.4.5-Trichlorophenol	1	0	Avg	0.4296	0.4200	0.4197	0.3687	0.4333	0.4568	0.4192	0.4291	-----	0.422	7.49	0.996	0.997	5.9	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Fluorobiphenyl	1	0	Avg	1.4544	1.7236	1.5353	1.4266	1.4167	1.4744	1.3625	1.4256	-----	1.48	7.53	0.999	0.999	7.5		25.00	1.00	5.00	10.00	40.00	60.00	80.00	98.00	
2-Chloronaphthalene	1	0	Avg	1.1438	1.3759	1.2393	1.2010	1.1294	1.1551	1.0650	1.1094	-----	1.18	7.63	0.998	0.998	8.2	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.4-Dimethylnaphthalei	1	0	Avg	0.9135	1.1145	0.9887	0.9502	0.8866	0.8898	0.8035	0.8328	-----	0.922	7.91	0.998	0.999	11		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dimethylnaphthalenes	1	0	Avg	0.9135	1.1145	0.9887	0.9502	0.8866	0.8898	0.8035	0.8328	-----	0.922	7.91	0.998	0.999	11		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Diphenyl Ether	1	0	Avg	0.8819	1.0504	0.9474	0.9015	0.8580	0.8800	0.7944	0.8137	-----	0.891	7.69	0.998	0.999	9.0		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Nitroaniline	1	0	Avg	0.3148	0.2932	0.3234	0.3261	0.3166	0.3202	0.2922	0.2979	-----	0.311	7.70	0.998	0.999	4.5	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Coumarin	1	0	Avg	0.4815	0.5455	0.5142	0.4981	0.4706	0.4805	0.4345	0.4494	-----	0.484	7.88	0.998	0.999	7.3		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Acenaphthylene	1	0	Avg	1.7832	1.9997	1.8907	1.8250	1.7476	1.7838	1.6528	1.6765	-----	1.79	7.98	0.999	1.00	6.3	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dimethylphthalate	1	0	Avg	1.3657	1.6021	1.4635	1.4228	1.3905	1.4145	1.2753	1.3364	-----	1.41	7.85	0.997	0.998	6.9	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.6-Dinitrotoluene	1	0	Avg	0.2991	0.2696	0.3110	0.3136	0.2971	0.2995	0.2708	0.2770	-----	0.292	7.91	0.997	0.998	6.0	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Acenaphthene	1	0	Avg	1.1413	1.4313	1.2496	1.2004	1.1310	1.1807	1.0737	1.1080	-----	1.19	8.13	0.998	0.998	9.4	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
3-Nitroaniline	1	0	Qua	0.3143	0.2683	0.2959	0.3155	0.3019	0.2809	0.2425	0.2406	-----	0.283	8.05	0.985	0.998	11	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4-Dinitrophenol	1	0	Qua	0.1154	-----	0.0488	0.0895	0.1750	0.1826	0.1770	0.1860	-----	0.139	8.14	0.992	0.994	39	0.01	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
Dibenzofuran	1	0	Qua	1.7146	2.1564	1.8477	1.7767	1.6867	1.7077	1.5864	1.6396	2.9481	1.90	8.28	0.999	1.00	23	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
2.4-Dinitrotoluene	1	0	Qua	0.4143	0.3283	0.4009	0.4162	0.4458	0.4521	0.4233	0.4377	-----	0.415	8.26	0.999	0.999	9.4	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Nitrophenol	1	0	Qua	0.2056	0.1279	0.1979	0.2157	0.2112	0.2159	0.2162	0.2096	-----	0.200	8.18	1.00	1.00	15	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.3.4.6-Tetrachlorophe	1	0	Avg	0.3772	0.3580	0.3846	0.3819	0.3896	0.4092	0.3759	0.3898	-----	0.383	8.39	0.999	0.999	3.8	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Fluorene	1	0	Avg	1.3879	1.7030	1.4961	1.4544	1.3476	1.3853	1.2633	1.3138	-----	1.42	8.60	0.999	0.999	9.6	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Chlorophenyl-phenyl	1	0	Avg	0.7001	0.8545	0.7698	0.7398	0.6920	0.7214	0.6602	0.6838	-----	0.728	8.59	0.999	0.999	8.5	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Diethylphthalate	1	0	Avg	1.3117	1.4593	1.4422	1.3810	1.3480	1.3763	1.2696	1.3200	-----	1.36	8.48	0.998	0.998	4.8	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Nitroaniline	1	0	Avg	0.3517	0.3219	0.3521	0.3597	0.3578	0.3714	0.3433	0.3598	-----	0.352	8.60	0.999	0.999	4.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Atrazine	1	0	Avg	0.3736	0.3671	0.3918	0.3841	0.3893	0.3983	0.3663	0.3833	-----	0.382	9.23	0.999	0.999	3.1	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4.6-Dinitro-2-methylphe	1	0	Qua	0.1020	-----	0.0657	0.0871	0.1303	0.1331	0.1280	0.1364	-----	0.112	8.64	0.997	0.997	24	0.01	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
n-Nitrosodiphenylamine	1	0	Avg	0.6014	0.7058	0.6332	0.6228	0.5929	0.6072	0.5733	0.5789	-----	0.614	8.70	0.999	1.00	6.8	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4.6-Tribromophenol	1	0	Avg	0.1118	0.0885	0.1036	0.1107	0.1149	0.1198	0.1134	0.1192	-----	0.110	8.83	0.999	0.999	9.2		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.2-Diphenylhydrazine	1	0	Avg	0.5297	0.5742	0.5600	0.5525	0.5682	0.5791	0.5343	0.5491	-----	0.556	8.74	0.999	0.999	3.2		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Bromophenyl-phenyl	1	0	Avg	0.2063	0.2283	0.2147	0.2145	0.2146	0.2183	0.2110	0.2175	-----	0.216	9.07	0.999	0.999	3.0	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachlorobenzene	1	0	Avg	0.2350	0.2881	0.2518	0.2432	0.2382	0.2417	0.2292	0.2374	-----	0.246	9.14	1.00	1.00	7.5	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Octadecane	1	0	Avg	0.2921	0.3268	0.3104	0.3073	0.2721	0.2763	0.2510	0.2495	-----	0.286	9.42	0.996	0.999	9.9	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Pentachlorophenol	1	0	Avg	0.1453	-----	0.1119	0.1296	0.1633	0.1698	0.1637	0.1687	-----	0.150	9.34	0.999	0.999	15	0.05	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
Phenanthrene	1	0	Avg	1.0616	1.3167	1.1195	1.0736	1.0433	1.0393	0.9955	1.0085	-----	1.08	9.57	0.999	1.00	9.4	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Anthracene	1	0	Avg	1.0541	1.2344	1.1078	1.0937	1.0501	1.0708	1.0027	1.0198	-----	1.08	9.62	0.999	0.999	6.6	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Carbazole	1	0	Avg	1.0216	1.1604	1.0859	1.0655	0.9933	1.0319	0.9721	0.9926	-----	1.04	9.79	0.999	0.999	5.9	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Di-n-butylphthalate	1	0	Avg	1.1569	1.0545	1.1723	1.1397	1.1601	1.1708	1.1260	1.1387	1.2302	1.15	10.18	1.00	1.00	4.1	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Fluoranthene	1	0	Avg	1.2476	1.3325	1.3111	1.2647	1.2575	1.2732	1.2066	1.2218	-----	1.26	10.89	0.999	0.999	3.3	0.60	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Pyrene	1	0	Avg	1.1004	1.1686	1.1011	1.0985	1.1330	1.1694	1.1008	1.1018	-----	1.12	11.14	0.999	0.999	2.8	0.60	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzidine	1	0	Qua	0.5383	0.1158	0.3116	0.4918	0.5183	0.4586	0.3884	0.3604	-----	0.398	11.04	0.972	0.996	35		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Terphenyl-d14	1	0	Avg	0.6085	0.6496	0.6141	0.6019	0.6324	0.6600	0.6315	0.6567	-----	0.632	11.33	0.999	0.999	3.5		25.00	1.00	5.00	10.00	40.00	60.00	80.00	96.00	
4.4'-DDE	1	0	Avg	0.2419	0.2557	0.2408	0.2368	0.2477	0.2582	0.2455	0.2474	-----	0.247	11.28	0.999	0.999	3.0		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4.4'-DDD	1	0	Avg	0.4056	0.3767	0.3957	0.3882	0.4321	0.4448	0.4249	0.4267	-----	0.412	11.67	0.999	0.999	5.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

Flags

a - failed the min rf criteria

c - failed the minimum correlation coeff criteria(if applicable)

Note: Avg Rsd: 8.83

Corr 1 = Correlation Coefficient for linear Eq.

Corr 2 = Correlation Coefficient for quad Eq.

Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Form 6
Initial Calibration

Method: EPA 8270D

Instrument: GCMS_5

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	5M92808.	CAL BNA@50PPM	10/29/15 12:32	2	5M92814.	CAL BNA@2PPM	10/29/15 14:53
3	5M92807.	CAL BNA@10PPM	10/29/15 11:54	4	5M92813.	CAL BNA@20PPM	10/29/15 14:30
5	5M92812.	CAL BNA@80PPM	10/29/15 14:06	6	5M92811.	CAL BNA@120PPM	10/29/15 13:42
7	5M92810.	CAL BNA@160PPM	10/29/15 13:19	8	5M92809.	CAL BNA@196PPM	10/29/15 12:55
9	5M92815.	CAL BNA@.5PPM	10/29/15 15:17				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Butylbenzylphthalate	1	0	Avg	0.4543	0.3465	0.4271	0.4308	0.4803	0.4989	0.4702	0.4713	-----	0.447	11.93	0.999	0.999	11	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4,4'-DDT	1	0	Avg	0.3833	0.2765	0.3584	0.3504	0.4034	0.4169	0.3986	0.3951	-----	0.373	12.02	0.999	0.999	12		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
3,3'-Dichlorobenzidine	1	0	Qua	0.3031	0.2408	0.1905	0.3017	0.3383	0.3018	0.2746	0.2615	-----	0.277	12.53	0.986	0.998	17	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[a]anthracene	1	0	Avg	1.1097	1.2248	1.1083	1.0924	1.1158	1.1404	1.0973	1.1047	-----	1.12	12.56	1.00	1.00	3.8	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Chrysene	1	0	Avg	1.0384	1.2123	1.0628	1.0352	1.0452	1.0730	1.0087	1.0043	-----	1.06	12.60	0.999	0.999	6.2	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Ethylhexyl)phthal	1	0	Avg	0.6107	0.5093	0.5840	0.5943	0.6314	0.6575	0.6162	0.6213	-----	0.603	12.63	0.999	0.999	7.3	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Di-n-octylphthalate	1	0	Qua	1.1443	0.8393	1.0207	1.0969	1.1936	1.2477	1.1676	1.1865	-----	1.11	13.38	0.999	0.999	12	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[b]fluoranthene	1	0	Avg	1.1199	1.2695	1.1550	1.1024	1.1576	1.1726	1.1561	1.1422	-----	1.16	13.77	1.00	1.00	4.3	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[k]fluoranthene	1	0	Avg	1.1518	1.2939	1.1924	1.1402	1.1090	1.1444	1.0483	1.1280	-----	1.15	13.80	0.997	0.997	6.2	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[a]pyrene	1	0	Avg	1.1043	1.1827	1.0915	1.0967	1.1141	1.1233	1.0760	1.1041	-----	1.11	14.11	0.999	0.999	2.9	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Indeno[1,2,3-cd]pyrene	1	0	Avg	1.1788	1.2519	1.2138	1.1525	1.2191	1.2114	1.1447	1.2147	-----	1.20	15.41	0.999	0.999	3.0	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dibenzo[a,h]anthracene	1	0	Avg	1.0077	1.0363	1.0425	0.9802	1.0275	1.0271	0.9643	1.0131	-----	1.01	15.43	0.999	0.999	2.7	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[g,h,i]perylene	1	0	Avg	0.9844	1.0579	1.0111	0.9650	1.0229	0.9937	0.9571	1.0172	-----	1.00	15.76	0.998	0.998	3.3	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

Flags	*Note:* Avg Rsd: 8.83
a - failed the min rf criteria	*Corr 1 = Correlation Coefficient for linear Eq.*
c - failed the minimum correlation coeff criteria(if applicable)	*Corr 2 = Correlation Coefficient for quad Eq.*
	Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 5M92833.D **Instrument:** GCMS 5

Cont Calibration Date/Time 10/30/2015 9:45:00 Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
1,4-Dichlorobenzene-d4	1	0	I	5.68	40.00	40	**			0.000	0.00	
Pyridine	1	0		2.84	54.75	50	**		1.098	1.285	9.50	
N-Nitrosodimethylamine	1	0		2.76	52.74	50	**		0.686	0.723	5.48	
2-Fluorophenol	1	0	S	4.46	49.07	50	**		1.242	1.219	1.85	
Benzaldehyde	1	0		5.29	30.40	50	20	0.01	0.403	0.277	39.20	C1
Aniline	1	0		5.39	51.96	50	**		1.707	1.930	3.91	
Pentachloroethane	1	0		5.44	48.91	50	**	0.05	0.437	0.428	2.19	
bis(2-Chloroethyl)ether	1	0		5.45	50.08	50	20	0.7	1.297	1.223	0.16	
Phenol-d5	1	0	S	5.36	49.32	50	**		1.671	1.648	1.35	
Phenol	1	0		5.38	50.86	50	20	0.8	1.771	1.802	1.73	
2-Chlorophenol	1	0		5.50	50.73	50	20	0.8	1.412	1.433	1.46	
N-Decane	1	0		5.56	50.74	50	**	0.05	1.016	1.031	1.47	
1,3-Dichlorobenzene	1	0		5.63	50.13	50	**		1.588	1.592	0.25	
1,4-Dichlorobenzene	1	0		5.69	50.34	50	20		1.596	1.606	0.68	
1,2-Dichlorobenzene	1	0		5.82	49.86	50	**		1.541	1.537	0.28	
Benzyl alcohol	1	0		5.79	50.90	50	**		0.914	0.930	1.80	
bis(2-chloroisopropyl)ether	1	0		5.91	51.13	50	20	0.01	1.101	1.116	2.25	
2-Methylphenol	1	0		5.89	50.63	50	20	0.7	1.328	1.289	1.26	
Acetophenone	1	0		6.01	48.88	50	20	0.01	1.963	1.881	2.24	
Hexachloroethane	1	0		6.10	50.34	50	20	0.3	0.540	0.544	0.68	
N-Nitroso-di-n-propylamine	1	0		6.01	52.47	50	20	0.5	0.879	0.860	4.94	
3&4-Methylphenol	1	0		6.01	51.41	50	20		1.313	1.317	2.81	
Naphthalene-d8	1	0	I	6.69	40.00	40	**			0.000	0.00	
Nitrobenzene-d5	1	0	S	6.13	24.10	25	**		0.169	0.163	3.58	
Nitrobenzene	1	0		6.15	50.62	50	20	0.2	0.326	0.330	1.25	
Isophorone	1	0		6.34	51.41	50	20	0.4	0.611	0.628	2.83	
2-Nitrophenol	1	0		6.40	53.67	50	20	0.1	0.191	0.205	7.35	
2,4-Dimethylphenol	1	0		6.43	50.69	50	20	0.2	0.380	0.385	1.38	
Benzoic Acid	1	0		6.50	17.39	50	**		0.319	0.121	65.23	
bis(2-Chloroethoxy)methane	1	0		6.51	50.65	50	20	0.3	0.381	0.386	1.30	
2,4-Dichlorophenol	1	0		6.59	49.63	50	20	0.2	0.342	0.339	0.74	
1,2,4-Trichlorobenzene	1	0		6.65	50.49	50	**		0.375	0.379	0.98	
Naphthalene	1	0		6.71	51.18	50	20	0.7	1.156	1.089	2.36	
4-Chloroaniline	1	0		6.75	57.15	50	20	0.01	0.337	0.452	14.30	
Hexachlorobutadiene	1	0		6.80	49.61	50	20	0.01	0.221	0.220	0.77	
Caprolactam	1	0		7.02	47.52	50	20	0.01	0.131	0.125	4.97	
4-Chloro-3-methylphenol	1	0		7.11	52.83	50	20	0.2	0.326	0.344	5.66	
2-Methylnaphthalene	1	0		7.24	50.37	50	**	0.4	0.789	0.795	0.74	
Methylnaphthalenes	1	0		7.32	50.67	50	20			1.545	1.34	
1,1'-Biphenyl	1	0		7.61	50.35	50	20	0.01	1.009	1.016	0.69	
Acenaphthene-d10	1	0	I	8.10	40.00	40	**			0.000	0.00	
1,2,4,5-Tetrachlorobenzene	1	0		7.37	49.29	50	20	0.01	0.639	0.630	1.42	
Hexachlorocyclopentadiene	1	0		7.37	51.55	50	20	0.05	0.347	0.358	3.10	
2,4,6-Trichlorophenol	1	0		7.46	51.76	50	20	0.2	0.405	0.420	3.52	
2,4,5-Trichlorophenol	1	0		7.49	54.55	50	20	0.2	0.422	0.461	9.10	
2-Fluorobiphenyl	1	0	S	7.53	24.89	25	**		1.477	1.471	0.45	
2-Chloronaphthalene	1	0		7.63	51.49	50	20	0.8	1.177	1.212	2.97	
1,4-Dimethylnaphthalene	1	0		7.91	48.25	50	**		0.923	0.890	3.49	
Dimethylnaphthalenes	1	0		7.91	48.25	50	20			0.890	3.49	
Diphenyl Ether	1	0		7.69	49.40	50	**		0.891	0.880	1.20	
2-Nitroaniline	1	0		7.70	55.06	50	20	0.01	0.311	0.342	10.12	
Coumarin	1	0		7.88	52.41		**		0.484			

S-Surrogate Compound I-Internal Standard Compound

N/O or N/Q - Not applicable for this run C1-Compound %Diff exceeds limits ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 5M92833.D **Instrument:** GCMS 5

Cont Calibration Date/Time 10/30/2015 9:45:00 Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Acenaphthylene	1	0		7.98	52.04	50	20	0.9	1.795	1.868	4.07	
Dimethylphthalate	1	0		7.85	51.53	50	20	0.01	1.409	1.452	3.06	
2,6-Dinitrotoluene	1	0		7.91	55.24	50	20	0.2	0.292	0.323	10.48	
Acenaphthene	1	0		8.13	51.32	50	20	0.9	1.190	1.221	2.65	
3-Nitroaniline	1	0		8.05	58.27	50	20	0.01	0.283	0.357	16.54	
2,4-Dinitrophenol	1	0		8.14	36.26	50	20	0.01	0.139	0.095	27.48	C1
Dibenzofuran	1	0		8.28	52.04	50	20	0.8	1.896	1.807	4.07	
2,4-Dinitrotoluene	1	0		8.26	52.07	50	20	0.2	0.415	0.457	4.15	
4-Nitrophenol	1	0		8.18	55.26	50	20	0.01	0.200	0.232	10.51	
2,3,4,6-Tetrachlorophenol	1	0		8.39	55.42	50	20	0.01	0.383	0.425	10.84	
Fluorene	1	0		8.60	52.05	50	20	0.9	1.419	1.477	4.11	
4-Chlorophenyl-phenylether	1	0		8.59	51.83	50	20	0.4	0.728	0.754	3.67	
Diethylphthalate	1	0		8.48	52.83	50	20	0.01	1.364	1.441	5.65	
4-Nitroaniline	1	0		8.60	54.06	50	20	0.01	0.352	0.381	8.13	
Atrazine	1	0		9.22	50.07	50	20	0.01	0.382	0.382	0.13	
Phenanthrene-d10	1	0	I	9.54	40.00	40	**			0.000	0.00	
4,6-Dinitro-2-methylphenol	1	0		8.63	42.74	50	20	0.01	0.112	0.101	14.52	
n-Nitrosodiphenylamine	1	0		8.70	51.88	50	20	0.01	0.614	0.638	3.76	
2,4,6-Tribromophenol	1	0	S	8.83	52.22	50	**		0.110	0.115	4.44	
1,2-Diphenylhydrazine	1	0		8.74	50.99	50	**		0.556	0.567	1.98	
4-Bromophenyl-phenylether	1	0		9.07	52.13	50	20	0.1	0.216	0.225	4.26	
Hexachlorobenzene	1	0		9.14	51.41	50	20	0.1	0.246	0.253	2.82	
N-Octadecane	1	0		9.42	52.96	50	**	0.05	0.286	0.303	5.91	
Pentachlorophenol	1	0		9.34	51.55	50	20	0.05	0.150	0.155	3.09	
Phenanthrene	1	0		9.56	51.87	50	20	0.7	1.082	1.123	3.74	
Anthracene	1	0		9.62	52.12	50	20	0.7	1.079	1.125	4.23	
Carbazole	1	0		9.78	51.35	50	20	0.01	1.040	1.068	2.70	
Di-n-butylphthalate	1	0		10.18	52.99	50	20	0.01	1.150	1.219	5.99	
Fluoranthene	1	0		10.88	52.44	50	20	0.6	1.264	1.326	4.88	
Chrysene-d12	1	0	I	12.57	40.00	40	**			0.000	0.00	
Pyrene	1	0		11.14	51.69	50	20	0.6	1.122	1.160	3.37	
Benzidine	1	0		11.03	46.64	50	**		0.398	0.474	6.72	
Terphenyl-d14	1	0	S	11.33	25.05	25	**		0.632	0.633	0.22	
4,4'-DDE	1	0		11.27	50.63		**		0.247			
4,4'-DDD	1	0		11.67	51.23		**		0.412			
Butylbenzylphthalate	1	0		11.92	52.93	50	20	0.01	0.447	0.474	5.86	
4,4'-DDT	1	0		12.02	52.43		**		0.373			
3,3'-Dichlorobenzidine	1	0		12.53	58.06	50	20	0.01	0.277	0.380	16.12	
Benzo[a]anthracene	1	0		12.56	51.30	50	20	0.8	1.124	1.153	2.59	
Chrysene	1	0		12.60	50.73	50	20	0.7	1.060	1.076	1.46	
bis(2-Ethylhexyl)phthalate	1	0		12.63	53.72	50	20	0.01	0.603	0.648	7.43	
Perylene-d12	1	0	I	14.17	40.00	40	**			0.000	0.00	
Di-n-octylphthalate	1	0		13.37	52.46	50	20	0.01	1.112	1.221	4.92	
Benzo[b]fluoranthene	1	0		13.77	52.36	50	20	0.7	1.159	1.214	4.73	
Benzo[k]fluoranthene	1	0		13.80	50.71	50	20	0.7	1.151	1.167	1.42	
Benzo[a]pyrene	1	0		14.11	51.85	50	20	0.7	1.112	1.153	3.71	
Indeno[1,2,3-cd]pyrene	1	0		15.40	49.70	50	20	0.5	1.198	1.191	0.60	
Dibenzo[a,h]anthracene	1	0		15.42	51.02	50	20	0.4	1.012	1.033	2.03	
Benzo[g,h,i]perylene	1	0		15.75	50.15	50	20	0.5	1.001	1.004	0.30	
4-Methylphenol	1	100		0.00	0.00	50	**	0.6		0.000	100.00	
Dimethylnaphthalenes (Total)	1	100		0.00	0.00	50	**		0.923	0.000	100.00	
Endrin	1	100		0.00	0.00	50	**			0.000	100.00	

S-Surrogate Compound I-Internal Standard Compound

N/O or N/Q - Not applicable for this run C1-Compound %Diff exceeds limits ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 5M92833.D **Instrument:** GCMS 5

Cont Calibration Date/Time 10/30/2015 9:45:00 Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
gamma-BHC	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor epoxide	1	100		0.00	0.00	10	**			0.000	100.00	
Methoxychlor	1	100		0.00	0.00	10	**			0.000	100.00	
Methylnaphthalenes (Total)	1	100		0.00	0.00	50	**		1.525	0.000	100.00	
Toluene Diisocyanate	1	100		0.00	0.00	50	**			0.000	100.00	
1,4-Dioxane	1	100		0.00	0.00	20	20			0.000	100.00	C1
2,2'-oxybis-(1-Chloropropane)	1	100		0.00	0.00	50	**			0.000	100.00	
2,4 Diaminotoluene	1	100		0.00	0.00	50	**			0.000	100.00	
Diaminotoluene Dihydrochloride	1	100		0.00	0.00	50	**			0.000	100.00	

S-Surrogate Compound I-Internal Standard Compound

N/O or N/Q - Not applicable for this run C1-Compound %Diff exceeds limits ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 7M72969.D **Instrument:** GCMS 7

Cont Calibration Date/Time 10/30/2015 9:47:00 Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
1,4-Dichlorobenzene-d4	1	0	I	5.80	40.00	40	**			0.000	0.00	
Pyridine	1	0		3.04	50.89	50	**		1.447	1.473	1.79	
N-Nitrosodimethylamine	1	0		2.96	50.49	50	**		0.876	0.885	0.98	
2-Fluorophenol	1	0	S	4.59	47.46	50	**		1.410	1.338	5.07	
Benzaldehyde	1	0		6.13	49.48	50	20	0.01	2.300	2.277	1.03	
Aniline	1	0		5.52	52.11	50	**		2.006	2.265	4.21	
Pentachloroethane	1	0		5.56	47.18	50	**	0.05	0.468	0.442	5.65	
bis(2-Chloroethyl)ether	1	0		5.58	51.21	50	20	0.7	1.589	1.549	2.42	
Phenol-d5	1	0	S	5.48	49.05	50	**		2.056	2.016	1.91	
Phenol	1	0		5.49	50.96	50	20	0.8	2.243	2.286	1.93	
2-Chlorophenol	1	0		5.62	49.42	50	20	0.8	1.644	1.625	1.16	
N-Decane	1	0		5.66	48.09	50	**	0.05	1.154	1.109	3.82	
1,3-Dichlorobenzene	1	0		5.75	48.25	50	**		1.579	1.524	3.49	
1,4-Dichlorobenzene	1	0		5.82	48.98	50	20		1.625	1.592	2.05	
1,2-Dichlorobenzene	1	0		5.94	48.98	50	**		1.581	1.549	2.04	
Benzyl alcohol	1	0		5.91	48.70	50	**		1.148	1.118	2.60	
bis(2-chloroisopropyl)ether	1	0		6.03	49.30	50	20	0.01	1.703	1.679	1.40	
2-Methylphenol	1	0		6.00	49.14	50	20	0.7	1.637	1.609	1.72	
Acetophenone	1	0		6.13	49.22	50	20	0.01	2.439	2.401	1.57	
Hexachloroethane	1	0		6.22	48.13	50	20	0.3	0.585	0.563	3.75	
N-Nitroso-di-n-propylamine	1	0		6.13	47.88	50	20	0.5	1.186	1.136	4.24	
3&4-Methylphenol	1	0		6.13	51.21	50	20		1.706	1.747	2.42	
Naphthalene-d8	1	0	I	6.83	40.00	40	**			0.000	0.00	
Nitrobenzene-d5	1	0	S	6.26	23.92	25	**		0.175	0.167	4.32	
Nitrobenzene	1	0		6.27	51.05	50	20	0.2	0.335	0.342	2.09	
Isophorone	1	0		6.46	51.30	50	20	0.4	0.703	0.721	2.60	
2-Nitrophenol	1	0		6.52	50.06	50	20	0.1	0.187	0.191	0.11	
2,4-Dimethylphenol	1	0		6.55	50.62	50	20	0.2	0.385	0.390	1.25	
Benzoic Acid	1	0		6.60	26.29	50	**		0.301	0.110	47.43	
bis(2-Chloroethoxy)methane	1	0		6.63	51.85	50	20	0.3	0.424	0.440	3.71	
2,4-Dichlorophenol	1	0		6.71	52.21	50	20	0.2	0.324	0.339	4.41	
1,2,4-Trichlorobenzene	1	0		6.78	50.13	50	**		0.336	0.337	0.26	
Naphthalene	1	0		6.85	50.67	50	20	0.7	1.192	1.120	1.34	
4-Chloroaniline	1	0		6.89	51.13	50	20	0.01	0.369	0.490	2.25	
Hexachlorobutadiene	1	0		6.93	50.06	50	20	0.01	0.171	0.171	0.13	
Caprolactam	1	0		7.15	52.05	50	20	0.01	0.179	0.187	4.10	
4-Chloro-3-methylphenol	1	0		7.26	52.70	50	20	0.2	0.364	0.384	5.40	
2-Methylnaphthalene	1	0		7.39	52.03	50	**	0.4	0.813	0.846	4.06	
Methylnaphthalenes	1	0		7.39	49.79	50	20			1.632	0.42	
1,1'-Biphenyl	1	0		7.77	51.54	50	20	0.01	1.077	1.110	3.07	
Acenaphthene-d10	1	0	I	8.28	40.00	40	**			0.000	0.00	
1,2,4,5-Tetrachlorobenzene	1	0		7.53	48.30	50	20	0.01	0.535	0.517	3.39	
Hexachlorocyclopentadiene	1	0		7.51	48.42	50	20	0.05	0.230	0.224	3.16	
2,4,6-Trichlorophenol	1	0		7.61	52.67	50	20	0.2	0.358	0.377	5.34	
2,4,5-Trichlorophenol	1	0		7.65	53.16	50	20	0.2	0.391	0.416	6.31	
2-Fluorobiphenyl	1	0	S	7.69	24.44	25	**		1.305	1.276	2.24	
2-Chloronaphthalene	1	0		7.80	51.36	50	20	0.8	1.151	1.182	2.71	
1,4-Dimethylnaphthalene	1	0		8.08	49.14	50	**		0.942	0.926	1.72	
Dimethylnaphthalenes	1	0		8.08	49.14	50	20			0.926	1.72	
Diphenyl Ether	1	0		7.86	47.72	50	**		0.824	0.786	4.55	
2-Nitroaniline	1	0		7.88	53.68	50	20	0.01	0.361	0.387	7.37	
Coumarin	1	0		8.06	55.21		**		0.543			

S-Surrogate Compound I-Internal Standard Compound

N/O or N/Q - Not applicable for this run C1-Compound %Diff exceeds limits ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 7M72969.D **Instrument:** GCMS 7

Cont Calibration Date/Time 10/30/2015 9:47:00 Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Acenaphthylene	1	0		8.16	52.83	50	20	0.9	1.772	1.873	5.67	
Dimethylphthalate	1	0		8.02	52.57	50	20	0.01	1.470	1.546	5.15	
2,6-Dinitrotoluene	1	0		8.08	56.47	50	20	0.2	0.312	0.353	12.93	
Acenaphthene	1	0		8.31	51.42	50	20	0.9	1.233	1.268	2.83	
3-Nitroaniline	1	0		8.23	62.27	50	20	0.01	0.339	0.422	24.53	C1
2,4-Dinitrophenol	1	0		8.32	41.37	50	20	0.01	0.139	0.114	17.26	
Dibenzofuran	1	0		8.46	52.00	50	20	0.8	1.914	1.866	4.01	
2,4-Dinitrotoluene	1	0		8.44	54.02	50	20	0.2	0.449	0.513	8.05	
4-Nitrophenol	1	0		8.36	58.78	50	20	0.01	0.257	0.303	17.56	
2,3,4,6-Tetrachlorophenol	1	0		8.57	58.80	50	20	0.01	0.346	0.407	17.60	
Fluorene	1	0		8.79	53.71	50	20	0.9	1.470	1.579	7.43	
4-Chlorophenyl-phenylether	1	0		8.78	52.09	50	20	0.4	0.699	0.728	4.19	
Diethylphthalate	1	0		8.66	49.73	50	20	0.01	1.731	1.608	0.54	
4-Nitroaniline	1	0		8.79	57.65	50	20	0.01	0.431	0.497	15.30	
Atrazine	1	0		9.42	54.70	50	20	0.01	0.389	0.425	9.39	
Phenanthrene-d10	1	0	I	9.74	40.00	40	**			0.000	0.00	
4,6-Dinitro-2-methylphenol	1	0		8.82	51.68	50	20	0.01	0.113	0.116	3.37	
n-Nitrosodiphenylamine	1	0		8.89	50.74	50	20	0.01	0.602	0.611	1.47	
2,4,6-Tribromophenol	1	0	S	9.02	48.86	50	**		0.096	0.097	2.28	
1,2-Diphenylhydrazine	1	0		8.93	48.12	50	**		0.638	0.614	3.75	
4-Bromophenyl-phenylether	1	0		9.26	49.54	50	20	0.1	0.188	0.186	0.92	
Hexachlorobenzene	1	0		9.33	48.15	50	20	0.1	0.217	0.209	3.70	
N-Octadecane	1	0		9.60	50.90	50	**	0.05	0.326	0.332	1.81	
Pentachlorophenol	1	0		9.53	60.21	50	20	0.05	0.093	0.111	20.42	
Phenanthrene	1	0		9.77	51.13	50	20	0.7	1.133	1.159	2.26	
Anthracene	1	0		9.82	51.95	50	20	0.7	1.115	1.159	3.89	
Carbazole	1	0		9.99	53.41	50	20	0.01	1.106	1.182	6.81	
Di-n-butylphthalate	1	0		10.37	54.44	50	20	0.01	1.234	1.343	8.87	
Fluoranthene	1	0		11.10	55.13	50	20	0.6	1.303	1.437	10.26	
Chrysene-d12	1	0	I	12.80	40.00	40	**			0.000	0.00	
Pyrene	1	0		11.36	50.03	50	20	0.6	1.162	1.163	0.07	
Benzidine	1	0		11.25	41.57	50	**		0.374	0.440	16.86	
Terphenyl-d14	1	0	S	11.55	23.91	25	**		0.592	0.566	4.37	
4,4'-DDE	1	0		11.48	48.20		**		0.219			
4,4'-DDD	1	0		11.88	50.57		**		0.391			
Butylbenzylphthalate	1	0		12.14	50.52	50	20	0.01	0.498	0.528	1.05	
4,4'-DDT	1	0		12.23	52.38		**		0.352			
3,3'-Dichlorobenzidine	1	0		12.76	54.77	50	20	0.01	0.308	0.413	9.53	
Benzo[a]anthracene	1	0		12.78	51.75	50	20	0.8	1.175	1.216	3.50	
Chrysene	1	0		12.83	52.27	50	20	0.7	1.092	1.141	4.54	
bis(2-Ethylhexyl)phthalate	1	0		12.83	54.79	50	20	0.01	0.672	0.737	9.57	
Perylene-d12	1	0	I	14.45	40.00	40	**			0.000	0.00	
Di-n-octylphthalate	1	0		13.59	50.31	50	20	0.01	1.259	1.346	0.63	
Benzo[b]fluoranthene	1	0		14.02	50.80	50	20	0.7	1.190	1.209	1.60	
Benzo[k]fluoranthene	1	0		14.05	52.25	50	20	0.7	1.168	1.220	4.51	
Benzo[a]pyrene	1	0		14.38	52.70	50	20	0.7	1.152	1.214	5.39	
Indeno[1,2,3-cd]pyrene	1	0		15.79	54.57	50	20	0.5	1.381	1.507	9.14	
Dibenzo[a,h]anthracene	1	0		15.82	54.65	50	20	0.4	1.154	1.262	9.29	
Benzo[g,h,i]perylene	1	0		16.18	54.02	50	20	0.5	1.177	1.271	8.04	
4-Methylphenol	1	100		0.00	0.00	50	**	0.6		0.000	100.00	
Dimethylnaphthalenes (Total)	1	100		0.00	0.00	50	**		0.942	0.000	100.00	
Endrin	1	100		0.00	0.00	50	**			0.000	100.00	

S-Surrogate Compound I-Internal Standard Compound

N/O or N/Q - Not applicable for this run C1-Compound %Diff exceeds limits ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 7M72969.D **Instrument:** GCMS 7

Cont Calibration Date/Time 10/30/2015 9:47:00 Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
gamma-BHC	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor epoxide	1	100		0.00	0.00	10	**			0.000	100.00	
Methoxychlor	1	100		0.00	0.00	10	**			0.000	100.00	
Methylnaphthalenes (Total)	1	100		0.00	0.00	50	**		1.461	0.000	100.00	
Toluene Diisocyanate	1	100		0.00	0.00	50	**			0.000	100.00	
1,4-Dioxane	1	100		0.00	0.00	20	20			0.000	100.00	C1
2,2'-oxybis-(1-Chloropropane)	1	100		0.00	0.00	50	**			0.000	100.00	
2,4 Diaminotoluene	1	100		0.00	0.00	50	**			0.000	100.00	
Diaminotoluene Dihydrochloride	1	100		0.00	0.00	50	**			0.000	100.00	

S-Surrogate Compound I-Internal Standard Compound

N/O or N/Q - Not applicable for this run C1-Compound %Diff exceeds limits ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

FORM8

Internal Standard Areas

Evaluation Std Data File: 7M72942.D Method: EPA 8270D

Analysis Date/Time: 10/29/15 10:58

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	81163	5.80	380558	6.84	266325	8.31	572929	9.77	656916	12.81	615244	14.48
Eval File Area Limit:	40582-162326		190279-761116		133162-532650		286464-1145858		328458-1313832		307622-1230488	
Eval File Rt Limit:	5.3-6.3		6.34-7.34		7.81-8.81		9.27-10.27		12.31-13.31		13.98-14.98	

Data File	Sample											
7M72941.D	CAL BNA@1C	66214	5.80	312799	6.83	225492	8.29	504333	9.74	619535	12.80	579136	14.46
7M72942.D	CAL BNA@5C	81163	5.80	380558	6.84	266325	8.31	572929	9.77	656916	12.81	615244	14.48
7M72943.D	CAL BNA@1S	88031	5.81	417580	6.85	280170	8.32	589702	9.78	617906	12.83	606351	14.54
7M72944.D	CAL BNA@1E	73161	5.80	355882	6.83	251815	8.29	536552	9.74	600524	12.82	599876	14.51
7M72945.D	CAL BNA@12	54189	5.80	270136	6.83	201160	8.29	454065	9.75	538881	12.80	543793	14.46
7M72946.D	CAL BNA@8C	68331	5.80	323687	6.82	228962	8.26	497058	9.72	579249	12.80	577080	14.45
7M72947.D	CAL BNA@2C	58876	5.80	280285	6.82	203871	8.25	452393	9.72	578625	12.79	551450	14.42
7M72948.D	CAL BNA@2F	55928	5.80	254764	6.82	183217	8.25	429874	9.72	565254	12.78	548117	14.43
7M72949.D	CAL BNA@.5	48002	5.80	216921	6.82	152477	8.25	371106	9.72	526966	12.79	529180	14.43
7M72950.D	ICV BNA@50	74765	5.80	345410	6.84	245224	8.30	534392	9.76	634373	12.80	599279	14.45
7M72951.D	AC87725-018	59231	5.80	299902	6.82	222368	8.25	505805	9.72	612110	12.80	603216	14.44
7M72952.D	AC87725-004	62031	5.80	296926	6.81	208560	8.25	470245	9.72	552116	12.80	555104	14.44
7M72953.D	AC87725-004(	50858	5.80	249449	6.82	192900	8.25	478410	9.72	643743	12.79	639131	14.42
7M72954.D	AC87845-001	51139	5.80	244600	6.82	174436	8.25	415895	9.72	509551	12.79	485523	14.43
7M72955.D	AC87845-004	48371	5.80	238637	6.81	168586	8.24	412689	9.72	550027	12.79	526587	14.42
7M72956.D	AC87845-007	61974	5.80	263971	6.81	177468	8.24	438392	9.72	571538	12.79	554914	14.42
7M72957.D	SMB46128	49989	5.80	209131	6.81	137601	8.24	334674	9.72	455674	12.78	450007	14.42
7M72958.D	SMB45302(M	47066	5.80	218502	6.81	158772	8.25	371385	9.72	487005	12.79	480010	14.42
7M72959.D	SMB45302	48581	5.80	226565	6.81	165080	8.24	411838	9.72	529342	12.78	518267	14.42
7M72960.D	SMB46135	44432	5.80	184082 A	6.81	119477 A	8.24	301223	9.72	445947	12.78	456301	14.42
7M72961.D	WMB45306	62548	5.80	274146	6.81	189382	8.24	444034	9.72	574683	12.79	572336	14.42
7M72962.D	AC87791-001	37110 A	5.80	183618 A	6.81	133055 A	8.24	337195	9.72	467832	12.79	462979	14.42
7M72963.D	AC87791-001(	41180	5.80	191602	6.81	134590	8.24	319876	9.72	441782	12.79	456696	14.42
7M72964.D	AC87791-001(	50165	5.80	248170	6.81	185280	8.25	425957	9.72	522882	12.79	485824	14.42
7M72965.D	AC87791-002	35908 A	5.80	179007 A	6.81	133926	8.24	358582	9.72	471513	12.78	448666	14.42
7M72966.D	AC87791-003	27586 A	5.80	111588 A	6.81	73911 A	8.24	203421 A	9.72	343026	12.78	365703	14.42
7M72967.D	AC87791-004	44860	5.80	195870	6.81	139043	8.24	357385	9.72	485764	12.78	468230	14.42

I1 =	1,4-Dichlorobenzene-d4	I4 =	Phenanthrene-d10	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Naphthalene-d8	I5 =	Chrysene-d12	624/8260 Internal Standard concentration = 30ug/L
I3 =	Acenaphthene-d10	I6 =	Perylene-d12	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

FORM8

Internal Standard Areas

Evaluation Std Data File: 5M92808.D Method: EPA 8270D

Analysis Date/Time: 10/29/15 12:32

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	41848	5.68	159374	6.69	103627	8.10	212733	9.54	248906	12.57	229646	14.17
Eval File Area Limit:	20924-83696		79687-318748		51814-207254		106366-425466		124453-497812		114823-459292	
Eval File Rt Limit:	5.18-6.18		6.19-7.19		7.6-8.6		9.04-10.04		12.07-13.07		13.67-14.67	

Data File	Sample											
5M92807.D	CAL BNA@1C	59853	5.68	236441	6.69	155549	8.10	326792	9.53	410986	12.57	380115	14.17
5M92808.D	CAL BNA@5C	41848	5.68	159374	6.69	103627	8.10	212733	9.54	248906	12.57	229646	14.17
5M92809.D	CAL BNA@1S	36293	5.68	142086	6.70	91854	8.10	187595	9.54	210243	12.58	196842	14.17
5M92810.D	CAL BNA@1E	39023	5.68	150359	6.70	100492	8.10	201677	9.54	224905	12.58	212365	14.17
5M92811.D	CAL BNA@12	38785	5.68	153290	6.70	97775	8.10	201281	9.54	223604	12.57	209392	14.17
5M92812.D	CAL BNA@8C	54806	5.68	213795	6.70	139542	8.10	285150	9.54	322480	12.57	302854	14.17
5M92813.D	CAL BNA@2C	42107	5.68	166057	6.69	106969	8.10	219954	9.53	266996	12.57	242666	14.17
5M92814.D	CAL BNA@2F	40651	5.68	163067	6.69	107704	8.10	223036	9.53	277576	12.56	250721	14.17
5M92815.D	CAL BNA@.5	40238	5.68	159705	6.69	105775	8.10	221674	9.53	270756	12.56	244940	14.16
5M92816.D	ICV BNA@50	41410	5.68	160431	6.69	101141	8.10	208091	9.54	246992	12.57	222659	14.17
5M92817.D	WMB45306(M	43781	5.68	171183	6.70	108583	8.10	222922	9.54	250056	12.57	230695	14.17
5M92818.D	WMB45306	42279	5.68	169496	6.69	113649	8.10	238196	9.53	288258	12.56	263522	14.17
5M92819.D	SMB46128	42510	5.68	161710	6.69	99802	8.10	200139	9.53	201678	12.56	166070	14.16
5M92820.D	AC87725-018	46793	5.68	188294	6.69	118582	8.10	224372	9.53	222390	12.56	191971	14.17
5M92821.D	AC87725-004	40705	5.68	160845	6.69	102090	8.10	202391	9.54	216401	12.57	195817	14.17
5M92822.D	AC87725-004(	44258	5.68	181529	6.69	117899	8.10	246106	9.53	273687	12.57	249542	14.17
5M92823.D	AC87767-003	46584	5.68	184286	6.69	120892	8.10	247669	9.53	289389	12.56	254458	14.17
5M92824.D	AC87767-003(	44508	5.68	173161	6.69	112846	8.10	229984	9.54	258138	12.57	227868	14.17
5M92825.D	AC87767-003(	42451	5.68	163959	6.70	108081	8.10	216877	9.54	242641	12.57	217662	14.17
5M92826.D	AC87852-011	39251	5.68	157518	6.69	105724	8.10	222322	9.53	265611	12.56	236437	14.16
5M92827.D	AC87852-012	43274	5.68	161913	6.70	112675	8.10	237389	9.53	276966	12.56	239819	14.17
5M92828.D	AC87767-001	44332	5.68	176734	6.69	120392	8.10	248087	9.53	286305	12.57	249435	14.17
5M92829.D	AC87767-004	40479	5.68	160019	6.69	111657	8.10	232056	9.53	264749	12.56	236595	14.17
5M92830.D	AC87760-001	42357	5.68	171149	6.69	114316	8.10	238357	9.53	279474	12.56	250246	14.16
5M92831.D	AC87760-002	44302	5.68	175601	6.69	116883	8.10	247450	9.53	288933	12.56	251414	14.17

I1 =	1,4-Dichlorobenzene-d4	I4 =	Phenanthrene-d10	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Naphthalene-d8	I5 =	Chrysene-d12	624/8260 Internal Standard concentration = 30ug/L
I3 =	Acenaphthene-d10	I6 =	Perylene-d12	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

FORM8

Internal Standard Areas

Evaluation Std Data File: 5M92833.D Method: EPA 8270D

Analysis Date/Time: 10/30/15 09:45

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	42615	5.68	165146	6.69	104501	8.10	215739	9.54	252772	12.57	229193	14.17
Eval File Area Limit:	21308-85230		82573-330292		52250-209002		107870-431478		126386-505544		114596-458386	
Eval File Rt Limit:	5.18-6.18		6.19-7.19		7.6-8.6		9.04-10.04		12.07-13.07		13.67-14.67	

Data File	Sample											
5M92834.D	SMB46140	37501	5.68	141679	6.69	86098	8.10	166315	9.53	161875	12.56	136132	14.16
5M92835.D	SMB46140(M	40646	5.68	152611	6.69	91915	8.10	170234	9.53	179626	12.57	158983	14.16

I1 =	1,4-Dichlorobenzene-d4	I4 =	Phenanthrene-d10	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Naphthalene-d8	I5 =	Chrysene-d12	624/8260 Internal Standard concentration = 30ug/L
I3 =	Acenaphthene-d10	I6 =	Perylene-d12	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

FORM8

Internal Standard Areas

Evaluation Std Data File: 7M72969.D Method: EPA 8270D

Analysis Date/Time: 10/30/15 09:47

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	50245	5.80	232292	6.83	167248	8.28	398725	9.74	529573	12.80	534498	14.45
Eval File Area Limit:	25122-100490		116146-464584		83624-334496		199362-797450		264786-1059146		267249-1068996	
Eval File Rt Limit:	5.3-6.3		6.33-7.33		7.78-8.78		9.24-10.24		12.3-13.3		13.95-14.95	

Data File	Sample											
7M72970.D	AC87804-001	46332	5.80	213684	6.84	148585	8.30	353358	9.76	495727	12.80	494186	14.45
7M72971.D	AC87828-001	35506	5.80	139351	6.82	95244	8.25	248025	9.72	390729	12.79	422466	14.45
7M72972.D	AC87817-001	41483	5.80	184551	6.82	127946	8.26	290272	9.72	412163	12.78	427020	14.43
7M72973.D	AC87791-001	44651	5.80	215112	6.82	144491	8.25	347886	9.72	473901	12.79	466185	14.44
7M72974.D	AC87791-002	51709	5.80	243176	6.82	156017	8.25	363829	9.72	464418	12.78	443004	14.43
7M72975.D	AC87791-003	42442	5.80	192095	6.82	127070	8.27	315998	9.73	457155	12.79	432240	14.45
7M72976.D	SMB46135	54788	5.80	251290	6.82	163418	8.25	371785	9.72	498190	12.79	479482	14.46
7M72977.D	SMB46140	40211	5.80	181215	6.82	117463	8.25	281990	9.72	374340	12.79	367088	14.45
7M72978.D	OMB46139	35977	5.80	148009	6.82	96567	8.25	225042	9.72	326486	12.79	340374	14.46
7M72979.D	OMB46139(M	40767	5.80	192107	6.82	140385	8.25	327348	9.72	420172	12.79	413059	14.44
7M72980.D	AC87816-001	91652	5.81	231983	6.84	178710	8.29	458869	9.74	559505	12.79	557642	14.45
7M72981.D	AC87816-004	55242	5.80	246586	6.82	161406	8.25	370469	9.72	491997	12.79	490708	14.44
7M72982.D	SMB46140	37590	5.80	152605	6.82	95638	8.25	239523	9.72	373437	12.79	407542	14.47
7M72983.D	AC87816-001(	72723	5.80	270543	6.82	174871	8.27	377362	9.73	475432	12.79	499495	14.46
7M72984.D	AC87816-002(	85406	5.80	316567	6.82	220949	8.25	477176	9.72	589398	12.78	581072	14.42
7M72985.D	AC87816-003(	76886	5.80	307724	6.82	204408	8.25	446258	9.72	572602	12.78	582799	14.42
7M72986.D	AC87816-006	43054	5.80	176779	6.81	116996	8.25	281663	9.72	423981	12.78	439860	14.42
7M72987.D	AC87819-001	69113	5.80	301117	6.81	195343	8.24	441513	9.72	570982	12.78	550961	14.43
7M72988.D	AC87810-001	56003	5.80	250301	6.81	164678	8.24	381750	9.71	505408	12.78	486995	14.42
7M72989.D	AC87810-002	47633	5.80	200696	6.81	127572	8.24	322389	9.71	462195	12.78	480607	14.42
7M72990.D	AC87810-004	56813	5.80	264789	6.82	180055	8.25	408987	9.72	517543	12.78	500146	14.42
7M72991.D	SMB46146	43706	5.80	175574	6.81	115816	8.24	285929	9.72	432146	12.78	471449	14.42
7M72992.D	AC87876-003	52272	5.80	224219	6.81	150248	8.24	351820	9.72	493864	12.78	521322	14.42
7M72993.D	AC87880-005	79985	5.80	353667	6.81	232972	8.24	501192	9.72	571823	12.78	530409	14.42
7M72994.D	AC87876-004(	93586	5.80	423240	6.81	271311	8.24	536306	9.72	593463	12.80	529761	14.44
7M72995.D	AC87880-002(	100235	5.80	450576	6.81	299183	8.25	581569	9.72	546571	12.81	478709	14.44
7M72996.D	AC87880-003(	94001	5.80	414737	6.81	276122	8.24	586221	9.72	668732	12.79	577950	14.42
7M72997.D	AC87752-001	55425	5.80	244891	6.81	173220	8.24	414405	9.72	549242	12.78	528086	14.42

I1 =	1,4-Dichlorobenzene-d4	I4 =	Phenanthrene-d10	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Naphthalene-d8	I5 =	Chrysene-d12	624/8260 Internal Standard concentration = 30ug/L
I3 =	Acenaphthene-d10	I6 =	Perylene-d12	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

PCB Data

Form1

ORGANICS PCB REPORT

Sample Number: AC87819-001
Client Id: Quarry Material COMP
Data File: 5G60856.D
Analysis Date: 10/29/15 20:38
Date Rec/Extracted: 10/26/15-10/29/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8082A
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 97

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
12674-11-2	Aroclor-1016	0.026	U	11097-69-1	Aroclor-1254	0.026	U
11104-28-2	Aroclor-1221	0.026	U	11096-82-5	Aroclor-1260	0.026	U
11141-16-5	Aroclor-1232	0.026	U	37324-23-5	Aroclor-1262	0.026	U
53469-21-9	Aroclor-1242	0.026	U	11100-14-4	Aroclor-1268	0.026	U
12672-29-6	Aroclor-1248	0.026	U	1336-36-3	Aroclor (Total)	0.026	U

Worksheet #: 362636

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used
Chlordane (Total) is sum of a-Chlordane and y-Chlordane.

Data Path : G:\Gcdata\2015\GC_5\Data\10-2915\
Data File : 5G60856.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 29-Oct-15, 20:38:26
Operator : MS/MLC/ZM
Sample : AC87819-001
Misc : S,PCB
ALS Vial : 12 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Oct 30 10:04:39 2015
Quant Method : G:\GCDATA\2015\GC_5\METHODQT\5G_PCB1001.M
Quant Title : @GC_5,ug,608,8082
QLast Update : Thu Oct 01 10:20:07 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

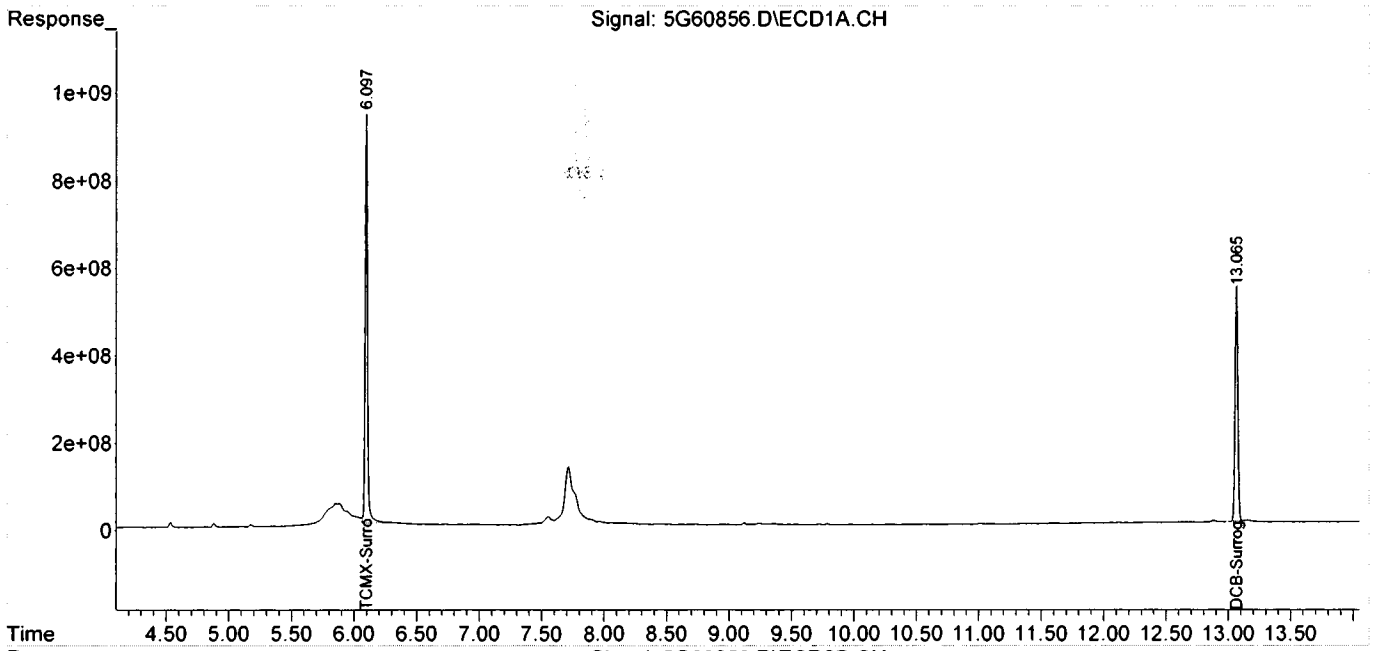
Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
Target Compounds						
1)TCMX-Surrogate	6.098	6.114	12227.3E6	6850.6E6	114.200	97.336
45)DCB-Surrogate	13.065	13.558	8302.5E6	5172.1E6	96.550	91.607

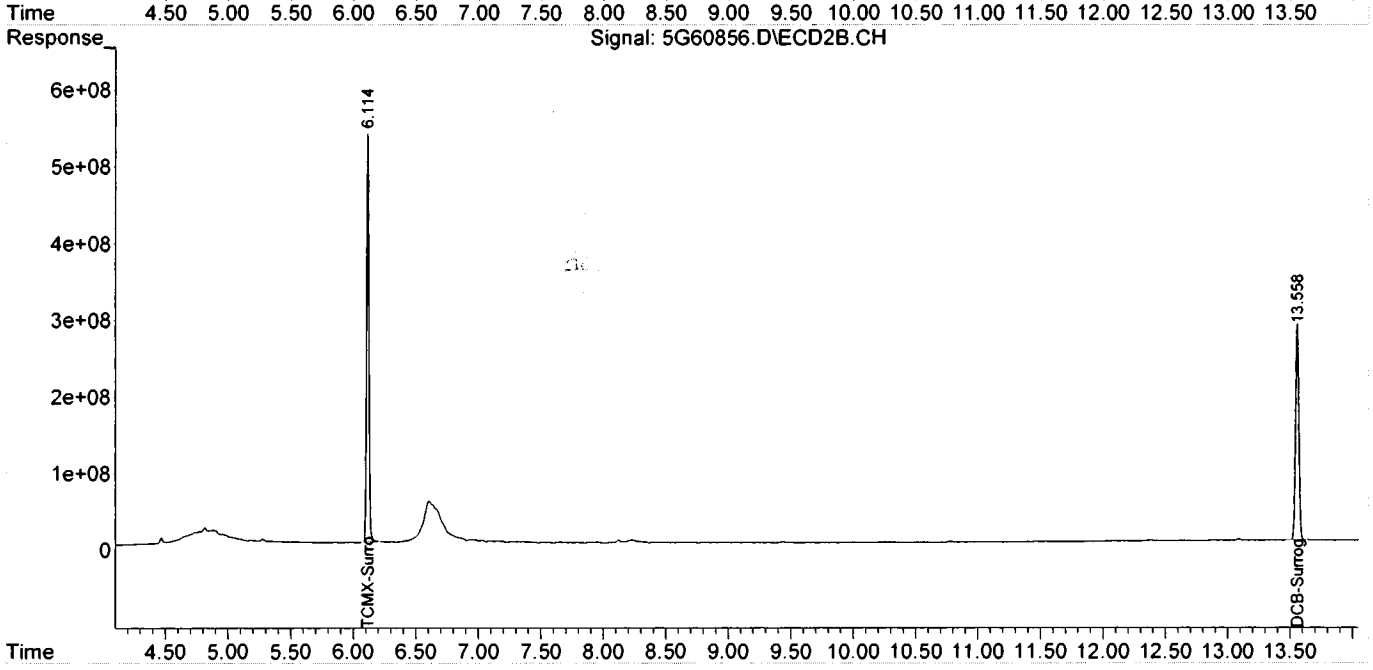
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_5\Data\10-2915\
Data File : 5G60856.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 29-Oct-15, 20:38:26
Operator : MS/MLC/ZM
Sample : AC87819-001
Misc : S,PCB
ALS Vial : 12 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Oct 30 10:04:39 2015
Quant Method : G:\GCDATA\2015\GC_5\METHODQT\5G_PCB1001.M
Quant Title : @GC_5,ug,608,8082
QLast Update : Thu Oct 01 10:20:07 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Form1

ORGANICS PCB REPORT

Sample Number: SMB46131
Client Id:
Data File: 3G93469.D
Analysis Date: 10/29/15 14:03
Date Rec/Extracted: NA-10/29/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8082A
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 100

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
12674-11-2	Aroclor-1016	0.025	U	11097-69-1	Aroclor-1254	0.025	U
11104-28-2	Aroclor-1221	0.025	U	11096-82-5	Aroclor-1260	0.025	U
11141-16-5	Aroclor-1232	0.025	U	37324-23-5	Aroclor-1262	0.025	U
53469-21-9	Aroclor-1242	0.025	U	11100-14-4	Aroclor-1268	0.025	U
12672-29-6	Aroclor-1248	0.025	U				

Worksheet #: 362636

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used
Chlordane (Total) is sum of a-Chlordane and y-Chlordane.

Data Path : G:\Gcdata\2015\GC_3\Data\10-29-15\
Data File : 3G93469.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 29 Oct 2015 14:03
Operator : MLC/MS/ZM
Sample : SMB46131
Misc : S,PCB
ALS Vial : 8 Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Oct 29 14:17:09 2015
Quant Method : G:\GCDATA\2015\GC_3\METHODQT\3G_C1027.M
Quant Title : @GC_3,ug,608,8082
QLast Update : Wed Oct 28 10:05:05 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

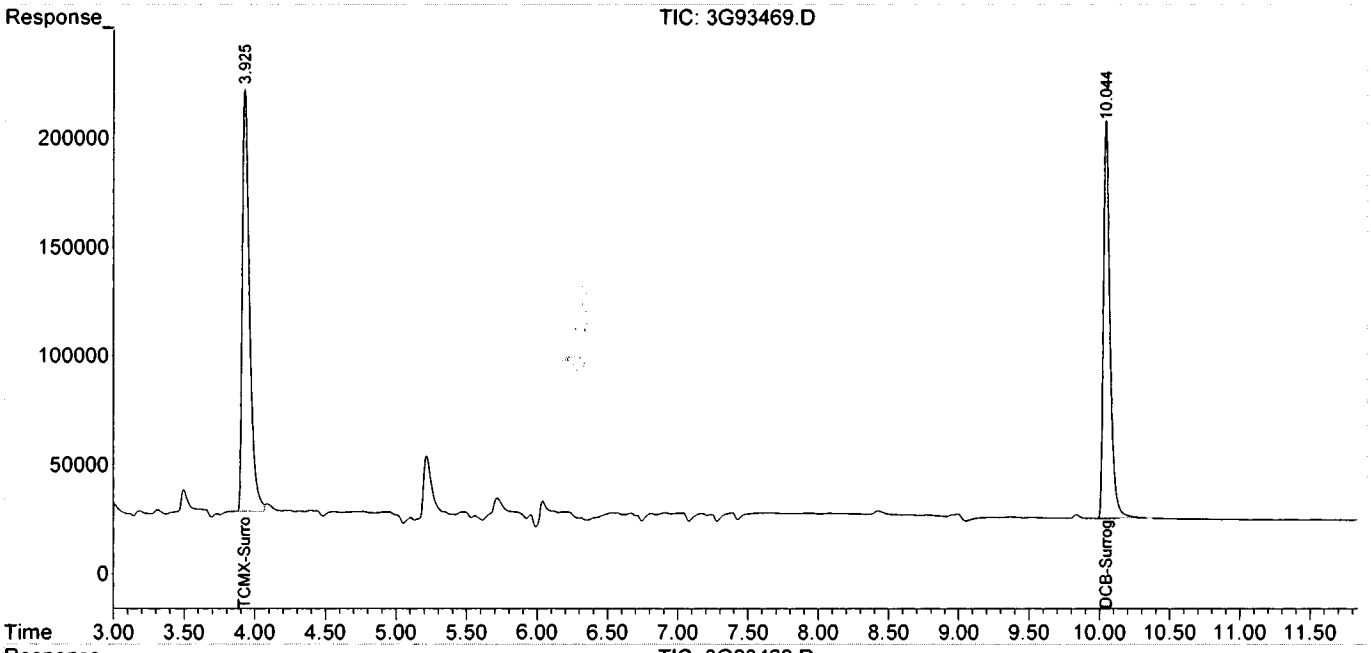
Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
Target Compounds						
1)TCMX-Surrogate	3.925	4.186	6967310	4086904	87.038m	93.918
45)DCB-Surrogate	10.046	11.134	5920868	4181085	94.487	96.920

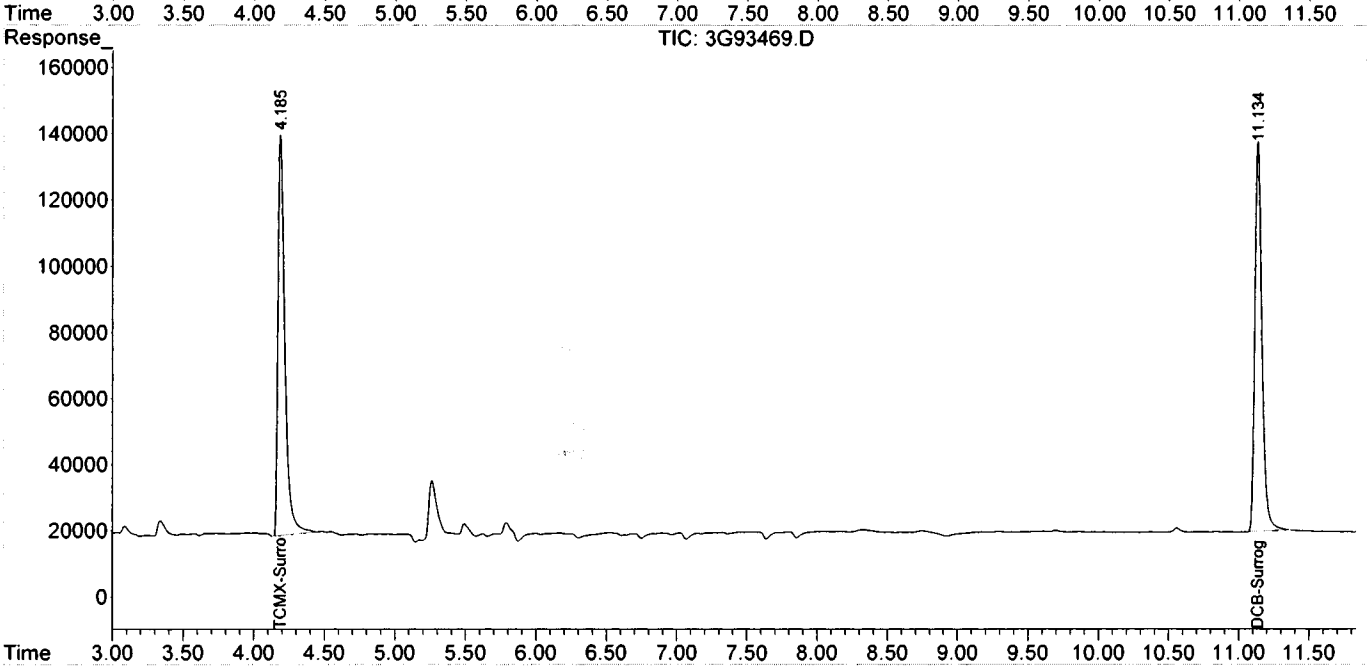
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_3\Data\10-29-15\
Data File : 3G93469.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 29 Oct 2015 14:03
Operator : MLC/MS/ZM
Sample : SMB46131
Misc : S,PCB
ALS Vial : 8 Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Oct 29 14:17:09 2015
Quant Method : G:\GCDATA\2015\GC_3\METHODQT\3G_C1027.M
Quant Title : @GC_3,ug,608,8082
QLast Update : Wed Oct 28 10:05:05 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





FORM2

Surrogate Recovery

Method: EPA 8082A

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column2 S2 Recov	Column1 S3 Recov	Column2 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
3G93469.D	SMB46131	S	10/29/15 14:03	1		87	94	94	97		
5G60856.D	AC87819-001	S	10/29/15 20:38	1		114	97	97	92		
3G93470.D	SMB46131(MS)	S	10/29/15 14:18	1		87	89	93	95		
5G60892.D	AC87820-004	S	10/30/15 13:19	1		100	84	85	80		
5G60893.D	AC87820-004(MS)	S	10/30/15 13:37	1		89	82	88	80		
5G60894.D	AC87820-004(MSD)	S	10/30/15 13:55	1		103	87	91	85		

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8082A

Soil Limits

Compound	Spike Amt	Limits
S1=TCMX-Surrogate	100	30-150
S2=TCMX-Surrogate	100	30-150
S3=DCB-Surrogate	100	30-150
S4=DCB-Surrogate	100	30-150

Form3
Recovery Data
QC Batch: SMB46131

	Data File	Sample ID:	Analysis Date
Spike or Dup:	3G93470.D	SMB46131(MS)	10/29/2015 2:18:00 PM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8082 | Matrix: Soil | QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Aroclor-1016 -Total	1	842.888	0	1000	84	40	140
Aroclor-1260 -Total	1	946.89	0	1000	95	40	140

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB46131

	Data File	Sample ID:	Analysis Date
Spike or Dup:	5G60893.D	AC87820-004(MS)	10/30/2015 1:37:40 PM
Non Spike(If applicable):	5G60892.D	AC87820-004	10/30/2015 1:19:54 PM
Inst Blank(If applicable):			

Method: 8082 Matrix: Soil QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Aroclor-1016 -Total	1	954.442	0	1000	95	40	140
Aroclor-1260 -Total	1	928.552	121.49	1000	81	40	140

	Data File	Sample ID:	Analysis Date
Spike or Dup:	5G60894.D	AC87820-004(MSD)	10/30/2015 1:55:27 PM
Non Spike(If applicable):	5G60892.D	AC87820-004	10/30/2015 1:19:54 PM
Inst Blank(If applicable):			

Method: 8082 Matrix: Soil QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Aroclor-1016 -Total	1	1061.688	0	1000	106	40	140
Aroclor-1260 -Total	1	1030.18	121.49	1000	91	40	140

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA
QC Batch: SMB46131

	Data File	Sample ID:	Analysis Date
Spike or Dup:	5G60894.D	AC87820-004(MSD)	10/30/2015 1:55:27 PM
Duplicate(If applicable):	5G60893.D	AC87820-004(MS)	10/30/2015 1:37:40 PM
Inst Blank(If applicable):			

Method: 8082 Matrix: Soil QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
Aroclor-1016 -Total	1	1061.688	954.442	11	30
Aroclor-1260 -Total	1	1030.18	928.552	10	30

* - Indicates outside of limits NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: SMB46131
Blank Data File: 3G93469.D
Matrix: Soil

Blank Analysis Date: 10/29/15 14:03
Blank Extraction Date: 10/29/15
(If Applicable)
Method: EPA 8082A

Sample Number	Data File	Analysis Date
AC87819-001	5G60856.D	10/29/15 20:38
AC87820-004(MSD	5G60894.D	10/30/15 13:55
AC87820-004(MS)	5G60893.D	10/30/15 13:37
AC87820-004	5G60892.D	10/30/15 13:19
SMB46131(MS)	3G93470.D	10/29/15 14:18

Form 5

Method: EPA 8082A

Instrument: GC_5 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
5G60381.D	3268	09/30/15 18:08	Aqueous					
5G60382.D	CAL 3268@500PPB	09/30/15 18:26	Aqueous	5G60387.	13.0829	0.0176	13.5698	0.0037
5G60383.D	CAL 1242@500PPB	09/30/15 18:44	Aqueous	5G60387.	13.0824	0.0138	13.5709	0.0044
5G60384.D	CAL 1248@500PPB	09/30/15 19:01	Aqueous	5G60387.	13.0818	0.0092	13.5707	0.0029
5G60385.D	CAL 2154@500PPB	09/30/15 19:19	Aqueous	5G60387.	13.0799	0.0054	13.5697	0.0044
5G60386.D	CAL 1262@500PPB	09/30/15 19:37	Aqueous	5G60387.	13.0814	0.0061	13.5718	0.0111
5G60387.D	CAL 1660@50PPB	09/30/15 19:55	Aqueous	5G60387.	13.0806	0	13.5703	0
5G60388.D	CAL 1660@200PPB	09/30/15 20:13	Aqueous	5G60387.	13.0806	0	13.5691	0.0088
5G60389.D	CAL 1660@500PPB	09/30/15 20:31	Aqueous	5G60387.	13.0805	0.0008	13.5687	0.0118
5G60390.D	CAL 1660@1000PPB	09/30/15 20:48	Aqueous	5G60387.	13.0819	0.0099	13.5714	0.0081
5G60391.D	CAL 1660@2000PPB	09/30/15 21:06	Aqueous	5G60387.	13.0804	0.0015	13.5692	0.0081
5G60392.D	CAL 1660@4000PPB	09/30/15 21:24	Aqueous	5G60387.	13.0817	0.0084	13.5704	0.0007
5G60393.D	ICV	09/30/15 21:42	Aqueous	5G60387.	13.0792	0.0107	13.5687	0.0118
5G60394.D	PEST WS	09/30/15 22:00	Aqueous	5G60387.	0.0000	200 *	0.0000	200 *
5G60395.D	WMB45357	09/30/15 22:18	Aqueous	5G60387.	13.0786	0.0153	13.5692	0.0081
5G60396.D	AC87029-014	09/30/15 22:35	Aqueous	5G60387.	13.0798	0.0061	13.5682	0.0155
5G60397.D	CAL 1660@1000PPB	09/30/15 22:53	Aqueous	5G60387.	13.0803	0.0023	13.5697	0.0044
5G60398.D	2000PPB	09/30/15 23:11	Aqueous	5G60397.	13.0797	0.0046	13.5696	0.0007

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8082A

Instrument: GC_3 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
3G93440.D	TEST	10/27/15 11:32	Soil					
3G93441.D	CAL 3268@500PPB	10/27/15 11:47	Soil	3G93446.	10.0385	0.1135	11.1319	0.0907
3G93442.D	CAL 1242@500PPB	10/27/15 12:02	Soil	3G93446.	10.0441	0.0577	11.1363	0.0512
3G93443.D	CAL 1248@500PPB	10/27/15 12:17	Soil	3G93446.	10.0444	0.0547	11.1377	0.0386
3G93444.D	CAL 2154@500PPB	10/27/15 12:32	Soil	3G93446.	10.0437	0.0617	11.1362	0.0521
3G93445.D	CAL 1262@500PPB	10/27/15 12:47	Soil	3G93446.	10.0430	0.0687	11.1351	0.0619
3G93446.D	CAL 1660@50PPB	10/27/15 13:01	Soil	3G93446.	10.0499	0	11.1420	0
3G93447.D	CAL 1660@200PPB	10/27/15 13:16	Soil	3G93446.	10.0471	0.0279	11.1403	0.0153
3G93448.D	CAL 1660@500PPB	10/27/15 13:32	Soil	3G93446.	10.0456	0.0428	11.1388	0.0287
3G93449.D	CAL 1660@1000PPB	10/27/15 13:46	Soil	3G93446.	10.0432	0.0667	11.1361	0.053
3G93450.D	CAL 1660@2000PPB	10/27/15 14:01	Soil	3G93446.	10.0401	0.0976	11.1343	0.0691
3G93451.D	CAL 1660@4000PPB	10/27/15 14:16	Soil	3G93446.	10.0398	0.1006	11.1317	0.0925
3G93452.D	ICV	10/27/15 14:31	Soil	3G93446.	10.0434	0.0647	11.1378	0.0377
3G93453.D	PEST WS	10/27/15 14:46	Soil	3G93446.	0.0000	200 *	0.0000	200 *

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8082A

Instrument: GC_3 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
3G93460.D	CAL 1660@1000PPB	10/29/15 08:43	Soil	3G93460.	10.0476	0	11.1393	0
3G93461.D	WMB45298	10/29/15 09:31	Aqueous	3G93460.	10.0572	0.0955	11.1428	0.0314
3G93462.D	WMB45298(MS)	10/29/15 09:46	Aqueous	3G93460.	10.0471	0.005	11.1368	0.0225
3G93463.D	EF-SPLP-V-221089(10/	10/29/15 10:02	Aqueous	3G93460.	10.0457	0.0189	11.1354	0.035
3G93464.D	AC87757-004(T)	10/29/15 10:17	Aqueous	3G93460.	10.0450	0.0259	11.1344	0.044
3G93465.D	AC87756-003(T)	10/29/15 10:32	Aqueous	3G93460.	10.0426	0.0498	11.1332	0.0548
3G93466.D	CAL 1660@1000PPB	10/29/15 10:47	Aqueous	3G93460.	10.0490	0.0139	11.1397	0.0036
3G93467.D	SMB46132	10/29/15 13:32	Soil	3G93466.	10.0553	0.0627	11.1382	0.0135
3G93468.D	SMB46132(MS)	10/29/15 13:48	Soil	3G93466.	10.0477	0.0129	11.1361	0.0323
3G93469.D	SMB46131	10/29/15 14:03	Soil	3G93466.	10.0457	0.0328	11.1343	0.0485
3G93470.D	SMB46131(MS)	10/29/15 14:18	Soil	3G93466.	10.0459	0.0308	11.1349	0.0431
3G93471.D	AC87794-001	10/29/15 14:34	Soil	3G93466.	10.0416	0.0737	11.1297	0.0898
3G93472.D	AC87794-002	10/29/15 14:49	Soil	3G93466.	10.0401	0.0886	11.1271	0.1132
3G93473.D	1000PPB	10/29/15 15:04	Soil	3G93466.	10.0491	0.001	11.1397	0
3G93474.D	CAL 1660@1000PPB	10/29/15 16:14	Soil	3G93466.	10.0430	0.0597	11.1338	0.053
3G93475.D	SMB46133	10/29/15 16:31	Soil	3G93474.	10.0421	0.009	11.1302	0.0323
3G93476.D	SMB46133(MS)	10/29/15 16:46	Soil	3G93474.	10.0419	0.011	11.1299	0.035
3G93477.D	SMB46134	10/29/15 17:01	Soil	3G93474.	10.0401	0.0289	11.1299	0.035
3G93478.D	SMB46134(MS)	10/29/15 17:17	Soil	3G93474.	10.0399	0.0309	11.1288	0.0449
3G93479.D	CAL 1660@1000PPB	10/29/15 17:32	Soil	3G93474.	10.0435	0.005	11.1349	0.0099

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8082A

Instrument: GC_5 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
5G60844.D	CAL 1660@1000PPB	10/29/15 17:04	Soil	5G60844.	13.0686	0	13.5571	0
5G60845.D	AC87820-001	10/29/15 17:22	Soil	5G60844.	13.0657	0.0222	13.5587	0.0118
5G60846.D	AC87820-002	10/29/15 17:40	Soil	5G60844.	13.0642	0.0337	13.5567	0.003
5G60847.D	AC87820-003	10/29/15 17:58	Soil	5G60844.	13.0660	0.0199	13.5593	0.0162
5G60848.D	AC87800-001	10/29/15 18:15	Soil	5G60844.	13.0646	0.0306	13.5577	0.0044
5G60849.D	AC87800-002	10/29/15 18:33	Soil	5G60844.	13.0653	0.0253	13.5581	0.0074
5G60850.D	AC87800-003	10/29/15 18:51	Soil	5G60844.	13.0637	0.0375	13.5569	0.0015
5G60851.D	AC87848-001	10/29/15 19:09	Soil	5G60844.	13.0649	0.0283	13.5573	0.0015
5G60852.D	AC87848-002	10/29/15 19:27	Soil	5G60844.	13.0645	0.0314	13.5570	0.0007
5G60853.D	AC87848-008	10/29/15 19:44	Soil	5G60844.	13.0644	0.0321	13.5579	0.0059
5G60854.D	AC87859-001	10/29/15 20:02	Soil	5G60844.	13.0651	0.0268	13.5564	0.0052
5G60855.D	AC87859-003	10/29/15 20:20	Soil	5G60844.	13.0647	0.0298	13.5572	0.0007
5G60856.D	AC87819-001	10/29/15 20:38	Soil	5G60844.	13.0652	0.026	13.5584	0.0096
5G60857.D	AC87861-001	10/29/15 20:56	Soil	5G60844.	13.0651	0.0268	13.5575	0.0029
5G60858.D	AC87756-003	10/29/15 21:14	Soil	5G60844.	13.0635	0.039	13.5567	0.003
5G60859.D	AC87757-004	10/29/15 21:31	Soil	5G60844.	13.0645	0.0314	13.5578	0.0052
5G60860.D	1000PPB	10/29/15 21:49	Soil	5G60844.	13.0648	0.0291	13.5570	0.0007
5G60861.D	CAL 1660@2000PPB	10/29/15 22:07	Soil	5G60844.	13.0653	0.0253	13.5568	0.0022
5G60862.D	AC87725-012	10/29/15 22:25	Soil	5G60861.	13.0639	0.0107	13.5569	0.0007
5G60863.D	AC87799-026	10/29/15 22:43	Soil	5G60861.	13.0671	0.0138	13.5587	0.014
5G60864.D	AC87799-025	10/29/15 23:00	Soil	5G60861.	13.0648	0.0038	13.5584	0.0118
5G60865.D	AC87799-024	10/29/15 23:18	Soil	5G60861.	13.0638	0.0115	13.5565	0.0022
5G60866.D	AC87799-023	10/29/15 23:36	Soil	5G60861.	13.0646	0.0054	13.5568	0
5G60867.D	AC87799-022	10/29/15 23:54	Soil	5G60861.	13.0641	0.0092	13.5583	0.0111
5G60868.D	AC87799-021	10/30/15 00:12	Soil	5G60861.	13.0637	0.0122	13.5569	0.0007
5G60869.D	AC87799-021(MS)	10/30/15 00:29	Soil	5G60861.	13.0640	0.0099	13.5558	0.0074
5G60870.D	AC87799-021(MSD)	10/30/15 00:47	Soil	5G60861.	13.0633	0.0153	13.5563	0.0037
5G60871.D	AC87799-027	10/30/15 01:05	Soil	5G60861.	13.0685	0.0245	13.5613	0.0332
5G60872.D	AC87799-028	10/30/15 01:23	Soil	5G60861.	13.0686	0.0253	13.5609	0.0302
5G60873.D	AC87799-030	10/30/15 01:41	Soil	5G60861.	13.0639	0.0107	13.5557	0.0081
5G60874.D	AC87799-031	10/30/15 01:58	Soil	5G60861.	13.0721	0.052	13.5626	0.0428
5G60875.D	AC87799-032	10/30/15 02:16	Soil	5G60861.	13.0670	0.013	13.5586	0.0133
5G60876.D	AC87799-017	10/30/15 02:34	Soil	5G60861.	13.0624	0.0222	13.5551	0.0125
5G60877.D	1000PPB	10/30/15 02:52	Soil	5G60861.	13.0642	0.0084	13.5563	0.0037
5G60878.D	CAL 1660@2000PPB	10/30/15 03:10	Soil	5G60861	13.0640	0.0099	13.5565	0.0022

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8082A

Instrument: GC_5 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
5G60879.D	1000PPB	10/30/15 08:50	Soil					
5G60880.D	CAL 1660@2000PPB	10/30/15 09:45	Soil	5G60880.	13.0622	0	13.5548	0
5G60881.D	AC87799-005(MS)	10/30/15 10:03	Soil	5G60880.	13.0632	0.0077	13.5555	0.0052
5G60882.D	AC87799-005(MSD)	10/30/15 10:21	Soil	5G60880.	13.0624	0.0015	13.5551	0.0022
5G60883.D	AC87799-005	10/30/15 10:39	Soil	5G60880.	13.0632	0.0077	13.5551	0.0022
5G60884.D	AC87799-007	10/30/15 10:57	Soil	5G60880.	13.0624	0.0015	13.5547	0.0007
5G60885.D	AC87799-019	10/30/15 11:15	Soil	5G60880.	13.0622	0	13.5541	0.0052
5G60886.D	AC87799-020	10/30/15 11:32	Soil	5G60880.	13.0618	0.0031	13.5539	0.0066
5G60887.D	AC87799-029	10/30/15 11:50	Soil	5G60880.	13.0634	0.0092	13.5565	0.0125
5G60888.D	AC87774-007(10X)	10/30/15 12:08	Soil	5G60880.	13.0615	0.0054	13.5543	0.0037
5G60889.D	AC87774-013(10X)	10/30/15 12:26	Soil	5G60880.	13.0597	0.0191	13.5510	0.028
5G60890.D	AC87774-003(10X)	10/30/15 12:44	Soil	5G60880.	13.0620	0.0015	13.5541	0.0052
5G60891.D	AC87774-017(5X)	10/30/15 13:01	Soil	5G60880.	13.0608	0.0107	13.5537	0.0081
5G60892.D	AC87820-004	10/30/15 13:19	Soil	5G60880.	13.0632	0.0077	13.5554	0.0044
5G60893.D	AC87820-004(MS)	10/30/15 13:37	Soil	5G60880.	13.0624	0.0015	13.5550	0.0015
5G60894.D	AC87820-004(MSD)	10/30/15 13:55	Soil	5G60880.	13.0624	0.0015	13.5558	0.0074
5G60895.D	2000PPB	10/30/15 14:13	Soil	5G60880.	13.0626	0.0031	13.5554	0.0044
5G60896.D	CAL 1660@1000PPB	10/30/15 14:40	Soil	5G60880.	13.0647	0.0191	13.5545	0.0022
5G60897.D	AC87886-038	10/30/15 15:15	Soil	5G60896.	13.0662	0.0115	13.5527	0.0133
5G60898.D	AC87886-039(MS:AC87	10/30/15 15:33	Soil	5G60896.	13.0617	0.023	13.5533	0.0089
5G60899.D	AC87886-040(MSD:AC8	10/30/15 15:51	Soil	5G60896.	13.0604	0.0329	13.5534	0.0081
5G60900.D	AC87886-022	10/30/15 16:09	Soil	5G60896.	13.0639	0.0061	13.5637	0.0679
5G60901.D	AC87886-023	10/30/15 16:27	Soil	5G60896.	13.0604	0.0329	13.5533	0.0089
5G60902.D	AC87886-024	10/30/15 16:44	Soil	5G60896.	13.0602	0.0345	13.5535	0.0074
5G60903.D	AC87886-029	10/30/15 17:20	Soil	5G60896.	13.0600	0.036	13.5553	0.0059
5G60904.D	AC87886-030	10/30/15 17:37	Soil	5G60896.	13.0610	0.0283	13.5581	0.0266
5G60905.D	AC87886-031	10/30/15 17:55	Soil	5G60896.	13.0603	0.0337	13.5530	0.0111
5G60906.D	AC87886-032	10/30/15 18:13	Soil	5G60896.	13.0600	0.036	13.5537	0.0059
5G60907.D	AC87886-033	10/30/15 18:31	Soil	5G60896.	13.0605	0.0322	13.5536	0.0066
5G60908.D	AC87886-034	10/30/15 18:48	Soil	5G60896.	13.0599	0.0367	13.5564	0.014
5G60909.D	AC87886-035	10/30/15 19:06	Soil	5G60896.	13.0607	0.0306	13.5546	0.0007
5G60910.D	AC87886-036	10/30/15 19:24	Soil	5G60896.	13.0604	0.0329	13.5539	0.0044
5G60911.D	AC87886-041	10/30/15 19:42	Soil	5G60896.	13.0606	0.0314	13.5524	0.0155
5G60912.D	AC87886-042	10/30/15 20:00	Soil	5G60896.	13.0604	0.0329	13.5527	0.0133
5G60913.D	AC87886-043	10/30/15 20:17	Soil	5G60896.	13.0607	0.0306	13.5533	0.0089
5G60914.D	AC87886-044	10/30/15 20:35	Soil	5G60896.	13.0603	0.0337	13.5534	0.0081
5G60915.D	AC87886-045	10/30/15 20:53	Soil	5G60896.	13.0593	0.0413	13.5524	0.0155
5G60916.D	AC87886-046	10/30/15 21:11	Soil	5G60896.	13.0590	0.0436	13.5523	0.0162
5G60917.D	1000PPB	10/30/15 21:29	Soil	5G60896.	13.0599	0.0367	13.5521	0.0177
5G60918.D	CAL 1660@2000PPB	10/30/15 21:46	Soil	5G60896.	13.0605	0.0322	13.5533	0.0089
5G60919.D	AC87886-061(MS:AC87	10/30/15 22:04	Soil	5G60918.	13.0587	0.0138	13.5518	0.0111
5G60920.D	AC87886-062(MSD:AC8	10/30/15 22:36	Soil	5G60918.	13.0590	0.0115	13.5523	0.0074
5G60921.D	AC87886-060	10/30/15 22:53	Soil	5G60918	13.0584	0.0161	13.5521	0.0089
5G60922.D	AC87886-049	10/30/15 23:11	Soil	5G60918.	13.0589	0.0123	13.5511	0.0162
5G60923.D	AC87886-050	10/30/15 23:29	Soil	5G60918.	13.0583	0.0168	13.5516	0.0125
5G60924.D	AC87886-051	10/30/15 23:47	Soil	5G60918.	13.0595	0.0077	13.5519	0.0103
5G60925.D	AC87886-052	10/31/15 00:05	Soil	5G60918.	13.0599	0.0046	13.5537	0.003
5G60926.D	AC87886-053	10/31/15 00:22	Soil	5G60918.	13.0590	0.0115	13.5520	0.0096
5G60927.D	AC87886-054	10/31/15 00:40	Soil	5G60918.	13.0590	0.0115	13.5528	0.0037
5G60928.D	AC87886-055	10/31/15 00:58	Soil	5G60918.	13.0586	0.0145	13.5518	0.0111
5G60929.D	AC87886-056	10/31/15 01:16	Soil	5G60918.	13.0594	0.0084	13.5530	0.0022
5G60930.D	AC87886-057	10/31/15 01:34	Soil	5G60918.	13.0574	0.0237	13.5524	0.0066
5G60931.D	AC87886-058	10/31/15 01:51	Soil	5G60918.	13.0588	0.013	13.5520	0.0096
5G60932.D	AC87886-063	10/31/15 02:09	Soil	5G60918.	13.0586	0.0145	13.5514	0.014
5G60933.D	AC87886-064	10/31/15 02:27	Soil	5G60918.	13.0592	0.01	13.5523	0.0074
5G60934.D	AC87886-065	10/31/15 02:45	Soil	5G60918.	13.0577	0.0214	13.5517	0.0118
5G60935.D	AC87886-066	10/31/15 03:03	Soil	5G60918.	13.0587	0.0138	13.5519	0.0103
5G60936.D	AC87886-067	10/31/15 03:20	Soil	5G60918.	13.0590	0.0115	13.5527	0.0044
5G60937.D	AC87886-047	10/31/15 03:38	Soil	5G60918.	13.0596	0.0069	13.5536	0.0022
5G60938.D	AC87886-048	10/31/15 03:56	Soil	5G60918.	13.0583	0.0168	13.5520	0.0096
5G60939.D	1000PPB	10/31/15 04:14	Soil	5G60918.	13.0579	0.0199	13.5506	0.0199
5G60940.D	CAL 1660@2000PPB	10/31/15 04:32	Soil	5G60918.	13.0578	0.0207	13.5520	0.0096
5G60941.D	TEST	10/31/15 11:06	Soil	5G60940.	13.0596	0.0138	13.5509	0.0081

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

5102701 0107

Method: EPA 8082A

Form 6
Initial Calibration

Instrument: GC_5

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	5G60387.	CAL 1660@50PPB	09/30/15 19:55	2	5G60388.	CAL 1660@200PPB	09/30/15 20:13
3	5G60389.	CAL 1660@500PPB	09/30/15 20:31	4	5G60390.	CAL 1660@1000PPB	09/30/15 20:48
5	5G60391.	CAL 1660@2000PPB	09/30/15 21:06	6	5G60392.	CAL 1660@4000PPB	09/30/15 21:24
7	5G60382.	CAL 3268@500PPB	09/30/15 18:26	8	5G60383.	CAL 1242@500PPB	09/30/15 18:44
9	5G60384.	CAL 1248@500PPB	09/30/15 19:01	10	5G60385.	CAL 2154@500PPB	09/30/15 19:19
11	5G60386.	CAL 1262@500PPB	09/30/15 19:37				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
TCMX-Surrogate	1	0	Avg	10585.	11189.	11190.	10898.	11108.	9268.9	----	----	10700	6.10	0.990	0.999	6.9	5.00	20.00	50.00	100.0	200.0	400.0		
Aroclor-1016	1	1	Qua	194.18	173.57	163.61	155.61	150.09	139.73	----	----	163	6.95	0.999	1.00	12	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	2	Qua	413.71	401.06	363.40	338.13	321.89	302.44	----	----	357	7.46	0.999	1.00	12	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	3	Avg	850.25	842.67	826.38	794.59	780.37	774.05	----	----	811	8.06	1.00	1.00	4.0	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	4	Avg	266.25	241.68	236.15	240.71	236.88	227.00	----	----	241	8.35	0.999	1.00	5.5	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	5	Avg	208.07	189.07	180.12	176.61	175.22	169.00	----	----	183	8.46	1.00	1.00	7.6	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	1	Avg	479.58	434.64	414.52	404.56	410.34	410.51	----	----	426	10.15	1.00	1.00	6.7	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	2	Avg	571.98	520.42	502.42	490.10	502.63	509.97	----	----	516	10.41	1.00	1.00	5.6	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	3	Avg	252.44	226.08	214.04	208.35	209.94	204.79	----	----	219	10.90	1.00	1.00	8.1	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	4	Avg	453.36	415.52	402.57	394.95	406.18	410.16	----	----	414	11.20	1.00	1.00	5.0	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	5	Avg	716.65	677.18	667.07	663.42	693.89	708.63	----	----	688	11.91	1.00	1.00	3.2	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1221	1	1	Avg	----	----	----	----	----	----	----	----	93.9	6.65	-1	-1	Lvl=10	500.0							
Aroclor-1221	1	2	Avg	----	----	----	----	----	----	----	----	63.7	6.87	-1	-1	Lvl=10	500.0							
Aroclor-1221	1	3	Avg	----	----	----	----	----	----	----	----	234	6.95	-1	-1	Lvl=10	500.0							
Aroclor-1232	1	1	Avg	----	----	----	----	----	----	----	----	158	6.95	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	2	Avg	----	----	----	----	----	----	----	----	154	7.46	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	3	Avg	----	----	----	----	----	----	----	----	334	8.06	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	4	Avg	----	----	----	----	----	----	----	----	96.6	8.35	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	5	Avg	----	----	----	----	----	----	----	----	84.4	8.46	-1	-1	Lvl=7	500.0							
Aroclor-1242	1	1	Avg	----	----	----	----	----	----	----	----	147	6.95	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	2	Avg	----	----	----	----	----	----	----	----	298	7.46	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	3	Avg	----	----	----	----	----	----	----	----	674	8.06	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	4	Avg	----	----	----	----	----	----	----	----	194	8.35	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	5	Avg	----	----	----	----	----	----	----	----	276	8.77	-1	-1	Lvl=8	500.0							
Aroclor-1248	1	1	Avg	----	----	----	----	----	----	----	----	143	7.46	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	2	Avg	----	----	----	----	----	----	----	----	390	8.06	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	3	Avg	----	----	----	----	----	----	----	----	254	8.46	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	4	Avg	----	----	----	----	----	----	----	----	405	8.77	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	5	Avg	----	----	----	----	----	----	----	----	337	8.89	-1	-1	Lvl=9	500.0							
Aroclor-1254	1	1	Avg	----	----	----	----	----	----	----	----	580	9.98	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	2	Avg	----	----	----	----	----	----	----	----	273	10.15	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	3	Avg	----	----	----	----	----	----	----	----	383	10.27	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	4	Avg	----	----	----	----	----	----	----	----	251	10.41	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	5	Avg	----	----	----	----	----	----	----	----	231	10.67	-1	-1	Lvl=10	500.0							
Aroclor-1262	1	1	Avg	----	----	----	----	----	----	----	----	367	10.41	-1	-1	Lvl=11	500.0							
Aroclor-1262	1	2	Avg	----	----	----	----	----	----	----	----	357	11.84	-1	-1	Lvl=11	500.0							

Avg Rsd Col 1: 6.75 Avg Rsd Col 2: 8.41

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whehter Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

5102701 0108

Method: EPA 8082A

Form 6
Initial Calibration

Instrument: GC_5

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	5G60387.	CAL 1660@50PPB	09/30/15 19:55	2	5G60388.	CAL 1660@200PPB	09/30/15 20:13
3	5G60389.	CAL 1660@500PPB	09/30/15 20:31	4	5G60390.	CAL 1660@1000PPB	09/30/15 20:48
5	5G60391.	CAL 1660@2000PPB	09/30/15 21:06	6	5G60392.	CAL 1660@4000PPB	09/30/15 21:24
7	5G60382.	CAL 3268@500PPB	09/30/15 18:26	8	5G60383.	CAL 1242@500PPB	09/30/15 18:44
9	5G60384.	CAL 1248@500PPB	09/30/15 19:01	10	5G60385.	CAL 2154@500PPB	09/30/15 19:19
11	5G60386.	CAL 1262@500PPB	09/30/15 19:37				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Aroclor-1262	1	3	Avg	----	----	----	----	----	----	----	----	702	11.90	-1	-1	Lvl=11	500.0							
Aroclor-1262	1	4	Avg	----	----	----	----	----	----	----	----	340	12.58	-1	-1	Lvl=11	500.0							
Aroclor-1262	1	5	Avg	----	----	----	----	----	----	----	----	125	12.89	-1	-1	Lvl=11	500.0							
Aroclor-1268	1	1	Avg	----	----	----	----	----	----	----	----	112	11.19	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	2	Avg	----	----	----	----	----	----	----	----	153	11.52	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	3	Avg	----	----	----	----	----	----	----	----	978	12.07	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	4	Avg	----	----	----	----	----	----	----	----	264	12.17	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	5	Avg	----	----	----	----	----	----	----	----	2880	12.89	-1	-1	Lvl=7	500.0							
DCB-Surrogate	1	0	Avg	9246.5	8498.7	8328.4	8232.6	8613.6	8674.9	----	----	8600	13.08	1.00	1.00	4.2	5.00	20.00	50.00	100.0	200.0	400.0		
TCMX-Surrogate	2	0	Avg	7452.3	7377.1	7154.8	6847.9	6825.9	6570.3	----	----	7040	6.12	1.00	1.00	4.9	5.00	20.00	50.00	100.0	200.0	400.0		
Aroclor-1016	2	1	Qua	106.82	123.65	106.16	101.50	92.878	83.189	----	----	102	7.07	0.996	1.00	13	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	2	Qua	275.74	260.30	237.08	221.01	207.51	187.84	----	----	232	7.64	0.997	1.00	14	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	3	Avg	355.33	326.31	312.42	305.20	288.68	268.56	----	----	309	8.12	0.998	1.00	9.7	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	4	Avg	152.97	163.36	152.15	151.02	140.38	130.39	----	----	148	8.33	0.998	1.00	7.7	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	5	Avg	279.94	262.18	246.23	238.57	229.33	214.05	----	----	245	8.50	0.999	1.00	9.6	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	1	Avg	373.58	340.11	324.85	311.29	309.64	295.90	----	----	326	10.33	1.00	1.00	8.5	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	2	Avg	410.19	366.74	352.45	339.00	338.45	323.94	----	----	355	10.42	1.00	1.00	8.6	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	3	Avg	287.14	263.87	244.60	242.87	243.72	235.19	----	----	253	11.41	1.00	1.00	7.6	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	4	Avg	346.44	321.58	308.56	303.97	307.88	299.50	----	----	315	12.09	1.00	1.00	5.5	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	5	Avg	266.30	248.11	237.61	232.75	238.59	232.94	----	----	243	12.62	1.00	1.00	5.3	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1221	2	1	Avg	----	----	----	----	----	----	----	----	53.4	6.77	-1	-1	Lvl=10	500.0							
Aroclor-1221	2	2	Avg	----	----	----	----	----	----	----	----	43.4	6.98	-1	-1	Lvl=10	500.0							
Aroclor-1221	2	3	Avg	----	----	----	----	----	----	----	----	134	7.07	-1	-1	Lvl=10	500.0							
Aroclor-1232	2	1	Avg	----	----	----	----	----	----	----	----	109	7.07	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	2	Avg	----	----	----	----	----	----	----	----	108	7.64	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	3	Avg	----	----	----	----	----	----	----	----	126	8.12	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	4	Avg	----	----	----	----	----	----	----	----	63.3	8.33	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	5	Avg	----	----	----	----	----	----	----	----	109	8.52	-1	-1	Lvl=7	500.0							
Aroclor-1242	2	1	Avg	----	----	----	----	----	----	----	----	90.2	7.07	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	2	Avg	----	----	----	----	----	----	----	----	192	7.64	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	3	Avg	----	----	----	----	----	----	----	----	266	8.12	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	4	Avg	----	----	----	----	----	----	----	----	204	8.50	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	5	Avg	----	----	----	----	----	----	----	----	171	8.93	-1	-1	Lvl=8	500.0							
Aroclor-1248	2	1	Avg	----	----	----	----	----	----	----	----	89.2	7.64	-1	-1	Lvl=9	500.0							
Aroclor-1248	2	2	Avg	----	----	----	----	----	----	----	----	129	8.10	-1	-1	Lvl=9	500.0							
Aroclor-1248	2	3	Avg	----	----	----	----	----	----	----	----	210	8.52	-1	-1	Lvl=9	500.0							

Avg Rsd Col 1: 6.75 Avg Rsd Col 2: 8.41

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte >0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whehter Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

5102701 0109

Form 6
Initial Calibration

Method: EPA 8082A

Instrument: GC_5

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	5G60387.	CAL 1660@50PPB	09/30/15 19:55	2	5G60388.	CAL 1660@200PPB	09/30/15 20:13
3	5G60389.	CAL 1660@500PPB	09/30/15 20:31	4	5G60390.	CAL 1660@1000PPB	09/30/15 20:48
5	5G60391.	CAL 1660@2000PPB	09/30/15 21:06	6	5G60392.	CAL 1660@4000PPB	09/30/15 21:24
7	5G60382.	CAL 3268@500PPB	09/30/15 18:26	8	5G60383.	CAL 1242@500PPB	09/30/15 18:44
9	5G60384.	CAL 1248@500PPB	09/30/15 19:01	10	5G60385.	CAL 2154@500PPB	09/30/15 19:19
11	5G60386.	CAL 1262@500PPB	09/30/15 19:37				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Aroclor-1248	2	4	Avg	----	----	----	----	----	----	----	----	223	8.93	-1	-1	Lvl=9	500.0							
Aroclor-1248	2	5	Avg	----	----	----	----	----	----	----	----	237	9.24	-1	-1	Lvl=9	500.0							
Aroclor-1254	2	1	Avg	----	----	----	----	----	----	----	----	258	9.49	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	2	Avg	----	----	----	----	----	----	----	----	98.3	9.84	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	3	Avg	----	----	----	----	----	----	----	----	294	10.26	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	4	Avg	----	----	----	----	----	----	----	----	144	10.77	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	5	Avg	----	----	----	----	----	----	----	----	146	11.46	-1	-1	Lvl=10	500.0							
Aroclor-1262	2	1	Avg	----	----	----	----	----	----	----	----	204	10.84	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	2	Avg	----	----	----	----	----	----	----	----	245	11.99	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	3	Avg	----	----	----	----	----	----	----	----	271	12.09	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	4	Avg	----	----	----	----	----	----	----	----	321	12.62	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	5	Avg	----	----	----	----	----	----	----	----	84.0	13.10	-1	-1	Lvl=11	500.0							
Aroclor-1268	2	1	Avg	----	----	----	----	----	----	----	----	66.2	11.50	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	2	Avg	----	----	----	----	----	----	----	----	105	11.55	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	3	Avg	----	----	----	----	----	----	----	----	616	12.39	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	4	Avg	----	----	----	----	----	----	----	----	171	12.53	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	5	Avg	----	----	----	----	----	----	----	----	1820	13.10	-1	-1	Lvl=7	500.0							
DCB-Surrogate	2	0	Avg	6265.5	5730.4	5531.6	5434.4	5521.8	5391.5	----	----	5650	13.57	1.00	1.00	5.8	5.00	20.00	50.00	100.0	200.0	400.0		

Avg Rsd Col 1: 6.75 Avg Rsd Col 2: 8.41

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whehter Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

5102701 0110

Form 6
Initial Calibration

Method: EPA 8082A

Instrument: GC_3

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	3G93446.	CAL 1660@50PPB	10/27/15 13:01	2	3G93447.	CAL 1660@200PPB	10/27/15 13:16
3	3G93448.	CAL 1660@500PPB	10/27/15 13:32	4	3G93449.	CAL 1660@1000PPB	10/27/15 13:46
5	3G93450.	CAL 1660@2000PPB	10/27/15 14:01	6	3G93451.	CAL 1660@4000PPB	10/27/15 14:16
7	3G93441.	CAL 3268@500PPB	10/27/15 11:47	8	3G93442.	CAL 1242@500PPB	10/27/15 12:02
9	3G93443.	CAL 1248@500PPB	10/27/15 12:17	10	3G93444.	CAL 2154@500PPB	10/27/15 12:32
11	3G93445.	CAL 1262@500PPB	10/27/15 12:47				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
TCMX-Surrogate	1	0	Qua	9.4123	8.8832	8.4018	8.1078	7.4556	6.7645	----	----	8.17	3.92	0.997	1.00	12	5.00	20.00	50.00	100.0	200.0	400.0		
Aroclor-1016	1	1	Qua	0.1912	0.2085	0.1925	0.1750	0.1557	0.1370	----	----	0.177	4.41	0.993	1.00	15	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	2	Qua	0.4514	0.3952	0.3504	0.3107	0.2698	0.2289	----	----	0.334	4.76	0.990	0.999	24	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	3	Qua	0.9259	0.8334	0.7333	0.6617	0.5874	0.5149	----	----	0.710	5.21	0.994	1.00	22	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	4	Qua	0.2749	0.2597	0.2403	0.2280	0.2071	0.1876	----	----	0.233	5.45	0.996	1.00	14	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	5	Qua	0.6385	0.5795	0.5165	0.4895	0.4359	0.3859	----	----	0.508	5.56	0.994	1.00	18	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	1	Qua	0.6166	0.5262	0.4692	0.4157	0.3715	0.3358	----	----	0.456	7.03	0.996	1.00	23	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	2	Qua	0.6951	0.6007	0.5357	0.4768	0.4271	0.3883	----	----	0.521	7.28	0.996	1.00	22	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	3	Qua	0.4075	0.3625	0.3439	0.3149	0.2914	0.2720	----	----	0.332	7.48	0.998	1.00	15	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	4	Qua	0.4425	0.3979	0.3768	0.3394	0.3105	0.2849	----	----	0.359	8.06	0.997	1.00	16	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	5	Avg	0.6890	0.6041	0.6459	0.5995	0.5616	0.5284	----	----	0.605	8.78	0.998	1.00	9.5	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1221	1	1	Avg	----	----	----	----	----	----	----	----	0.107	4.21	-1	-1	Lvl=10	500.0							
Aroclor-1221	1	2	Avg	----	----	----	----	----	----	----	----	0.0506	4.35	-1	-1	Lvl=10	500.0							
Aroclor-1221	1	3	Avg	----	----	----	----	----	----	----	----	0.256	4.41	-1	-1	Lvl=10	500.0							
Aroclor-1232	1	1	Avg	----	----	----	----	----	----	----	----	0.153	4.41	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	2	Avg	----	----	----	----	----	----	----	----	0.151	4.76	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	3	Avg	----	----	----	----	----	----	----	----	0.277	5.21	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	4	Avg	----	----	----	----	----	----	----	----	0.118	5.34	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	5	Avg	----	----	----	----	----	----	----	----	0.129	5.79	-1	-1	Lvl=7	500.0							
Aroclor-1242	1	1	Avg	----	----	----	----	----	----	----	----	0.145	4.41	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	2	Avg	----	----	----	----	----	----	----	----	0.263	4.76	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	3	Avg	----	----	----	----	----	----	----	----	0.552	5.21	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	4	Avg	----	----	----	----	----	----	----	----	0.377	5.55	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	5	Avg	----	----	----	----	----	----	----	----	0.241	5.79	-1	-1	Lvl=8	500.0							
Aroclor-1248	1	1	Avg	----	----	----	----	----	----	----	----	0.138	4.75	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	2	Avg	----	----	----	----	----	----	----	----	0.341	5.21	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	3	Avg	----	----	----	----	----	----	----	----	0.585	5.55	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	4	Avg	----	----	----	----	----	----	----	----	0.368	5.89	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	5	Avg	----	----	----	----	----	----	----	----	0.416	6.48	-1	-1	Lvl=9	500.0							
Aroclor-1254	1	1	Avg	----	----	----	----	----	----	----	----	0.174	6.67	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	2	Avg	----	----	----	----	----	----	----	----	0.671	6.88	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	3	Avg	----	----	----	----	----	----	----	----	0.340	7.04	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	4	Avg	----	----	----	----	----	----	----	----	0.465	7.16	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	5	Avg	----	----	----	----	----	----	----	----	0.208	7.54	-1	-1	Lvl=10	500.0							
Aroclor-1262	1	1	Avg	----	----	----	----	----	----	----	----	0.572	7.70	-1	-1	Lvl=11	500.0							
Aroclor-1262	1	2	Avg	----	----	----	----	----	----	----	----	0.273	8.71	-1	-1	Lvl=11	500.0							

Avg Rsd Col 1: 17.16 Avg Rsd Col 2: 16.37

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte, >0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

5102701 0111

Form 6
Initial Calibration

Method: EPA 8082A

Instrument: GC_3

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	3G93446.	CAL 1660@50PPB	10/27/15 13:01	2	3G93447.	CAL 1660@200PPB	10/27/15 13:16
3	3G93448.	CAL 1660@500PPB	10/27/15 13:32	4	3G93449.	CAL 1660@1000PPB	10/27/15 13:46
5	3G93450.	CAL 1660@2000PPB	10/27/15 14:01	6	3G93451.	CAL 1660@4000PPB	10/27/15 14:16
7	3G93441.	CAL 3268@500PPB	10/27/15 11:47	8	3G93442.	CAL 1242@500PPB	10/27/15 12:02
9	3G93443.	CAL 1248@500PPB	10/27/15 12:17	10	3G93444.	CAL 2154@500PPB	10/27/15 12:32
11	3G93445.	CAL 1262@500PPB	10/27/15 12:47				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Aroclor-1262	1	3	Avg	----	----	----	----	----	----	----	----	0.612	8.77	-1	-1	Lvl=11	500.0							
Aroclor-1262	1	4	Avg	----	----	----	----	----	----	----	----	0.296	9.49	-1	-1	Lvl=11	500.0							
Aroclor-1262	1	5	Avg	----	----	----	----	----	----	----	----	0.100	9.83	-1	-1	Lvl=11	500.0							
Aroclor-1268	1	1	Avg	----	----	----	----	----	----	----	----	0.133	8.05	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	2	Avg	----	----	----	----	----	----	----	----	0.0832	8.39	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	3	Avg	----	----	----	----	----	----	----	----	0.665	8.94	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	4	Avg	----	----	----	----	----	----	----	----	0.219	9.04	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	5	Avg	----	----	----	----	----	----	----	----	1.71	9.83	-1	-1	Lvl=7	500.0							
DCB-Surrogate	1	0	Qua	8.1169	7.5192	6.9203	6.3583	5.8311	5.3635	----	----	6.68	10.05	0.997	1.00	16	5.00	20.00	50.00	100.0	200.0	400.0		
TCMX-Surrogate	2	0	Avg	4.4827	4.3654	4.6208	4.3991	4.2407	4.0004	----	----	4.35	4.18	0.999	1.00	4.9	5.00	20.00	50.00	100.0	200.0	400.0		
Aroclor-1016	2	1	Qua	0.1282	0.1197	0.1109	0.1004	0.0894	0.0789	----	----	0.105	4.76	0.994	1.00	18	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	2	Qua	0.2697	0.2403	0.2105	0.1864	0.1648	0.1436	----	----	0.203	5.18	0.993	1.00	23	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	3	Qua	0.5457	0.5007	0.4522	0.4109	0.3749	0.3401	----	----	0.437	5.56	0.997	1.00	18	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	4	Qua	0.2230	0.2015	0.1786	0.1613	0.1453	0.1320	----	----	0.174	5.88	0.996	1.00	20	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	5	Qua	0.1528	0.1403	0.1288	0.1169	0.1039	0.0962	----	----	0.123	6.25	0.997	0.999	18	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	1	Qua	0.3529	0.3137	0.2778	0.2500	0.2262	0.2065	----	----	0.271	7.55	0.997	1.00	20	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	2	Qua	0.4190	0.3721	0.3308	0.2997	0.2724	0.2529	----	----	0.325	7.63	0.998	1.00	19	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	3	Qua	0.2262	0.1968	0.1784	0.1642	0.1485	0.1404	----	----	0.176	8.26	0.998	1.00	18	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	4	Qua	0.3121	0.2880	0.2719	0.2569	0.2415	0.2306	----	----	0.267	8.62	0.999	1.00	11	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	5	Qua	0.3935	0.3424	0.3295	0.3151	0.2915	0.2826	----	----	0.326	9.35	0.999	1.00	12	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1221	2	1	Avg	----	----	----	----	----	----	----	----	0.0644	4.55	-1	-1	Lvl=10	500.0							
Aroclor-1221	2	2	Avg	----	----	----	----	----	----	----	----	0.0341	4.70	-1	-1	Lvl=10	500.0							
Aroclor-1221	2	3	Avg	----	----	----	----	----	----	----	----	0.122	4.76	-1	-1	Lvl=10	500.0							
Aroclor-1232	2	1	Avg	----	----	----	----	----	----	----	----	0.0956	4.76	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	2	Avg	----	----	----	----	----	----	----	----	0.0932	5.18	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	3	Avg	----	----	----	----	----	----	----	----	0.175	5.56	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	4	Avg	----	----	----	----	----	----	----	----	0.0619	6.25	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	5	Avg	----	----	----	----	----	----	----	----	0.0551	6.39	-1	-1	Lvl=7	500.0							
Aroclor-1242	2	1	Avg	----	----	----	----	----	----	----	----	0.0902	4.76	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	2	Avg	----	----	----	----	----	----	----	----	0.164	5.18	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	3	Avg	----	----	----	----	----	----	----	----	0.341	5.56	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	4	Avg	----	----	----	----	----	----	----	----	0.137	5.88	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	5	Avg	----	----	----	----	----	----	----	----	0.108	6.25	-1	-1	Lvl=8	500.0							
Aroclor-1248	2	1	Avg	----	----	----	----	----	----	----	----	0.0825	5.18	-1	-1	Lvl=9	500.0							
Aroclor-1248	2	2	Avg	----	----	----	----	----	----	----	----	0.216	5.55	-1	-1	Lvl=9	500.0							
Aroclor-1248	2	3	Avg	----	----	----	----	----	----	----	----	0.151	5.88	-1	-1	Lvl=9	500.0							

Avg Rsd Col 1: 17.16 Avg Rsd Col 2: 16.37

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

5102701 0112

Method: EPA 8082A

Form 6
Initial Calibration

Instrument: GC_3

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	3G93446.	CAL 1660@50PPB	10/27/15 13:01	2	3G93447.	CAL 1660@200PPB	10/27/15 13:16
3	3G93448.	CAL 1660@500PPB	10/27/15 13:32	4	3G93449.	CAL 1660@1000PPB	10/27/15 13:46
5	3G93450.	CAL 1660@2000PPB	10/27/15 14:01	6	3G93451.	CAL 1660@4000PPB	10/27/15 14:16
7	3G93441.	CAL 3268@500PPB	10/27/15 11:47	8	3G93442.	CAL 1242@500PPB	10/27/15 12:02
9	3G93443.	CAL 1248@500PPB	10/27/15 12:17	10	3G93444.	CAL 2154@500PPB	10/27/15 12:32
11	3G93445.	CAL 1262@500PPB	10/27/15 12:47				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Aroclor-1248	2	4	Avg	----	----	----	----	----	----	----	----	0.158	6.39	-1	-1	Lvl=9	500.0							
Aroclor-1248	2	5	Avg	----	----	----	----	----	----	----	----	0.198	6.52	-1	-1	Lvl=9	500.0							
Aroclor-1254	2	1	Avg	----	----	----	----	----	----	----	----	0.276	6.74	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	2	Avg	----	----	----	----	----	----	----	----	0.0798	7.08	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	3	Avg	----	----	----	----	----	----	----	----	0.187	7.48	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	4	Avg	----	----	----	----	----	----	----	----	0.0578	8.02	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	5	Avg	----	----	----	----	----	----	----	----	0.0983	8.69	-1	-1	Lvl=10	500.0							
Aroclor-1262	2	1	Avg	----	----	----	----	----	----	----	----	0.229	8.05	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	2	Avg	----	----	----	----	----	----	----	----	0.178	9.23	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	3	Avg	----	----	----	----	----	----	----	----	0.275	9.34	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	4	Avg	----	----	----	----	----	----	----	----	0.253	9.98	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	5	Avg	----	----	----	----	----	----	----	----	0.0674	10.56	-1	-1	Lvl=11	500.0							
Aroclor-1268	2	1	Avg	----	----	----	----	----	----	----	----	0.0502	8.71	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	2	Avg	----	----	----	----	----	----	----	----	0.0997	8.76	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	3	Avg	----	----	----	----	----	----	----	----	0.460	9.69	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	4	Avg	----	----	----	----	----	----	----	----	0.136	9.86	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	5	Avg	----	----	----	----	----	----	----	----	1.29	10.55	-1	-1	Lvl=7	500.0							
DCB-Surrogate	2	0	Qua	5.6280	4.9863	4.6435	4.3762	4.0967	3.8747	----	----	4.60	11.14	0.999	1.00	14	5.00	20.00	50.00	100.0	200.0	400.0		

Avg Rsd Col 1: 17.16 Avg Rsd Col 2: 16.37

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

Form7
Continuing Calibration

Method: EPA 8082A

Data File:				3G93466.D				3G93474.D				5G60844.D				5G60861.D				5G60880.D			
Method:				8082				8082				8082				8082				8082			
Calibration Name:				CAL 1660@1000PP				CAL 1660@1000PP				CAL 1660@1000PP				CAL 1660@2000PP				CAL 1660@2000PP			
Calibration Date/Time				10/29/15 10:47				10/29/15 16:14				10/29/15 17:04				10/29/15 22:07				10/30/15 09:45			
					Conc				Conc				Conc				Conc				Conc		
Compound	Limit	Col	Mr	Conc	Exp	%Diff		Conc	Exp	%Diff		Conc	Exp	%Diff		Conc	Exp	%Diff		Conc	Exp	%Diff	
TCMX-Surrogate	20	1	0	97.51	100	2.5		92.93	100	7.1		110.8	100	10.8		240.7	200	20.4		231.4	200	15.7	
Aroclor-1016	20	1	1	1023	1000	2.3		939.9	1000	6.0		1109	1000	10.9		2318	2000	15.9		2226	2000	11.3	
Aroclor-1016	20	1	2	1031	1000	3.1		946.9	1000	5.3		1147	1000	14.7		2247	2000	12.3		2187	2000	9.4	
Aroclor-1016	20	1	3	1026	1000	2.6		909.3	1000	9.1		1051	1000	5.1		2146	2000	7.3		2047	2000	2.3	
Aroclor-1016	20	1	4	1036	1000	3.6		979	1000	2.1		1099	1000	9.9		2298	2000	14.9		2189	2000	9.5	
Aroclor-1016	20	1	5	1029	1000	2.9		964.3	1000	3.6		1060	1000	6.0		2208	2000	10.4		2125	2000	6.3	
Aroclor-1260	20	1	1	1044	1000	4.4		990.9	1000	0.9		1054	1000	5.4		2199	2000	9.9		2077	2000	3.9	
Aroclor-1260	20	1	2	1055	1000	5.5		1006	1000	0.6		1041	1000	4.1		2233	2000	11.7		2129	2000	6.4	
Aroclor-1260	20	1	3	1057	1000	5.7		996.2	1000	0.4		1025	1000	2.5		2210	2000	10.5		2076	2000	3.8	
Aroclor-1260	20	1	4	1067	1000	6.7		1041	1000	4.1		1045	1000	4.5		2256	2000	12.8		2116	2000	5.8	
Aroclor-1260	20	1	5	1026	1000	2.6		1001	1000	0.1		1028	1000	2.8		2272	2000	13.6		2150	2000	7.5	
DCB-Surrogate	20	1	0	103	100	3.0		106.8	100	6.8		98.58	100	1.4		213.8	200	6.9		207.2	200	3.6	
Average Difference	20	1	0			3.7				3.8				6.5				12.2				7.1	
TCMX-Surrogate	20	2	0	104.6	100	4.6		97.36	100	2.6		98.68	100	1.3		192.4	200	3.8		188.1	200	5.9	
Aroclor-1016	20	2	1	1019	1000	1.9		928	1000	7.2		1002	1000	0.2		2170	2000	8.5		2075	2000	3.7	
Aroclor-1016	20	2	2	1060	1000	6.0		931	1000	6.9		1064	1000	6.4		2191	2000	9.5		2114	2000	5.7	
Aroclor-1016	20	2	3	1052	1000	5.2		926.9	1000	7.3		1028	1000	2.8		1951	2000	2.5		1831	2000	8.4	
Aroclor-1016	20	2	4	1062	1000	6.2		957.5	1000	4.2		1100	1000	10.0		2088	2000	4.4		1977	2000	1.1	
Aroclor-1016	20	2	5	1058	1000	5.8		969.5	1000	3.1		1018	1000	1.8		2026	2000	1.3		1892	2000	5.4	
Aroclor-1260	20	2	1	1065	1000	6.5		1009	1000	0.9		934.7	1000	6.5		1966	2000	1.7		1787	2000	10.6	
Aroclor-1260	20	2	2	1060	1000	6.0		990.2	1000	1.0		932	1000	6.8		1978	2000	1.1		1761	2000	11.9	
Aroclor-1260	20	2	3	1050	1000	5.0		930.9	1000	6.9		950.9	1000	4.9		2026	2000	1.3		1867	2000	6.6	
Aroclor-1260	20	2	4	1054	1000	5.4		1024	1000	2.4		914	1000	8.6		2000	2000	0.0		1869	2000	6.6	
Aroclor-1260	20	2	5	924.4	1000	7.6		884.4	1000	11.6		941.4	1000	5.9		2030	2000	1.5		1892	2000	5.4	
DCB-Surrogate	20	2	0	102	100	2.0		104.4	100	4.4		92.71	100	7.3		197.6	200	1.2		187.5	200	6.3	
Average Difference	20	2	0			5.2				4.9				5.2				3.1				6.5	

Flags/Notes: **** - Values outside of limits for this column/run***

Form7
Continuing Calibration

Method: EPA 8082A

Data File: 5G60896.D
Method: 8082
Calibration Name: CAL 1660@1000PP
Calibration Date/Time 10/30/15 14:40

Compound	Limit	Col	Mr	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff
TCMX-Surrogate	20	1	0	108.3	100	8.3												
Aroclor-1016	20	1	1	1081	1000	8.1												
Aroclor-1016	20	1	2	1375	1000	37.5*												
Aroclor-1016	20	1	3	1015	1000	1.5												
Aroclor-1016	20	1	4	1040	1000	4.0												
Aroclor-1016	20	1	5	1014	1000	1.4												
Aroclor-1260	20	1	1	975.4	1000	2.5												
Aroclor-1260	20	1	2	969.7	1000	3.0												
Aroclor-1260	20	1	3	956.5	1000	4.4												
Aroclor-1260	20	1	4	963.1	1000	3.7												
Aroclor-1260	20	1	5	971.1	1000	2.9												
DCB-Surrogate	20	1	0	91.62	100	8.4												
Average Difference	20	1	0			7.1												
TCMX-Surrogate	20	2	0	97.5	100	2.5												
Aroclor-1016	20	2	1	1001	1000	0.1												
Aroclor-1016	20	2	2	1037	1000	3.7												
Aroclor-1016	20	2	3	964.6	1000	3.5												
Aroclor-1016	20	2	4	1012	1000	1.2												
Aroclor-1016	20	2	5	967.6	1000	3.2												
Aroclor-1260	20	2	1	870.3	1000	13.0												
Aroclor-1260	20	2	2	862.1	1000	13.8												
Aroclor-1260	20	2	3	833.8	1000	16.6												
Aroclor-1260	20	2	4	838.1	1000	16.2												
Aroclor-1260	20	2	5	844.4	1000	15.6												
DCB-Surrogate	20	2	0	85	100	15.0												
Average Difference	20	2	0			8.7												

Flags/Notes: **** - Values outside of limits for this column/run***

Form7

RtWindow Summary

Method: EPA 8082A

Compound	Col	Mr	Data File: 3G93446.D Calibration Name: CAL 1660@50PPB Calibration Date/Time: 10/27/2015 1:01:00 PM Cal RT	Limit	5G60387.D CAL 1660@50PPB 9/30/2015 7:55:28 PM Cal RT	Limit	3G93466.D CAL 1660@1000PPB 10/29/2015 10:47:00 AM Cal RT	Limit	5G60844.D CAL 1660@1000PPB 10/29/2015 5:04:34 PM Cal RT	Limit	5G60880.D CAL 1660@2000PPB 10/30/2015 9:45:15 AM Cal RT	Limit
TCMX-Surrogate	1	0	3.92	(3.86 - 3.98)	6.10	(6.04 - 6.16)	3.93	(3.87 - 3.99)	6.10	(6.04 - 6.16)	6.10	(6.04 - 6.16)
Aroclor-1016	1	1	4.41	(4.37 - 4.45)	6.95	(6.91 - 6.99)	4.41	(4.37 - 4.45)	6.94	(6.90 - 6.98)	6.94	(6.90 - 6.98)
Aroclor-1016	1	2	4.76	(4.72 - 4.80)	7.46	(7.42 - 7.50)	4.76	(4.72 - 4.80)	7.45	(7.41 - 7.49)	7.45	(7.41 - 7.49)
Aroclor-1016	1	3	5.21	(5.17 - 5.25)	8.06	(8.02 - 8.10)	5.21	(5.17 - 5.25)	8.05	(8.01 - 8.09)	8.05	(8.01 - 8.09)
Aroclor-1016	1	4	5.44	(5.40 - 5.48)	8.35	(8.31 - 8.39)	5.45	(5.41 - 5.49)	8.34	(8.30 - 8.38)	8.34	(8.30 - 8.38)
Aroclor-1016	1	5	5.55	(5.51 - 5.59)	8.46	(8.42 - 8.50)	5.56	(5.52 - 5.60)	8.45	(8.41 - 8.49)	8.45	(8.41 - 8.49)
Aroclor-1260	1	1	7.03	(6.99 - 7.07)	10.15	(10.11 - 10.19)	7.03	(6.99 - 7.07)	10.14	(10.10 - 10.18)	10.14	(10.10 - 10.18)
Aroclor-1260	1	2	7.28	(7.24 - 7.32)	10.41	(10.37 - 10.45)	7.28	(7.24 - 7.32)	10.40	(10.36 - 10.44)	10.40	(10.36 - 10.44)
Aroclor-1260	1	3	7.48	(7.44 - 7.52)	10.90	(10.86 - 10.94)	7.48	(7.44 - 7.52)	10.89	(10.85 - 10.93)	10.89	(10.85 - 10.93)
Aroclor-1260	1	4	8.06	(8.02 - 8.10)	11.20	(11.16 - 11.24)	8.06	(8.02 - 8.10)	11.19	(11.15 - 11.23)	11.19	(11.15 - 11.23)
Aroclor-1260	1	5	8.78	(8.74 - 8.82)	11.91	(11.87 - 11.95)	8.78	(8.74 - 8.82)	11.90	(11.86 - 11.94)	11.90	(11.86 - 11.94)
Aroclor-1221	1	1	4.21	(4.17 - 4.25)	6.65	(6.61 - 6.69)						
Aroclor-1221	1	2	4.35	(4.31 - 4.39)	6.87	(6.83 - 6.91)						
Aroclor-1221	1	3	4.41	(4.37 - 4.45)	6.95	(6.91 - 6.99)						
Aroclor-1232	1	1	4.41	(4.37 - 4.45)	6.95	(6.91 - 6.99)						
Aroclor-1232	1	2	4.76	(4.72 - 4.80)	7.46	(7.42 - 7.50)						
Aroclor-1232	1	3	5.21	(5.17 - 5.25)	8.06	(8.02 - 8.10)						
Aroclor-1232	1	4	5.34	(5.30 - 5.38)	8.35	(8.31 - 8.39)						
Aroclor-1232	1	5	5.79	(5.75 - 5.83)	8.46	(8.42 - 8.50)						
Aroclor-1242	1	1	4.41	(4.37 - 4.45)	6.95	(6.91 - 6.99)						
Aroclor-1242	1	2	4.76	(4.72 - 4.80)	7.46	(7.42 - 7.50)						
Aroclor-1242	1	3	5.21	(5.17 - 5.25)	8.06	(8.02 - 8.10)						
Aroclor-1242	1	4	5.55	(5.51 - 5.59)	8.35	(8.31 - 8.39)						
Aroclor-1242	1	5	5.79	(5.75 - 5.83)	8.77	(8.73 - 8.81)						
Aroclor-1248	1	1	4.75	(4.71 - 4.79)	7.46	(7.42 - 7.50)						
Aroclor-1248	1	2	5.21	(5.17 - 5.25)	8.06	(8.02 - 8.10)						
Aroclor-1248	1	3	5.55	(5.51 - 5.59)	8.46	(8.42 - 8.50)						
Aroclor-1248	1	4	5.89	(5.85 - 5.93)	8.77	(8.73 - 8.81)						
Aroclor-1248	1	5	6.48	(6.44 - 6.52)	8.89	(8.85 - 8.93)						
Aroclor-1254	1	1	6.67	(6.63 - 6.71)	9.98	(9.94 - 10.02)						
Aroclor-1254	1	2	6.88	(6.84 - 6.92)	10.15	(10.11 - 10.19)						
Aroclor-1254	1	3	7.04	(7.00 - 7.08)	10.27	(10.23 - 10.31)						
Aroclor-1254	1	4	7.16	(7.12 - 7.20)	10.41	(10.37 - 10.45)						
Aroclor-1254	1	5	7.54	(7.50 - 7.58)	10.67	(10.63 - 10.71)						
Aroclor-1262	1	1	7.70	(7.66 - 7.74)	10.41	(10.37 - 10.45)						
Aroclor-1262	1	2	8.71	(8.67 - 8.75)	11.84	(11.80 - 11.88)						
Aroclor-1262	1	3	8.77	(8.73 - 8.81)	11.90	(11.86 - 11.94)						
Aroclor-1262	1	4	9.49	(9.45 - 9.53)	12.58	(12.54 - 12.62)						
Aroclor-1262	1	5	9.83	(9.79 - 9.87)	12.89	(12.85 - 12.93)						
Aroclor-1268	1	1	8.05	(8.01 - 8.09)	11.19	(11.15 - 11.23)						
Aroclor-1268	1	2	8.38	(8.34 - 8.42)	11.52	(11.48 - 11.56)						
Aroclor-1268	1	3	8.94	(8.90 - 8.98)	12.07	(12.03 - 12.11)						
Aroclor-1268	1	4	9.04	(9.00 - 9.08)	12.17	(12.13 - 12.21)						
Aroclor-1268	1	5	9.83	(9.79 - 9.87)	12.90	(12.86 - 12.94)						
DCB-Surrogate	1	0	10.04	(9.98 - 10.10)	13.08	(13.02 - 13.14)	10.05	(9.99 - 10.11)	13.07	(13.01 - 13.13)	13.06	(13.00 - 13.12)
TCMX-Surrogate	2	0	4.18	(4.12 - 4.24)	6.12	(6.06 - 6.18)	4.19	(4.13 - 4.25)	6.11	(6.05 - 6.17)	6.12	(6.06 - 6.18)
Aroclor-1016	2	1	4.76	(4.72 - 4.80)	7.07	(7.03 - 7.11)	4.76	(4.72 - 4.80)	7.06	(7.02 - 7.10)	7.07	(7.03 - 7.11)
Aroclor-1016	2	2	5.18	(5.14 - 5.22)	7.64	(7.60 - 7.68)	5.18	(5.14 - 5.22)	7.63	(7.59 - 7.67)	7.64	(7.60 - 7.68)
Aroclor-1016	2	3	5.56	(5.52 - 5.60)	8.12	(8.08 - 8.16)	5.56	(5.52 - 5.60)	8.11	(8.07 - 8.15)	8.12	(8.08 - 8.16)
Aroclor-1016	2	4	5.88	(5.84 - 5.92)	8.33	(8.29 - 8.37)	5.88	(5.84 - 5.92)	8.32	(8.28 - 8.36)	8.32	(8.28 - 8.36)
Aroclor-1016	2	5	6.25	(6.21 - 6.29)	8.50	(8.46 - 8.54)	6.25	(6.21 - 6.29)	8.49	(8.45 - 8.53)	8.50	(8.46 - 8.54)
Aroclor-1260	2	1	7.55	(7.51 - 7.59)	10.33	(10.29 - 10.37)	7.55	(7.51 - 7.59)	10.32	(10.28 - 10.36)	10.32	(10.28 - 10.36)
Aroclor-1260	2	2	7.63	(7.59 - 7.67)	10.42	(10.38 - 10.46)	7.63	(7.59 - 7.67)	10.41	(10.37 - 10.45)	10.41	(10.37 - 10.45)
Aroclor-1260	2	3	8.26	(8.22 - 8.30)	11.41	(11.37 - 11.45)	8.26	(8.22 - 8.30)	11.40	(11.36 - 11.44)	11.40	(11.36 - 11.44)
Aroclor-1260	2	4	8.62	(8.58 - 8.66)	12.09	(12.05 - 12.13)	8.62	(8.58 - 8.66)	12.08	(12.04 - 12.12)	12.08	(12.04 - 12.12)
Aroclor-1260	2	5	9.35	(9.31 - 9.39)	12.62	(12.58 - 12.66)	9.35	(9.31 - 9.39)	12.61	(12.57 - 12.65)	12.61	(12.57 - 12.65)
Aroclor-1221	2	1	4.55	(4.51 - 4.59)	6.77	(6.73 - 6.81)						
Aroclor-1221	2	2	4.70	(4.66 - 4.74)	6.98	(6.94 - 7.02)						
Aroclor-1221	2	3	4.76	(4.72 - 4.80)	7.07	(7.03 - 7.11)						
Aroclor-1232	2	1	4.76	(4.72 - 4.80)	7.07	(7.03 - 7.11)						
Aroclor-1232	2	2	5.18	(5.14 - 5.22)	7.64	(7.60 - 7.68)						
Aroclor-1232	2	3	5.56	(5.52 - 5.60)	8.12	(8.08 - 8.16)						
Aroclor-1232	2	4	6.25	(6.21 - 6.29)	8.33	(8.29 - 8.37)						
Aroclor-1232	2	5	6.39	(6.35 - 6.43)	8.52	(8.48 - 8.56)						
Aroclor-1242	2	1	4.76	(4.72 - 4.80)	7.07	(7.03 - 7.11)						
Aroclor-1242	2	2	5.18	(5.14 - 5.22)	7.64	(7.60 - 7.68)						
Aroclor-1242	2	3	5.56	(5.52 - 5.60)	8.12	(8.08 - 8.16)						
Aroclor-1242	2	4	5.88	(5.84 - 5.92)	8.50	(8.46 - 8.54)						
Aroclor-1242	2	5	6.25	(6.21 - 6.29)	8.93	(8.89 - 8.97)						
Aroclor-1248	2	1	5.18	(5.14 - 5.22)	7.64	(7.60 - 7.68)						
Aroclor-1248	2	2	5.55	(5.51 - 5.59)	8.10	(8.06 - 8.14)						
Aroclor-1248	2	3	5.88	(5.84 - 5.92)	8.52	(8.48 - 8.56)						
Aroclor-1248	2	4	6.39	(6.35 - 6.43)	8.93	(8.89 - 8.97)						
Aroclor-1248	2	5	6.52	(6.48 - 6.56)	9.24	(9.20 - 9.28)						
Aroclor-1254	2	1	6.74	(6.70 - 6.78)	9.49	(9.45 - 9.53)						
Aroclor-1254	2	2	7.08	(7.04 - 7.12)	9.84	(9.80 - 9.88)						
Aroclor-1254	2	3	7.48	(7.44 - 7.52)	10.26	(10.22 - 10.30)						
Aroclor-1254	2	4	8.02	(7.98 - 8.06)	10.77	(10.73 - 10.81)						
Aroclor-1254	2	5	8.69	(8.65 - 8.73)	11.46	(11.42 - 11.50)						
Aroclor-1262	2	1	8.05	(8.01 - 8.09)	10.84	(10.80 - 10.88)						
Aroclor-1262	2	2	9.23	(9.19 - 9.27)	11.99	(11.95 - 12.03)						
Aroclor-1262	2	3	9.34	(9.30 - 9.38)	12.09	(12.05 - 12.13)						
Aroclor-1262	2	4	9.98	(9.94 - 10.02)	12.62	(12.58 - 12.66)						
Aroclor-1262	2	5	10.56	(10.52 - 10.60)	13.10	(13.06 - 13.14)						
Aroclor-1268	2	1	8.71	(8.67 - 8.75)	11.50	(11.46 - 11.54)						
Aroclor-1268	2	2	8.76	(8.72 - 8.80)	11.55	(11.51 - 11.59)						
Aroclor-1268	2	3	9.69	(9.65 - 9.73)	12.39	(12.35 - 12.43)						
Aroclor-1268	2	4	9.86	(9.82 - 9.90)	12.53	(12.49 - 12.57)						
Aroclor-1268	2	5	10.55	(10.51 - 10.59)	13.10	(13.06 - 13.14)						
DCB-Surrogate	2	0	11.14	(11.08 - 11.20)	13.57	(13.51 - 13.63)	11.14	(11.08 - 11.20)	13.56	(13.50 - 13.62)	13.55	(13.49 - 13.61)

Pesticide Data

Form1

ORGANICS PESTICIDE REPORT

Sample Number: AC87819-001
Client Id: Quarry Material COMP
Data File: 6G61303.D
Analysis Date: 10/30/15 03:47
Date Rec/Extracted: 10/26/15-10/29/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8081B
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 97

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
5103-71-9	a-chlordane	0.0052	U	53494-70-5	Endrin Ketone	0.0052	U
309-00-2	Aldrin	0.0052	U	58-89-9	gamma-BHC	0.0010	U
319-84-6	alpha-BHC	0.0010	U	76-44-8	Heptachlor	0.0052	U
319-85-7	beta-BHC	0.0010	U	1024-57-3	Heptachlor Epoxide	0.0052	U
319-86-8	delta-BHC	0.0052	U	72-43-5	Methoxychlor	0.0052	U
60-57-1	Dieldrin	0.0010	U	72-54-8	p,p'-DDD	0.0026	U
959-98-8	Endosulfan I	0.0052	U	72-55-9	p,p'-DDE	0.0026	U
33213-65-9	Endosulfan II	0.0052	U	50-29-3	p,p'-DDT	0.0026	U
1031-07-8	Endosulfan Sulfate	0.0052	U	8001-35-2	Toxaphene	0.026	U
72-20-8	Endrin	0.0052	U	5103-74-2	y-chlordane	0.0052	U
7421-93-4	Endrin Aldehyde	0.0052	U	57-74-9	Chlordane (Total)	0.0052	U

Worksheet #: 362774

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Chlordane (Total) is sum of a-Chlordane and y-Chlordane.

Data Path : G:\Gcdata\2015\GC_6\Data\10-30-15\
Data File : 6G61303.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 30 Oct 2015 3:47
Operator : MS/ZM/MLC
Sample : AC87819-001
Misc : S,PEST
ALS Vial : 16 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Oct 30 13:24:18 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P1030.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Fri Oct 30 11:39:30 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32

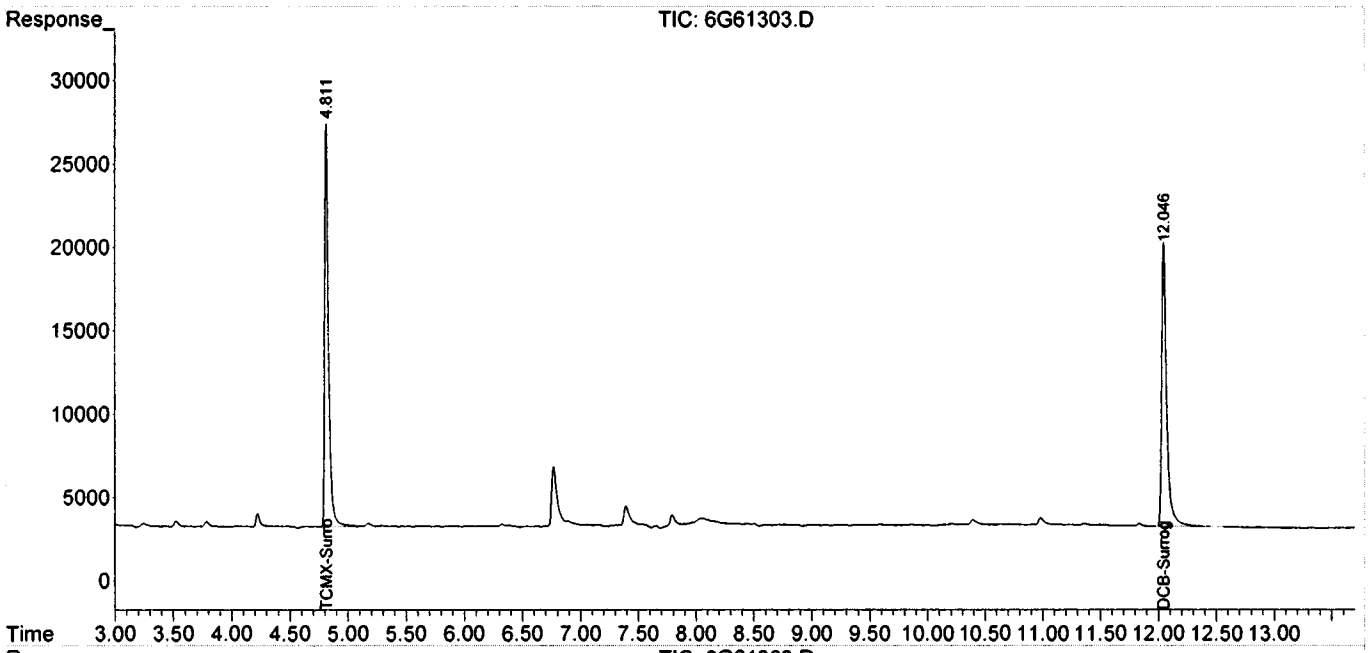
	Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
	Target Compounds						
1)	TCMX-Surrogate	4.812	4.827	554762	489959	90.088	90.753
22)	DCB-Surrogate	12.047	12.613	506202	489622	92.588	93.922

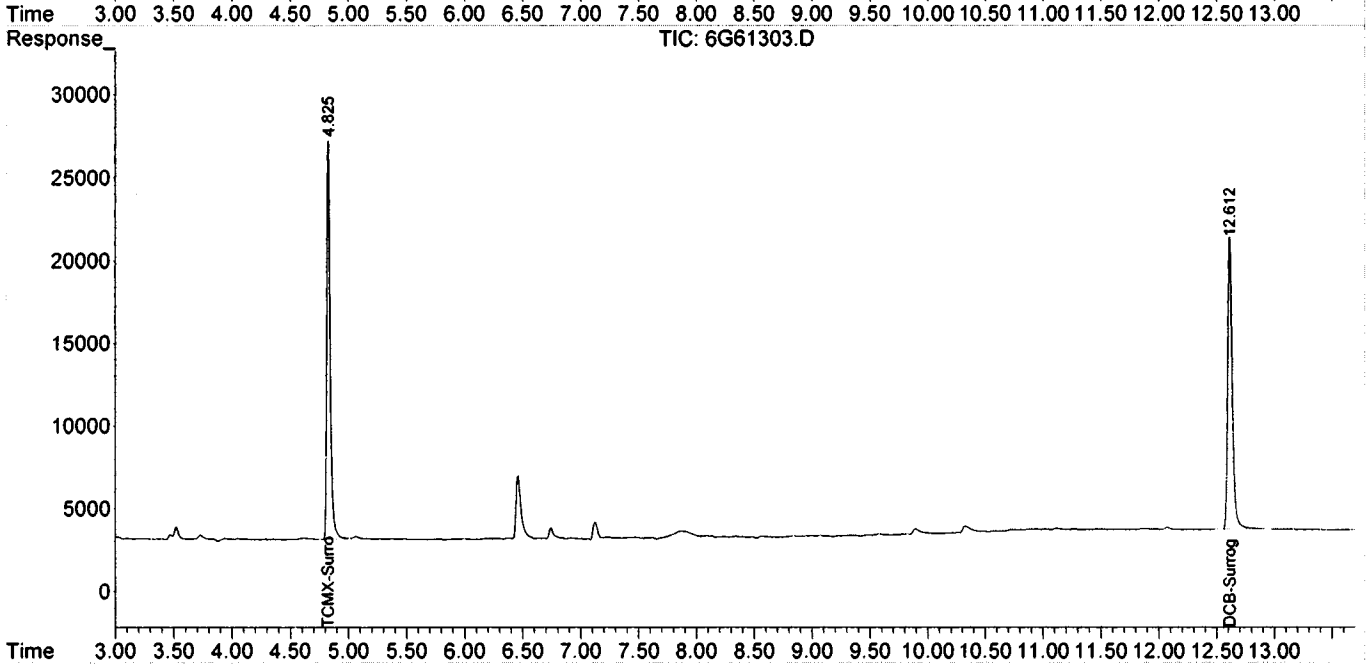
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_6\Data\10-30-15\
Data File : 6G61303.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 30 Oct 2015 3:47
Operator : MS/ZM/MLC
Sample : AC87819-001
Misc : S,PEST
ALS Vial : 16 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Oct 30 13:24:18 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P1030.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Fri Oct 30 11:39:30 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32





Form1

ORGANICS PESTICIDE REPORT

Sample Number: SMB46130
Client Id:
Data File: 6G61324.D
Analysis Date: 10/30/15 14:35
Date Rec/Extracted: NA-10/29/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8081B
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 100

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
5103-71-9	a-chlordane	0.0050	U	53494-70-5	Endrin Ketone	0.0050	U
309-00-2	Aldrin	0.0050	U	58-89-9	gamma-BHC	0.0010	U
319-84-6	alpha-BHC	0.0010	U	76-44-8	Heptachlor	0.0050	U
319-85-7	beta-BHC	0.0010	U	1024-57-3	Heptachlor Epoxide	0.0050	U
319-86-8	delta-BHC	0.0050	U	72-43-5	Methoxychlor	0.0050	U
60-57-1	Dieldrin	0.0010	U	72-54-8	p,p'-DDD	0.0025	U
959-98-8	Endosulfan I	0.0050	U	72-55-9	p,p'-DDE	0.0025	U
33213-65-9	Endosulfan II	0.0050	U	50-29-3	p,p'-DDT	0.0025	U
1031-07-8	Endosulfan Sulfate	0.0050	U	8001-35-2	Toxaphene	0.025	U
72-20-8	Endrin	0.0050	U	5103-74-2	y-chlordane	0.0050	U
7421-93-4	Endrin Aldehyde	0.0050	U				

Worksheet #: 362774

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Chlordane (Total) is sum of a-Chlordane and y-Chlordane.

Data Path : G:\Gcdata\2015\GC_6\Data\10-30-15\
Data File : 6G61324.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 30 Oct 2015 14:35
Operator : MS/ZM/MLC
Sample : SMB46130
Misc : S,PEST
ALS Vial : 5 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Oct 30 15:48:06 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P1030.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Fri Oct 30 16:46:53 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32

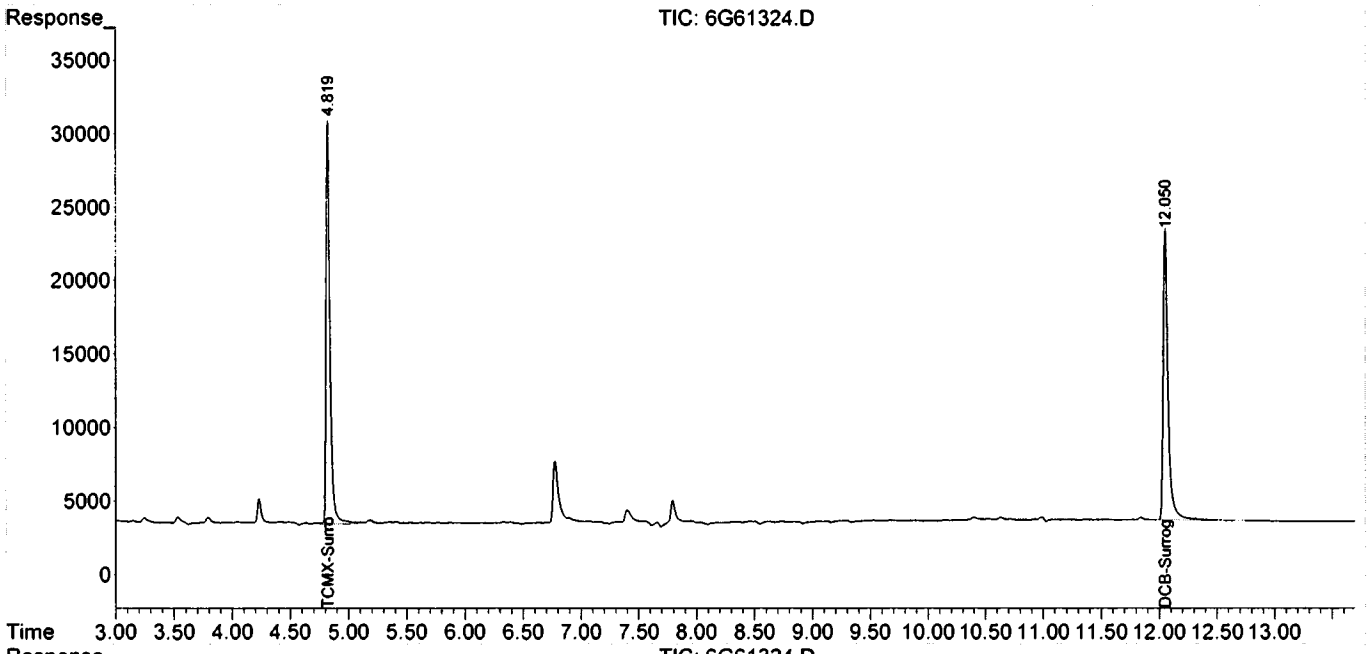
	Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
	Target Compounds						
1)	TCMX-Surrogate	4.821	4.828	643383	539971	104.924	100.016
22)	DCB-Surrogate	12.052	12.613	590775	540576	108.567	104.113

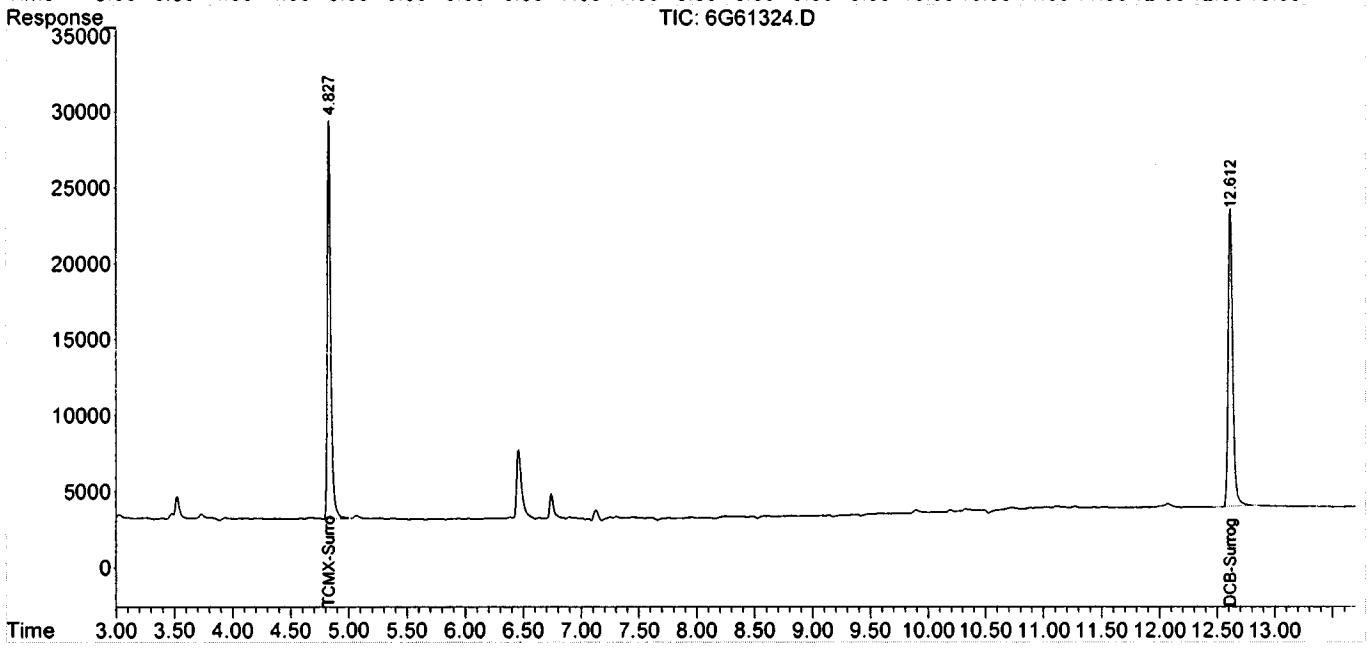
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_6\Data\10-30-15\
Data File : 6G61324.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 30 Oct 2015 14:35
Operator : MS/ZM/MLC
Sample : SMB46130
Misc : S,PEST
ALS Vial : 5 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Oct 30 15:48:06 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P1030.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Fri Oct 30 16:46:53 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32





FORM2

Surrogate Recovery

Method: EPA 8081B

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column2 S2 Recov	Column1 S3 Recov	Column2 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
6G61324.D	SMB46130	S	10/30/15 14:35	1		105	100	109	104		
6G61303.D	AC87819-001	S	10/30/15 03:47	1		90	91	93	94		
6G61314.D	AC87820-004(MS)	S	10/30/15 07:00	1		87	89	60	89		
6G61315.D	AC87820-004(MSD)	S	10/30/15 07:17	1		88	88	56	78		
6G61316.D	AC87820-004	S	10/30/15 07:35	1		85	85	49	67		
6G61325.D	SMB46130(MS)	S	10/30/15 14:53	1		95	95	100	98		

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8081B

Soil Limits

Compound	Spike Amt	Limits
S1=TCMX-Surrogate	100	30-150
S2=TCMX-Surrogate	100	30-150
S3=DCB-Surrogate	100	30-150
S4=DCB-Surrogate	100	30-150

Form3
Recovery Data
QC Batch: SMB46130

Data File	Sample ID:	Analysis Date
Spike or Dup: 6G61325.D	SMB46130(MS)	10/30/2015 2:53:00 PM
Non Spike(If applicable):		
Inst Blank(If applicable):		

Method: 8081 | Matrix: Soil | QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
alpha-BHC	2	91.56	0	100	92	40	140
gamma-BHC	2	99.89	0	100	100	40	140
beta-BHC	2	90.77	0	100	91	40	140
Heptachlor	2	109.55	0	100	110	40	140
delta-BHC	2	91.49	0	100	91	40	140
Aldrin	2	96.6	0	100	97	40	140
Heptachlor Epoxide	2	95.89	0	100	96	40	140
Endosulfan I	2	97	0	100	97	40	140
p,p'-DDE	2	98.96	0	100	99	40	140
Dieldrin	2	99.79	0	100	100	40	140
Endrin	2	107.44	0	100	107	40	140
p,p'-DDD	2	103.24	0	100	103	40	140
Endosulfan II	2	97.41	0	100	97	40	140
p,p'-DDT	2	114.34	0	100	114	40	140
Endrin Aldehyde	2	67.48	0	100	67	40	140
Endosulfan Sulfate	2	94.79	0	100	95	40	140
Methoxychlor	2	130.95	0	100	131	40	140
Endrin Ketone	2	100.14	0	100	100	40	140

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB46130

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G61314.D	AC87820-004(MS)	10/30/2015 7:00:00 AM
Non Spike(If applicable):	6G61316.D	AC87820-004	10/30/2015 7:35:00 AM
Inst Blank(If applicable):			

Method: 8081 Matrix: Soil QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
alpha-BHC	2	83.05	0	100	83	30	150
gamma-BHC	2	91.56	0	100	92	30	150
beta-BHC	2	133.65	0	100	134	30	150
Heptachlor	2	92.47	0	100	92	30	150
delta-BHC	2	77.59	0	100	78	30	150
Aldrin	2	90.69	0	100	91	30	150
Heptachlor Epoxide	2	85.23	0	100	85	30	150
Endosulfan I	2	81.85	0	100	82	30	150
p,p'-DDE	2	96.43	0	100	96	30	150
Dieldrin	2	66.88	0	100	67	30	150
Endrin	2	144.75	0	100	145	30	150
p,p'-DDD	2	104.58	0	100	105	30	150
Endosulfan II	2	97.09	0	100	97	30	150
p,p'-DDT	2	119.08	0	100	119	30	150
Endrin Aldehyde	2	83.67	0	100	84	30	150
Endosulfan Sulfate	2	74.68	0	100	75	30	150
Methoxychlor	2	88.73	0	100	89	30	150
Endrin Ketone	2	105.47	0	100	105	30	150

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G61315.D	AC87820-004(MSD)	10/30/2015 7:17:00 AM
Non Spike(If applicable):	6G61316.D	AC87820-004	10/30/2015 7:35:00 AM
Inst Blank(If applicable):			

Method: 8081 Matrix: Soil QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
alpha-BHC	2	80.22	0	100	80	30	150
gamma-BHC	2	88.03	0	100	88	30	150
beta-BHC	2	144.17	0	100	144	30	150
Heptachlor	2	98.21	0	100	98	30	150
delta-BHC	2	78.63	0	100	79	30	150
Aldrin	2	108.14	0	100	108	30	150
Heptachlor Epoxide	2	82.79	0	100	83	30	150
Endosulfan I	2	79.34	0	100	79	30	150
p,p'-DDE	2	88.63	0	100	89	30	150
Dieldrin	2	85.75	0	100	86	30	150
Endrin	2	140.16	0	100	140	30	150
p,p'-DDD	2	103.34	0	100	103	30	150
Endosulfan II	2	98.23	0	100	98	30	150
p,p'-DDT	2	122.25	0	100	122	30	150
Endrin Aldehyde	2	77.09	0	100	77	30	150
Endosulfan Sulfate	2	73.27	0	100	73	30	150
Methoxychlor	2	75.44	0	100	75	30	150
Endrin Ketone	2	101.51	0	100	102	30	150

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA
QC Batch: SMB46130

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G61315.D	AC87820-004(MSD)	10/30/2015 7:17:00 AM
Duplicate(If applicable):	6G61314.D	AC87820-004(MS)	10/30/2015 7:00:00 AM
Inst Blank(If applicable):			

Method: 8081 Matrix: Soil QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
alpha-BHC	2	80.22	83.05	3.5	30
gamma-BHC	2	88.03	91.56	3.9	30
beta-BHC	2	144.17	133.65	7.6	30
Heptachlor	2	98.21	92.47	6	30
delta-BHC	2	78.63	77.59	1.3	30
Aldrin	2	108.14	90.69	18	30
Heptachlor Epoxide	2	82.79	85.23	2.9	30
Endosulfan I	2	79.34	81.85	3.1	30
p,p'-DDE	2	88.63	96.43	8.4	30
Dieldrin	2	85.75	66.88	25	30
Endrin	2	140.16	144.75	3.2	30
p,p'-DDD	2	103.34	104.58	1.2	30
Endosulfan II	2	98.23	97.09	1.2	30
p,p'-DDT	2	122.25	119.08	2.6	30
Endrin Aldehyde	2	77.09	83.67	8.2	30
Endosulfan Sulfate	2	73.27	74.68	1.9	30
Methoxychlor	2	75.44	88.73	16	30
Endrin Ketone	2	101.51	105.47	3.8	30

* - Indicates outside of limits NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: SMB46130
Blank Data File: 6G61324.D
Matrix: Soil

Blank Analysis Date: 10/30/15 14:35
Blank Extraction Date: 10/29/15
(If Applicable)
Method: EPA 8081B

Sample Number	Data File	Analysis Date
AC87819-001	6G61303.D	10/30/15 03:47
SMB46130(MS)	6G61325.D	10/30/15 14:53
AC87820-004	6G61316.D	10/30/15 07:35
AC87820-004(MSD	6G61315.D	10/30/15 07:17
AC87820-004(MS)	6G61314.D	10/30/15 07:00

Form 5

Method: EPA 8081B

Instrument: GC_6 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
6G61285.D	CAL EVAL	10/29/15 22:31	Aqueous					
6G61286.D	EVAL	10/29/15 22:49	Aqueous					
6G61287.D	TEST	10/29/15 23:07	Aqueous					
6G61288.D	TEST	10/29/15 23:24	Aqueous					
6G61289.D	TEST	10/29/15 23:42	Aqueous					
6G61290.D	TEST	10/29/15 23:59	Aqueous					
6G61291.D	CAL PEST@50PPB	10/30/15 00:17	Aqueous	6G61293.	12.0481	0.0133	12.6141	0.0135
6G61292.D	CAL PEST@10PPB	10/30/15 00:34	Aqueous	6G61293.	12.0489	0.0066	12.6156	0.0016
6G61293.D	CAL PEST@2PPB	10/30/15 00:52	Aqueous	6G61293.	12.0497	0	12.6158	0
6G61294.D	CAL PEST@100PPB	10/30/15 01:09	Aqueous	6G61293.	12.0464	0.0274	12.6134	0.019
6G61295.D	CAL PEST@200PPB	10/30/15 01:27	Aqueous	6G61293.	12.0480	0.0141	12.6143	0.0119
6G61296.D	CAL PEST@400PPB	10/30/15 01:44	Aqueous	6G61293.	12.0475	0.0183	12.6135	0.0182
6G61297.D	CAL CHLOR@100PPB	10/30/15 02:02	Aqueous	6G61293.	12.0471	0.0216	12.6143	0.0119
6G61298.D	CAL TOX@500PPB	10/30/15 02:19	Aqueous	6G61293.	12.0473	0.0199	12.6144	0.0111
6G61299.D	ICV	10/30/15 02:37	Aqueous	6G61293.	12.0484	0.0108	12.6161	0.0024
6G61300.D	AC87848-001	10/30/15 02:54	Soil	6G61293.	12.0463	0.0282	12.6138	0.0159
6G61301.D	AC87820-001	10/30/15 03:12	Soil	6G61293.	12.0448	0.0407	12.6108	0.0396
6G61302.D	AC87820-002	10/30/15 03:29	Soil	6G61293.	12.0463	0.0282	12.6118	0.0317
6G61303.D	AC87819-001	10/30/15 03:47	Soil	6G61293.	12.0469	0.0232	12.6130	0.0222
6G61304.D	AC87848-002	10/30/15 04:04	Soil	6G61293.	12.0455	0.0349	12.6136	0.0174
6G61305.D	AC87757-004	10/30/15 04:22	Soil	6G61293.	12.0456	0.034	12.6119	0.0309
6G61306.D	AC87756-003	10/30/15 04:40	Soil	6G61293.	12.0456	0.034	12.6122	0.0285
6G61307.D	AC87848-008	10/30/15 04:57	Soil	6G61293.	12.0462	0.0291	12.6122	0.0285
6G61308.D	AC87859-003	10/30/15 05:15	Soil	6G61293.	12.0453	0.0365	12.6125	0.0262
6G61309.D	AC87820-003	10/30/15 05:32	Soil	6G61293.	12.0445	0.0432	12.6140	0.0143
6G61310.D	AC87859-001	10/30/15 05:50	Soil	6G61293.	12.0444	0.044	12.6110	0.0381
6G61311.D	AC87800-003	10/30/15 06:07	Soil	6G61293.	12.0440	0.0473	12.6119	0.0309
6G61312.D	AC87800-001	10/30/15 06:25	Soil	6G61293.	12.0435	0.0515	12.6106	0.0412
6G61313.D	AC87800-002	10/30/15 06:42	Soil	6G61293.	12.0460	0.0307	12.6130	0.0222
6G61314.D	AC87820-004(MS)	10/30/15 07:00	Soil	6G61293.	12.0448	0.0407	12.6135	0.0182
6G61315.D	AC87820-004(MSD)	10/30/15 07:17	Soil	6G61293.	12.0437	0.0498	12.6116	0.0333
6G61316.D	AC87820-004	10/30/15 07:35	Soil	6G61293.	12.0445	0.0432	12.6132	0.0206
6G61317.D	CAL EVAL	10/30/15 09:44	Soil					
6G61318.D	100PPB	10/30/15 10:01	Soil	6G61293.	12.0481	0.0133	12.6121	0.0293
6G61319.D	CAL PEST@100PPB	10/30/15 12:17	Soil	6G61293.	12.0488	0.0075	12.6118	0.0317
6G61320.D	AC87725-005	10/30/15 12:40	Soil	6G61319.	12.0476	0.01	12.6117	0.0008
6G61321.D	AC87725-010	10/30/15 12:58	Soil	6G61319.	12.0449	0.0324	12.6108	0.0079
6G61322.D	AC87725-011	10/30/15 13:15	Soil	6G61319.	12.0451	0.0307	12.6118	0
6G61323.D	AC87725-005(5X)	10/30/15 13:36	Soil	6G61319.	12.0482	0.005	12.6133	0.0119
6G61324.D	SMB46130	10/30/15 14:35	Soil	6G61319.	12.0520	0.0266	12.6129	0.0087
6G61325.D	SMB46130(MS)	10/30/15 14:53	Soil	6G61319.	12.0469	0.0158	12.6125	0.0056
6G61326.D	SMB46141	10/30/15 15:10	Soil	6G61319.	12.0470	0.0149	12.6125	0.0056
6G61327.D	SMB46141(MS)	10/30/15 15:28	Soil	6G61319.	12.0470	0.0149	12.6139	0.0166
6G61328.D	CAL PEST@100PPB	10/30/15 16:27	Soil	6G61319.	12.0464	0.0199	12.6126	0.0063
6G61329.D	100PPB	10/30/15 21:41	Soil	6G61328.	12.0505	0.034	12.6100	0.0206

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

5102701 0129

Form 6
Initial Calibration

Method: EPA 8081B

Instrument: GC_6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6G61293.	CAL PEST@2PPB	10/30/15 00:52	2	6G61292.	CAL PEST@10PPB	10/30/15 00:34
3	6G61291.	CAL PEST@50PPB	10/30/15 00:17	4	6G61294.	CAL PEST@100PPB	10/30/15 01:09
5	6G61295.	CAL PEST@200PPB	10/30/15 01:27	6	6G61296.	CAL PEST@400PPB	10/30/15 01:44
7	6G61297.	CAL CHLOR@100PP	10/30/15 02:02	8	6G61298.	CAL TOX@500PPB	10/30/15 02:19

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
TCMX-Surrogate	1	0	Qua	0.6417	0.6103	0.6159	0.6186	0.5955	0.5612	----	----	0.607	4.81	0.999	1.00	4.5	2.00	10.00	50.00	100.0	200.0	400.0		
alpha-BHC	1	0	Qua	0.5911	0.5604	0.6759	0.7333	0.7467	0.7311	----	----	0.673	6.00	1.00	1.00	12	2.00	10.00	50.00	100.0	200.0	400.0		
gamma-BHC	1	0	Avg	0.6059	0.5745	0.6565	0.6887	0.6827	0.6541	----	----	0.644	6.53	0.999	1.00	7.0	2.00	10.00	50.00	100.0	200.0	400.0		
beta-BHC	1	0	Qua	0.5242	0.4415	0.4136	0.3996	0.3759	0.3476	----	----	0.417	7.42	0.998	1.00	15	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor	1	0	Qua	0.5393	0.3991	0.3537	0.3500	0.3384	0.3271	----	----	0.385	6.82	1.00	1.00	21	2.00	10.00	50.00	100.0	200.0	400.0		
delta-BHC	1	0	Avg	0.6239	0.5173	0.5877	0.6209	0.6203	0.5984	----	----	0.595	7.76	1.00	1.00	6.8	2.00	10.00	50.00	100.0	200.0	400.0		
Aldrin	1	0	Avg	0.6111	0.5650	0.6259	0.6671	0.6766	0.6673	----	----	0.636	7.20	1.00	1.00	6.8	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor Epoxide	1	0	Avg	0.6344	0.5502	0.5673	0.5905	0.5836	0.5673	----	----	0.582	8.03	1.00	1.00	5.0	2.00	10.00	50.00	100.0	200.0	400.0		
y-chlordane	1	0	Avg	0.7434	0.6291	0.6693	0.7321	0.7630	0.7564	----	----	0.716	8.43	1.00	1.00	7.5	2.00	10.00	50.00	100.0	200.0	400.0		
a-chlordane	1	0	Avg	0.7172	0.6182	0.6403	0.6724	0.6847	0.6857	----	----	0.670	8.50	1.00	1.00	5.3	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan I	1	0	Avg	0.4826	0.4374	0.4471	0.4511	0.4237	0.3896	----	----	0.439	8.39	0.997	1.00	7.1	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDE	1	0	Avg	0.5817	0.5111	0.5573	0.5950	0.6046	0.6018	----	----	0.575	8.59	1.00	1.00	6.2	2.00	10.00	50.00	100.0	200.0	400.0		
Dieldrin	1	0	Avg	0.5682	0.4949	0.5289	0.5548	0.5543	0.5435	----	----	0.541	8.84	1.00	1.00	4.8	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin	1	0	Avg	0.4724	0.4199	0.4431	0.4530	0.4468	0.4400	----	----	0.446	9.10	1.00	1.00	3.9	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDD	1	0	Qua	0.5599	0.4537	0.4202	0.4275	0.4134	0.4012	----	----	0.446	9.54	1.00	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan II	1	0	Avg	0.6004	0.5128	0.5027	0.5187	0.5102	0.4993	----	----	0.524	9.67	1.00	1.00	7.3	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDT	1	0	Qua	0.2362	0.2632	0.2731	0.2912	0.2974	0.3132	----	----	0.279	9.76	0.999	1.00	9.8	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Aldehyde	1	0	Avg	0.4577	0.4622	0.4410	0.4375	0.4177	0.4093	----	----	0.438	10.16	1.00	1.00	4.8	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan Sulfate	1	0	Qua	0.5180	0.4735	0.4826	0.4925	0.4851	0.4786	----	----	0.488	10.52	1.00	1.00	3.2	2.00	10.00	50.00	100.0	200.0	400.0		
Methoxychlor	1	0	Qua	0.1457	0.1647	0.1649	0.1639	0.1554	0.1480	----	----	0.157	10.45	0.999	1.00	5.6	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Ketone	1	0	Avg	0.4633	0.4705	0.4960	0.5157	0.5044	0.4812	----	----	0.489	11.04	0.999	1.00	4.2	2.00	10.00	50.00	100.0	200.0	400.0		
DCB-Surrogate	1	0	Qua	0.7129	0.6273	0.5726	0.5503	0.5252	0.4977	----	----	0.581	12.05	0.999	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
Chlordane (Technical)	1	1	Avg	----	----	----	----	----	----	----	----	0.0280	6.62	-1	-1	Lvl=7	100.0							
Chlordane (Technical)	1	2	Avg	----	----	----	----	----	----	----	----	0.0682	8.43	-1	-1	Lvl=7	100.0							
Chlordane (Technical)	1	3	Avg	----	----	----	----	----	----	----	----	0.109	8.50	-1	-1	Lvl=7	100.0							
Toxaphene	1	1	Avg	----	----	----	----	----	----	----	----	0.00924	9.23	-1	-1	Lvl=8	500.0							
Toxaphene	1	2	Avg	----	----	----	----	----	----	----	----	0.00436	9.35	-1	-1	Lvl=8	500.0							
Toxaphene	1	3	Avg	----	----	----	----	----	----	----	----	0.00992	9.70	-1	-1	Lvl=8	500.0							
Toxaphene	1	4	Avg	----	----	----	----	----	----	----	----	0.00968	10.02	-1	-1	Lvl=8	500.0							
Toxaphene	1	5	Avg	----	----	----	----	----	----	----	----	0.0122	10.49	-1	-1	Lvl=8	500.0							
TCMX-Surrogate	2	0	Avg	0.5946	0.5340	0.5511	0.5498	0.5232	0.4863	----	----	0.540	4.83	0.998	1.00	6.6	2.00	10.00	50.00	100.0	200.0	400.0		
alpha-BHC	2	0	Qua	0.5299	0.5111	0.6345	0.6868	0.6905	0.6642	----	----	0.620	5.77	0.999	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
gamma-BHC	2	0	Avg	0.5389	0.5097	0.5956	0.6297	0.6235	0.5918	----	----	0.582	6.31	0.999	1.00	8.2	2.00	10.00	50.00	100.0	200.0	400.0		
beta-BHC	2	0	Qua	0.4764	0.3965	0.3854	0.3803	0.3594	0.3273	----	----	0.388	6.39	0.997	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor	2	0	Qua	0.5366	0.4152	0.3907	0.3904	0.3807	0.3630	----	----	0.413	6.75	0.999	1.00	15	2.00	10.00	50.00	100.0	200.0	400.0		
delta-BHC	2	0	Qua	0.5221	0.4793	0.5722	0.6110	0.6113	0.5813	----	----	0.563	6.89	0.999	1.00	9.3	2.00	10.00	50.00	100.0	200.0	400.0		

Avg Rsd Col 1: 7.89 Avg Rsd Col 2: 7.66

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte, >0=multi peak analyte (i.e. pch/chlordane etc..)
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 ; Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

5102701 0130

Method: EPA 8081B

Form 6
Initial Calibration

Instrument: GC_6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6G61293.	CAL PEST@2PPB	10/30/15 00:52	2	6G61292.	CAL PEST@10PPB	10/30/15 00:34
3	6G61291.	CAL PEST@50PPB	10/30/15 00:17	4	6G61294.	CAL PEST@100PPB	10/30/15 01:09
5	6G61295.	CAL PEST@200PPB	10/30/15 01:27	6	6G61296.	CAL PEST@400PPB	10/30/15 01:44
7	6G61297.	CAL CHLOR@100PP	10/30/15 02:02	8	6G61298.	CAL TOX@500PPB	10/30/15 02:19

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Aldrin	2	0	Avg	0.5303	0.4858	0.5530	0.5895	0.5910	0.5677	----	----	0.553	7.20	0.999	1.00	7.2	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor Epoxide	2	0	Avg	0.5462	0.4801	0.5079	0.5251	0.5148	0.4895	----	----	0.511	7.93	0.999	1.00	4.7	2.00	10.00	50.00	100.0	200.0	400.0		
γ-chlordane	2	0	Avg	0.5766	0.5086	0.5420	0.5715	0.5696	0.5507	----	----	0.553	8.14	1.00	1.00	4.6	2.00	10.00	50.00	100.0	200.0	400.0		
a-chlordane	2	0	Avg	0.5439	0.4841	0.5232	0.5418	0.5272	0.4938	----	----	0.519	8.34	0.999	1.00	4.8	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan I	2	0	Avg	0.5568	0.4934	0.5174	0.5446	0.5462	0.5327	----	----	0.532	8.39	1.00	1.00	4.4	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDE	2	0	Avg	0.5084	0.4533	0.5119	0.5513	0.5546	0.5344	----	----	0.519	8.63	0.999	1.00	7.2	2.00	10.00	50.00	100.0	200.0	400.0		
Dieldrin	2	0	Avg	0.5015	0.4515	0.4963	0.5247	0.5212	0.5003	----	----	0.499	8.78	0.999	1.00	5.2	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin	2	0	Avg	0.3904	0.3511	0.3765	0.3862	0.3790	0.3607	----	----	0.374	9.26	0.999	1.00	4.1	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDD	2	0	Avg	0.4325	0.3889	0.4038	0.4192	0.4137	0.3940	----	----	0.409	9.34	0.999	1.00	4.0	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan II	2	0	Avg	0.5134	0.4692	0.4830	0.4960	0.4837	0.4602	----	----	0.484	9.47	0.999	1.00	3.9	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDT	2	0	Avg	0.3132	0.2800	0.2832	0.2975	0.2966	0.2847	----	----	0.293	9.72	0.999	1.00	4.3	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Aldehyde	2	0	Qua	0.5438	0.4364	0.4134	0.4162	0.3940	0.3686	----	----	0.429	9.88	0.998	1.00	14	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan Sulfate	2	0	Qua	0.5077	0.4216	0.4275	0.4391	0.4313	0.4122	----	----	0.440	10.03	0.999	1.00	7.8	2.00	10.00	50.00	100.0	200.0	400.0		
Methoxychlor	2	0	Qua	0.1533	0.1569	0.1636	0.1567	0.1524	0.1441	----	----	0.155	10.77	0.999	1.00	4.2	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Ketone	2	0	Avg	0.5319	0.4900	0.5178	0.5189	0.4976	0.4647	----	----	0.504	11.01	0.998	1.00	4.8	2.00	10.00	50.00	100.0	200.0	400.0		
DCB-Surrogate	2	0	Qua	0.7422	0.6053	0.5473	0.5252	0.4953	0.4589	----	----	0.562	12.61	0.998	1.00	18	2.00	10.00	50.00	100.0	200.0	400.0		
Chlordane (Technical)	2	1	Avg	----	----	----	----	----	----	----	----	0.0229	6.54	-1	-1	Lvl=7	100.0							
Chlordane (Technical)	2	2	Avg	----	----	----	----	----	----	----	----	0.107	8.14	-1	-1	Lvl=7	100.0							
Chlordane (Technical)	2	3	Avg	----	----	----	----	----	----	----	----	0.0605	8.34	-1	-1	Lvl=7	100.0							
Toxaphene	2	1	Avg	----	----	----	----	----	----	----	----	0.00520	9.02	-1	-1	Lvl=8	500.0							
Toxaphene	2	2	Avg	----	----	----	----	----	----	----	----	0.00328	9.28	-1	-1	Lvl=8	500.0							
Toxaphene	2	3	Avg	----	----	----	----	----	----	----	----	0.00672	9.76	-1	-1	Lvl=8	500.0							
Toxaphene	2	4	Avg	----	----	----	----	----	----	----	----	0.00958	10.52	-1	-1	Lvl=8	500.0							
Toxaphene	2	5	Avg	----	----	----	----	----	----	----	----	0.00716	10.59	-1	-1	Lvl=8	500.0							

Avg Rsd Col 1: 7.89 Avg Rsd Col 2: 7.66

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 ; Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

Form7
Continuing Calibration

Method: EPA 8081B

Data File:				6G61319.D			6G61328.D												
Method:				8081			8081												
Calibration Name:				CAL PEST@100PP			CAL PEST@100PP												
Calibration Date/Time				10/30/15 12:17			10/30/15 16:27												
				Conc			Conc			Conc			Conc			Conc		
Compound	Limit	Col	Mr	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff
TCMX-Surrogate	20	1	0	102	100	1.9	95.9	100	4.1									
alpha-BHC	20	1	0	101.6	100	1.6	95.35	100	4.7									
gamma-BHC	20	1	0	110.5	100	10.5	105.1	100	5.1									
beta-BHC	20	1	0	104.6	100	4.6	100.1	100	0.1									
Heptachlor	20	1	0	108.0	100	8.0	110.6	100	10.6									
delta-BHC	20	1	0	107.9	100	7.9	102.5	100	2.5									
Aldrin	20	1	0	106	100	6.0	100.4	100	0.4									
Heptachlor Epoxide	20	1	0	103	100	3.0	97.3	100	2.7									
y-chlordane	20	1	0	104.1	100	4.1	98	100	2.0									
a-chlordane	20	1	0	101.2	100	1.2	96.32	100	3.7									
Endosulfan I	20	1	0	104.6	100	4.6	99.3	100	0.7									
p,p'-DDE	20	1	0	108.7	100	8.7	102.9	100	2.9									
Dieldrin	20	1	0	104.5	100	4.5	100.1	100	0.1									
Endrin	20	1	0	105.0	100	5.0	106.3	100	6.3									
p,p'-DDD	20	1	0	106.5	100	6.5	102.4	100	2.4									
Endosulfan II	20	1	0	100.3	100	0.3	95.78	100	4.2									
p,p'-DDT	20	1	0	104.4	100	4.4	103.9	100	3.8									
Endrin Aldehyde	20	1	0	98.55	100	1.4	95.37	100	4.6									
Endosulfan Sulfate	20	1	0	99.73	100	0.3	94.27	100	5.7									
Methoxychlor	20	1	0	104.3	100	4.3	109.3	100	9.3									
Endrin Ketone	20	1	0	106.7	100	6.7	101.6	100	1.6									
DCB-Surrogate	20	1	0	108.9	100	8.9	100.2	100	0.2									
Average Difference	20	1	0			4.7			3.5									
TCMX-Surrogate	20	2	0	102	100	2.0	97.89	100	2.1									
alpha-BHC	20	2	0	100.8	100	0.8	96.87	100	3.1									
gamma-BHC	20	2	0	111.2	100	11.2	107.5	100	7.5									
beta-BHC	20	2	0	102.5	100	2.5	98.87	100	1.1									
Heptachlor	20	2	0	108.9	100	8.9	112.9	100	12.9									
delta-BHC	20	2	0	102.4	100	2.4	98.88	100	1.1									
Aldrin	20	2	0	107.5	100	7.5	101.8	100	1.8									
Heptachlor Epoxide	20	2	0	104.3	100	4.3	100.6	100	0.6									
y-chlordane	20	2	0	104.0	100	4.0	100.3	100	0.3									
a-chlordane	20	2	0	105.5	100	5.5	101.5	100	1.5									
Endosulfan I	20	2	0	102.3	100	2.3	99.17	100	0.8									
p,p'-DDE	20	2	0	107.9	100	7.9	103.8	100	3.8									
Dieldrin	20	2	0	105.2	100	5.2	102.2	100	2.2									
Endrin	20	2	0	108.5	100	8.5	113.7	100	13.7									
p,p'-DDD	20	2	0	107.5	100	7.5	107.0	100	7.0									
Endosulfan II	20	2	0	101.1	100	1.1	98.77	100	1.2									
p,p'-DDT	20	2	0	103.6	100	3.6	111.6	100	11.6									
Endrin Aldehyde	20	2	0	101.3	100	1.3	100.3	100	0.3									
Endosulfan Sulfate	20	2	0	99.66	100	0.3	100.3	100	0.3									
Methoxychlor	20	2	0	106.2	100	6.2	119.4	100	19.4									
Endrin Ketone	20	2	0	105.8	100	5.8	104.3	100	4.3									
DCB-Surrogate	20	2	0	98.72	100	1.3	100.5	100	0.5									
Average Difference	20	2	0			4.5			4.4									

Flags/Notes: ** - Values outside of limits for this column/run*

Form7
RtWindow Summary

Method: EPA 8081B

			6G61293.D		6G61293.D		6G61319.D					
Data File:												
Calibration Name:			CAL PEST@2PPB		CAL PEST@2PPB		CAL PEST@100PPB					
Calibration Date/Time			10/30/2015 12:52:00 AM		10/30/2015 12:52:00 AM		10/30/2015 12:17:00 PM					
Compound	Col	Mr	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit
TCMX-Surrogate	1	0	4.81	(4.75 - 4.87)	4.81	(4.75 - 4.87)	4.81	(4.75 - 4.87)				
alpha-BHC	1	0	6.00	(5.96 - 6.04)	6.00	(5.96 - 6.04)	6.00	(5.96 - 6.04)				
gamma-BHC	1	0	6.53	(6.49 - 6.57)	6.53	(6.49 - 6.57)	6.53	(6.49 - 6.57)				
beta-BHC	1	0	7.42	(7.34 - 7.50)	7.42	(7.34 - 7.50)	7.42	(7.34 - 7.50)				
Heptachlor	1	0	6.82	(6.78 - 6.86)	6.82	(6.78 - 6.86)	6.82	(6.78 - 6.86)				
delta-BHC	1	0	7.76	(7.68 - 7.84)	7.76	(7.68 - 7.84)	7.76	(7.68 - 7.84)				
Aldrin	1	0	7.20	(7.12 - 7.28)	7.19	(7.11 - 7.27)	7.20	(7.12 - 7.28)				
Heptachlor Epoxide	1	0	8.03	(7.99 - 8.07)	8.03	(7.99 - 8.07)	8.03	(7.99 - 8.07)				
y-chlordane	1	0	8.43	(8.39 - 8.47)	8.43	(8.39 - 8.47)	8.43	(8.39 - 8.47)				
a-chlordane	1	0	8.50	(8.46 - 8.54)	8.50	(8.46 - 8.54)	8.50	(8.46 - 8.54)				
Endosulfan I	1	0	8.39	(8.35 - 8.43)	8.39	(8.35 - 8.43)	8.39	(8.35 - 8.43)				
p,p'-DDE	1	0	8.59	(8.51 - 8.67)	8.59	(8.51 - 8.67)	8.59	(8.51 - 8.67)				
Dieldrin	1	0	8.84	(8.76 - 8.92)	8.84	(8.76 - 8.92)	8.84	(8.76 - 8.92)				
Endrin	1	0	9.10	(9.06 - 9.14)	9.10	(9.06 - 9.14)	9.10	(9.06 - 9.14)				
p,p'-DDD	1	0	9.54	(9.46 - 9.62)	9.55	(9.47 - 9.63)	9.54	(9.46 - 9.62)				
Endosulfan II	1	0	9.66	(9.58 - 9.74)	9.66	(9.58 - 9.74)	9.66	(9.58 - 9.74)				
p,p'-DDT	1	0	9.76	(9.68 - 9.84)	9.76	(9.68 - 9.84)	9.76	(9.68 - 9.84)				
Endrin Aldehyde	1	0	10.15	(10.07 - 10.23)	10.16	(10.08 - 10.24)	10.15	(10.07 - 10.23)				
Endosulfan Sulfate	1	0	10.52	(10.48 - 10.56)	10.52	(10.48 - 10.56)	10.52	(10.48 - 10.56)				
Methoxychlor	1	0	10.45	(10.41 - 10.49)	10.45	(10.41 - 10.49)	10.45	(10.41 - 10.49)				
Endrin Ketone	1	0	11.04	(10.96 - 11.12)	11.04	(10.96 - 11.12)	11.04	(10.96 - 11.12)				
DCB-Surrogate	1	0	12.05	(11.99 - 12.11)	12.05	(11.99 - 12.11)	12.05	(11.99 - 12.11)				
Chlordane (Technical	1	1										
Chlordane (Technical	1	2										
Chlordane (Technical	1	3										
Toxaphene	1	1	9.23	(9.19 - 9.27)								
Toxaphene	1	2	9.35	(9.31 - 9.39)								
Toxaphene	1	3	9.70	(9.66 - 9.74)								
Toxaphene	1	4	10.02	(9.98 - 10.06)								
Toxaphene	1	5	10.49	(10.45 - 10.53)								
TCMX-Surrogate	2	0	4.83	(4.77 - 4.89)	4.83	(4.77 - 4.89)	4.82	(4.76 - 4.88)				
alpha-BHC	2	0	5.77	(5.73 - 5.81)	5.77	(5.73 - 5.81)	5.77	(5.73 - 5.81)				
gamma-BHC	2	0	6.31	(6.27 - 6.35)	6.31	(6.27 - 6.35)	6.30	(6.26 - 6.34)				
beta-BHC	2	0	6.39	(6.31 - 6.47)	6.39	(6.31 - 6.47)	6.38	(6.30 - 6.46)				
Heptachlor	2	0	6.75	(6.71 - 6.79)	6.75	(6.71 - 6.79)	6.75	(6.71 - 6.79)				
delta-BHC	2	0	6.89	(6.81 - 6.97)	6.89	(6.81 - 6.97)	6.89	(6.81 - 6.97)				
Aldrin	2	0	7.20	(7.12 - 7.28)	7.20	(7.12 - 7.28)	7.20	(7.12 - 7.28)				
Heptachlor Epoxide	2	0	7.93	(7.89 - 7.97)	7.93	(7.89 - 7.97)	7.92	(7.88 - 7.96)				
y-chlordane	2	0	8.14	(8.10 - 8.18)	8.13	(8.09 - 8.17)	8.13	(8.09 - 8.17)				
a-chlordane	2	0	8.34	(8.30 - 8.38)	8.34	(8.30 - 8.38)	8.34	(8.30 - 8.38)				
Endosulfan I	2	0	8.39	(8.35 - 8.43)	8.39	(8.35 - 8.43)	8.39	(8.35 - 8.43)				
p,p'-DDE	2	0	8.63	(8.55 - 8.71)	8.63	(8.55 - 8.71)	8.63	(8.55 - 8.71)				
Dieldrin	2	0	8.78	(8.70 - 8.86)	8.78	(8.70 - 8.86)	8.78	(8.70 - 8.86)				
Endrin	2	0	9.25	(9.21 - 9.29)	9.25	(9.21 - 9.29)	9.25	(9.21 - 9.29)				
p,p'-DDD	2	0	9.34	(9.26 - 9.42)	9.34	(9.26 - 9.42)	9.33	(9.25 - 9.41)				
Endosulfan II	2	0	9.47	(9.39 - 9.55)	9.47	(9.39 - 9.55)	9.47	(9.39 - 9.55)				
p,p'-DDT	2	0	9.71	(9.63 - 9.79)	9.72	(9.64 - 9.80)	9.71	(9.63 - 9.79)				
Endrin Aldehyde	2	0	9.88	(9.80 - 9.96)	9.88	(9.80 - 9.96)	9.88	(9.80 - 9.96)				
Endosulfan Sulfate	2	0	10.03	(9.99 - 10.07)	10.03	(9.99 - 10.07)	10.03	(9.99 - 10.07)				
Methoxychlor	2	0	10.77	(10.73 - 10.81)	10.77	(10.73 - 10.81)	10.77	(10.73 - 10.81)				
Endrin Ketone	2	0	11.01	(10.93 - 11.09)	11.01	(10.93 - 11.09)	11.01	(10.93 - 11.09)				
DCB-Surrogate	2	0	12.61	(12.55 - 12.67)	12.62	(12.56 - 12.68)	12.61	(12.55 - 12.67)				
Chlordane (Technical	2	1										
Chlordane (Technical	2	2										
Chlordane (Technical	2	3										
Toxaphene	2	1	9.02	(8.98 - 9.06)								
Toxaphene	2	2	9.28	(9.24 - 9.32)								
Toxaphene	2	3	9.76	(9.72 - 9.80)								
Toxaphene	2	4	10.52	(10.48 - 10.56)								
Toxaphene	2	5	10.59	(10.55 - 10.63)								

Metal Data

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC87819-001	% Solid:	97	Lab Name:	Veritech	Nras No:	
Client Id:	Quarry Material COMP	Units:	MG/KG	Lab Code:		Sdg No:	
Matrix:	SOIL	Date Rec:	10/27/2015	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7429-90-5	Aluminum	210	13000	1	0.5	50	10/29/15	47349	S18548A2	39	P	PEICPRAD2A
7440-39-3	Barium	10	29	1	0.5	50	10/29/15	47349	S18548A3	47	P	PEICP3A
7440-70-2	Calcium	1000	14000	1	0.5	50	10/29/15	47349	S18548A2	39	P	PEICPRAD2A
7440-47-3	Chromium	5.2	18	1	0.5	50	10/29/15	47349	S18548A3	47	P	PEICP3A
7440-48-4	Cobalt	2.6	18	1	0.5	50	10/29/15	47349	S18548A3	47	P	PEICP3A
7440-50-8	Copper	5.2	84	1	0.5	50	10/29/15	47349	S18548A3	47	P	PEICP3A
7439-89-6	Iron	210	28000	1	0.5	50	10/29/15	47349	S18548A2	39	P	PEICPRAD2A
7439-92-1	Lead	5.2	ND	1	0.5	50	10/29/15	47349	S18548A3	47	P	PEICP3A
7439-95-4	Magnesium	520	14000	1	0.5	50	10/29/15	47349	S18548A2	39	P	PEICPRAD2A
7439-96-5	Manganese	10	360	1	0.5	50	10/29/15	47349	S18548A3	47	P	PEICP3A
7439-97-6	Mercury	0.086	ND	1	0.15	25	10/29/15	47349	H18548S	35	CV	HGCV2A
7440-02-0	Nickel	5.2	44	1	0.5	50	10/29/15	47349	S18548A3	47	P	PEICP3A
7440-09-7	Potassium	520	ND	1	0.5	50	10/29/15	47349	S18548A2	39	P	PEICPRAD2A
7440-23-5	Sodium	260	1100	1	0.5	50	10/29/15	47349	S18548A2	39	P	PEICPRAD2A
7440-62-2	Vanadium	10	56	1	0.5	50	10/29/15	47349	S18548A3	47	P	PEICP3A
7440-66-6	Zinc	10	39	1	0.5	50	10/29/15	47349	S18548A3	47	P	PEICP3A

Comments: _____

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Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC87819-001	% Solid:	97	Lab Name:	Veritech	Nras No:	
Client Id:	Quarry Material COMP	Units:	MG/KG	Lab Code:		Sdg No:	
Matrix:	SOIL	Date Rec:	10/27/2015	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7440-36-0	Antimony	0.82	ND	1	0.5	100	10/29/15	47350	S102915A	44	MS	MS2_7500SWA
7440-38-2	Arsenic	0.21	0.57	1	0.5	100	10/29/15	47350	S102915A	44	MS	MS2_7500SWA
7440-41-7	Beryllium	0.21	ND	1	0.5	100	10/29/15	47350	S102915A	44	MS	MS2_7500SWA
7440-43-9	Cadmium	0.41	ND	1	0.5	100	10/29/15	47350	S102915A	44	MS	MS2_7500SWA
7782-49-2	Selenium	2.1	ND	1	0.5	100	10/29/15	47350	S102915A	44	MS	MS2_7500SWA
7440-22-4	Silver	0.21	ND	1	0.5	100	10/29/15	47350	S102915A	44	MS	MS2_7500SWA
7440-28-0	Thallium	0.41	ND	1	0.5	100	10/29/15	47350	S102915A	44	MS	MS2_7500SWA

Comments: _____

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Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID: MB 47349 (100) % Solid: 0 Lab Name: Veritech
Client Id: MB 47349 (100) Units: MG/KG Lab Code:
Matrix: SOIL
Level: LOW

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7429-90-5	Aluminum	200	ND	1	0.5	50	10/29/15	47349	S18548A2	11	P	PEICPRAD2A
7440-36-0	Antimony	4.0	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-38-2	Arsenic	4.0	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-39-3	Barium	10	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-41-7	Beryllium	1.2	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-43-9	Cadmium	1.2	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-70-2	Calcium	1000	ND	1	0.5	50	10/29/15	47349	S18548A2	11	P	PEICPRAD2A
7440-47-3	Chromium	5.0	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-48-4	Cobalt	2.5	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-50-8	Copper	5.0	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7439-89-6	Iron	200	ND	1	0.5	50	10/29/15	47349	S18548A2	11	P	PEICPRAD2A
7439-92-1	Lead	5.0	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7439-95-4	Magnesium	500	ND	1	0.5	50	10/29/15	47349	S18548A2	11	P	PEICPRAD2A
7439-96-5	Manganese	10	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7439-98-7	Molybdenum	2.5	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-02-0	Nickel	5.0	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-09-7	Potassium	500	ND	1	0.5	50	10/29/15	47349	S18548A2	11	P	PEICPRAD2A
7782-49-2	Selenium	3.0	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-22-4	Silver	1.5	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-23-5	Sodium	250	ND	1	0.5	50	10/29/15	47349	S18548A2	11	P	PEICPRAD2A
7440-28-0	Thallium	1.5	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-31-5	Tin	20	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-32-6	Titanium	10	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-62-2	Vanadium	10	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A
7440-66-6	Zinc	10	ND	1	0.5	50	10/29/15	47349	S18548A3	12	P	PEICP3A

Comments: _____

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Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID: MB 47350 % Solid: 0 Lab Name: Veritech
Client Id: MB 47350 Units: MG/KG Lab Code:
Matrix: SOIL
Level: LOW

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7440-36-0	Antimony	0.80	ND	1	0.5	100	10/29/15	47350	S102915A	16	MS	MS2_7500SWA
7440-38-2	Arsenic	0.20	ND	1	0.5	100	10/29/15	47350	S102915A	16	MS	MS2_7500SWA
7440-41-7	Beryllium	0.20	ND	1	0.5	100	10/29/15	47350	S102915A	16	MS	MS2_7500SWA
7440-43-9	Cadmium	0.40	ND	1	0.5	100	10/29/15	47350	S102915A	16	MS	MS2_7500SWA
7782-49-2	Selenium	2.0	ND	1	0.5	100	10/29/15	47350	S102915A	16	MS	MS2_7500SWA
7440-22-4	Silver	0.20	ND	1	0.5	100	10/29/15	47350	S102915A	16	MS	MS2_7500SWA
7440-28-0	Thallium	0.40	ND	1	0.5	100	10/29/15	47350	S102915A	16	MS	MS2_7500SWA

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID: MB 47349 (167) % Solid: 0 Lab Name: Veritech
Client Id: MB 47349 (167) Units: MG/KG Lab Code:
Matrix: SOIL
Level: LOW

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7439-97-6	Mercury	0.083	ND	1	0.15	25	10/29/15	47349	H18548S	11	CV	HGCV2A

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

FORM 2
(ICV/CCV Summary)

Date Analyzed: 10/29/15
Data File: S102915A
Prep Batch: 47350
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: MS2_7500SWA
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	ICV/CCV Amt	ICV V-220901-8	Rec	CCV V-220905-13	Rec	CCV V-220905-26	Rec	CCV V-220905-39	Rec	CCV V-220905-51	Rec		Rec		Rec		Rec
Antimony	50/30	50.39000	101	49.19000	98	48.17000	96	48.90000	98	47.80000	96						
Arsenic	50/30	51.40000	103	50.35000	101	50.23000	100	48.98000	98	48.91000	98						
Beryllium	50/30	49.17000	98	48.58000	97	47.30000	95	49.20000	98	46.30000	93						
Cadmium	50/30	50.10000	100	49.63000	99	49.12000	98	49.51000	99	47.90000	96						
Selenium	50/30	52.57000	105	252.10000	101	251.50000	101	251.70000	101	248.20000	99						
Silver	10/6	10.01000	100	49.28000	99	48.69000	97	48.16000	96	48.31000	97						
Thallium	50/30	49.54000	99	50.36000	101	50.04000	100	50.11000	100	49.30000	99						

Notes: a-indicates analyte failed the ICV limits for 6010B/6010C, 6020/6020A
b-indicates analyte failed the ICV limits for 200.7 or 200.8
c-indicates analyte failed the CCV limits for 200.7/200.8/245.1/6010B/6010C (Except Hg 7470/7470A,7471A/7471B),6020/6020A
d-indicates analyte failed the CCV limits Hg 7470A/7471A/7471B

Qc Limits: ICV - 200.7 : 95-105
CCV- 200.7/200.8/6010B/6010C/245.1 : 90-110 (Except Hg 7470/7470A/ 7471A/7471B=80-120)
ICV -6010B/6010C/6020/6020A/200.8 : 90-110

CLP ICP ICV/CCV: 90-110
CLP Hg ICV/CCV: 80-120

FORM 2
(LLICV/LLCCV Summary)

Date Analyzed: 10/29/15
Data File: S102915A
Prep Batch: 47350
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: MS2_7500SWA
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	LLICV/ LLCCV Amt	LLICV V-220906-9	Rec	LLCCV V-220906-14	Rec	LLCCV V-220906-27	Rec	LLCCV V-220906-40	Rec	LLCCV V-220906-52	Rec		Rec		Rec		Rec
Antimony	4/4	4.250	106	4.041	101	3.983	100	3.967	99	3.906	98						
Arsenic	1/1	1.037	104	9.473E-01	95	9.481E-01	95	8.936E-01	89	9.910E-01	99						
Beryllium	1/1	1.032	103	9.886E-01	99	9.273E-01	93	9.799E-01	98	9.337E-01	93						
Cadmium	2/2	2.041	102	2.019	101	1.956	98	1.980	99	1.971	99						
Selenium	10/10	10.28	103	10.28	103	10.10	101	10.06	101	10.04	100						
Silver	1/1	9.940E-01	99	9.739E-01	97	9.691E-01	97	9.881E-01	99	9.812E-01	98						
Thallium	2/2	1.865	93	1.837	92	1.794	90	1.797	90	1.744	87						

Notes: a-indicates analyte failed the LLICV limits for 6010B, 6010C, 6020, 6020A
c-indicates analyte failed the LLCCV limits for 6010B, 6010C, 6020, 6020A

Qc Limits: LLCCV- 6010B/6010C/6020/6020A (70-130)
LLICV -6010B/6010C/6020/6020A :70-130

FORM 2
(LLICV/LLCCV Summary)

Date Analyzed: 10/29/15
Data File: S18548A3
Prep Batch: 47349
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	LLICV/ LLCCV Amt	LLICV V-220704-8	Rec	LLCCV V-220704-21	Rec	LLCCV V-220704-33	Rec	LLCCV V-220704-43	Rec	LLCCV V-220704-54	Rec		Rec		Rec		Rec
Barium	0.1/0.1	0.108873	109	0.110051	110	0.107339	107	0.108798	109	0.109546	110						
Chromium	0.05/0.05	0.0564617	113	0.0570350	114	0.0558563	112	0.0564864	113	0.0569218	114						
Cobalt	0.025/0.025	0.0271841	109	0.0273174	109	0.0274518	110	0.0273586	109	0.0274982	110						
Copper	0.05/0.05	0.0550116	110	0.0557100	111	0.0549367	110	0.0557619	112	0.0562267	112						
Lead	0.05/0.05	0.0548008	110	0.0543712	109	0.0507587	102	0.0530816	106	0.0522971	105						
Manganese	0.1/0.1	0.105248	105	0.106424	106	0.105775	106	0.105564	106	0.106326	106						
Nickel	0.05/0.05	0.0502391	100	0.0511427	102	0.0501853	100	0.0506416	101	0.0509267	102						
Vanadium	0.1/0.1	0.110910	111	0.112377	112	0.108144	108	0.110035	110	0.110209	110						
Zinc	0.1/0.1	0.100837	101	0.102342	102	0.0989469	99	0.100764	101	0.101349	101						

Notes: a-indicates analyte failed the LLICV limits for 6010B, 6010C, 6020, 6020A
c-indicates analyte failed the LLCCV limits for 6010B, 6010C, 6020, 6020A

Qc Limits: LLCCV- 6010B/6010C/6020/6020A (70-130)
LLICV -6010B/6010C/6020/6020A :70-130

FORM 2
(ICV/CCV Summary)

Date Analyzed: 10/29/15
Data File: S18548A3
Prep Batch: 47349
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	ICV/CCV Amt	ICV (1) V-219614-7	Rec	CCV V-219614-20	Rec	CCV V-219614-32	Rec	CCV V-219614-42	Rec	CCV V-219614-53	Rec		Rec		Rec		Rec
Barium	1/.5	0.49540	99	0.50176	100	0.50204	100	0.49645	99	0.49819	100						
Chromium	1/.5	0.49887	100	0.50611	101	0.50431	101	0.49809	100	0.50033	100						
Cobalt	1/.5	0.48047	96	0.48596	97	0.48206	96	0.48957	98	0.48469	97						
Copper	1/.5	0.49972	100	0.50709	101	0.50842	102	0.50526	101	0.50057	100						
Lead	1/.5	0.49398	99	0.49801	100	0.49113	98	0.49881	100	0.49443	99						
Manganese	1/.5	0.49891	100	0.50624	101	0.50468	101	0.49906	100	0.50033	100						
Nickel	1/.5	0.51566	103	0.52161	104	0.51686	103	0.52523	105	0.51813	104						
Vanadium	1/.5	0.48166	96	0.48818	98	0.48806	98	0.48284	97	0.48306	97						
Zinc	1/.5	0.51742	103	0.52525	105	0.51790	104	0.52543	105	0.52247	104						

Notes: a-indicates analyte failed the ICV limits for 6010B/6010C, 6020/6020A
b-indicates analyte failed the ICV limits for 200.7 or 200.8
c-indicates analyte failed the CCV limits for 200.7/200.8/245.1/6010B/6010C (Except Hg 7470/7470A,7471A/7471B),6020/6020A
d-indicates analyte failed the CCV limits Hg 7470A/7471A/7471B

Qc Limits: ICV - 200.7 : 95-105
CCV- 200.7/200.8/6010B/6010C/245.1 : 90-110 (Except Hg 7470/7470A/ 7471A/7471B=80-120)
ICV -6010B/6010C/6020/6020A/200.8 : 90-110

CLP ICP ICV/CCV: 90-110
CLP Hg ICV/CCV: 80-120

FORM 2
(LLICV/LLCCV Summary)

Date Analyzed: 10/29/15
Data File: S18548A2
Prep Batch: 47349
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICPRAD2A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	LLICV/ LLCCV Amt	LLICV [soil] V-220704-7	Rec	LLCCV [soil] V-220704-20	Rec	LLCCV [soil] V-220704-32	Rec	LLCCV [soil] V-220704-43	Rec	Rec	Rec	Rec	Rec	Rec
Aluminum	2.0/2	2.07806	104	2.07654	104	2.05151	103	2.07124	104					
Calcium	10./10	10.4743	105	10.4360	104	10.4823	105	10.4706	105					
Iron	2.0/2	2.10738	105	2.11311	106	2.09354	105	2.10615	105					
Magnesium	5.0/5	5.27160	105	5.26039	105	5.21620	104	5.27637	106					
Potassium	5.0/5	5.21510	104	5.16960	103	5.16953	103	5.08115	102					
Sodium	2.5/2.5	2.44950	98	2.37456	95	2.36347	95	2.30645	92					

Notes: a-indicates analyte failed the LLICV limits for 6010B, 6010C, 6020, 6020A
c-indicates analyte failed the LLCCV limits for 6010B, 6010C, 6020, 6020A

Qc Limits: LLCCV- 6010B/6010C/6020/6020A (70-130)
LLICV -6010B/6010C/6020/6020A :70-130

FORM 2
(ICV/CCV Summary)

Date Analyzed: 10/29/15
Data File: S18548A2
Prep Batch: 47349
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICPRAD2A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	ICV/CCV Amt	ICV V-218567-6	Rec	CCV V-218567-19	Rec	CCV V-218567-31	Rec	CCV V-218567-42	Rec	Rec	Rec	Rec	Rec	Rec
Aluminum	10/5	5.13960	103	5.11069	102	5.13119	103	5.10493	102					
Calcium	100/50	52.29170	105	51.50610	103	51.96920	104	51.14250	102					
Iron	10/5	5.18187	104	5.19212	104	5.15884	103	5.14515	103					
Magnesium	100/50	52.28710	105	51.82380	104	51.89210	104	52.14630	104					
Potassium	100/50	52.19910	104	50.85020	102	50.53700	101	50.75570	102					
Sodium	100/50	51.41910	103	50.64330	101	50.97470	102	50.27700	101					

Notes: a-indicates analyte failed the ICV limits for 6010B/6010C, 6020/6020A
b-indicates analyte failed the ICV limits for 200.7 or 200.8
c-indicates analyte failed the CCV limits for 200.7/200.8/245.1/6010B/6010C (Except Hg 7470/7470A,7471A/7471B),6020/6020A
d-indicates analyte failed the CCV limits Hg 7470A/7471A/7471B

Qc Limits: ICV - 200.7 : 95-105
CCV- 200.7/200.8/6010B/6010C/245.1 : 90-110 (Except Hg 7470/7470A/ 7471A/7471B=80-120)
ICV -6010B/6010C/6020/6020A/200.8 : 90-110

CLP ICP ICV/CCV: 90-110
CLP Hg ICV/CCV: 80-120

FORM 2
(ICV/CCV Summary)

Date Analyzed: 10/29/15
Data File: H18548S
Prep Batch: 47349
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: HGCV2A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

		ICV (2)-9		CCV-21		CCV-33		CCV-39									
Analyte	ICV/CCV Amt		Rec		Rec		Rec		Rec		Rec		Rec		Rec		Rec
Mercury	20/10	18.12000	91	9.21000	92	9.15100	92	9.10400	91								

Notes:
a-indicates analyte failed the ICV limits for 6010B/6010C, 6020/6020A
b-indicates analyte failed the ICV limits for 200.7 or 200.8
c-indicates analyte failed the CCV limits for 200.7/200.8/245.1/6010B/6010C (Except Hg 7470/7470A,7471A/7471B),6020/6020A
d-indicates analyte failed the CCV limits Hg 7470A/7471A/7471B

Qc Limits:
ICV - 200.7 : 95-105
CCV- 200.7/200.8/6010B/6010C/245.1 : 90-110 (Except Hg 7470/7470A/ 7471A/7471B=80-120)
ICV -6010B/6010C/6020/6020A/200.8 : 90-110

CLP ICP ICV/CCV: 90-110
CLP Hg ICV/CCV: 80-120

FORM 3
(ICB/CCB/MB Summary)

Date Analyzed: 10/29/15
Data File: S102915A
Prep Batch: 47350
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: MS2_7500SWA
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:

Analyte	ICB V-220902-10	CCB V-220902-15	CCB V-220902-28	CCB V-220902-41	CCB V-220902-53	MB 47350-16
Antimony	4 U	4 U	4 U	4 U	4 U	800 U
Arsenic	1 U	1 U	1 U	1 U	1 U	200 U
Beryllium	1 U	1 U	1 U	1 U	1 U	200 U
Cadmium	2 U	2 U	2 U	2 U	2 U	400 U
Selenium	10 U	10 U	10 U	10 U	10 U	2000 U
Silver	1 U	1 U	1 U	1 U	1 U	200 U
Thallium	2 U	2 U	2 U	2 U	2 U	400 U

Notes: a-indicates absolute value of result found above the reporting limits in CCB/ICB or result found above reporting limit in the MB
u-indicates result below reporting limit

FORM 3
(ICB/CCB/MB Summary)

Date Analyzed: 10/29/15
Data File: S18548A3
Prep Batch: 47349
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:

Analyte	ICB V-220384-9	CCB V-220384-22	CCB V-220384-34	CCB V-220384-44	CCB V-216648-55	MB 47349 (100)-12
Barium	.1 U	.1 U	.1 U	.1 U	.1 U	10 U
Chromium	.05 U	.05 U	.05 U	.05 U	.05 U	5 U
Cobalt	.025 U	.025 U	.025 U	.025 U	.025 U	2.5 U
Copper	.05 U	.05 U	.05 U	.05 U	.05 U	5 U
Lead	.05 U	.05 U	.05 U	.05 U	.05 U	5 U
Manganese	.1 U	.1 U	.1 U	.1 U	.1 U	10 U
Nickel	.05 U	.05 U	.05 U	.05 U	.05 U	5 U
Vanadium	.1 U	.1 U	.1 U	.1 U	.1 U	10 U
Zinc	.1 U	.1 U	.1 U	.1 U	.1 U	10 U

Notes: a-indicates absolute value of result found above the reporting limits in CCB/ICB or result found above reporting limit in the MB
u-indicates result below reporting limit

FORM 3
(ICB/CCB/MB Summary)

Date Analyzed: 10/29/15
Data File: S18548A2
Prep Batch: 47349
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICPRAD2A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:

Analyte	ICB V-220384-8	CCB-21	CCB-33	CCB-44	MB 47349 (100)-11
Aluminum	2 U	2 U	2 U	2 U	200 U
Calcium	10 U	10 U	10 U	10 U	1000 U
Iron	2 U	2 U	2 U	2 U	200 U
Magnesium	5 U	5 U	5 U	5 U	500 U
Potassium	5 U	5 U	5 U	5 U	500 U
Sodium	2.5 U	2.5 U	2.5 U	2.5 U	250 U

Notes: a-indicates absolute value of result found above the reporting limits in CCB/ICB or result found above reporting limit in the MB
u-indicates result below reporting limit

FORM 3
(ICB/CCB/MB Summary)

Date Analyzed: 10/29/15
Data File: H18548S
Prep Batch: 47349
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: HGCV2A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:

Analyte	ICB-10	CCB-22	CCB-34	CCB-40	MB 47349 (167)-11
Mercury	.5 U	.5 U	.5 U	.5 U	83 U

Notes: a-indicates absolute value of result found above the reporting limits in CCB/ICB or result found above reporting limit in the MB
u-indicates result below reporting limit

FORM 4
(ICSA/ICSAB Summary)

Date Analyzed: 10/29/15
Data File: S102915A
Prep Batch: 47350
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: MS2_7500SWA
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICSA/ICSAB: SOURCE: VHG LABS

Analyte	Spk Amt	ICSA V-220903-11	Rec	ICSAB V-220904-12	Rec	Rec	Rec	Rec	Rec	Rec	Rec
Aluminum	50000	49250	98	49930.00000	100						
Arsenic	100	U		98.70000	99						
Cadmium	100	U		93.50000	94						
Calcium	150000	154500	103	158900.00000	106						
Iron	125000	123500	99	125200.00000	100						
Magnesium	50000	49700	99	50870.00000	102						
Selenium	100	U		88.50000	88						
Silver	50	U		45.50000	91						

Notes: a-indicates absolute value of the concentration > 2 * Reporting Limits In the ICSA
b-indicates absolute value of the concentration above Reporting Limits but < 2 * Reporting Limits in the ICSA
c-indicates the recovery failed the Qc Criteria in the ICSAB
u-indicates the absolute value of the concentration was below the reporting limit

FORM 4
(ICSA/ICSAB Summary)

Date Analyzed: 10/29/15
Data File: S18548A3
Prep Batch: 47349
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICSA/ICSAB: SOURCE: VHG LABS

Analyte	Spk Amt	ICSA V-219492-10	Rec	ICSAB V-219493-11	Rec	ICSA V-219492-30	Rec	ICSAB V-219493-31	Rec	ICSA V-219492-40	Rec	ICSAB V-219493-41	Rec	ICSA V-219492-51	Rec	ICSAB V-219493-52	Rec
Aluminum	500	497.818	100	513.26700	103	503.612	101	516.90100	103	498.728	100	515.11600	103	501.943	100	515.76700	103
Barium	.5	U		0.53740	107	U		0.54340	109	U		0.58442	117	U		0.54463	109
Calcium	500	482.588	97	501.95000	100	488.517	98	509.19100	102	487.611	98	507.51100	102	494.452	99	506.28500	101
Chromium	.5	U		0.55469	111	U		0.56161	112	U		0.57025	114	U		0.55959	112
Cobalt	.5	U		0.48432	97	U		0.49110	98	U		0.49820	100	U		0.48949	98
Copper	.5	U		0.54628	109	U		0.55094	110	U		0.54802	110	U		0.54890	110
Iron	200	194.83	97	201.22900	101	197.732	99	203.26800	102	195.999	98	201.72700	101	197.866	99	203.42000	102
Lead	1	U		1.02610	103	U		1.02952	103	U		1.05286	105	U		1.03418	103
Magnesium	500	510.33	102	527.45100	105	517.362	103	530.94800	106	511.459	102	525.53800	105	516.829	103	531.71400	106
Manganese	.5	U		0.50825	102	U		0.51315	103	U		0.50947	102	U		0.51314	103
Nickel	1	U		1.04477	104	U		1.05975	106	U		1.07853	108	U		1.05939	106
Vanadium	.5	U		0.54533	109	U		0.55459	111	U		0.54840	110	U		0.55244	110
Zinc	1	U		1.07261	107	U		1.09037	109	U		1.10677	111	U		1.08780	109

Notes: a-indicates absolute value of the concentration > 2 * Reporting Limits In the ICSA
b-indicates absolute value of the concentration above Reporting Limits but < 2 * Reporting Limits in the ICSA
c-indicates the recovery failed the Qc Criteria in the ICSAB
u-indicates the absolute value of the concentration was below the reporting limit

FORM 4
(ICSA/ICSAB Summary)

Date Analyzed: 10/29/15
Data File: S18548A2
Prep Batch: 47349
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICPRAD2A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5102701

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICSA/ICSAB: SOURCE: VHG LABS

Analyte	Spk Amt	ICSA V-218348-9	Rec	ICSAB V-218350-10	Rec	ICSA V-218348-29	Rec	ICSAB V-218350-30	Rec	ICSA V-218348-40	Rec	ICSAB V-218350-41	Rec		Rec		Rec
Aluminum	500	510.513	102	510.40700	102	514.155	103	510.69200	102	513.728	103	511.08100	102				
Calcium	500	502.033	100	501.97800	100	507.374	101	501.99900	100	505.271	101	502.30600	100				
Iron	200	194.294	97	194.96800	97	196.802	98	195.69800	98	195.774	98	194.68000	97				
Magnesium	500	508.575	102	508.68100	102	515.146	103	509.92100	102	512.635	103	509.93000	102				

Notes: a-indicates absolute value of the concentration > 2 * Reporting Limits In the ICSA
b-indicates absolute value of the concentration above Reporting Limits but < 2 * Reporting Limits in the ICSA
c-indicates the recovery failed the Qc Criteria in the ICSAB
u-indicates the absolute value of the concentration was below the reporting limit

FORM5/FORM7
SPIKE RECOVERY DATA
PREP BATCH: 47349

Instrument Type: ICP/HG
Analytical Method(s):6010/200.7/7470A/7471A/245.1 ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: LCSMR Matrix: SOIL SampleID: LCS MR 47349

Analyte	BatchId	DF	Data Fil	Seq#:	Spk Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Aluminum	47349	1	S18548A2	13	60.5819	74.6	81		47	153
Barium	47349	1	S18548A3	14	1.9119	2.03	94		83	118
Calcium	47349	1	S18548A2	13	60.0548	60.4	99		81	119
Chromium	47349	1	S18548A3	14	1.3753	1.36	101		79	121
Cobalt	47349	1	S18548A3	14	1.4635	1.48	99		83	117
Copper	47349	1	S18548A3	14	1.7575	1.68	105		82	118
Iron	47349	1	S18548A2	13	146.8500	141	104		43	157
Lead	47349	1	S18548A3	14	1.2924	1.33	97		82	119
Magnesium	47349	1	S18548A2	13	26.5055	28.0	95		75	125
Manganese	47349	1	S18548A3	14	2.9239	2.97	98		80	119
Mercury	47349	5	H18548S	15	13.5800	77.25	88		72.9	127
Nickel	47349	1	S18548A3	14	1.3103	1.23	107		82	119
Potassium	47349	1	S18548A2	13	23.7196	25.4	93		69	131
Sodium	47349	1	S18548A2	13	7.1869	7.61	94		70	130
Vanadium	47349	1	S18548A3	14	1.0580	1.07	99		77	123
Zinc	47349	1	S18548A3	14	1.9246	1.89	102		81	119

TxtQcType: LCS Matrix: SOIL SampleID: LCS 47349

Analyte	BatchId	DF	Data Fil	Seq#:	Spk Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Aluminum	47349	1	S18548A2	12	56.4697	74.6	76		47	153
Barium	47349	1	S18548A3	13	1.8567	2.03	91		83	118
Calcium	47349	1	S18548A2	12	56.2495	60.4	93		81	119
Chromium	47349	1	S18548A3	13	1.2944	1.36	95		79	121
Cobalt	47349	1	S18548A3	13	1.4278	1.48	96		83	117
Copper	47349	1	S18548A3	13	1.6607	1.68	99		82	118
Iron	47349	1	S18548A2	12	132.7020	141	94		43	157
Lead	47349	1	S18548A3	13	1.2393	1.33	93		82	119
Magnesium	47349	1	S18548A2	12	24.8293	28.0	89		75	125
Manganese	47349	1	S18548A3	13	2.9143	2.97	98		80	119
Mercury	47349	5	H18548S	14	13.7100	77.25	89		72.9	127
Nickel	47349	1	S18548A3	13	1.2750	1.23	104		82	119
Potassium	47349	1	S18548A2	12	22.4519	25.4	88		69	131
Sodium	47349	1	S18548A2	12	6.9215	7.61	91		70	130
Vanadium	47349	1	S18548A3	13	0.9863	1.07	92		77	123
Zinc	47349	1	S18548A3	13	1.8149	1.89	96		81	119

TxtQcType: MSD Matrix: SOIL SampleID: AC87800-003

Analyte	BatchId	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Aluminum	47349	1	S18548A2	17	S18548A2	14	111.4860	101.6700	5	196	b	75	125
Barium	47349	1	S18548A3	18	S18548A3	15	1.0867	0.6475	0.5	88		75	125
Calcium	47349	1	S18548A2	17	S18548A2	14	183.8560	195.4500	50	-23	a	75	125
Chromium	47349	1	S18548A3	18	S18548A3	15	0.6414	0.1756	0.5	93		75	125
Cobalt	47349	1	S18548A3	18	S18548A3	15	0.5357	0.0841	0.5	90		75	125
Copper	47349	1	S18548A3	18	S18548A3	15	0.7377	0.2311	0.5	101		75	125
Iron	47349	1	S18548A2	17	S18548A2	14	198.8840	200.5510	5	-33	b	75	125
Lead	47349	1	S18548A3	18	S18548A3	15	0.7089	0.2477	0.5	92		75	125
Magnesium	47349	1	S18548A2	17	S18548A2	14	144.0220	127.8030	50	32	a	75	125
Manganese	47349	1	S18548A3	18	S18548A3	15	4.9770	5.7257	0.5	-150	b	75	125
Mercury	47349	1	H18548S	19	H18548S	16	9.7920	.5U	10	98		75	125
Nickel	47349	1	S18548A3	18	S18548A3	15	0.6731	0.1744	0.5	100		75	125
Potassium	47349	1	S18548A2	17	S18548A2	14	56.4785	8.6027	50	96		75	125
Sodium	47349	1	S18548A2	17	S18548A2	14	47.3198	2.5U	50	95		75	125
Vanadium	47349	1	S18548A3	18	S18548A3	15	0.6944	0.2350	0.5	92		75	125
Zinc	47349	1	S18548A3	18	S18548A3	15	1.0497	0.5766	0.5	95		75	125

a-Indicates Recovery Failed the criteria b-Indicates Recovery Failed the criteria but non spike concentration >4*spike amount

FORM5/FORM7
SPIKE RECOVERY DATA
PREP BATCH: 47349

Instrument Type: ICP/HG
Analytical Method(s):6010/200.7/7470A/7471A/245.1

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: MS | Matrix: SOIL | SampleID: AC87800-003

Analyte	BatchId	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Aluminum	47349	1	S18548A2	16	S18548A2	14	157.2390	101.6700	5.000	1110	b	75	125
Barium	47349	1	S18548A3	17	S18548A3	15	1.3903	0.6475	0.5	149	a	75	125
Calcium	47349	1	S18548A2	16	S18548A2	14	303.0050	195.4500	50.000	215	a	75	125
Chromium	47349	1	S18548A3	17	S18548A3	15	0.7063	0.1756	0.5	106		75	125
Cobalt	47349	1	S18548A3	17	S18548A3	15	0.5323	0.0841	0.5	90		75	125
Copper	47349	1	S18548A3	17	S18548A3	15	0.9106	0.2311	0.5	136	a	75	125
Iron	47349	1	S18548A2	16	S18548A2	14	267.7970	200.5510	5.000	1340	b	75	125
Lead	47349	1	S18548A3	17	S18548A3	15	0.7794	0.2477	0.5	106		75	125
Magnesium	47349	1	S18548A2	16	S18548A2	14	223.6090	127.8030	50.000	192	a	75	125
Manganese	47349	1	S18548A3	17	S18548A3	15	8.9028	5.7257	0.5	635	b	75	125
Mercury	47349	1	H18548S	18	H18548S	16	9.9190	.5U	10	99		75	125
Nickel	47349	1	S18548A3	17	S18548A3	15	0.6900	0.1744	0.5	103		75	125
Potassium	47349	1	S18548A2	16	S18548A2	14	59.2480	8.6027	50.00	101		75	125
Sodium	47349	1	S18548A2	16	S18548A2	14	47.0067	2.5U	50.00	94		75	125
Vanadium	47349	1	S18548A3	17	S18548A3	15	0.8224	0.2350	0.5	117		75	125
Zinc	47349	1	S18548A3	17	S18548A3	15	1.2359	0.5766	0.5	132	a	75	125

a-Indicates Recovery Failed the criteria b-Indicates Recovery Failed the criteria but non spike concentration >4*spike amount

FORM5/FORM7

SPIKE RECOVERY DATA

PREP BATCH: 47350

Instrument Type: ICPMS

Analytical Method(s):6020/200.8

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: LCSMR Matrix: SOIL SampleID: LCS MR 47350

Analyte	BatchId	DF	Data Fil	Seq#:	Spk Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Antimony	47350	1	S102915A	18	11.3800	88.8	13		0.023	209
Arsenic	47350	1	S102915A	18	139.3000	139	100		78	122
Beryllium	47350	1	S102915A	18	91.1100	96.1	95		83	118
Cadmium	47350	1	S102915A	18	105.1000	96	109		82	118
Selenium	47350	1	S102915A	18	170.9000	177	97		77	123
Silver	47350	1	S102915A	18	43.6700	40.2	109		75	125
Thallium	47350	1	S102915A	18	150.4000	138	109		78	122

TxtQcType: LCS Matrix: SOIL SampleID: LCS 47350

Analyte	BatchId	DF	Data Fil	Seq#:	Spk Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Antimony	47350	1	S102915A	17	11.3900	88.8	13		0.023	209
Arsenic	47350	1	S102915A	17	140.3000	139	101		78	122
Beryllium	47350	1	S102915A	17	90.1300	96.1	94		83	118
Cadmium	47350	1	S102915A	17	105.1000	96	109		82	118
Selenium	47350	1	S102915A	17	172.4000	177	97		77	123
Silver	47350	1	S102915A	17	43.8500	40.2	109		75	125
Thallium	47350	1	S102915A	17	150.8000	138	109		78	122

TxtQcType: MSD Matrix: SOIL SampleID: AC87800-003

Analyte	BatchId	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Antimony	47350	1	S102915A	33	S102915A	29	22.0000	4U	250	8.8	a	75	125
Arsenic	47350	1	S102915A	33	S102915A	29	215.1000	14.0400	250	80		75	125
Beryllium	47350	1	S102915A	33	S102915A	29	170.5000	1.9910	250	67	a	75	125
Cadmium	47350	1	S102915A	33	S102915A	29	211.7000	2U	250	85		75	125
Selenium	47350	1	S102915A	33	S102915A	29	182.7000	10U	250	73	a	75	125
Silver	47350	1	S102915A	33	S102915A	29	43.3700	1U	50	87		75	125
Thallium	47350	1	S102915A	33	S102915A	29	205.9000	2U	250	82		75	125

TxtQcType: MS Matrix: SOIL SampleID: AC87800-003

Analyte	BatchId	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Antimony	47350	1	S102915A	32	S102915A	29	19.3600	4U	250	7.7	a	75	125
Arsenic	47350	1	S102915A	32	S102915A	29	210.7000	14.0400	250	79		75	125
Beryllium	47350	1	S102915A	32	S102915A	29	165.3000	1.9910	250	65	a	75	125
Cadmium	47350	1	S102915A	32	S102915A	29	207.6000	2U	250	83		75	125
Selenium	47350	1	S102915A	32	S102915A	29	180.7000	10U	250	72	a	75	125
Silver	47350	1	S102915A	32	S102915A	29	43.1400	1U	50	86		75	125
Thallium	47350	1	S102915A	32	S102915A	29	198.0000	2U	250	79		75	125

a-Indicates Recovery Failed the criteria b-Indicates Recovery Failed the criteria but non spike concentration >4*spike amount

FORM5/FORM7

SPIKE RECOVERY DATA

PREP BATCH: 47350

Instrument Type: ICPMS

Analytical Method(s):6020/200.8

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: PS | Matrix: SOIL | SampleID: AC87800-003

Analyte	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Antimony	1	S102915A	34	S102915A	29	46.8700	4U	50	94		80	120
Arsenic	1	S102915A	34	S102915A	29	58.8400	14.0400	50	90		80	120
Beryllium	1	S102915A	34	S102915A	29	37.3700	1.9910	50	71	a	80	120
Cadmium	1	S102915A	34	S102915A	29	45.7600	2U	50	92		80	120
Selenium	1	S102915A	34	S102915A	29	215.5000	10U	250	86		80	120
Silver	1	S102915A	34	S102915A	29	46.4400	1U	50	93		80	120
Thallium	1	S102915A	34	S102915A	29	48.0700	2U	50	96		80	120

a-Indicates Recovery Failed the criteria b-Indicates Recovery Failed the criteria but non spike concentration >4*spike amount

FORM6/FORM9

RPD/%Difference Data

PREP BATCH: 47349

Instrument Type: ICP/HG

Analytical Method(s):6010/200.7/7470A/7471A/245.1 ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: LCSMR Matrix: SOIL SampleID: LCS MR 47349

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	Result 1	Result 2	RPD		Limit
Aluminum	47349	S18548A2	13	S18548A2	12	60.5819	56.4697	7		20
Barium	47349	S18548A3	14	S18548A3	13	1.9119	1.8567	2.9		20
Calcium	47349	S18548A2	13	S18548A2	12	60.0548	56.2495	6.5		20
Chromium	47349	S18548A3	14	S18548A3	13	1.3753	1.2944	6.1		20
Cobalt	47349	S18548A3	14	S18548A3	13	1.4635	1.4278	2.5		20
Copper	47349	S18548A3	14	S18548A3	13	1.7575	1.6607	5.7		20
Iron	47349	S18548A2	13	S18548A2	12	146.8500	132.7020	10		20
Lead	47349	S18548A3	14	S18548A3	13	1.2924	1.2393	4.2		20
Magnesium	47349	S18548A2	13	S18548A2	12	26.5055	24.8293	6.5		20
Manganese	47349	S18548A3	14	S18548A3	13	2.9239	2.9143	.33		20
Mercury	47349	H18548S	15	H18548S	14	13.5800	13.7100	.95		20
Nickel	47349	S18548A3	14	S18548A3	13	1.3103	1.2750	2.7		20
Potassium	47349	S18548A2	13	S18548A2	12	23.7196	22.4519	5.5		20
Sodium	47349	S18548A2	13	S18548A2	12	7.1869	6.9215	3.8		20
Vanadium	47349	S18548A3	14	S18548A3	13	1.0580	0.9863	7		20
Zinc	47349	S18548A3	14	S18548A3	13	1.9246	1.8149	5.9		20

TxtQcType: MR Matrix: SOIL SampleID: AC87800-003

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	Result 1	Result 2	RPD		Limit
Aluminum	47349	S18548A2	15	S18548A2	14	93.2207	101.6700	8.7		20
Barium	47349	S18548A3	16	S18548A3	15	0.6067	0.6475	6.5		20
Calcium	47349	S18548A2	15	S18548A2	14	109.3200	195.4500	57	a	20
Chromium	47349	S18548A3	16	S18548A3	15	0.1587	0.1756	10		20
Cobalt	47349	S18548A3	16	S18548A3	15	0.0741	0.0841	13		20
Copper	47349	S18548A3	16	S18548A3	15	0.1773	0.2311	26	b	20
Iron	47349	S18548A2	15	S18548A2	14	187.8140	200.5510	6.6		20
Lead	47349	S18548A3	16	S18548A3	15	0.2432	0.2477	1.9		20
Magnesium	47349	S18548A2	15	S18548A2	14	80.3860	127.8030	46	a	20
Manganese	47349	S18548A3	16	S18548A3	15	4.7794	5.7257	18		20
Mercury	47349	H18548S	17	H18548S	16	.5U	.5U	---		20
Nickel	47349	S18548A3	16	S18548A3	15	0.1604	0.1744	8.4		20
Potassium	47349	S18548A2	15	S18548A2	14	7.8196	8.6027	9.5		20
Sodium	47349	S18548A2	15	S18548A2	14	2.5U	2.5U	---		20
Vanadium	47349	S18548A3	16	S18548A3	15	0.2160	0.2350	8.4		20
Zinc	47349	S18548A3	16	S18548A3	15	0.6194	0.5766	7.2		20

a-Indicates Rpd Failed the criteria

b-Method Rep Out but concentrations < 5*RL

c-Serial dilution Out but conc < 10 * IDL

FORM6/FORM9

RPD/%Difference Data

PREP BATCH: 47349

Instrument Type: ICP/HG

Analytical Method(s):6010/200.7/7470A/7471A/245.1

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: MSD Matrix: SOIL SampleID: AC87800-003

Analyte	BatchId	Data Fil	Seq#:	MS File	Seq#	Result 1	Result 2	RPD		Limit
Aluminum	47349	S18548A2	17	S18548A2	16	111.4860	157.2390	34	a	20
Barium	47349	S18548A3	18	S18548A3	17	1.0867	1.3903	25	a	20
Calcium	47349	S18548A2	17	S18548A2	16	183.8560	303.0050	49	a	20
Chromium	47349	S18548A3	18	S18548A3	17	0.6414	0.7063	9.6		20
Cobalt	47349	S18548A3	18	S18548A3	17	0.5357	0.5323	.65		20
Copper	47349	S18548A3	18	S18548A3	17	0.7377	0.9106	21	a	20
Iron	47349	S18548A2	17	S18548A2	16	198.8840	267.7970	30	a	20
Lead	47349	S18548A3	18	S18548A3	17	0.7089	0.7794	9.5		20
Magnesium	47349	S18548A2	17	S18548A2	16	144.0220	223.6090	43	a	20
Manganese	47349	S18548A3	18	S18548A3	17	4.9770	8.9028	57	a	20
Mercury	47349	H18548S	19	H18548S	18	9.7920	9.9190	1.3		20
Nickel	47349	S18548A3	18	S18548A3	17	0.6731	0.6900	2.5		20
Potassium	47349	S18548A2	17	S18548A2	16	56.4785	59.2480	4.8		20
Sodium	47349	S18548A2	17	S18548A2	16	47.3198	47.0067	.66		20
Vanadium	47349	S18548A3	18	S18548A3	17	0.6944	0.8224	17		20
Zinc	47349	S18548A3	18	S18548A3	17	1.0497	1.2359	16		20

TxtQcType: SD Matrix: SOIL SampleID: AC87800-003

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	DF	Result 1	Result 2	%Diff		Limit
Aluminum	47349	S18548A2	22	S18548A2	14	5	21.6026	101.6700	6.2		10
Barium	47349	S18548A3	23	S18548A3	15	5	0.1409	0.6475	8.8		10
Calcium	47349	S18548A2	22	S18548A2	14	5	41.9306	195.4500	7.3		10
Chromium	47349	S18548A3	23	S18548A3	15	5	0.0400	0.1756	14	a	10
Cobalt	47349	S18548A3	23	S18548A3	15	5	0.0190	0.0841	13	a	10
Copper	47349	S18548A3	23	S18548A3	15	5	0.0490	0.2311	6		10
Iron	47349	S18548A2	22	S18548A2	14	5	42.9799	200.5510	7.2		10
Lead	47349	S18548A3	23	S18548A3	15	5	0.0523	0.2477	5.5		10
Magnesium	47349	S18548A2	22	S18548A2	14	5	27.3989	127.8030	7.2		10
Manganese	47349	S18548A3	23	S18548A3	15	5	1.2051	5.7257	5.2		10
Nickel	47349	S18548A3	23	S18548A3	15	5	0.0327	0.1744	6.1		10
Potassium	47349	S18548A2	22	S18548A2	14	5	1.7041	8.6027	0.96		10
Sodium	47349	S18548A2	22	S18548A2	14	5	-0.0523	0.8389	---		10
Vanadium	47349	S18548A3	23	S18548A3	15	5	0.0394	0.2350	16	a	10
Zinc	47349	S18548A3	23	S18548A3	15	5	0.1204	0.5766	4.4		10

a-Indicates Rpd Failed the criteria

b-Method Rep Out but concentrations < 5*RL

c-Serial dilution Out but conc < 10 * IDL

FORM6/FORM9

RPD/%Difference Data

PREP BATCH: 47350

Instrument Type: ICPMS

Analytical Method(s):6020/200.8

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: LCSMR Matrix: SOIL SampleID: LCS MR 47350

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	Result 1	Result 2	RPD	Limit
Antimony	47350	S102915A	18	S102915A	17	11.3800	11.3900	.088	20
Arsenic	47350	S102915A	18	S102915A	17	139.3000	140.3000	.72	20
Beryllium	47350	S102915A	18	S102915A	17	91.1100	90.1300	1.1	20
Cadmium	47350	S102915A	18	S102915A	17	105.1000	105.1000	0	20
Selenium	47350	S102915A	18	S102915A	17	170.9000	172.4000	.87	20
Silver	47350	S102915A	18	S102915A	17	43.6700	43.8500	.41	20
Thallium	47350	S102915A	18	S102915A	17	150.4000	150.8000	.27	20

TxtQcType: MR Matrix: SOIL SampleID: AC87800-003

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	Result 1	Result 2	RPD	Limit
Antimony	47350	S102915A	30	S102915A	29	4U	4U	---	20
Arsenic	47350	S102915A	30	S102915A	29	14.4700	14.0400	3	20
Beryllium	47350	S102915A	30	S102915A	29	2.2150	1.9910	11	20
Cadmium	47350	S102915A	30	S102915A	29	2U	2U	---	20
Selenium	47350	S102915A	30	S102915A	29	10U	10U	---	20
Silver	47350	S102915A	30	S102915A	29	1U	1U	---	20
Thallium	47350	S102915A	30	S102915A	29	2U	2U	---	20

TxtQcType: MSD Matrix: SOIL SampleID: AC87800-003

Analyte	BatchId	Data Fil	Seq#:	MS File	Seq#	Result 1	Result 2	RPD	Limit
Antimony	47350	S102915A	33	S102915A	32	22.0000	19.3600	13	20
Arsenic	47350	S102915A	33	S102915A	32	215.1000	210.7000	2.1	20
Beryllium	47350	S102915A	33	S102915A	32	170.5000	165.3000	3.1	20
Cadmium	47350	S102915A	33	S102915A	32	211.7000	207.6000	2	20
Selenium	47350	S102915A	33	S102915A	32	182.7000	180.7000	1.1	20
Silver	47350	S102915A	33	S102915A	32	43.3700	43.1400	.53	20
Thallium	47350	S102915A	33	S102915A	32	205.9000	198.0000	3.9	20

TxtQcType: SD Matrix: SOIL SampleID: AC87800-003

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	DF	Result 1	Result 2	%Diff		Limit
Antimony	47350	S102915A	31	S102915A	29	5	-0.1709	-0.0423	---		10
Arsenic	47350	S102915A	31	S102915A	29	5	2.8750	14.0400	2.4		10
Beryllium	47350	S102915A	31	S102915A	29	5	0.5160	1.9910	30	c	10
Cadmium	47350	S102915A	31	S102915A	29	5	0.1706	0.8175	4.3		10
Selenium	47350	S102915A	31	S102915A	29	5	0.7327	3.6710	0.2		10
Silver	47350	S102915A	31	S102915A	29	5	0.1051	0.5901	11	c	10
Thallium	47350	S102915A	31	S102915A	29	5	0.0516	0.4798	---		10

a-Indicates Rpd Failed the criteria

b-Method Rep Out but concentrations < 5*RL

c-Serial dilution Out but conc < 10 * IDL

Hampton-Clarke/Veritech

ICP SAMPLE PREPARATION LOG

ANALYTICAL METHOD: 3010A 3005A 3050B (6020) 200.7/200.8 OTHER_____

Batch No.: 18548 Analyst: Zone

QC Number: 47349 Prep Date: 10.29.2015

Matrix: SOIL Reviewed By: ~~QA~~.

LAB ID#	ICP		ICP-MS (Secondary dil)		TCLP		COMMENTS
	Initial	Final	Aliquot	Final	Eff	TCLP	
Method blank	50ml	50ml				--	
LCS	0.5g	↓				--	
LCSD	↓	↓				--	
1. AC87800-003	1.0 g	100ml					
MR 003	0.5g	50ml					
MS 003	↓	↓					
MSD 003	↓	↓					
2. 87794 - 001	↓	↓					
3. 002	↓	↓					
4. 003	↓	↓					
5. 004	↓	↓					
6. 005	↓	↓					
7. 006	↓	↓					
8. 87800 - 001	↓	↓					
9. 002	↓	↓					
10. 87835 - 001	↓	↓					
11. 003	↓	↓					
12. 005	↓	↓					
13. 87782 - 005	↓	↓					
14. 006	↓	↓					
15. 87819 - 001	↓	↓					
16. 87770 - 001	↓	↓					
17. 87859 - 001	↓	↓					
18. 003	↓	↓					
19.							
20.							

Hot Plate Temperature: 93.7 C (90-95° C)

	Volume mL	Lot #
LCS, LCSD	0.5g	V- 9667
LLLCS, LLLCSD		V-
MS, MSD	0.5ml	V- 9410, 9477
LLMS, LLMSD		V-

Acid	Vol mL	Lot#
		9729
HNO_3	2.5ml	V- 9667sp
HCl	5 ml	V- 9661
H_2O_2	1.5ml	V- 9370

Acid	Vol mL	Lot#
1:1 HNO_3	5ml	V-219109
1:1 HCl		V-

Relinquished By Zone Date 10.29.15

Received By ~~QA~~. Date 10/29/2015

0042

Hampton-Clarke/Veritech

ICP SAMPLE PREPARATION LOG

ANALYTICAL METHOD: 3010A 3005A (3050B (6020) 200.7/200.8 OTHER_____

Batch No.: 18549 Analyst: Zane

QC Number: 47350 Prep Date: 10.29.2015

Matrix: soil-6020 Reviewed By: [illegible]

LAB ID#	ICP		ICP-MS (Secondary dil)		TCLP		COMMENTS
	Initial	Final	Aliquot	Final	Eff	TCLP	
Method blank	50ml	50ml	25ml	50ml		-	
LCS	0.1g	↓	↓	↓		-	
LCSD	↓	↓	↓	↓		-	
1. AC87800-003	0.5g	↓	↓	↓			
MR 003	↓	↓	↓	↓			
MS 003	↓	↓	↓	↓			
MSD 003	↓	↓	↓	↓			
2. 87794 - 001	↓	↓	↓	↓			
3. 002	↓	↓	↓	↓			
4. 003	↓	↓	↓	↓			
5. 004	↓	↓	↓	↓			
6. 005	↓	↓	↓	↓			
7. 006	↓	↓	↓	↓			
8. 87800 - 001	↓	↓	↓	↓			
9. 002	↓	↓	↓	↓			
10. 87835 - 001	↓	↓	↓	↓			
11. 003	↓	↓	↓	↓			
12. 005	↓	↓	↓	↓			
13. 87819 - 001	↓	↓	↓	↓			
14. 87770 - 001	↓	↓	↓	↓			
15. 87859 - 001	↓	↓	↓	↓			
16. 003	↓	↓	↓	↓			
17.							
18.							
19.							
20.							

Hot Plate Temperature: 93.7 C (90-95° C)

	Volume mL	Lot #
LCS, LCSD	0.1g	V- 9667
LLLCS, LLLCSD		V-
MS, MSD	0.5g	V-9410, 9477
LLMS, LLMSD		V-

Acid	Vol mL	Lot#
HNO_3	2.5ml	V- 9729
HCl		V-
H_2O_2	1.5ml	V-9370

Acid	Vol mL	Lot#
1:1 HNO_3	6ml	V-[illegible]9101
1:1 HCl		V-

Relinquished By Zane Date 10.29.15

Received By [illegible] Date 10/29/15

0043

T:\QC\FORMS\LOGBOOK FORMS\METALS\ICP sample prep log 2012.DOC

HG SAMPLE PREPARATION LOG

Hampton-Clarke/Veritech

ANALYTICAL METHOD: 245.1 7470A (7471B) **OTHER**_____

Batch No.:* 18548 Analyst: Zane

QC Number: 47349 Prep Date: 10.29.2015

Matrix: Soil Review By: CJA

LAB ID#	MERCURY		COMMENTS
	INITIAL	FINAL	
Method blank	25ml	25ml	
LCS	0.15g		
LCSD			
1 AC87800-003			
MR -003			
MS -003			
MSD -003			
2 87794 - 001			
3 002			
4 003			
5 004			
6 005			
7 006			
8 87800 - 001			
9 002			
10 87835 - 001			
11 003			
12 8 Sp. 005			
13 87819 - 001			
14 87770 - 001			
15 87859 - 001			
16 003			
17			
18			
19			
20			

Lot Numbers	Acid	Volume (mL)	Lot #
$KmnO_4$: V- 217041	HNO_3		V-
$K_2S_2O_8$: V-	HCl		V-
NH_2OH: V- 216239	H_2SO_4		V-
	Aqua Regia	1.25ml	V- 221181

**Block Temp. : 94.2

Time In Block: 7:00

Time Out of Block: 7:30

Spike Volume & Lot # 9667

LCS SPK-221180 0.15g / 0.25 ml

MS V-221180 0.250 ml

Standards/Control Batch B- 20233

**Temperature ranges:
245.1 / 7470A: 90-95C
7471B : 92-98C

Relinquished By: Zane

*25 mLs of each standard was digested with this batch using the same reagents and at the same time as the above samples. The preparation of each standard may be referenced in Veriprog using the standard batch number and the corresponding V #s.

Run Log

Data File: W:\METALS.FRM\ICPDATA\New\PEICP3A\S18548A3.txt

Analysis Date: 10/29/15 **Instrument:** PEICP3A

Sample Id	DF	Qc Type	Time	Run #	Test Group	Rept Limit Matrix	Qc Matrix	Anal Method	Prep Batch	Comments:	Stds:
CALBLK V-220384	1	CAL	12:34	1							V-220384(ICB/CCB)
CALST1 V-219798	1	CAL	12:37	2							V-219798(ICS1 Lowest std)
CALST2 V-219488	1	CAL	12:40	3							V-219488(ICS2- Low Std)
CALST3 V-219489	1	CAL	12:43	4							V-219489(ICS3 - Middle Std)
CALST4 V-220005	1	CAL	12:47	5							V-220005(ICS4 High std)
ICS3 V-219489	1	ICS	12:51	6							V-219489(ICS3 - Middle Std)
ICV (1) V-219614	1	ICV	12:55	7							V-219614(CCV)
LLICV V-220704	1	LLICV	12:59	8		SOIL	SOIL	SW846	47349		V-220704(LLICV/CCV soil)
ICB V-220384	1	ICB	13:03	9							V-220384(ICB/CCB)
ICSA V-219492	1	ICSA	13:06	10							V-219492(ICSA)
ICSAB V-219493	1	ICSAB	13:10	11							V-219493(ICSAB)
MB 47349 (100)	1	MB	13:14	12		SOIL	SOIL	SW846	47349		0
LCS 47349	1	LCS	13:17	13		SOIL	SOIL	SW846	47349		0
LCS MR 47349	1	LCS	13:21	14		SOIL	SOIL	SW846	47349		0
AC87800-003	1	SMP	13:24	15	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87800-003	1	MR	13:28	16	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87800-003	1	MS	13:31	17	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87800-003	1	MSD	13:34	18	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87800-003	1	PS	13:39	19	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
CCV V-219614	1	CCV	13:43	20							V-219614(CCV)
LLCCV V-220704	1	LLCCV	13:47	21		SOIL	SOIL	SW846	47349		V-220704(LLICV/CCV soil)
CCB V-220384	1	CCB	13:50	22							V-220384(ICB/CCB)
AC87800-003	5	SD	13:53	23	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-001	1	SMP	13:57	24	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-002	1	SMP	14:00	25	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-003	1	SMP	14:04	26	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-004	1	SMP	14:08	27	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-005	1	SMP	14:11	28	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-006	1	SMP	14:15	29	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
ICSA V-219492	1	ICSA	14:18	30							V-219492(ICSA)
ICSAB V-219493	1	ICSAB	14:23	31							V-219493(ICSAB)
CCV V-219614	1	CCV	14:26	32							V-219614(CCV)
LLCCV V-220704	1	LLCCV	14:30	33		SOIL	SOIL	SW846	47349		V-220704(LLICV/CCV soil)
CCB V-220384	1	CCB	14:34	34							V-220384(ICB/CCB)
AC87800-001	1	SMP	14:37	35	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87800-002	1	SMP	14:40	36	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87835-001	1	SMP	14:44	37	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87835-003	1	SMP	14:47	38	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87835-005	1	SMP	14:51	39	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
ICSA V-219492	1	ICSA	14:55	40							V-219492(ICSA)
ICSAB V-219493	1	ICSAB	14:59	41							V-219493(ICSAB)
CCV V-219614	1	CCV	15:03	42							V-219614(CCV)
LLCCV V-220704	1	LLCCV	15:07	43		SOIL	SOIL	SW846	47349		V-220704(LLICV/CCV soil)
CCB V-220384	1	CCB	15:10	44							V-220384(ICB/CCB)
AC87782-005	1	SMP	15:13	45	PB-SOIL	SOIL	SOIL	SW846	47349		0
AC87782-006	1	SMP	15:17	46	PB-SOIL	SOIL	SOIL	SW846	47349		0
AC87819-001	1	SMP	15:20	47	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87770-001	1	SMP	15:24	48	MET-6-SOIL	SOIL	SOIL	SW846	47349		0
AC87859-001	1	SMP	15:28	49	MET-RCRA-S	SOIL	SOIL	SW846	47349		0
AC87859-003	1	SMP	15:32	50	MET-RCRA-S	SOIL	SOIL	SW846	47349		0
ICSA V-219492	1	ICSA	15:35	51							V-219492(ICSA)
ICSAB V-219493	1	ICSAB	15:40	52							V-219493(ICSAB)
CCV V-219614	1	CCV	15:43	53							V-219614(CCV)
LLCCV V-220704	1	LLCCV	15:47	54		SOIL	SOIL	SW846	47349		V-220704(LLICV/CCV soil)
CCB V-216648	1	CCB	15:51	55							V-216648(ICB/CCB)

Comments/Reviewedby:

olufemi
192.168.1.85 10/29/2015 4:01:16 PM

RUN IS OK
All elements reported except earth elements

10/29/15

Standard/Batch/SnCl2 Lot #:

Run Log

Data File: W:\METALS.FRM\ICPDATA\New\PEICPRAD2A\S18548A2.txt

Analysis Date: 10/29/15 **Instrument:** PEICPRAD2A

Sample Id	DF	Qc Type	Time	Run #	Test Group	Rept Limit Matrix	Qc Matrix	Anal Method	Prep Batch	Comments:	Stds:
CALBLK V-220384	1	CAL	11:16	1							V-220384(ICB/CCB)
CALST2 V-219450	1	CAL	11:19	2							V-219450(ICS2- Low Std)
CALST3 V-219489	1	CAL	11:22	3							V-219489(ICS3 - Middle Std)
CALST4 V-219490	1	CAL	11:25	4							V-219490(ICS4 High std)
ICS3 V-219489	1	ICS	11:28	5							V-219489(ICS3 - Middle Std)
ICV V-218567	1	ICV	11:31	6							V-218567(CCV)
LLICV [soil] V-220704	1	LLICV	11:33	7		SOIL	SOIL	SW846	47349		V-220704(LLICV/CCV soil)
ICB V-220384	1	ICB	11:37	8							V-220384(ICB/CCB)
ICSA V-218348	1	ICSA	11:40	9							V-218348(ICSA)
ICSAB V-218350	1	ICSAB	11:44	10							V-218350(ICSAB)
MB 47349 (100)	1	MB	11:47	11		SOIL	SOIL	SW846	47349		0
LCS 47349	1	LCS	11:51	12		SOIL	SOIL	SW846	47349		0
LCS MR 47349	1	LCS	11:53	13		SOIL	SOIL	SW846	47349		0
AC87800-003	1	SMP	11:56	14	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87800-003	1	MR	11:59	15	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87800-003	1	MS	12:01	16	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87800-003	1	MSD	12:04	17	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87800-003	1	PS	12:07	18	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
CCV V-218567	1	CCV	12:10	19							V-218567(CCV)
LLCCV [soil] V-220704	1	LLCCV	12:12	20		SOIL	SOIL	SW846	47349		V-220704(LLICV/CCV soil)
CCB	1	CCB	12:16	21							0
AC87800-003	5	SD	12:19	22	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-001	1	SMP	12:22	23	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-002	1	SMP	12:24	24	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-003	1	SMP	12:27	25	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-004	1	SMP	12:30	26	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-005	1	SMP	12:33	27	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87794-006	1	SMP	12:36	28	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
ICSA V-218348	1	ICSA	12:38	29							V-218348(ICSA)
ICSAB V-218350	1	ICSAB	12:42	30							V-218350(ICSAB)
CCV V-218567	1	CCV	12:46	31							V-218567(CCV)
LLCCV [soil] V-220704	1	LLCCV	12:49	32		SOIL	SOIL	SW846	47349		V-220704(LLICV/CCV soil)
CCB	1	CCB	12:52	33							0
AC87800-001	1	SMP	12:55	34	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87800-002	1	SMP	12:58	35	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87835-001	1	SMP	13:01	36	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87835-003	1	SMP	13:03	37	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87835-005	1	SMP	13:06	38	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
AC87819-001	1	SMP	13:09	39	MET-TAL6010S	SOIL	SOIL	SW846	47349		0
ICSA V-218348	1	ICSA	13:11	40							V-218348(ICSA)
ICSAB V-218350	1	ICSAB	13:15	41							V-218350(ICSAB)
CCV V-218567	1	CCV	13:19	42							V-218567(CCV)
LLCCV [soil] V-220704	1	LLCCV	13:22	43		SOIL	SOIL	SW846	47349		V-220704(LLICV/CCV soil)
CCB	1	CCB	13:25	44							0

Comments/Reviewedby:

sean
192.168.1.78 10/29/2015 1:51:14 PM

OK

10/29/15

Standard/Batch/SnCl2 Lot #:

Run Log

Data File: W:\METALS.FRM\ICPDATA\New\HGCV2A\H18548S.txt

Analysis Date: 10/29/15 **Instrument:** HGCV2A

Sample Id	DF	Qc Type	Time	Run #	Test Group	Rept Limit Matrix	Qc Matrix	Anal Method	Prep Batch	Comments:	Stds:
Calibration Blank	1	CAL	09:53	1							0
.2 PPB	1	CAL	09:54	2							0
.5 PPB	1	CAL	09:55	3							0
1 PPB	1	CAL	09:57	4							0
2 PPB	1	CAL	09:58	5							0
5 PPB	1	CAL	09:59	6							0
10 PPB	1	CAL	10:00	7							0
25 PPB	1	CAL	10:02	8							0
ICV (2)	1	ICV	10:04	9							0
ICB	1	ICB	10:06	10							0
MB 47349 (167)	1	MB	10:07	11	HG-SOIL	SOIL	SOIL	SW846	47349		0
LCS 47349	1	NA	10:08	12	HG-SOIL	SOIL	SOIL	SW846	47349	CONCENTRATION HIGH	0
LCS MR 47349	1	NA	10:10	13	HG-SOIL	SOIL	SOIL	SW846	47349	CONCENTRATION HIGH	0
LCS 5D	5	LCS	10:12	14	HG-SOIL	SOIL	SOIL	SW846	47349		0
LCS MR 5D	5	LCS	10:14	15	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87800-003	1	SMP	10:15	16	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87800-003	1	MR	10:17	17	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87800-003	1	MS	10:18	18	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87800-003	1	MSD	10:20	19	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87794-001	1	SMP	10:21	20	HG-SOIL	SOIL	SOIL	SW846	47349		0
CCV	1	CCV	10:23	21							0
CCB	1	CCB	10:24	22							0
AC87794-002	1	SMP	10:26	23	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87794-003	1	SMP	10:27	24	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87794-004	1	SMP	10:28	25	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87794-005	1	SMP	10:30	26	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87794-006	1	SMP	10:31	27	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87800-001	1	SMP	10:32	28	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87800-002	1	SMP	10:34	29	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87835-001	1	SMP	10:35	30	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87835-003	1	SMP	10:36	31	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87835-005	1	SMP	10:38	32	HG-SOIL	SOIL	SOIL	SW846	47349		0
CCV	1	CCV	10:39	33							0
CCB	1	CCB	10:41	34							0
AC87819-001	1	SMP	10:42	35	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87770-001	1	SMP	10:43	36	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87859-001	1	SMP	10:45	37	HG-SOIL	SOIL	SOIL	SW846	47349		0
AC87859-003	1	SMP	10:46	38	HG-SOIL	SOIL	SOIL	SW846	47349		0
CCV	1	CCV	10:48	39							0
CCB	1	CCB	10:49	40							0

Comments/Reviewedby:

carmela
192.168.1.89 10/29/2015 2:07:56 PM

OK

10/29/15

Standard/Batch/SnCl2 Lot #:

V-221192

Run Log

Data File: W:\METALS.FRM\ICPDATA\New\MS2_7500SWA\S102915A.b\S102915A.TXT

Analysis Date: 10/29/15 **Instrument:** MS2_7500SWA

Sample Id	DF	Qc Type	Time	Run #	Test Group	Rept Limit Matrix	Qc Matrix	Anal Method	Prep Batch	Comments:	Stds:
Rinse	1	NA	11:12	1	MET-RCRA-MS	SOIL	SOIL	SW846	47350		()
CalBlk V-220895	1	ISBLK	11:18	2		SOIL	SOIL				V-220895(Cal Blk)
CalStd1 V-220896	1	CAL	11:24	3							V-220896(Cal Std-1)
CalStd2 V-220897	1	CAL	11:29	4							V-220897(Cal Std-2)
CalStd3 V-220898	1	CAL	11:35	5							V-220898(Cal Std-3)
CalStd4 V-220899	1	CAL	11:41	6							V-220899(Cal Std-4)
CalStd5 V-220900	1	CAL	11:47	7							V-220900(Cal Std-5)
ICV V-220901	1	ICV	11:53	8							V-220901(ICV)
LLICV V-220906	1	LLICV	11:59	9	MET-RCRA-MS	SOIL	SOIL	SW846	47350		V-220906(LL-ICV/CCV SOIL)
ICB V-220902	1	ICB	12:05	10							V-220902(ICB/CCB)
ICSA V-220903	1	ICSA	12:10	11							V-220903(ICSA)
ICSAB V-220904	1	ICSAB	12:16	12							V-220904(ICSAB)
CCV V-220905	1	CCV	12:22	13							V-220905(CCV)
LLCCV V-220906	1	LLCCV	12:28	14	MET-RCRA-MS	SOIL	SOIL	SW846	47350		V-220906(LL-ICV/CCV SOIL)
CCB V-220902	1	CCB	12:34	15							V-220902(ICB/CCB)
MB 47350	1	MB	12:40	16	MET-RCRA-MS	SOIL	SOIL	SW846	47350		()
LCS 47350	1	LCS	12:45	17	MET-RCRA-MS	SOIL	SOIL	SW846	47350		()
LCS MR 47350	1	LCS	12:51	18	MET-RCRA-MS	SOIL	SOIL	SW846	47350		()
AC87794-001	1	SMP	12:57	19	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87794-002	1	SMP	13:03	20	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87794-003	1	SMP	13:08	21	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87794-004	1	SMP	13:14	22	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87794-005	1	SMP	13:20	23	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87794-006	1	SMP	13:25	24	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
RINSE	1	NA	13:32	25	MET-RCRA-MS	SOIL	SOIL	SW846	47350		()
CCV V-220905	1	CCV	13:38	26							V-220905(CCV)
LLCCV V-220906	1	LLCCV	13:43	27	MET-RCRA-MS	SOIL	SOIL	SW846	47350		V-220906(LL-ICV/CCV SOIL)
CCB V-220902	1	CCB	13:49	28							V-220902(ICB/CCB)
AC87800-003	1	SMP	13:55	29	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87800-003	1	MR	14:01	30	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87800-003	5	SD	14:07	31	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87800-003	1	MS	14:12	32	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87800-003	1	MSD	14:18	33	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87800-003	1	PS	14:24	34	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87800-001	1	SMP	14:29	35	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87800-002	1	SMP	14:35	36	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87835-001	1	SMP	14:41	37	MET-TAL6020S	SOIL	SOIL	SW846	47350	Rerun Be.	()
RINSE	1	NA	14:47	38		SOIL	SOIL	SW846	47350		()
CCV V-220905	1	CCV	14:53	39							V-220905(CCV)
LLCCV V-220906	1	LLCCV	14:59	40		SOIL	SOIL	SW846	47350		V-220906(LL-ICV/CCV SOIL)
CCB V-220902	1	CCB	15:05	41							V-220902(ICB/CCB)
AC87835-003	1	SMP	15:10	42	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87835-005	1	SMP	15:16	43	MET-TAL6020S	SOIL	SOIL	SW846	47350	Rerun Be.	()
AC87819-001	1	SMP	15:22	44	MET-TAL6020S	SOIL	SOIL	SW846	47350		()
AC87770-001	1	SMP	15:27	45	MET-7-6020	SOIL	SOIL	SW846	47350	Rerun Be.	()
AC87859-001	1	SMP	15:33	46	MET-RCRA-MS	SOIL	SOIL	SW846	47350		()
AC87859-003	1	SMP	15:39	47	MET-RCRA-MS	SOIL	SOIL	SW846	47350		()
AC87752-007	2	SMP	15:45	48	MET-TAL6020S	SOIL	SOIL	SW846	47339	Report Be only.	()
AC87684-001	5	SMP	15:51	49	MET-TAL6020S	SOIL	SOIL	SW846	47339	Report Be only.	()
RINSE	1	NA	15:57	50		SOIL	SOIL	SW846	47350		()
CCV V-220905	1	CCV	16:02	51							V-220905(CCV)
LLCCV V-220906	1	LLCCV	16:08	52		SOIL	SOIL	SW846	47350		V-220906(LL-ICV/CCV SOIL)
CCB V-220902	1	CCB	16:14	53							V-220902(ICB/CCB)

2nd rev SBC 11/2

Comments/Reviewedby: **Standard/Batch/SnCl2 Lot #:**

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pcousineau
192.168.1.123 10/30/2015 9:46:39 AM

B-18538 Report Be only for 87752-007, 87684-001.
B-18549 Run ok. Report Ag, As, Be, Cd, Sb, Se, Tl. Rerun 87835-001, 005, 87770-001 for Be (int. std. Fail). PC.

ICPMS Internal Standard Summary Report

TuneID: 1

Batch/FileID: S102915A Sample ID: CalBlk V-220895 Sample Date 10/29/15 Sample Time: 11:18

IS ID:	Area	Area Limit		
Ho-1	893431.1	625401.77	-	1341040.0811
In-1	299568.4	209697.88	-	449652.1684
Sc-1	64680.73	45276.511	-	97085.77573
Tb-1	868020.7	607614.49	-	1302899.0707

QcType	txtSamId:	Pos	Ho-1 Area	In-1 Area	Sc-1 Area	Tb-1 Area		Area	Area	Area	Area
ISBLK	CalBlk V-220895	2	893431.1	299568.4	64680.73	868020.7					
SMP	Rinse	1	857079.8	270690.2	59653.74	824716.7					
CAL	CalStd1 V-22089	3	904900.7	308502.2	66075.34	881679.0					
CAL	CalStd2 V-22089	4	935147.9	314007.3	68064.50	900058.5					
CAL	CalStd3 V-22089	5	946432.0	320696.3	69893.63	914131.1					
CAL	CalStd4 V-22089	6	923183.3	312769.9	68571.99	898355.3					
CAL	CalStd5 V-22090	7	918460.8	310247.5	67783.95	888059.9					
ICV	ICV V-220901	8	941604.1	315397.4	68997.20	913498.6					
LLICV	LLICV V-220906	9	921211.2	314983.8	68071.30	898247.6					
ICB	ICB V-220902	10	968828.6	329486.7	71378.10	940097.3					
ICSA	ICSA V-220903	11	835549.6	273482.9	61538.93	812878.1					
ICSAB	ICSAB V-220904	12	866566.5	280957.0	62823.32	834321.4					
CCV	CCV V-220905	13	967678.6	323141.3	69643.96	940256.2					
LLCCV	LLCCV V-220906	14	959213.8	321878.0	68453.68	921493.0					
CCB	CCB V-220902	15	943031.1	320451.4	68393.86	919081.8					
MB	MB 47350	16	965093.1	326930.5	69652.66	938800.9					
LCS	LCS 47350	17	946473.9	313782.9	70414.80	915964.6					
MR	LCS MR 47350	18	950208.8	313247.9	70428.95	917556.8					
SMP	AC87794-001	19	922283.4	302503.0	74014.07	890351.3					
SMP	AC87794-002	20	922916.4	296851.6	77416.45	895737.2					
SMP	AC87794-003	21	930176.8	308126.9	74603.54	900512.9					
SMP	AC87794-004	22	958941.3	315325.0	79011.70	929614.6					
SMP	AC87794-005	23	927486.6	306657.1	75281.62	899935.1					
SMP	AC87794-006	24	938337.9	310013.2	75250.90	905549.8					
SMP	RINSE	25	1024674	344596.7	74911.04	992424.1					
CCV	CCV V-220905	26	1005697	334992.3	73767.26	957815.1					
LLCCV	LLCCV V-220906	27	969463.6	333363.5	72672.88	945962.3					
CCB	CCB V-220902	28	973665.3	335354.5	72879.32	943247.8					
SMP	AC87800-003	29	937634.6	306645.9	83683.52	912467.3					
MR	AC87800-003	30	924330.8	297949.8	83925.85	895455.2					
SD	AC87800-003	31	960254.0	319423.0	72982.43	930995.8					
MS	AC87800-003	32	903613.5	293135.6	78563.21	873139.9					
MSD	AC87800-003	33	872925.6	286096.1	76155.00	847896.2					
PS	AC87800-003	34	907709.8	296343.5	79690.65	882779.5					
SMP	AC87800-001	35	904758.9	295712.1	76083.85	877967.9					
SMP	AC87800-002	36	931177.9	306639.5	81750.03	905574.8					
SMP	AC87835-001	37	944550.7	305586.6	121416.8	*	904958.4				
SMP	RINSE	38	893293.3	298050.0	62325.34	867419.0					
CCV	CCV V-220905	39	892690.9	300335.7	63524.62	867581.4					
LLCCV	LLCCV V-220906	40	929720.1	317224.3	67610.13	910242.9					
CCB	CCB V-220902	41	935892.3	318972.7	68174.28	909003.8					
SMP	AC87835-003	42	944142.3	314687.0	80941.12	914115.1					
SMP	AC87835-005	43	897964.3	282966.4	97327.25	*	863812.1				
SMP	AC87819-001	44	898955.1	288894.8	78827.13	866122.1					
SMP	AC87770-001	45	967591.5	292417.1	118418.7	*	951072.3				
SMP	AC87859-001	46	949154.5	304935.8	90389.09	927891.5					
SMP	AC87859-003	47	948190.6	306253.9	86657.72	921067.3					
SMP	AC87752-007	48	1027673	319198.2	98732.26	*	994640.4				

* Indicates Internal Standard Area outside of limits

ICPMS Internal Standard Summary Report

TuneID: 1

SMP	AC87684-001	49	1012038	336260.3	95234.16	971359.0
SMP	RINSE	50	997340.0	335300.8	72909.62	954879.6
CCV	CCV V-220905	51	971585.3	333242.1	72831.20	941700.6
LLCCV	LLCCV V-220906	52	972841.7	336214.8	71893.74	944318.8
CCB	CCB V-220902	53	1017536	348379.9	74258.36	972138.6

* Indicates Internal Standard Area outside of limits

ICPMS Internal Standard Summary Report

TuneID: 2

Batch/FileID: S102915A Sample ID: CalBlk V-220895 Sample Date 10/29/15 Sample Time: 11:18

IS ID:	Area	Area Limit		
Ho-2	1969175	1378422.5	-	2955731.675
In-2	1042056	729439.2	-	1564126.056
Sc-2	705205.6	493643.92	-	1058513.6056
Tb-2	1921120	1344784	-	2883601.12

QcType	txtSamId:	Pos	Ho-2 Area	In-2 Area	Sc-2 Area	Tb-2 Area	Area	Area	Area	Area
ISBLK	CalBlk V-220895	2	1969175	1042056	705205.6	1921120				
SMP	Rinse	1	1929401	1034965	684110.2	1893083				
CAL	CalStd1 V-22089	3	1939021	1035429	699315.7	1908204				
CAL	CalStd2 V-22089	4	1979834	1073771	720751.8	1959930				
CAL	CalStd3 V-22089	5	2019935	1087067	760715.3	1984739				
CAL	CalStd4 V-22089	6	1981341	1046093	708891.4	1960459				
CAL	CalStd5 V-22090	7	1933945	1017356	691684.3	1911373				
ICV	ICV V-220901	8	1969439	1046246	718444.6	1937182				
LLICV	LLICV V-220906	9	1993127	1073688	707452.4	1964605				
ICB	ICB V-220902	10	2062319	1110037	768703.9	2019235				
ICSA	ICSA V-220903	11	1833041	936934.4	647934.6	1805434				
ICSAB	ICSAB V-220904	12	1873608	958370.1	657507.9	1831701				
CCV	CCV V-220905	13	2066960	1094728	730416.5	2023592				
LLCCV	LLCCV V-220906	14	2026171	1081110	724428.8	1996221				
CCB	CCB V-220902	15	2008227	1065314	704091.4	1976733				
MB	MB 47350	16	2040670	1079744	729087.6	2011486				
LCS	LCS 47350	17	1997535	1044691	751396.7	1969091				
MR	LCS MR 47350	18	1973732	1029830	731453.8	1937026				
SMP	AC87794-001	19	1953545	1009120	803766.6	1915074				
SMP	AC87794-002	20	1989288	1009798	861199.1	1938198				
SMP	AC87794-003	21	2021305	1051059	826831.4	1974532				
SMP	AC87794-004	22	2033810	1042523	842548.3	1992542				
SMP	AC87794-005	23	2000369	1030130	818904.6	1945278				
SMP	AC87794-006	24	2010328	1048081	807119.9	1973336				
SMP	RINSE	25	2152423	1136359	796624.1	2096469				
CCV	CCV V-220905	26	2052382	1104684	771129.8	2028158				
LLCCV	LLCCV V-220906	27	2049391	1114088	784034.3	2029402				
CCB	CCB V-220902	28	2030293	1084807	758862.3	1996554				
SMP	AC87800-003	29	1983723	1007481	892864.3	1939773				
MR	AC87800-003	30	2001427	1008853	917592.9	1954019				
SD	AC87800-003	31	2065611	1080655	789349.8	2008511				
MS	AC87800-003	32	1938991	980461.6	846865.1	1880317				
MSD	AC87800-003	33	1896377	962269.8	817536.2	1849842				
PS	AC87800-003	34	1955123	993007.3	860829.1	1911728				
SMP	AC87800-001	35	1955045	995674.6	817209.3	1909680				
SMP	AC87800-002	36	1976361	1015774	869058.6	1922706				
SMP	AC87835-001	37	1955336	993058.2	1257686 *	1907313				
SMP	RINSE	38	1925209	990209.9	636353.3	1856508				
CCV	CCV V-220905	39	1934710	1016450	660741.9	1887472				
LLCCV	LLCCV V-220906	40	1987167	1057700	686267.6	1948037				
CCB	CCB V-220902	41	1961266	1051020	688047.9	1925844				
SMP	AC87835-003	42	2005447	1032523	845379.0	1951444				
SMP	AC87835-005	43	2014495	996035.6	1064458 *	1969246				
SMP	AC87819-001	44	1933600	979338.2	861759.7	1888743				
SMP	AC87770-001	45	2126042	1010631	1308019 *	2121732				
SMP	AC87859-001	46	2078745	1029646	991007.7	2042420				
SMP	AC87859-003	47	2028911	1035435	930980.9	1988228				
SMP	AC87752-007	48	2129773	1062187	1031789	2093960				

* Indicates Internal Standard Area outside of limits

ICPMS Internal Standard Summary Report

TuneID: 2

SMP	AC87684-001	49	2108156	1113213	999103.5	2058858
SMP	RINSE	50	2085614	1114641	775652.6	2051667
CCV	CCV V-220905	51	2028162	1104033	752093.2	1993410
LLCCV	LLCCV V-220906	52	2089153	1117373	771610.1	2063233
CCB	CCB V-220902	53	2046316	1126707	774044.4	2015957

* Indicates Internal Standard Area outside of limits

Wet Chemistry Data

VERITECH Wet Chem Form1 Analysis Summary

Lab#: AC87819-001
Matrix: Soil
Client SampleID: Quarry Material COMP

Project Number: 5102701
Received Date: 10/26/2015
Collect Date: 10/26/2015

Analysis	TestGroup	Dilution:	Result	Units:	RL	Prep Date:	Analysis Date:
Cyanide	CN-S-9012	1	ND	mg/Kg	0.25	10/30/15	10/30/15
Eh	CR6-EH	**1**	**160**	**MV**		10/29/15	10/29/15
pH	CR6-PH	**1**	**9.8**	**PH**		10/29/15	10/29/15
Cr (Hexavalent)	CR6-SOIL	1	ND	mg/Kg	1.0	10/29/15	10/30/15

VERITECH Wet Chem Form1 Analysis Summary
% Solids

TestGroupName: % Solids SM2540G **Project #: 5102701**

TestGroup: %SOLIDS

Lab#	Client SampleID	Matrix	Dilution:	Result	Units:	RL	Prep Date	Analysis Date	Received Date	Collect Date
AC87819-001	Quarry Material C	Soil	1	97	Percent			10/28/15	10/26/15	10/26/15
AC87819-002	Quarry Material G	Soil/Encore	1	98	Percent			10/28/15	10/26/15	10/26/15

% Solids Report

Analysis Type: SOLIDS-SS
BatchID: SOLIDS-SS-4791

QcType	SampleID:	Rounded Result	Raw Result	Units	Tare Weight	Wet Weight	Dry Weight	Analysis Date	Analyzed By	QC RPD	Rpd Limit
DUP	AC87824-012	86	85.66176	Percent	1.08	11.96	10.39	10/28/15	hossain	0.061	5
Sample	AC87799-019	93	93.27957	Percent	1.08	12.24	11.50	10/28/15	hossain		
Sample	AC87799-020	90	90.48059	Percent	1.09	11.91	10.89	10/28/15	hossain		
Sample	AC87799-021	92	91.55963	Percent	1.10	12.00	11.08	10/28/15	hossain		
Sample	AC87799-022	89	88.92989	Percent	1.09	11.93	10.73	10/28/15	hossain		
Sample	AC87799-023	91	90.98287	Percent	1.09	12.18	11.18	10/28/15	hossain		
Sample	AC87799-024	89	89.08927	Percent	1.08	12.17	10.96	10/28/15	hossain		
Sample	AC87799-025	91	90.95841	Percent	1.09	12.15	11.15	10/28/15	hossain		
Sample	AC87799-026	86	86.02541	Percent	1.09	12.11	10.57	10/28/15	hossain		
Sample	AC87799-027	93	93.01701	Percent	1.09	12.26	11.48	10/28/15	hossain		
Sample	AC87799-028	84	83.63803	Percent	1.09	12.03	10.24	10/28/15	hossain		
Sample	AC87799-029	89	88.98072	Percent	1.08	11.97	10.77	10/28/15	hossain		
Sample	AC87799-030	89	88.95985	Percent	1.10	12.06	10.85	10/28/15	hossain		
Sample	AC87799-031	87	87.30594	Percent	1.10	12.05	10.66	10/28/15	hossain		
Sample	AC87799-032	87	87.47715	Percent	1.09	12.03	10.66	10/28/15	hossain		
Sample	AC87819-001	97	97.29973	Percent	1.09	12.20	11.90	10/28/15	hossain		
Sample	AC87819-002	98	98.26007	Percent	1.09	12.01	11.81	10/28/15	hossain		
Sample	AC87824-001	81	81.44144	Percent	1.09	12.19	10.13	10/28/15	hossain		
Sample	AC87824-010	89	89.21833	Percent	1.08	12.21	11.01	10/28/15	hossain		
Sample	AC87824-011	88	88.39928	Percent	1.09	12.21	10.92	10/28/15	hossain		
Sample	AC87824-012	86	85.71429	Percent	1.09	11.94	10.40	10/28/15	hossain		

* - Indicates Failed Rpd Criteria

MS/MSD/DUP Recovery

5102701 0175

Prep Batch: S-1558 Sample ID: AC87800-003
Method: EPA 9012B Matrix: Soil

Qc Type: DUP

Analyte	Limits Rpd	Dil	DUP Conc	Sample Conc	Rpd	Flag	MS/MSD/DUP Batch	RunID	Analysis Date	Non Spike Batch	RunID	Analysis Date
Cyanide	35	1	0	0	NA		20151030135	15	10/30/15 14:29	20151030135	14	10/30/15 14:27

Qc Type: MS

Analyte	Amt	Limits Recov	Dil	MS Conc	Sample Conc	% Rec	Flag	MS/MSD/DUP Batch	RunID	Analysis Date	Non Spike Batch	RunID	Analysis Date
Cyanide	0.4	75-125	1	0.3353	0	84		20151030135	16	10/30/15 14:31	20151030135	14	10/30/15 14:27

Qc Type: MSD

Analyte	Amt	Limits Recov	Rpd	Dil	MSD Conc	Sample Conc	% Rec	Rpd	Flag	MS/MSD/DUP Batch	RunID	Analysis Date	Non Spike Batch	RunID	Analysis Date
Cyanide	0.4	75-125	20	1	0.2617	0	65	24.7	Ms	20151030135	17	10/30/15 14:34	20151030135	14	10/30/15 14:27

LCS Recoveries

	BatchRunID/RunID:====>		201510301356-12							
	QcBatchID:====>		LCSS-1558							
	Date/Time:====>		10/30/15 14:22							
	Analytical Method:====>		EPA 9012B							
	Matrix:====>		Soil		Soil		Soil		Soil	
	EPA 9012B									
Analyte	**Amt Limits**	**Amt Limits**	% Rec	Flags	% Rec	Flags	% Rec	Flags	% Rec	Flags
Cyanide	0.4 80-120		96							

Calibration Summary:

Instrument: DA1
Analysis Meth: EPA 9012B

Analyte	Batch ID	Run#	Qc Type	Recov	Spk Amt	Limit
Cyanide	20151030135	9	ICV	104	0.4	85-115
Cyanide	20151030135	21	CCV	102	0.4	85-115
Cyanide	20151030135	33	CCV	103	0.4	85-115
Cyanide	20151030135	41	CCV	106	0.4	85-115

Blank Summary

Instrument: DA1

Qc Type: Method Blank Summary Prep Date: 10/30/15

Run Batch ID	Analysis Date/Time	Sample ID	Run#	Analyte	Conc	RL
20151030135	10/30/15 14:20	MBS-1558	11	Cyanide	ND	0.020

Qc Type: ICB Summary Prep Date: NA

Run Batch ID	Analysis Date/Time	Sample ID	Run#	Analyte	Conc	RL
20151030135	10/30/15 14:17	CCB	10	Cyanide	ND	0.020

Qc Type: CCB Summary Prep Date: NA

Run Batch ID	Analysis Date/Time	Sample ID	Run#	Analyte	Conc	RL
20151030135	10/30/15 14:45	CCB	22	Cyanide	ND	0.020
20151030135	10/30/15 15:13	CCB	34	Cyanide	ND	0.020
20151030135	10/30/15 15:28	CCB	42	Cyanide	ND	0.020

Hex-Cr Soil SW-846 3060A / 7196A

Cr6 soil curve		Date	10/30/2015			Batch # 326 A		TestGroupID	CR6-SOIL
								TestID	CR-HEX
STD ppm			ABS						
0			0.0008		Intercept	Constant	0.000673115		
0.025			0.0207						
0.25			0.1810		Slope	X Coefficients	0.695343338		
0.5			0.3332						
1			0.7019						

STD mg/L	ABS	PPM	DIFF
0	0.0008	0.000182478	-0.000182478
0.025	0.0207	0.028801434	-0.003801434
0.25	0.1810	0.259335029	-0.009335029
0.5	0.3332	0.478219704	0.021780296
1	0.7019	1.008461355	-0.008461355

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.99952625
R Square	0.999052724
Adjusted R Square	0.998736966
Standard Error	0.010216286
Observations	5

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.330232111	0.330232111	3163.976373	1.23773E-05
Residual	3	0.000313117	0.000104372		
Total	4	0.330545228			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.000673115	0.00633506	0.106252342	0.922088644	-0.019487891	0.020834121	-0.019487891	0.020834121
X Variable 1	0.695343338	0.012361828	56.24923442	1.23773E-05	0.656002449	0.734684228	0.656002449	0.734684228

BM
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#326A

DW
11/4/15

Hex-Cr Soil SW-846 3060A / 7196A

	Hex-Cr Soil		Q.C. DATA								
Batch#	326 A		QC Sample	AC87599-002 NS.Sample							
Date	10/29/2015			Spike Amount	Result	Adjusted Conc	% REC	Limits	RPD	Limits	%REC	RPD
Analyst	BCT			PPM	PPM	PPM					PASS/FAIL	PASS/FAIL
PrepBy	BCT		LCS	20.00	18.16	18.16	91%	80-120%	NA	NA	PASS	
			MS(Sol)	20.00	14.41	14.35	72%	75-125%	NA	NA		
			MS(Insol)	957.96	341.56	341.56	36%	75-125%	NA	20%		PASS
			Sample	NA	ND	NA	NA	NA	NA	NA		
			Sample Dup	NA	ND	NA	NA	NA	NA	20%		PASS
			PVS	20.00	16.45	16.38	82%	75-125%	NA	NA	PASS	
Lead Chromate Added :	0.014	g										
Upper Calibration Abbsorbance:	0.7019											

ICV Data	ABS	Turb ABS	Crct. ABS	PPM	Solid Factor	Sample wt (g)	Dilution Factor	Final vol (mL)	Hex-Cr (ppm)	True Value(ppm	% REC (90-110%)	AnalysisDate	
ICV.Control	0.3210	0.0000	0.3210	0.460674428	1	1	1	1	0.461	0.500	92	10/30/15 15:51	PASS
QC Data	**ABS**	**Turb ABS**	**Crct. ABS**	**PPM**	**Solid Factor**	**Sample wt (g)**	**Dilution Factor**	**Final vol (mL)**	**Hex-Cr (ppm)**	**RL**			
ICB.Sample	0.0003	0.0000	0.0003	-0.000536591	1	1	1	1	-0.001	0.025		10/30/15 15:51	
MB.Sample	0.0031	0.0000	0.0031	0.003490197	1	2.5	1	100	0.140	1.000		10/30/15 15:52	
LCS.Sample	0.3164	0.0000	0.3164	0.454058965	1	2.5	1	100	18.162	1.000		10/30/15 15:52	
AC87599-002 NS.Sample	0.0134	0.0116	0.0018	0.001620616	0.94	2.5	1	100	0.069	1.064		10/30/15 15:52	
AC87599-002 DUP.Sample	0.0120	0.0116	0.0004	-0.000392777	0.94	2.5	1	100	-0.017	1.064		10/30/15 15:53	
AC87599-002 MS.Sample	0.2478	0.0116	0.2362	0.338720262	0.94	2.5	1	100	14.414	1.064		10/30/15 15:53	
AC87599-002 50X MSD.Sample	0.1239	0.0116	0.1123	0.160534912	0.94	2.5	50	100	341.564	53.191		10/30/15 15:54	
AC87599-002 PVS.Sample	0.2811	0.0116	0.2695	0.386610291	0.94	2.5	1	100	16.452	1.064		10/30/15 15:54	
Analytical Run					1	2.5	1	100					
ICV.Control	0.3210		0.3210	0.460674428	1	1	1	1	0.461	0.025	92	10/30/15 15:51	PASS
ICB.Sample	0.0003		0.0003	-0.000536591	1	1	1	1	-0.001	0.025		10/30/15 15:51	
MB.Sample	0.0031		0.0031	0.003490197	1	2.5	1	100	0.140	1.000		10/30/15 15:52	
LCS.Sample	0.3164		0.3164	0.454058965	1	2.5	1	100	18.162	1.000		10/30/15 15:52	
AC87599-002 NS.Sample	0.0134	0.0116	0.0018	0.001620616	0.94	2.5	1	100	0.069	1.064		10/30/15 15:52	
AC87599-002 DUP.Sample	0.0120	0.0116	0.0004	-0.000392777	0.94	2.5	1	100	-0.017	1.064		10/30/15 15:53	
AC87599-002 MS.Sample	0.2478	0.0116	0.2362	0.338720262	0.94	2.5	1	100	14.414	1.064		10/30/15 15:53	
AC87599-002 XXX.Sample	3.4546	0.0116	3.4430	4.950542835	0.94	2.5	1	100	210.661	1.064		10/30/15 15:53	
AC87599-002 50X MSD.Sample	0.1239	0.0116	0.1123	0.160534912	0.94	2.5	50	100	341.564	53.191		10/30/15 15:54	
AC87599-002 PVS.Sample	0.2811	0.0116	0.2695	0.386610291	0.94	2.5	1	100	16.452	1.064		10/30/15 15:54	
CCV.Control	0.3188		0.3188	0.457510513	1	1	1	1	0.458	0.025		10/30/15 15:54	
CCB.Sample	0.0016		0.0016	0.001332989	1	1	1	1	0.001	0.025		10/30/15 15:55	
AC87756-001.Sample	0.0028	0.0060	-0.0032	-0.005570076	0.48	2.5	1	100	-0.464	2.083		10/30/15 15:55	
AC87756-003.Sample	0.0106	0.0099	0.0007	3.86641E-05	0.49	2.5	1	100	0.003	2.041		10/30/15 15:55	
AC87757-002.Sample	0.0052	0.0043	0.0009	0.000326292	0.51	2.5	1	100	0.026	1.961		10/30/15 15:56	
AC87757-004.Sample	0.0013	0.0006	0.0007	3.86644E-05	0.5	2.5	1	100	0.003	2.000		10/30/15 15:56	
AC87773-001.Sample	0.0780	0.0935	-0.0155	-0.023259181	0.75	2.5	1	100	-1.240	1.333		10/30/15 15:57	
AC87773-003.Sample	0.1771	0.1997	-0.0226	-0.033469955	0.77	2.5	1	100	-1.739	1.299		10/30/15 15:57	
AC87773-005.Sample	0.1021	0.1038	-0.0017	-0.003412866	0.77	2.5	1	100	-0.177	1.299		10/30/15 15:58	
AC87773-007.Sample	0.1912	0.2006	-0.0094	-0.014486527	0.71	2.5	1	100	-0.816	1.408		10/30/15 15:58	
AC87819-001.Sample	0.0027	0.0006	0.0021	0.002052058	0.97	2.5	1	100	0.085	1.031		10/30/15 15:58	
AC87848-001.Sample	0.0007	0.0019	-0.0012	-0.002693799	0.97	2.5	1	100	-0.111	1.031		10/30/15 15:59	
CCV-2.Control	0.3214		0.3214	0.461249651	1	1	1	1	0.461	0.025	92	10/30/15 15:59	PASS
CCB-2.Sample	0.0010		0.0010	0.000470106	1	1	1	1	0.000	0.025		10/30/15 16:00	
AC87848-002.Sample	0.0036	0.0019	0.0017	0.001476803	0.98	2.5	1	100	0.060	1.020		10/30/15 16:00	
AC87848-008.Sample	0.0169	0.0224	-0.0055	-0.008877794	0.97	2.5	1	100	-0.366	1.031		10/30/15 16:00	
AC87859-001.Sample	0.0005	0.0041	-0.0036	-0.006145331	0.89	2.5	1	100	-0.276	1.124		10/30/15 16:00	
AC87859-003.Sample	0.0014	0.0006	0.0008	0.000182478	0.87	2.5	1	100	0.008	1.149		10/30/15 16:01	
AC87599-002 T.Sample	0.0116		0.0116	0.015714373	0.94	2.5	1	100	0.669	1.064		10/30/15 16:01	
AC87756-001 T.Sample	0.0060		0.0060	0.007660798	0.48	2.5	1	100	0.638	2.083		10/30/15 16:01	

DW 11/4/15

BD 11/4/15 #326A

Hex-Cr Soil SW-846 3060A / 7196A

AC87756-003 T.Sample	0.0099	0.0099	0.013269538	0.49	2.5	1	100	1.083	2.041		10/30/15 16:01	
AC87757-002 T.Sample	0.0043	0.0043	0.005215963	0.51	2.5	1	100	0.409	1.961		10/30/15 16:02	
AC87757-004 T.Sample	0.0006	0.0006	-0.000105149	0.5	2.5	1	100	-0.008	2.000		10/30/15 16:02	
AC87773-001 T.Sample	0.0935	0.0935	0.133497918	0.75	2.5	1	100	7.120	1.333		10/30/15 16:02	
CCV-3.Control	0.3438	0.3438	0.493463983	1	1	1	1	0.493	0.025	99	10/30/15 16:03	PASS
CCB-3.Sample	0.0018	0.0018	0.001620617	1	1	1	1	0.002	0.025		10/30/15 16:03	
AC87773-003 T.Sample	0.1997	0.1997	0.286228216	0.77	2.5	1	100	14.869	1.299		10/30/15 16:05	
AC87773-005 T.Sample	0.1038	0.1038	0.148310738	0.77	2.5	1	100	7.704	1.299		10/30/15 16:05	
AC87773-007 T.Sample	0.2006	0.2006	0.287522541	0.71	2.5	1	100	16.198	1.408		10/30/15 16:06	
AC87848-001 T.SAMPLE	0.0019	0.0019	0.001764431	0.97	2.5	1	100	0.073	1.031		10/30/15 16:06	
AC87848-002 T.Sample	0.0019	0.0019	0.001764431	0.98	2.5	1	100	0.072	1.020		10/30/15 16:06	
AC87848-008 T.SAMPLE	0.0224	0.0224	0.031246268	0.97	2.5	1	100	1.289	1.031		10/30/15 16:06	
AC87859-001 T.Sample	0.0041	0.0041	0.004928335	0.89	2.5	1	100	0.221	1.124		10/30/15 16:07	
AC87859-003 T.Sample	0.0006	0.0006	-0.000105149	0.87	2.5	1	100	-0.005	1.149		10/30/15 16:07	
AC87819-001 T.Sample	0.0006	0.0006	-0.000105149	0.97	2.5	1	100	-0.004	1.031		10/30/15 16:07	
CCV-4.Sample	0.3219	0.3219	0.461968753	1	1	1	1	0.462	0.025	92	10/30/15 16:07	PASS
CCB-4.Sample	0.0020	0.0020	0.001908245	1	1	1	1	0.002	0.025		10/30/15 16:07	

11/4/15
#32617

11/4/15

0182

Hex-Cr Soil SW-846 3060A / 7196A

5102701

Cr6 soil curve		Date	10/30/2015			Batch #	326	TestGroupID	CR6-SOIL
								TestID	CR-HEX
STD ppm		ABS							
0		0.0008		Intercept	Constant	0.000673115			
0.025		0.0207							
0.25		0.1810		Slope	X Coefficients	0.695343338			
0.5		0.3332							
1		0.7019							

STD mg/L	ABS	PPM	DIFF
0	0.0008	0.000182478	-0.000182478
0.025	0.0207	0.028801434	-0.003801434
0.25	0.1810	0.259335029	-0.009335029
0.5	0.3332	0.478219704	0.021780296
1	0.7019	1.008461355	-0.008461355

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.99952625
R Square	0.999052724
Adjusted R Square	0.998736966
Standard Error	0.010216286
Observations	5

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.330232111	0.330232111	3163.976373	1.23773E-05
Residual	3	0.000313117	0.000104372		
Total	4	0.330545228			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.000673115	0.00633506	0.106252342	0.922088644	-0.019487891	0.020834121	-0.019487891	0.020834121
X Variable 1	0.695343338	0.012361828	56.24923442	1.23773E-05	0.656002449	0.734684228	0.656002449	0.734684228

13
11/4/15
326

DW
11/4/15

Hex-Cr Soil SW-846 3060A / 7196A

	Hex-Cr Soil
Batch#	326
Date	10/29/2015
Analyst	BCT
PrepBy	BCT

Q.C. DATA

QC Sample AC87599-002 NS.Sample

	Spike Amount PPM	Result PPM	Adjusted Conc PPM	% REC	Limits	RPD	Limits	%REC PASS/FAIL	RPD PASS/FAIL
LCS	20.00	18.20	18.20	91%	80-120%	NA	NA	PASS	
MS(Sol)	20.00	14.74	14.79	74%	75-125%	NA	NA		
MS(Insol)	957.96	383.18	383.18	40%	75-125%	NA	20%		PASS
Sample	NA	ND	NA	NA	NA	NA	NA		
Sample Dup	NA	ND	NA	NA	NA	NA	20%		PASS
PVS	20.00	15.03	15.07	75%	75-125%	NA	NA	PASS	

Lead Chromate Added	0.014	g
Upper Calibration Abbsorbance:	0.7019	

ICV Data	ABS	Turb ABS	Crct. ABS	PPM	Solid Factor	Sample wt (g)	Dilution Factor	Final vol (mL)	Hex-Cr (ppm)	True Value(ppm	% REC (90-110%)	AnalysisDate	
ICV.Control	0.3207	0.0000	0.3207	0.460242958	1	1	1	1	0.460	0.500	92	10/30/15 15:29	PASS
QC Data	**ABS**	**Turb ABS**	**Crct. ABS**	**PPM**	**Solid Factor**	**Sample wt (g)**	**Dilution Factor**	**Final vol (mL)**	**Hex-Cr (ppm)**	**RL**			
ICB.Sample	0.0017	0.0000	0.0017	0.001476803	1	1	1	1	0.001	0.025		10/30/15 15:29	
MB.Sample	0.0003	0.0000	0.0003	-0.000536591	1	2.5	1	100	-0.021	1.000		10/30/15 15:30	
LCS.Sample	0.3170	0.0000	0.3170	0.454921863	1	2.5	1	100	18.197	1.000		10/30/15 15:30	
AC87599-002 NS.Sample	0.0105	0.0106	-0.0001	-0.001111846	0.94	2.5	1	100	-0.047	1.064		10/30/15 15:30	
AC87599-002 DUP.Sample	0.0059	0.0106	-0.0047	-0.007727282	0.94	2.5	1	100	-0.329	1.064		10/30/15 15:31	
AC87599-002 MS.Sample	0.2522	0.0106	0.2416	0.346486231	0.94	2.5	1	100	14.744	1.064		10/30/15 15:31	
AC87599-002 50X MSD.Sample	0.1365	0.0106	0.1259	0.180093602	0.94	2.5	50	100	383.178	53.191		10/30/15 15:32	
AC87599-002 PVS.Sample	0.2568	0.0106	0.2462	0.353101652	0.94	2.5	1	100	15.026	1.064		10/30/15 15:33	
Analytical Run					1	2.5	1	100					
ICV.Control	0.3207		0.3207	0.460242958	1	1	1	1	0.460	0.025	92	10/30/15 15:29	PASS
ICB.Sample	0.0017		0.0017	0.001476803	1	1	1	1	0.001	0.025		10/30/15 15:29	
MB.Sample	0.0003		0.0003	-0.000536591	1	2.5	1	100	-0.021	1.000		10/30/15 15:30	
LCS.Sample	0.3170		0.3170	0.454921863	1	2.5	1	100	18.197	1.000		10/30/15 15:30	
AC87599-002 NS.Sample	0.0105	0.0106	-0.0001	-0.001111846	0.94	2.5	1	100	-0.047	1.064		10/30/15 15:30	
AC87599-002 DUP.Sample	0.0059	0.0106	-0.0047	-0.007727282	0.94	2.5	1	100	-0.329	1.064		10/30/15 15:31	
AC87599-002 MS.Sample	0.2522	0.0106	0.2416	0.346486231	0.94	2.5	1	100	14.744	1.064		10/30/15 15:31	
AC87599-002 XXX.Sample	3.5420	0.0106	3.5314	5.077674217	0.94	2.5	1	100	216.071	1.064		10/30/15 15:32	
AC87599-002 50X MSD.Sample	0.1365	0.0106	0.1259	0.180093602	0.94	2.5	50	100	383.178	53.191		10/30/15 15:32	
AC87599-002 PVS.Sample	0.2568	0.0106	0.2462	0.353101652	0.94	2.5	1	100	15.026	1.064		10/30/15 15:33	
CCV.Control	0.3178		0.3178	0.45607235	1	1	1	1	0.456	0.025		10/30/15 15:33	
CCB.Sample	0.0009		0.0009	0.000326292	1	1	1	1	0.000	0.025		10/30/15 15:33	
AC87756-001.Sample	0.0065	0.0023	0.0042	0.005072149	0.48	2.5	1	100	0.423	2.083		10/30/15 15:34	
AC87756-003.Sample	0.0104	0.0091	0.0013	0.000901547	0.49	2.5	1	100	0.074	2.041		10/30/15 15:34	
AC87757-002.Sample	0.0210	0.0201	0.0009	0.000326293	0.51	2.5	1	100	0.026	1.961		10/30/15 15:35	
AC87757-004.Sample	0.0052	0.0008	0.0044	0.005359777	0.5	2.5	1	100	0.429	2.000		10/30/15 15:35	
AC87773-001.Sample	0.1044	0.1032	0.0012	0.000757731	0.75	2.5	1	100	0.040	1.333		10/30/15 15:35	
AC87773-003.Sample	0.0667	0.0673	-0.0006	-0.001830919	0.77	2.5	1	100	-0.095	1.299		10/30/15 15:36	
AC87773-005.Sample	0.0958	0.0904	0.0054	0.006797907	0.77	2.5	1	100	0.353	1.299		10/30/15 15:37	
AC87773-007.Sample	0.1111	0.1027	0.0084	0.011112332	0.71	2.5	1	100	0.626	1.408		10/30/15 15:37	
AC87819-001.Sample	0.0069	0.0018	0.0051	0.006366474	0.97	2.5	1	100	0.263	1.031		10/30/15 15:37	
AC87848-001.Sample	0.0024	0.0020	0.0004	-0.000392777	0.97	2.5	1	100	-0.016	1.031		10/30/15 15:38	
CCV-2.Control	0.3290		0.3290	0.472179517	1	1	1	1	0.472	0.025	94	10/30/15 15:39	PASS
CCB-2.Sample	0.0007		0.0007	3.86644E-05	1	1	1	1	0.000	0.025		10/30/15 15:39	
AC87848-002.Sample	0.0012	0.0019	-0.0007	-0.001974729	0.98	2.5	1	100	-0.081	1.020		10/30/15 15:40	
AC87848-008.Sample	0.0016	0.0024	-0.0008	-0.002118543	0.97	2.5	1	100	-0.087	1.031		10/30/15 15:40	
AC87859-001.Sample	0.0008	0.0025	-0.0017	-0.003412868	0.89	2.5	1	100	-0.153	1.124		10/30/15 15:40	
AC87859-003.Sample	0.0020	0.0025	-0.0005	-0.001687101	0.87	2.5	1	100	-0.078	1.149		10/30/15 15:41	
AC87599-002 T.Sample	0.0106		0.0106	0.014276235	0.94	2.5	1	100	0.607	1.064		10/30/15 15:41	

11/4/15
#326

Hex-Cr Soil SW-846 3060A / 7196A

AC87756-001 T,Sample	0.0023	0.0023	0.002339686	0.48	2.5	1	100	0.195	2.083		10/30/15 15:41	
AC87756-003 T,Sample	0.0091	0.0091	0.012119028	0.49	2.5	1	100	0.989	2.041		10/30/15 15:42	
AC87757-002 T,Sample	0.0201	0.0201	0.02793855	0.51	2.5	1	100	2.191	1.961		10/30/15 15:42	
AC87757-004 T,Sample	0.0008	0.0008	0.000182478	0.5	2.5	1	100	0.015	2.000		10/30/15 15:42	
AC87773-001 T,Sample	0.1032	0.1032	0.147447862	0.75	2.5	1	100	7.864	1.333		10/30/15 15:43	
CCV-3,Control	0.3261	0.3261	0.468008909	1	1	1	1	0.468	0.025	94	10/30/15 15:43	PASS
CCB-3,Sample	0.0013	0.0013	0.000901548	1	1	1	1	0.001	0.025		10/30/15 15:44	
AC87773-003 T,Sample	0.0673	0.0673	0.095818685	0.77	2.5	1	100	4.978	1.299		10/30/15 15:44	
AC87773-005 T,Sample	0.0904	0.0904	0.129039689	0.77	2.5	1	100	6.703	1.299		10/30/15 15:45	
AC87773-007 T,Sample	0.1027	0.1027	0.146728791	0.71	2.5	1	100	8.266	1.408		10/30/15 15:46	
AC87848-001 T,Sample	0.0020	0.0020	0.001908245	0.97	2.5	1	100	0.079	1.031		10/30/15 15:47	
AC87848-002 T,Sample	0.0019	0.0019	0.001764431	0.98	2.5	1	100	0.072	1.020		10/30/15 15:47	
AC87848-008 T,Sample	0.0024	0.0024	0.0024835	0.97	2.5	1	100	0.102	1.031		10/30/15 15:47	
AC87859-001 T,Sample	0.0025	0.0025	0.002627314	0.89	2.5	1	100	0.118	1.124		10/30/15 15:47	
AC87859-003 T,Sample	0.0025	0.0025	0.002627314	0.87	2.5	1	100	0.121	1.149		10/30/15 15:47	
AC87819-001 T,Sample	0.0018	0.0018	0.001620617	0.97	2.5	1	100	0.067	1.031		10/30/15 15:48	
CCV-4,Control	0.3231	0.3231	0.463694506	1	1	1	1	0.464	0.025	93	10/30/15 15:48	PASS
CCB-4,Sample	0.0017	0.0017	0.001476803	1	1	1	1	0.001	0.025		10/30/15 15:48	

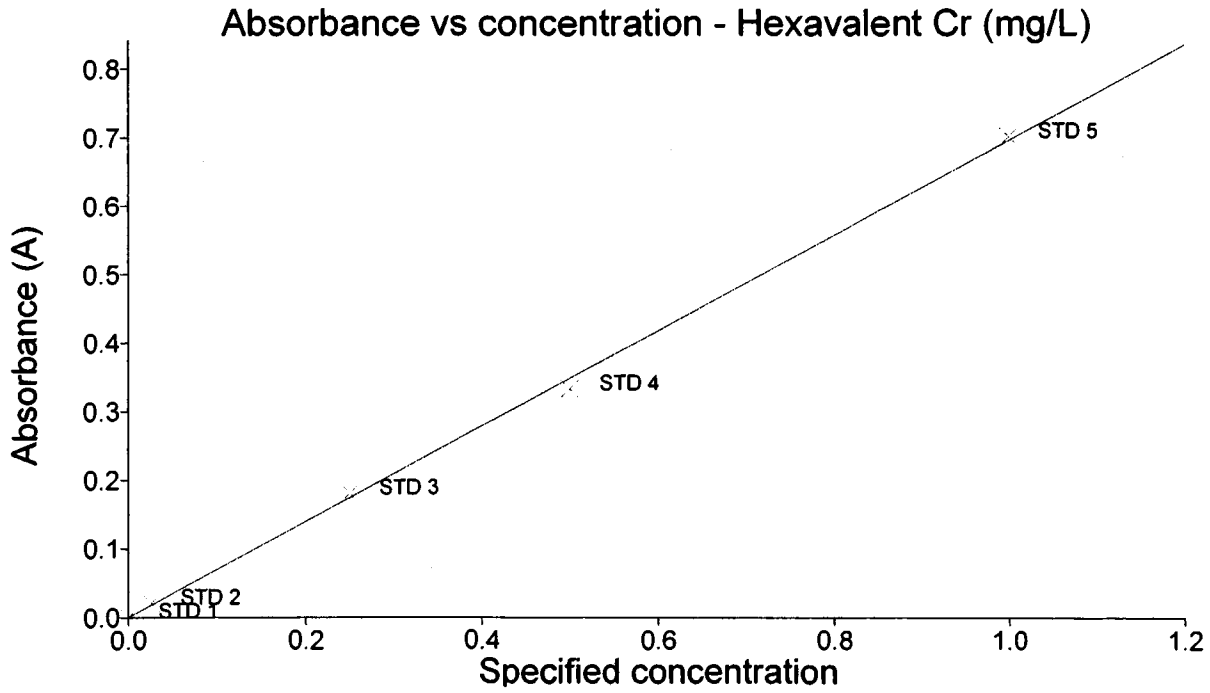
BJ
11/4/15
#326

DW
11/4/15

Perkin-Elmer UV-VIS Lambda 20 **Instrument ID: UV1**

Quant Report with Calibration Graph, Instrument Settings and Sample Prediction Results

Calibration Graph



Correlation Coefficient: 0.9996

Calibrated on: 10/30/15 15:16:01

User name: wet chem

Method name: Hexavalent Cr

Standards Table

Sample ID	Concentration	Hexavalent Cr	Residual	Ordinate
STD 1.Sample	0.0000	0.0001	-0.0001	0.0008
STD 2.Sample	0.0250	0.0289	-0.0039	0.0207
STD 3.Sample	0.2500	0.2593	-0.0093	0.1810
STD 4.Sample	0.5000	0.4782	0.0218	0.3332
STD 5.Sample	1.0000	1.0085	-0.0085	0.7019

11/4/15 #3268

11/4/15

Report Generated On:10/30/2015 16:08

Perkin-Elmer UV-VIS Lambda 20 ***Instrument ID: UV1***

Results Table

Units:mg/L

Sample ID	Des	Analyzed On	Concentration	Residual	Ordinate	Hexavalent Cr
ICV.Control		10/30/15 15:51:34	0.5000	0.0393	0.3210	0.4607
ICB.Sample		10/30/15 15:51:51			0.0003	-0.0005 : Exceeded calibration limits.
MB.Sample		10/30/15 15:52:06			0.0031	0.0035
LCS.Sample		10/30/15 15:52:21			0.3164	0.4541
AC87599-002 NS.Sample		10/30/15 15:52:50			0.0134	0.0182
AC87599-002 DUP.Sample		10/30/15 15:53:11			0.0120	0.0163
AC87599-002 MS.Sample		10/30/15 15:53:32			0.2478	0.3554
AC87599-002 XXX.Sample		10/30/15 15:53:46			3.4546	4.9673 : Exceeded calibration limits.
AC87599-002 50X MSD.Sample	50	10/30/15 15:54:06			0.1239	0.1772
AC87599-002 PVS.Sample		10/30/15 15:54:32			0.2811	0.4032
CCV.Control		10/30/15 15:54:52	0.5000	0.0425	0.3188	0.4575
CCB.Sample		10/30/15 15:55:07			0.0016	0.0014
AC87756-001.Sample		10/30/15 15:55:25			0.0028	0.0031
AC87756-003.Sample		10/30/15 15:55:42			0.0106	0.0142
AC87757-002.Sample		10/30/15 15:56:13			0.0052	0.0065
AC87757-004.Sample		10/30/15 15:56:48			0.0013	0.0009
AC87773-001.Sample		10/30/15 15:57:20			0.0780	0.1112
AC87773-003.Sample		10/30/15 15:57:44			0.1771	0.2537
AC87773-005.Sample		10/30/15 15:58:06			0.1021	0.1459
AC87773-007.Sample		10/30/15 15:58:29			0.1912	0.2740
AC87819-001.Sample		10/30/15 15:58:54			0.0027	0.0029
AC87848-001.Sample		10/30/15 15:59:13			0.0007	-0.0000 : Exceeded calibration limits.
CCV-2.Control		10/30/15 15:59:59	0.5000	0.0387	0.3214	0.4613
CCB-2.Sample		10/30/15 16:00:15			0.0010	0.0004
AC87848-002.Sample		10/30/15 16:00:29			0.0036	0.0043

Report Generated On:10/30/2015 16:08

11/4/15

11/4/15

Perkin-Elmer UV-VIS Lambda 20 *Instrument ID: UV1*

Results Table

Units:mg/L

Sample ID	Des	Analyzed On	Concentration	Residual	Ordinate	Hexavalent Cr
AC87848-008.Sample		10/30/15 16:00:42			0.0169	0.0234
AC87859-001.Sample		10/30/15 16:00:58			0.0005	-0.0002 : Exceeded calibration limits
AC87859-003.Sample		10/30/15 16:01:12			0.0014	0.0010
AC87599-002 T.Sample		10/30/15 16:01:27			0.0116	0.0157
AC87756-001 T.Sample		10/30/15 16:01:42			0.0060	0.0077
AC87756-003 T.Sample		10/30/15 16:01:58			0.0099	0.0133
AC87757-002 T.Sample		10/30/15 16:02:14			0.0043	0.0053
AC87757-004 T.Sample		10/30/15 16:02:31			0.0006	-0.0002 : Exceeded calibration limits
AC87773-001 T.Sample		10/30/15 16:02:59			0.0935	0.1335
CCV-3.Control		10/30/15 16:03:34	0.5000	0.0065	0.3438	0.4935
CCB-3.Sample		10/30/15 16:03:49			0.0018	0.0017
AC87773-003 T.Sample		10/30/15 16:05:28			0.1997	0.2862
AC87773-005 T.Sample		10/30/15 16:05:45			0.1038	0.1484
AC87773-007 T.Sample		10/30/15 16:06:00			0.2006	0.2875
AC87848-001 T.Control		10/30/15 16:06:16	0.5000	0.4983	0.0019	0.0017
AC87848-002 T.Sample		10/30/15 16:06:26			0.0019	0.0017
AC87848-008 T.Control		10/30/15 16:06:40	0.5000	0.4688	0.0224	0.0312
AC87859-001 T.Sample		10/30/15 16:07:00			0.0041	0.0049
AC87859-003 T.Sample		10/30/15 16:07:22			0.0006	-0.0002 : Exceeded calibration limits
AC87819-001 T.Sample		10/30/15 16:07:29			0.0006	-0.0001 : Exceeded calibration limits
CCV-4.Sample		10/30/15 16:07:44			0.3219	0.4620
CCB-4.Sample		10/30/15 16:07:57			0.0020	0.0019

PM 11/4/15 # 326A

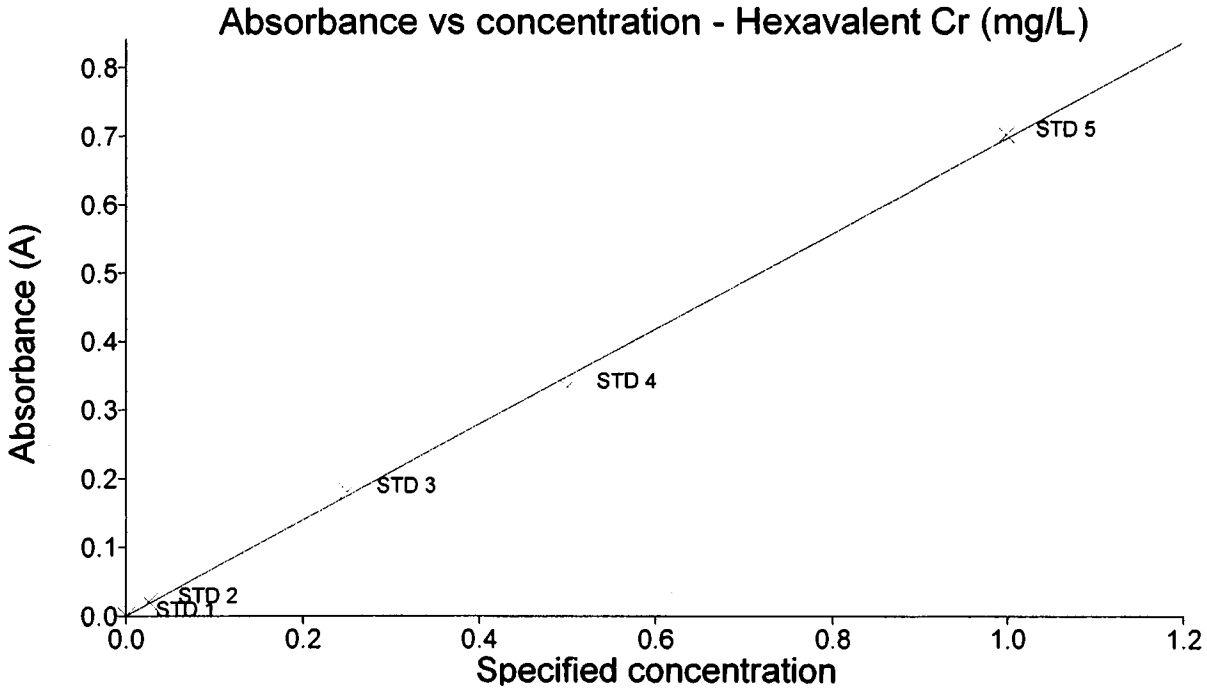
JW 11/4/15

Report Generated On:10/30/2015 16:08

Perkin-Elmer UV-VIS Lambda 20 **Instrument ID: UV1**

Quant Report with Calibration Graph, Instrument Settings and Sample Prediction Results

Calibration Graph



Correlation Coefficient: 0.9996

Calibrated on: 10/30/15 15:16:01

User name: wet chem

Method name: Hexavalent Cr

Standards Table

Sample ID	Concentration	Hexavalent Cr	Residual	Ordinate
STD 1.Sample	0.0000	0.0001	-0.0001	0.0008
STD 2.Sample	0.0250	0.0289	-0.0039	0.0207
STD 3.Sample	0.2500	0.2593	-0.0093	0.1810
STD 4.Sample	0.5000	0.4782	0.0218	0.3332
STD 5.Sample	1.0000	1.0085	-0.0085	0.7019

11/4/15

11/4/15 4326

Report Generated On:10/30/2015 15:49

Perkin-Elmer UV-VIS Lambda 20 **Instrument ID: UV1**

Results Table

Units:mg/L

Sample ID	Des	Analyzed On	Concentration	Residual	Ordinate	Hexavalent Cr
ICV.Control		10/30/15 15:29:20	0.5000	0.0398	0.3207	0.4602
ICB.Sample		10/30/15 15:29:46			0.0017	0.0015
MB.Sample		10/30/15 15:30:01			0.0003	-0.0006 : Exceeded calibration limits.
LCS.Sample		10/30/15 15:30:19			0.3170	0.4550
AC87599-002 NS.Sample		10/30/15 15:30:44			0.0105	0.0141
AC87599-002 DUP.Sample		10/30/15 15:31:03			0.0059	0.0076
AC87599-002 MS.Sample		10/30/15 15:31:55			0.2522	0.3617
AC87599-002 XXX.Sample		10/30/15 15:32:19			3.5420	5.0929 : Exceeded calibration limits.
AC87599-002 50X MSD.Sample	50	10/30/15 15:32:48			0.1365	0.1954
AC87599-002 PVS.Sample		10/30/15 15:33:09			0.2568	0.3683
CCV.Control		10/30/15 15:33:28	0.5000	0.0440	0.3178	0.4560
CCB.Sample		10/30/15 15:33:51			0.0009	0.0003
AC87756-001.Sample		10/30/15 15:34:16			0.0065	0.0084
AC87756-003.Sample		10/30/15 15:34:43			0.0104	0.0140
AC87757-002.Sample		10/30/15 15:35:07			0.0210	0.0292
AC87757-004.Sample		10/30/15 15:35:30			0.0052	0.0065
AC87773-001.Sample		10/30/15 15:35:51			0.1044	0.1491
AC87773-003.Sample		10/30/15 15:36:41			0.0667	0.0950
AC87773-005.Sample		10/30/15 15:37:13			0.0958	0.1368
AC87773-007.Sample		10/30/15 15:37:33			0.1111	0.1588
AC87819-001.Sample		10/30/15 15:37:56			0.0069	0.0089
AC87848-001.Sample		10/30/15 15:38:22			0.0024	0.0025
CCV-2.Control		10/30/15 15:39:12	0.5000	0.0278	0.3290	0.4722
CCB-2.Sample		10/30/15 15:39:29			0.0007	0.0001
AC87848-002.Sample		10/30/15 15:40:08			0.0012	0.0008
AC87848-008.Sample		10/30/15 15:40:33			0.0016	0.0013

Report Generated On:10/30/2015 15:49

JW 11/4/15

SB 11/4/15 #326

Perkin-Elmer UV-VIS Lambda 20 *Instrument ID: UV1*

Results Table

Units: mg/L

Sample ID	Des	Analyzed On	Concentration	Residual	Ordinate	Hexavalent Cr
AC87859-001.Sample		10/30/15 15:40:55			0.0008	0.0001
AC87859-003.Sample		10/30/15 15:41:15			0.0020	0.0019
AC87599-002 T.Sample		10/30/15 15:41:35			0.0106	0.0142
AC87756-001 T.Sample		10/30/15 15:41:54			0.0023	0.0024
AC87756-003 T.Sample		10/30/15 15:42:12			0.0091	0.0121
AC87757-002 T.Sample		10/30/15 15:42:32			0.0201	0.0280
AC87757-004 T.Sample		10/30/15 15:42:50			0.0008	0.0001
AC87773-001 T.Sample		10/30/15 15:43:23			0.1032	0.1474
CCV-3.Control		10/30/15 15:43:53	0.5000	0.0320	0.3261	0.4680
CCB-3.Sample		10/30/15 15:44:11			0.0013	0.0009
AC87773-003 T.Sample		10/30/15 15:44:38			0.0673	0.0958
AC87773-005 T.Sample		10/30/15 15:45:24			0.0904	0.1290
AC87773-007 T.Sample		10/30/15 15:46:40			0.1027	0.1467
AC87848-001 T.Sample		10/30/15 15:47:04			0.0020	0.0019
AC87848-002 T.Sample		10/30/15 15:47:11			0.0019	0.0017
AC87848-008 T.Sample		10/30/15 15:47:26			0.0024	0.0024
AC87859-001 T.Sample		10/30/15 15:47:37			0.0025	0.0027
AC87859-003 T.Sample		10/30/15 15:47:54			0.0025	0.0026
AC87819-001 T.Sample		10/30/15 15:48:10			0.0018	0.0016
CCV-4.Control		10/30/15 15:48:35	0.5000	0.0363	0.3231	0.4637
CCB-4.Sample		10/30/15 15:48:52			0.0017	0.0014

JW 11/4

BB 11/4/15 4326

Report Generated On:10/30/2015 15:49

HEXAVALENT CHROMIUM PREPARATION DATA SHEET
(SOIL SAMPLES ONLY)

Method 3060A

Batch: 326A Analyst Beeva Date 10/29/15

AM 10/30/15 Digestion Start: ~~10:30~~ 11:30 Finish: ~~11:30~~ 12:30 Hot Plate Temp 1: 90° Hot Plate Temp 2: 90°

Laboratory Sample No.	Sample Wt (g)	pH 7.5 ± 0.5	Final Vol (ml)	pH 2.0 ± 0.5	Comments
Cal Curve 0.0 from	0.0 ml	7.15	100	1.79	
Cal Curve 0.025 100ppm	0.025	7.84		1.84	
Cal Curve 0.25	0.25	7.36		2.11	
Cal Curve 0.5	0.5	7.19		2.16	
Cal Curve 1.0	1.0	7.28		2.03	
MB	25gm	7.79		1.97	
LCS		7.80		1.90	
~~AC87599-002~~ QC Sample					
PDS		7.16		2.13	
DUP		7.09		2.16	
(Sol) MS		7.17		1.88	
(Insol) MSD		7.13		1.90	
1 AC87599-002		7.19		1.93	
2 AC87756-001		7.12		1.90	
3. " 003		7.56		1.89	
4. AC87757-002		7.80		1.86	
5. " 004		7.86		1.87	
6. AC87773-001		7.37		2.13	
7. " 003		7.59		2.15	
8. " 005		7.64		2.17	
9. " 007		7.68		2.19	
10 AC87819-001		7.83		2.18	
11. AC87848-001		7.71		2.17	
12. " 002		7.66		2.10	
13. " 006		7.48		2.14	
14. AC87854-001		7.55		2.10	
15. " 003		7.38		2.11	
16.					
17.					
18.					
19.					
20.					

Reagent	Lot #:		$MgCl_2$	#
				9215
Digestion Solution - pH must be > 11.5. If not, discard	V- 221215	pH 13.41	Lead Chromate (PbCr)	# 6413
Phosphate Buffer	V- 214326		Weight of PbCr (10-20mg)	0.0140 g
			PVS 9/100 Volume 0.0 ml	10% H_2SO_4 V: 219360
			Sample chosen for PVS should be spiked at 40 mg/kg. If sample is > 40 mg/kg, use 2X	5 M HNO_3 V: 217770
			Spike Volume 1ml & Lot # V- 22216	Col Rea. V: 219876

HEXAVALENT CHROMIUM PREPARATION DATA SHEET
(SOIL SAMPLES ONLY)

Method 3060A

Batch: 326 Analyst Beeng Date 10/29/15
Digestion Start: 1030 Finish: 1130 Hot Plate Temp 1: 90°C Hot Plate Temp 2: 90°C

Laboratory Sample No.	Sample Wt (g)	pH 7.5 ± 0.5	Final Vol (ml)	pH 2.0 ± 0.5	Comments
Cal Curve 0.0 from	0.0 ml	7.15	100	1.79	
Cal Curve 0.025 100ppm	0.025	7.84		1.84	
Cal Curve 0.25	0.25	7.36		2.11	
Cal Curve 0.5	0.5	7.19		2.16	
Cal Curve 1.0	1.0	7.28		2.03	
MB	2.5gm	7.15		2.10	
LCS		7.37		2.18	
QC Sample AC87549.002					
PDS		7.59		1.97	
DUP		7.61		1.86	
(Sol) MS		7.69		1.86	
(Insol) MSD		7.83		1.78	
1 AC87599.002		7.80		1.83	
2 AC87756.001		7.71		2.13	
3. ↓ 003		7.56		2.16	
4. AC87757.002		7.48		2.15	
5. ↓ 004		7.39		2.19	
6. AC87773.001		7.33		1.95	
7. 003		7.15		1.90	
8. 005		7.79		1.88	
9. 007		7.80		1.79	
10. AC87819.001		7.25		1.73	
11. AC87858.001		7.43		1.69	
12. 002		7.66		1.88	
13. 006		7.81		1.78	
14. AC87859.001		7.38		1.70	
15. ↓ 003		7.30		1.69	
16.					
17.					
18.					
19.					
20.					

Reagent	Lot #:		$MgCl_2$	#
				9215
Digestion Solution - pH must be > 11.5. If not, discard	V- 221215	pH 13.41	Lead Chromate (PbCr)	# 6413
Phosphate Buffer	V- 214326		Weight of PbCr (10-20mg)	.0140gm g
			PVS 100ppm Volume 0.5ml ml	10% H_2SO_4 V: 219360
			Sample chosen for PVS should be spiked at 40 mg/kg. If sample is > 40 mg/kg, use 2X	5 M HNO_3 V: 217770
			Spike Volume 1ml & Lot # V- 221216	Col Rea. V: 219876

5102701 0193

Hampton-Clarke/Veritech

OXIDATION-REDUCTION POTENTIAL & pH (SM2580B & SM4500 H+ B)

Batch #: 460 Meter #: 25641

Platinum Ag/AgCl Combination Electrode with 4 M KCl Filling Solution

Veritech Sample No.	Reading 1* mV	Temp 1 °C	Reading 2* mV	Temp 2 °C	PH 4.2 - 4.6 Units	Sample Weight	DI H_2O Vol.	Date / Time	Analyst
ZoBell's Solution (228 ± 10 mV)	221.9	22.3	222.6	22.3	LCS: 4.46 23.0			10/29/15 11:00	BM/SDL
DUP AC87848-001	198.8	23.5	197.6	23.5	DUP: 8.65	25	25		
1. 001	203.4	23.3	201.8	23.3	8.73				
2. 002	217.9	23.3	216.4	23.3	8.55				
3. 008	223.8	23.5	224.1	23.5	8.57				
4. AC87549-002	283.4	23.7	286.8	23.7	7.43				
5. AC87879-001	163.8	23.4	167.9	23.4	9.84				
6. AC87859-001	234.8	23.5	235.1	23.5	8.26				
7. 003	233.1	23.5	232.7	23.5	8.18				
8. Zobell's soln	223.1	22.3	222.8	22.3					
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									
17.									
18.									
19.									
20.									
ZoBell's Solution (228 ± 10 mV)									

BM 11/4/15

* Reading 1 and Reading 2 must agree within ± 10 mV

Solution	Manufacturer's Lot #
ZoBell's Solution	9319
4 M KCl Filling Solution	7998
LCS	V- 219954

Reviewed by: _____

Date Reviewed: _____

5102701 0194

Hampton-Clarke/Veritech

OXIDATION-REDUCTION POTENTIAL & pH (SM2580B & SM4500 H+ B)

Batch #: U59 Meter #: 1600 H

Platinum Ag/AgCl Combination Electrode with 4 M KCl Filling Solution

Veritech Sample No.	Reading 1* mV	Temp 1 °C	Reading 2* mV	Temp 2 °C	PH 4.2 - 4.6 Units	Sample Weight	DI H_2O Vol.	Date / Time	Analyst
ZoBell's Solution (228 ± 10 mV)	225.7	22.6	223.8	22.6	LCS: 4.40 21.8	25	25	10/27/15 13:45	BM/SPL
DUP AC87773-001	235.7	22.1	233.8	22.1	DUP: 7.32				
1. AC87773-001	236.4	21.7	239.1	21.7	7.32				
2. 003	237.5	21.4	238.1	21.4	7.35				
3. 005	241.4	20.6	240.6	20.6	7.27				
4. 007	243.8	21.8	244.5	21.8	7.02				
5. AC87756-001	210.4	21.8	211.2	21.8	8.03				
6. 003	-111.5	21.8	-113.4	21.5	12.81				
7. AC87757-002	205.8	21.7	207.1	21.7	8.15				
8. 004	-110.6	22.1	-118.9	22.1	12.83				
9.									
10.									
11. ZoBell's Soln	224.8	22.6	222.9	22.6					
12.									
13.									
14.									
15.									
16.									
17.									
18.									
19.									
20.									
ZoBell's Solution (228 ± 10 mV)									

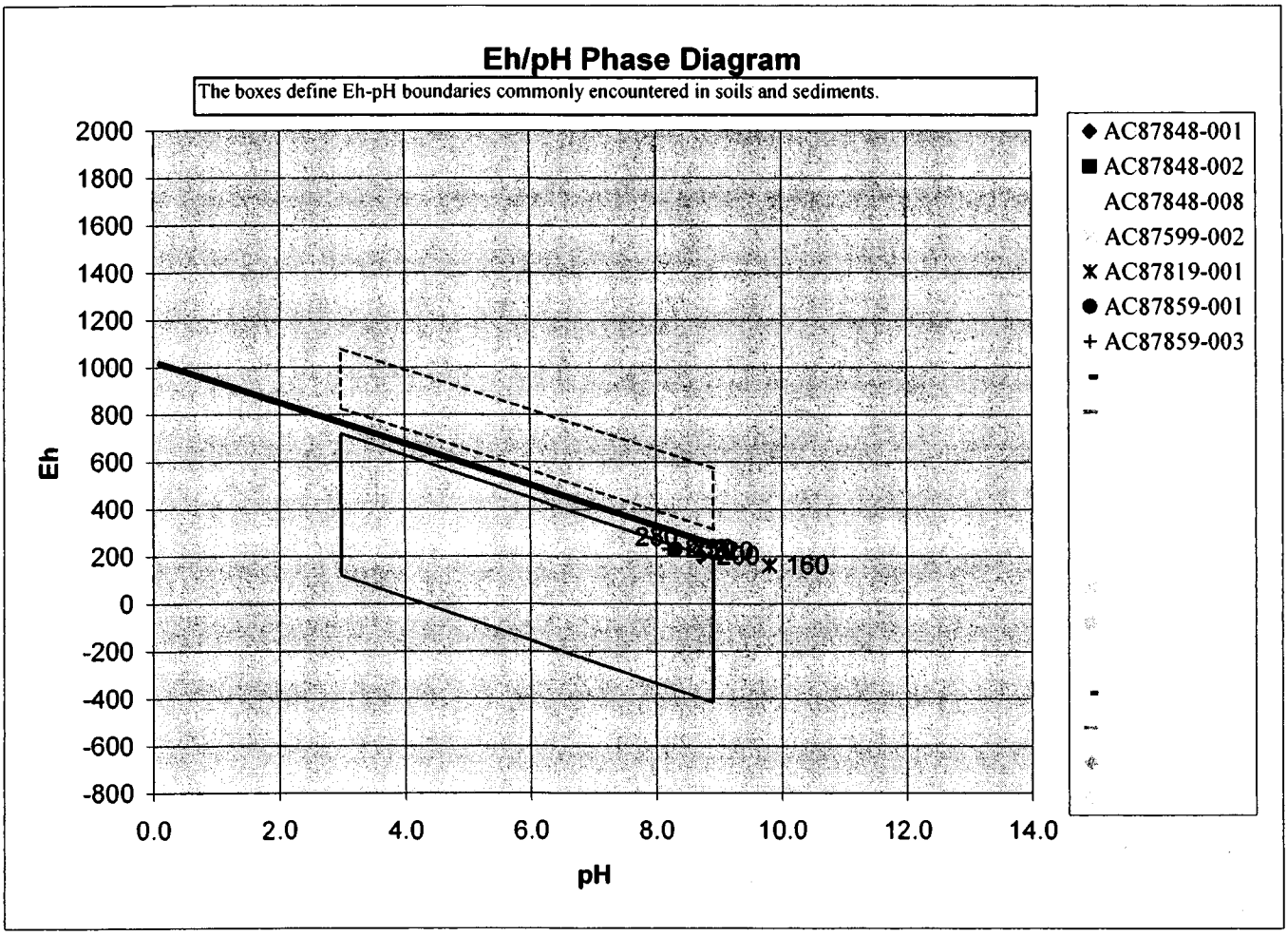
BM 11/4/15

* Reading 1 and Reading 2 must agree within ± 10 mV

Reviewed by:_____

Date Reviewed:_____

Solution	Manufacturer's Lot #
ZoBell's Solution	9319
4 M KCl Filling Solution	79978
LCS	V- 219954



Sample	Eh	pH
AC87848-001	200	8.7
AC87848-002	220	8.6
AC87848-008	220	8.6
AC87599-002	280	7.4
AC87819-001	160	9.8
AC87859-001	230	8.3
AC87859-003	230	8.2

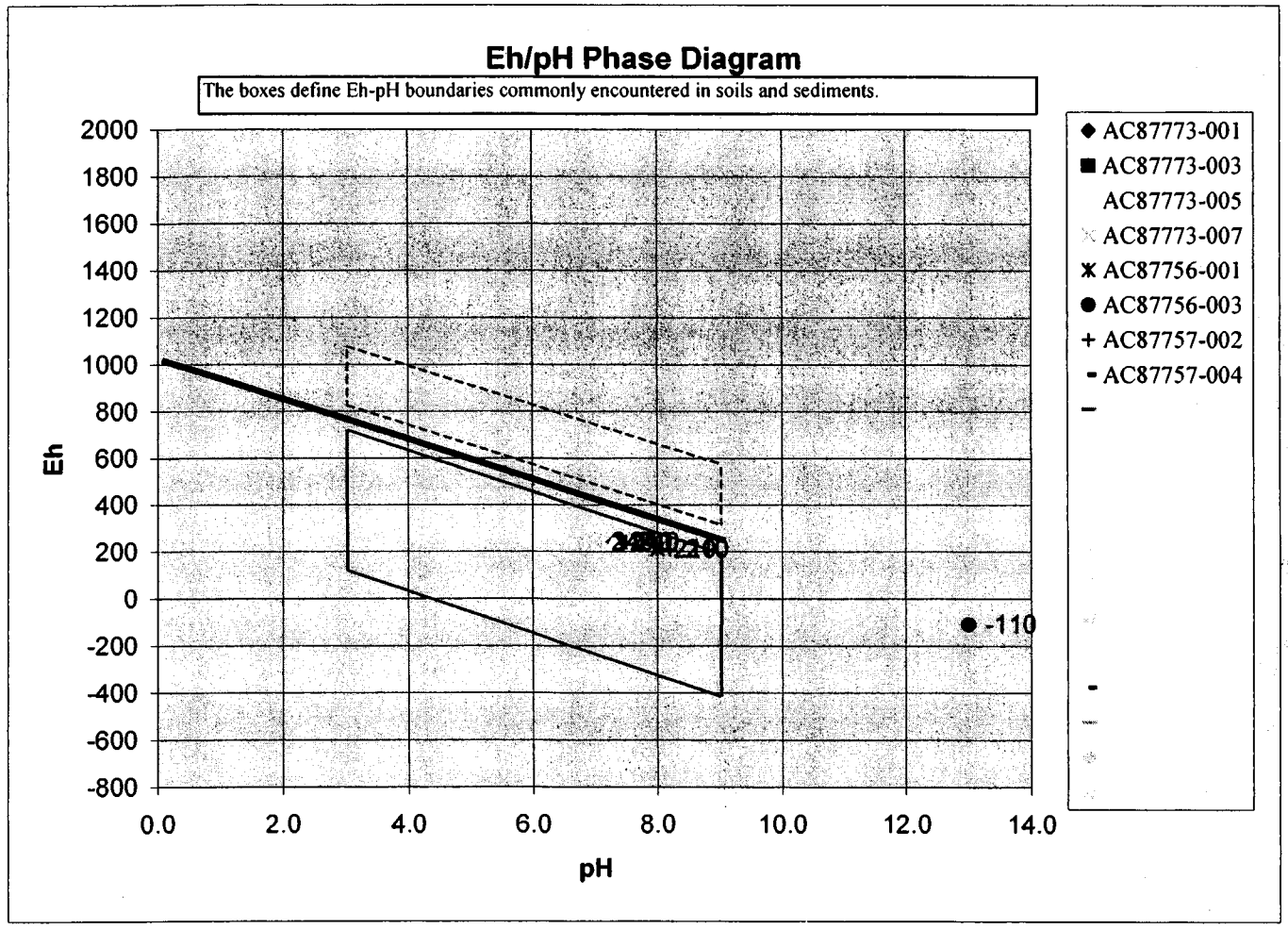
Reducing

Oxidizing

*Note the Eh values plotted on this diagram are corrected for the reference electrode voltage :199 mV units must be added for the combination platinum electrode used.

BJ 11/4/15

JW 11/4/15



Sample	Eh	pH
AC87773-001	240	7.3
AC87773-003	240	7.4
AC87773-005	240	7.3
AC87773-007	240	7.0
AC87756-001	210	8.0
AC87756-003	-110	13.0
AC87757-002	210	8.2
AC87757-004	-110	13.0

Reducing | Oxidizing

*Note the Eh values plotted on this diagram are corrected for the reference electrode voltage :199 mV units must be added for the combination platinum electrode used.

11/4/15 11/4/15

Hampton-Clarke/Veritech

pH CALIBRATION RECORD

pH Meter: Orion 3 Star

Serial # 25641

Date	Calibration				Checks				Buffer Lot #s		
	Initials / Time	Calibrate Buffer 1	Calibrate Buffer 2	Read pH 7.0 Buffer	Initials / Time	Read pH 7.0 Buffer	Initials / Time	Read pH 7.0 Buffer	pH 4.0	pH 10.0	pH 7.0
10/26/15	SNC 7:00	4.00	10.00	7.06					9055	9533	9597
10/27/15	SNC 7:10	4.00	10.00	7.06					↓	↓	↓
10/28/15	SNC 8:00	4.00	10.00	7.07					↓	↓	↓
10/29/15	SNC 7:45	4.00	10.00	7.07	SNC 10:55	7.08			↓	↓	↓
10/30/15	SNC 8:30	4.00	10.00	7.06					↓	↓	↓
11/2/15	SNC 7:00	4.00	10.00	7.07					↓	↓	↓
11/3/15	SNC 7:45	4.00	10.00	7.07					9708	↓	↓
11/4/15	SNC 7:15	4.00	10.00	7.06					↓	↓	↓

Calibrate using pH 4.0 and pH 10.0/Read and record pH 7.0 (the pH 7.0 must agree within ± 0.1 pH units)
When using the pH meter more for analysis and more than 3 hours has passed calibration, read and record pH 7.0
If pH 7.0 is off by ± 0.2 units, re-calibrate using the pH 4.0 and pH 10.0 buffers.

Hampton-Clarke/Veritech

pH CALIBRATION RECORD

pH Meter: Orion 3 Star

Serial # ~~25641~~ 16004 & 516

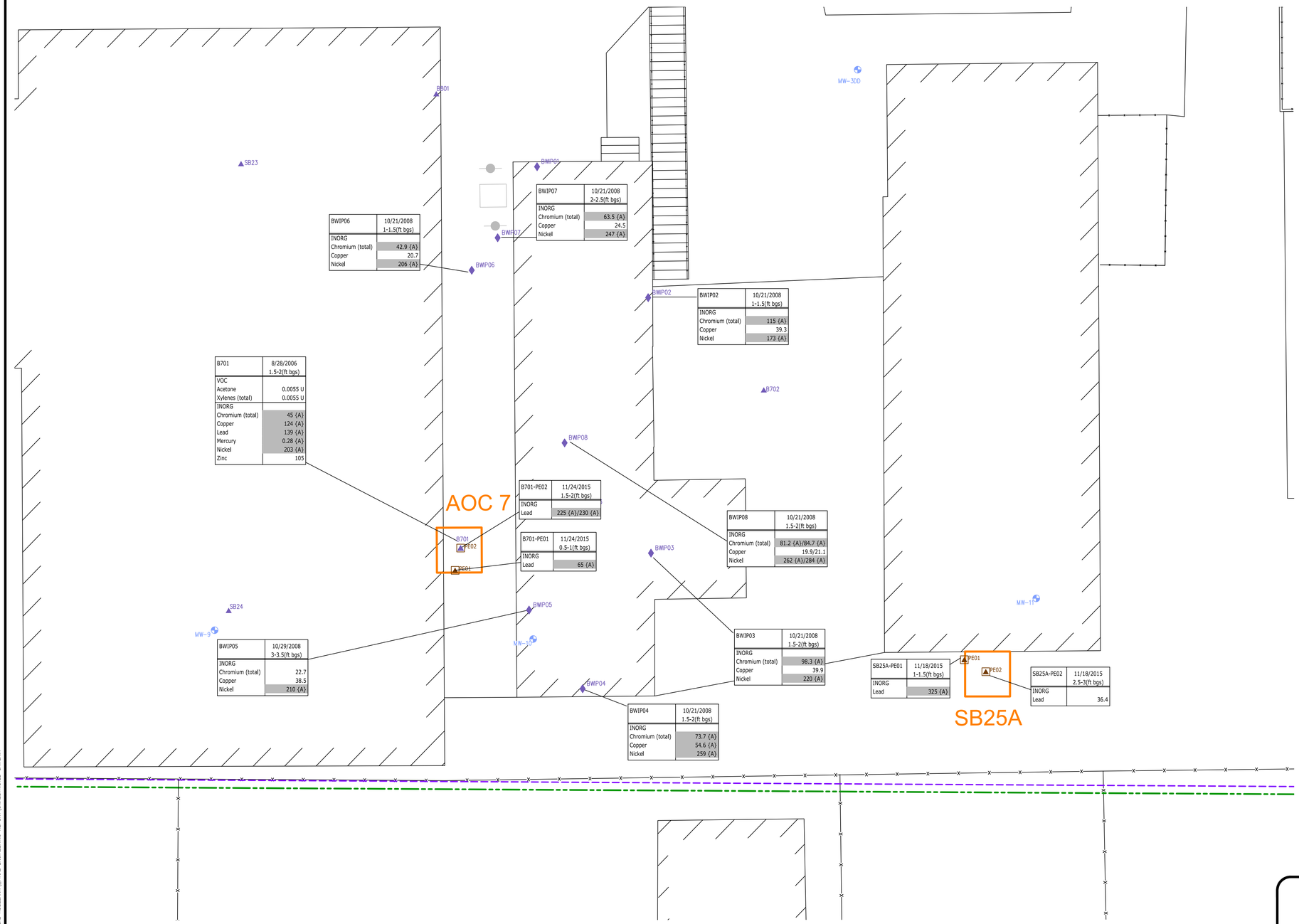
Date	Calibration				Checks				Buffer Lot #s		
	Initials / Time	Calibrate Buffer 1	Calibrate Buffer 2	Read pH 7.0 Buffer	Initials / Time	Read pH 7.0 Buffer	Initials / Time	Read pH 7.0 Buffer	pH 4.0	pH 10.0	pH 7.0
10/23/15	SDC 7:10	4.00	10.00	7.06	BG 11:15	7.06			9055	9533	9591
10/26/15	SDC 7:00	4.00	10.00	7.06	SDC 12:05	7.06			↓	↓	↓
10/27/15	SDC 7:00	4.00	10.00	7.06	BG 10/13:10	7.06			↓	↓	↓
10/28/15	SDC 8:00	4.00	10.00	7.06	7.06	SDC 15:35			↓	↓	↓
10/29/15	SDC 7:45	4.00	10.00	7.06					↓	↓	↓
10/30/15	SDC 8:30	4.00	10.00	7.06					↓	↓	↓
11/2/15	SDC 7:00	4.00	10.00	7.06	SDC 9:40	7.06			↓	↓	↓
11/3/15	SDC 7:45	4.00	10.00	7.06					9708	↓	↓
11/4/15	SDC 7:15	4.00	10.00	7.06					↓	↓	↓

Calibrate using pH 4.0 and pH 10.0/Read and record pH 7.0 (the pH 7.0 must agree within ± 0.1 pH units)
When using the pH meter more for analysis and more than 3 hours has passed calibration, read and record pH 7.0
If pH 7.0 is off by ± 0.2 units, re-calibrate using the pH 4.0 and pH 10.0 buffers.

Hampton-Clarke
Analytical & Field Services

Last Page of Report

APPENDIX O
SUMMARY OF DATA EXCEEDING TRACK 2 (UNRESTRICTED) SCOS



BWIP06	10/21/2008 1-1.5(ft bgs)
INORG	
Chromium (total)	42.9 (A)
Copper	20.7
Nickel	206 (A)

BWIP07	10/21/2008 2-2.5(ft bgs)
INORG	
Chromium (total)	63.5 (A)
Copper	24.5
Nickel	247 (A)

BWIP02	10/21/2008 1-1.5(ft bgs)
INORG	
Chromium (total)	115 (A)
Copper	39.3
Nickel	173 (A)

B701	8/28/2006 1.5-2(ft bgs)
VOC	
Acetone	0.0055 U
Xylenes (total)	0.0055 U
INORG	
Chromium (total)	45 (A)
Copper	124 (A)
Lead	139 (A)
Mercury	0.28 (A)
Nickel	203 (A)
Zinc	105

B701-PE02	11/24/2015 1.5-2(ft bgs)
INORG	
Lead	225 (A)/230 (A)

B701-PE01	11/24/2015 0.5-1(ft bgs)
INORG	
Lead	65 (A)

BWIP08	10/21/2008 1.5-2(ft bgs)
INORG	
Chromium (total)	81.2 (A)/84.7 (A)
Copper	19.9/21.1
Nickel	262 (A)/284 (A)

BWIP03	10/21/2008 1.5-2(ft bgs)
INORG	
Chromium (total)	98.3 (A)
Copper	39.9
Nickel	220 (A)

BWIP05	10/29/2008 3-3.5(ft bgs)
INORG	
Chromium (total)	22.7
Copper	38.5
Nickel	210 (A)

BWIP04	10/21/2008 1.5-2(ft bgs)
INORG	
Chromium (total)	73.7 (A)
Copper	54.6 (A)
Nickel	259 (A)

SB25A-PE01	11/18/2015 1-1.5(ft bgs)
INORG	
Lead	325 (A)

SB25A-PE02	11/18/2015 2.5-3(ft bgs)
INORG	
Lead	36.4

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FENCE
- SOIL BORING (2006)
- MONITORING WELL
- SOIL SAMPLE
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION
- EXCAVATION AREA

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U -- Not Detected.
J -- Estimated Concentration.
D -- Dilution.
F -- MS/MSD RPD exceeds control limits
* -- LCS or LCSD is outside acceptance limits.
B -- Compound found in the blank and sample.
SCO -- Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
{A} -- Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

6 0 6 12
SCALE IN FEET

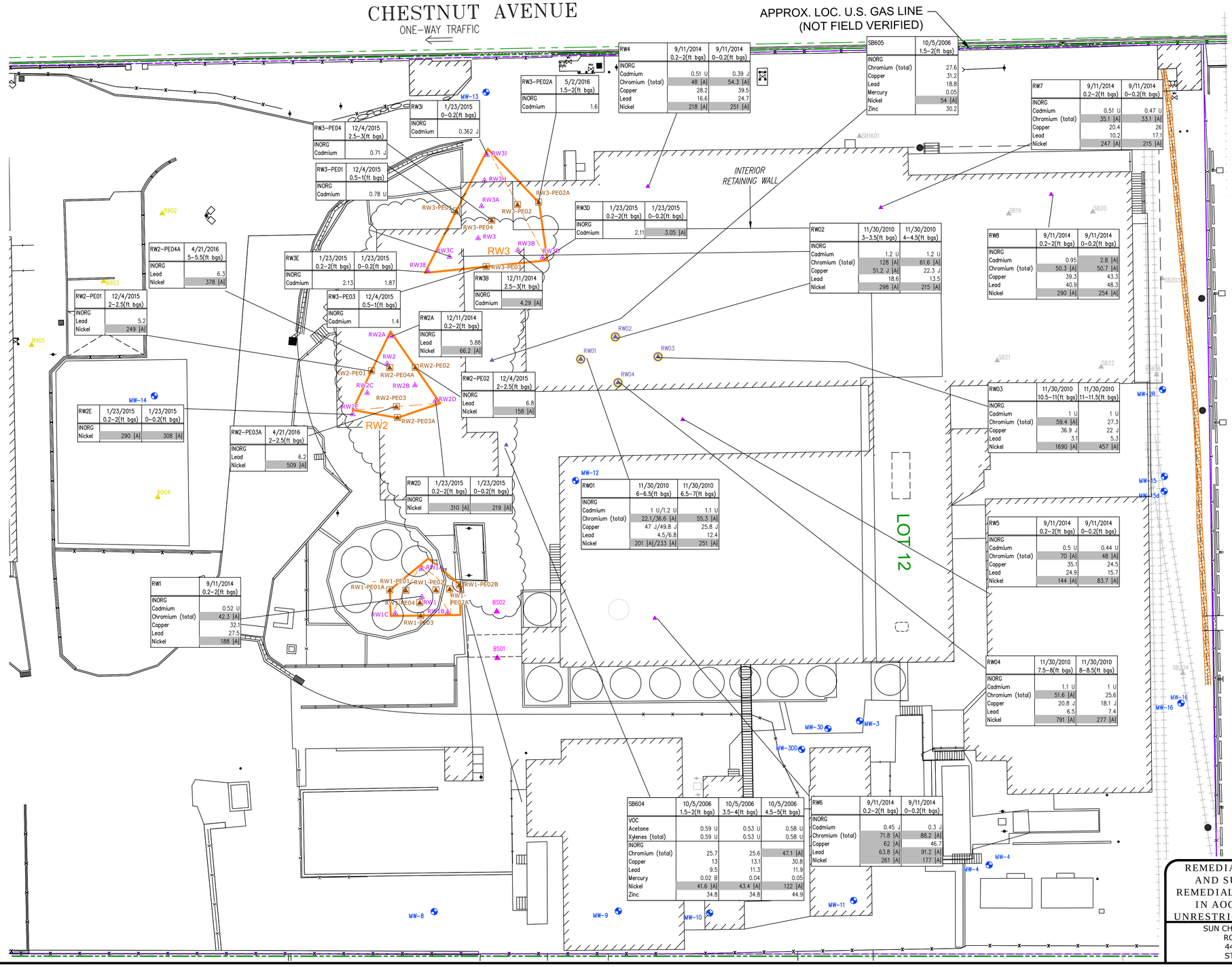
REMEDIAL ACTION DETAIL AND SAMPLE EXCEEDANCES IN AOC 7, BWIP AND SB25A UNRESTRICTED CRITERIA ONLY

RAMBOLL ENVIRON

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

PREPARED BY: JS	DATE: 01/13/2017	PLATE 1
DRAFTED BY: TSP	SCALE: AS SHOWN	
APPROVED BY: BK	PROJECT: 2116443A	

TPENNISI 1/13/17 [DATA_FE_AOC 7 & BWIP & SB25A_(UNR)_2116443]
F:\2116443_SUN CHEMICAL ROSEBANK_FINAL ENGINEERING REPORT\UNRESTRICTED CRITERIA



LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FENCE
- SOIL BORING (2006-2008)
- EXISTING MONITORING WELL TO REMAIN
- EXCAVATION AREA
- STORM WATER TRENCH DRAIN
- ADDITIONAL DELINEATION SOIL BORING (NOVEMBER-DECEMBER 2010)
- SEPTEMBER 2014 SOIL SAMPLE LOCATION
- SUPPLEMENTAL SOIL SAMPLE LOCATION
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U -- Not Detected.
J -- Estimated Concentration.
D -- Dilution.
F -- MS/MSD RPD exceeds control limits
* -- LCS or LCSD is outside acceptance limits.
B -- Compound found in the blank and sample.
SCO -- Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
(A) -- Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

20 0 20 40
SCALE IN FEET

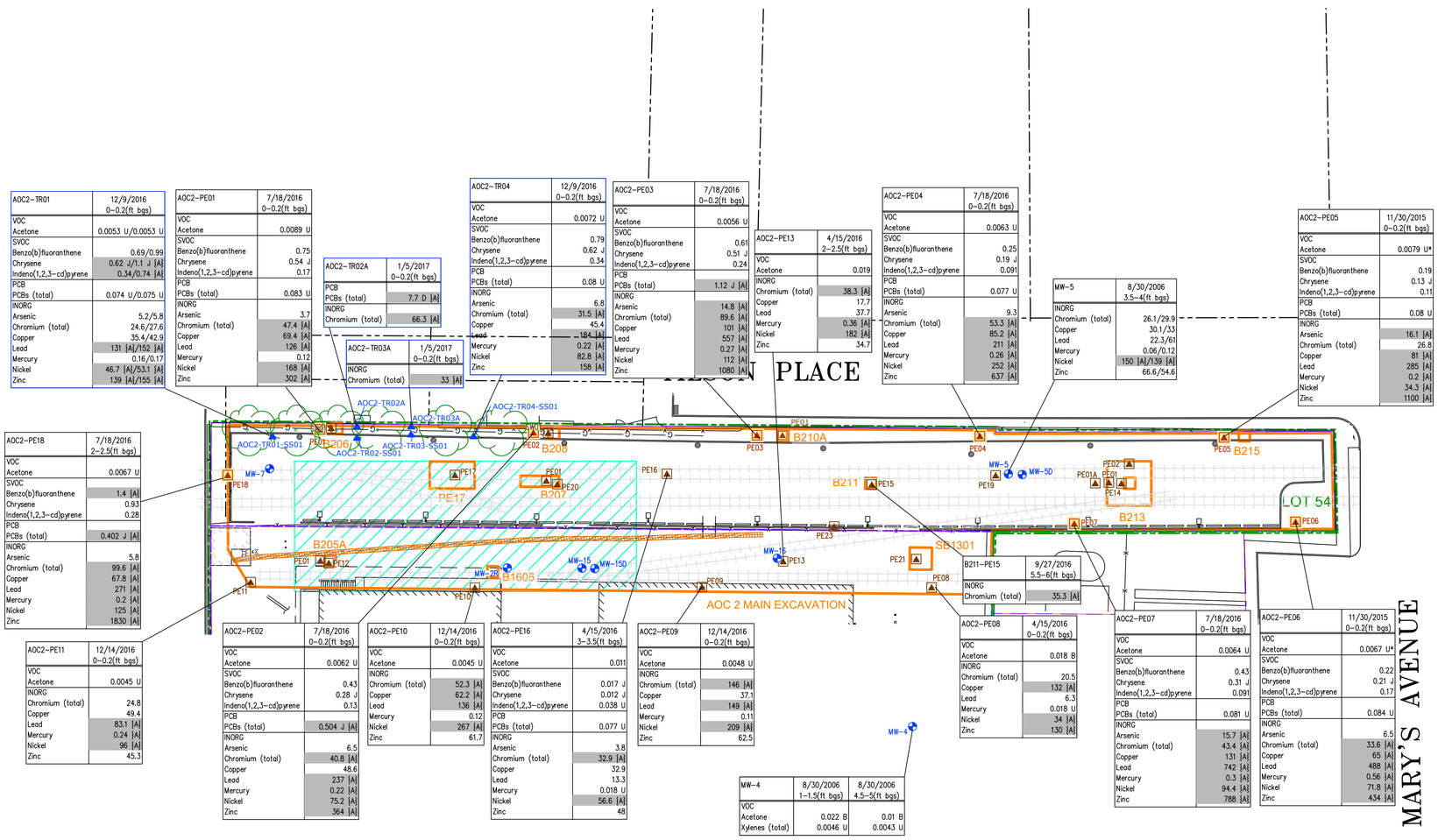
REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN AOC 6 AND REDWING UNRESTRICTED CRITERIA ONLY

SUN CHEMICAL CORPORATION-
ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

RAMBOLL ENVIRON

PREPARED BY: LD	DATE: 01/09/2017	PLATE 2
DRAFTED BY: KM/TP	SCALE: AS SHOWN	
APPROVED BY: JS	PROJECT: 2116443A	

MBLD: 1/9/17 [DATA_EXCAVATION_AOC 6 REDWING_(UNR)_2116443]
F:\2116443_SUN CHEMICAL ROSEBANK_FINAL ENGINEERING REPORT\UNRESTRICTED CRITERIA



AOC2-TR01	12/9/2016 0–0.2(ft bgs)
VOC	
Acetone	0.0053 U/0.0053 U
SVOC	
Benzo(b)fluoranthene	0.69/0.99
Chrysene	0.62 J/1.1 J [A]
Indeno(1,2,3-cd)pyrene	0.34/0.74 [A]
PCB	
PCBs (total)	0.074 U/0.075 U
INORG	
Arsenic	5.2/5.8
Chromium (total)	24.6/27.6
Copper	35.4/42.9
Lead	131 [A]/152 [A]
Mercury	0.16/0.17
Nickel	46.7 [A]/53.1 [A]
Zinc	139 [A]/155 [A]

AOC2-PE01	7/18/2016 0–0.2(ft bgs)
VOC	
Acetone	0.0089 U
SVOC	
Benzo(b)fluoranthene	0.75
Chrysene	0.54 J
Indeno(1,2,3-cd)pyrene	0.17
PCB	
PCBs (total)	0.083 U
INORG	
Arsenic	3.7
Chromium (total)	47.4 [A]
Copper	69.4 [A]
Lead	126 [A]
Mercury	0.12
Nickel	168 [A]
Zinc	302 [A]

AOC2-TR02A	1/5/2017 0–0.2(ft bgs)
PCB	
PCBs (total)	7.7 D [A]
INORG	
Chromium (total)	66.3 [A]

AOC2-TR03A	1/5/2017 0–0.2(ft bgs)
INORG	
Chromium (total)	33 [A]

AOC2-TR04	12/9/2016 0–0.2(ft bgs)
VOC	
Acetone	0.0072 U
SVOC	
Benzo(b)fluoranthene	0.79
Chrysene	0.62 J
Indeno(1,2,3-cd)pyrene	0.34
PCB	
PCBs (total)	0.08 U
INORG	
Arsenic	6.8
Chromium (total)	31.5 [A]
Copper	45.4
Lead	184 [A]
Mercury	0.22 [A]
Nickel	82.8 [A]
Zinc	158 [A]

AOC2-PE03	7/18/2016 0–0.2(ft bgs)
VOC	
Acetone	0.0056 U
SVOC	
Benzo(b)fluoranthene	0.61
Chrysene	0.51 J
Indeno(1,2,3-cd)pyrene	0.24
PCB	
PCBs (total)	1.12 J [A]
INORG	
Arsenic	14.8 [A]
Chromium (total)	89.6 [A]
Copper	101 [A]
Lead	557 [A]
Mercury	0.27 [A]
Nickel	112 [A]
Zinc	1080 [A]

AOC2-PE13	4/15/2016 2–2.5(ft bgs)
VOC	
Acetone	0.019
INORG	
Chromium (total)	38.3 [A]
Copper	17.7
Lead	37.7
Mercury	0.36 [A]
Nickel	182 [A]
Zinc	34.7

AOC2-PE04	7/18/2016 0–0.2(ft bgs)
VOC	
Acetone	0.0063 U
SVOC	
Benzo(b)fluoranthene	0.25
Chrysene	0.19 J
Indeno(1,2,3-cd)pyrene	0.091
PCB	
PCBs (total)	0.077 U
INORG	
Arsenic	9.3
Chromium (total)	53.3 [A]
Copper	85.2 [A]
Lead	211 [A]
Mercury	0.26 [A]
Nickel	252 [A]
Zinc	637 [A]

MW-5	8/30/2006 3.5–4(ft bgs)
INORG	
Chromium (total)	26.1/29.9
Copper	30.1/33
Lead	22.3/61
Mercury	0.06/0.12
Nickel	150 [A]/139 [A]
Zinc	66.6/54.6

AOC2-PE05	11/30/2015 0–0.2(ft bgs)
VOC	
Acetone	0.0079 U*
SVOC	
Benzo(b)fluoranthene	0.19
Chrysene	0.13 J
Indeno(1,2,3-cd)pyrene	0.11
PCB	
PCBs (total)	0.08 U
INORG	
Arsenic	16.1 [A]
Chromium (total)	26.8
Copper	81 [A]
Lead	285 [A]
Mercury	0.2 [A]
Nickel	34.3 [A]
Zinc	1100 [A]

AOC2-PE18	7/18/2016 2–2.5(ft bgs)
VOC	
Acetone	0.0067 U
SVOC	
Benzo(b)fluoranthene	1.4 [A]
Chrysene	0.93
Indeno(1,2,3-cd)pyrene	0.28
PCB	
PCBs (total)	0.402 J [A]
INORG	
Arsenic	5.8
Chromium (total)	99.6 [A]
Copper	67.8 [A]
Lead	271 [A]
Mercury	0.2 [A]
Nickel	125 [A]
Zinc	1830 [A]

AOC2-PE11	12/14/2016 0–0.2(ft bgs)
VOC	
Acetone	0.0045 U
INORG	
Chromium (total)	24.8
Copper	49.4
Lead	83.1 [A]
Mercury	0.24 [A]
Nickel	96 [A]
Zinc	45.3

AOC2-PE02	7/18/2016 0–0.2(ft bgs)
VOC	
Acetone	0.0062 U
SVOC	
Benzo(b)fluoranthene	0.43
Chrysene	0.28 J
Indeno(1,2,3-cd)pyrene	0.13
PCB	
PCBs (total)	0.504 J [A]
INORG	
Arsenic	6.5
Chromium (total)	40.8 [A]
Copper	48.6
Lead	237 [A]
Mercury	0.22 [A]
Nickel	75.2 [A]
Zinc	364 [A]

AOC2-PE10	12/14/2016 0–0.2(ft bgs)
VOC	
Acetone	0.0045 U
INORG	
Chromium (total)	52.3 [A]
Copper	62.2 [A]
Lead	136 [A]
Mercury	0.12
Nickel	267 [A]
Zinc	61.7

AOC2-PE16	4/15/2016 3–3.5(ft bgs)
VOC	
Acetone	0.011
SVOC	
Benzo(b)fluoranthene	0.017 J
Chrysene	0.012 J
Indeno(1,2,3-cd)pyrene	0.038 U
PCB	
PCBs (total)	0.077 U
INORG	
Arsenic	3.8
Chromium (total)	32.9 [A]
Copper	32.9
Lead	13.3
Mercury	0.018 U
Nickel	56.6 [A]
Zinc	48

AOC2-PE09	12/14/2016 0–0.2(ft bgs)
VOC	
Acetone	0.0048 U
INORG	
Chromium (total)	146 [A]
Copper	37.1
Lead	149 [A]
Mercury	0.11
Nickel	209 [A]
Zinc	62.5

MW-4	8/30/2006 1–1.5(ft bgs)	8/30/2006 4.5–5(ft bgs)
VOC		
Acetone	0.022 B	0.01 B
Xylenes (total)	0.0046 U	0.0043 U

B211–PE15	9/27/2016 5.5–6(ft bgs)
INORG	
Chromium (total)	35.3 [A]

AOC2-PE08	4/15/2016 0–0.2(ft bgs)
VOC	
Acetone	0.018 B
INORG	
Chromium (total)	20.5
Copper	132 [A]
Lead	6.3
Mercury	0.018 U
Nickel	34 [A]
Zinc	130 [A]

AOC2-PE07	7/18/2016 0–0.2(ft bgs)
VOC	
Acetone	0.0064 U
SVOC	
Benzo(b)fluoranthene	0.43
Chrysene	0.31 J
Indeno(1,2,3-cd)pyrene	0.091
PCB	
PCBs (total)	0.081 U
INORG	
Arsenic	15.7 [A]
Chromium (total)	43.4 [A]
Copper	131 [A]
Lead	742 [A]
Mercury	0.3 [A]
Nickel	94.4 [A]
Zinc	788 [A]

AOC2-PE06	11/30/2015 0–0.2(ft bgs)
VOC	
Acetone	0.0067 U*
SVOC	
Benzo(b)fluoranthene	0.22
Chrysene	0.21 J
Indeno(1,2,3-cd)pyrene	0.17
PCB	
PCBs (total)	0.084 U
INORG	
Arsenic	6.5
Chromium (total)	33.6 [A]
Copper	65 [A]
Lead	488 [A]
Mercury	0.56 [A]
Nickel	71.8 [A]
Zinc	434 [A]

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- MONITORING WELL
- INTERCEPTOR CHANNEL (INSTALLED FEBRUARY - MARCH 2011)-NOT TO BE EXCAVATED
- FORMER RAILROAD
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION
- POST-EXCAVATION DOCUMENTATION SAMPLE LOCATION
- EXCAVATION AREA
- AREA OF POTENTIAL RCRA HAZARDOUS WASTE FOR LEAD
- ROOT BALL SAMPLE LOCATION

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Xylenes (total)	0.26
SVOC	
Benzo(b)fluoranthene	1
Chrysene	1
Indeno(1,2,3-cd)pyrene	0.5
PEST	
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Zinc	109

U -- Not Detected.
J -- Estimated Concentration.
D -- Dilution.
F -- MS/MSD RPD exceeds control limits
* -- LCS or LCSD is outside acceptance limits.
B -- Compound found in the blank and sample.
SCO -- Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
{A} -- Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

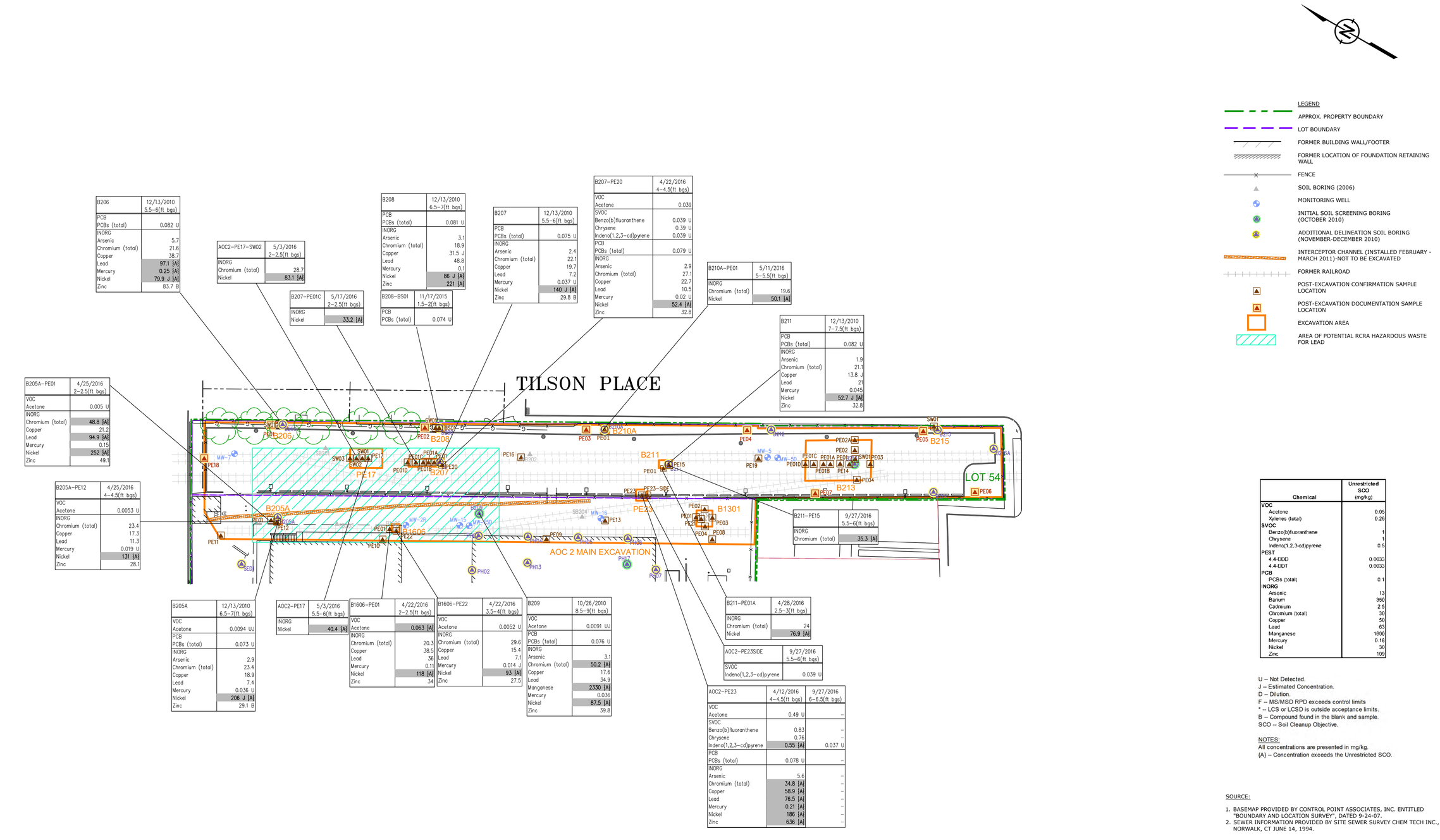
30 0 30 60 90
Scale in Feet

REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN AOC 2 UNRESTRICTED CRITERIA ONLY

RAMBOLL ENVIRON

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

PREPARED BY: JS	DATE: 01/13/2017	PLATE 3
DRAFTED BY: TSP	SCALE: AS SHOWN	
APPROVED BY: BK	PROJECT: 2116443A	



B206	12/13/2010 5.5–6(ft bgs)
PCB	
PCBs (total)	0.082 U
INORG	
Arsenic	5.7
Chromium (total)	21.6
Copper	38.7
Lead	97.1 {A}
Mercury	0.25 {A}
Nickel	79.9 J {A}
Zinc	83.7 B

AOC2–PE17–SW02	5/3/2016 2–2.5(ft bgs)
INORG	
Chromium (total)	28.7
Nickel	83.1 {A}

B207–PE01C	5/17/2016 2–2.5(ft bgs)
INORG	
Nickel	33.2 {A}

B208	12/13/2010 6.5–7(ft bgs)
PCB	
PCBs (total)	0.081 U
INORG	
Arsenic	3.1
Chromium (total)	18.9
Copper	31.5 J
Lead	48.8
Mercury	0.1
Nickel	86 J {A}
Zinc	221 {A}

B208–BS01	11/17/2015 1.5–2(ft bgs)
PCB	
PCBs (total)	0.074 U

B207	12/13/2010 5.5–6(ft bgs)
PCB	
PCBs (total)	0.075 U
INORG	
Arsenic	2.4
Chromium (total)	22.1
Copper	19.7
Lead	7.2
Mercury	0.037 U
Nickel	140 J {A}
Zinc	29.8 B

B207–PE20	4/22/2016 4–4.5(ft bgs)
VOC	
Acetone	0.039
SVOC	
Benzo(b)fluoranthene	0.039 U
Chrysene	0.39 U
Indeno(1,2,3–cd)pyrene	0.039 U
PCB	
PCBs (total)	0.079 U
INORG	
Arsenic	2.9
Chromium (total)	27.1
Copper	22.7
Lead	10.5
Mercury	0.02 U
Nickel	52.4 {A}
Zinc	32.8

B210A–PE01	5/11/2016 5–5.5(ft bgs)
INORG	
Chromium (total)	19.6
Nickel	50.1 {A}

B211	12/13/2010 7–7.5(ft bgs)
PCB	
PCBs (total)	0.082 U
INORG	
Arsenic	1.9
Chromium (total)	21.1
Copper	13.8 J
Lead	21
Mercury	0.045
Nickel	52.7 J {A}
Zinc	32.8

B205A–PE01	4/25/2016 2–2.5(ft bgs)
VOC	
Acetone	0.005 U
INORG	
Chromium (total)	48.8 {A}
Copper	21.2
Lead	94.9 {A}
Mercury	0.15
Nickel	252 {A}
Zinc	49.1

B205A–PE12	4/25/2016 4–4.5(ft bgs)
VOC	
Acetone	0.0053 U
INORG	
Chromium (total)	23.4
Copper	17.3
Lead	11.3
Mercury	0.019 U
Nickel	131 {A}
Zinc	28.1

B205A	12/13/2010 6.5–7(ft bgs)
VOC	
Acetone	0.0094 UJ
PCB	
PCBs (total)	0.073 U
INORG	
Arsenic	2.9
Chromium (total)	23.4
Copper	18.9
Lead	7.4
Mercury	0.036 U
Nickel	206 J {A}
Zinc	29.1 B

AOC2–PE17	5/3/2016 5.5–6(ft bgs)
INORG	
Nickel	40.4 {A}

B1606–PE01	4/22/2016 2–2.5(ft bgs)
VOC	
Acetone	0.063 {A}
INORG	
Chromium (total)	20.3
Copper	38.5
Lead	36
Mercury	0.11
Nickel	118 {A}
Zinc	34

B1606–PE22	4/22/2016 3.5–4(ft bgs)
VOC	
Acetone	0.0052 U
INORG	
Chromium (total)	29.6
Copper	15.4
Lead	7.1
Mercury	0.014 J
Nickel	93 {A}
Zinc	27.5

B209	10/26/2010 8.5–9(ft bgs)
VOC	
Acetone	0.0091 UJ
PCB	
PCBs (total)	0.076 U
INORG	
Arsenic	3.1
Chromium (total)	50.2 {A}
Copper	17.6
Lead	34.9
Manganese	2330 {A}
Mercury	0.036
Nickel	87.5 {A}
Zinc	39.8

B211–PE15	9/27/2016 5.5–6(ft bgs)
INORG	
Chromium (total)	35.3 {A}

B211–PE01A	4/28/2016 2.5–3(ft bgs)
INORG	
Chromium (total)	24
Nickel	76.9 {A}

AOC2–PE23SIDE	9/27/2016 5.5–6(ft bgs)
SVOC	
Indeno(1,2,3–cd)pyrene	0.039 U

AOC2–PE23	4/12/2016 4–4.5(ft bgs)	9/27/2016 6–6.5(ft bgs)
VOC		
Acetone	0.49 U	--
SVOC		
Benzo(b)fluoranthene	0.83	--
Chrysene	0.76	--
Indeno(1,2,3–cd)pyrene	0.55 {A}	0.037 U
PCB		
PCBs (total)	0.078 U	--
INORG		
Arsenic	5.6	--
Chromium (total)	34.8 {A}	--
Copper	58.9 {A}	--
Lead	76.5 {A}	--
Mercury	0.21 {A}	--
Nickel	186 {A}	--
Zinc	636 {A}	--

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- SOIL BORING (2006)
- MONITORING WELL
- INITIAL SOIL SCREENING BORING (OCTOBER 2010)
- ADDITIONAL DELINEATION SOIL BORING (NOVEMBER-DECEMBER 2010)
- INTERCEPTOR CHANNEL (INSTALLED FEBRUARY - MARCH 2011)-NOT TO BE EXCAVATED
- FORMER RAILROAD
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION
- POST-EXCAVATION DOCUMENTATION SAMPLE LOCATION
- EXCAVATION AREA
- AREA OF POTENTIAL RCRA HAZARDOUS WASTE FOR LEAD

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Xylenes (total)	0.26
SVOC	
Benzo(b)fluoranthene	1
Chrysene	1
Indeno(1,2,3-cd)pyrene	0.5
PEST	
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Zinc	109

U – Not Detected.
J – Estimated Concentration.
D – Dilution.
F – MS/MSD RPD exceeds control limits
* – LCS or LCSD is outside acceptance limits.
B – Compound found in the blank and sample.
SCO – Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
{A} – Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

30 0 30 60 90
Scale in Feet

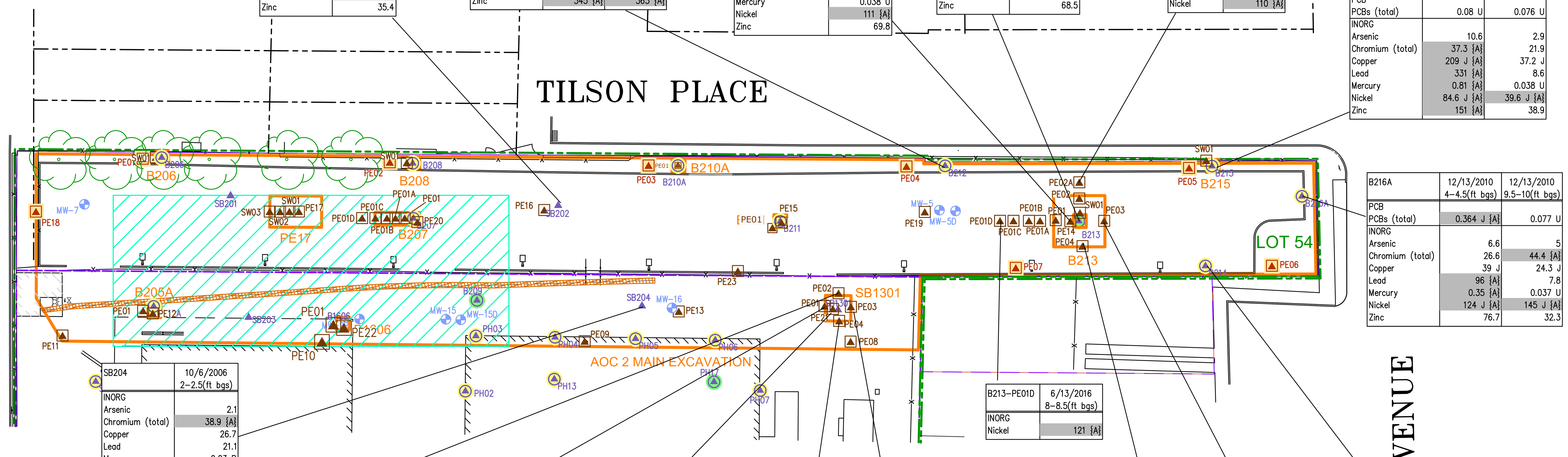
REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN AOC 2 (PE17, B1606, & B205-B211) UNRESTRICTED CRITERIA ONLY

RAMBOLL ENVIRON

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

PREPARED BY: JS	DATE: 01/11/2017
DRAFTED BY: TSP	SCALE: AS SHOWN
APPROVED BY: BK	PROJECT: 2116443A

PLATE 3A



SB202	10/4/2006 3.5–4(ft bgs)
INORG	
Arsenic	2
Chromium (total)	21.2
Copper	21.5
Lead	6.8
Mercury	0.019 U
Nickel	38.9 {A}
Zinc	35.4

B212	12/13/2010 2–2.5(ft bgs)	12/13/2010 4.5–5(ft bgs)
PCB		
PCBs (total)	0.276 J {A}	0.367 J {A}
INORG		
Arsenic	14.4 {A}	7.6
Chromium (total)	17.8	23
Copper	61.2 J {A}	53.9 J {A}
Lead	208 {A}	142 {A}
Mercury	0.28 {A}	0.24 {A}
Nickel	53.3 J {A}	64 J {A}
Zinc	345 {A}	363 {A}

B213–PE14	4/26/2016 10–10.5(ft bgs)
VOC	
Acetone	0.13 {A}
SVOC	
Benzo(b)fluoranthene	0.76
Chrysene	0.59 J
Indeno(1,2,3–cd)pyrene	0.36
PCB	
PCBs (total)	0.15 U
INORG	
Arsenic	2.8 J
Chromium (total)	31 {A}
Copper	36.3
Lead	11.7
Mercury	0.038 U
Nickel	111 {A}
Zinc	69.8

B213	10/26/2010 12.7–13.2(ft bgs)
VOC	
Acetone	0.13 J {A}
PCB	
PCBs (total)	0.228 J {A}
INORG	
Arsenic	5.4
Chromium (total)	23.4
Copper	30.3
Lead	46.2
Manganese	310
Mercury	0.056
Nickel	131 {A}
Zinc	68.5

B213–PE02A	5/11/2016 8–8.5(ft bgs)
INORG	
Nickel	110 {A}

B215	12/13/2010 2.5–3(ft bgs)	12/13/2010 7–7.5(ft bgs)
PCB		
PCBs (total)	0.08 U	0.076 U
INORG		
Arsenic	10.6	2.9
Chromium (total)	37.3 {A}	21.9
Copper	209 J {A}	37.2 J
Lead	331 {A}	8.6
Mercury	0.81 {A}	0.038 U
Nickel	84.6 J {A}	39.6 J {A}
Zinc	151 {A}	38.9

B216A	12/13/2010 4–4.5(ft bgs)	12/13/2010 9.5–10(ft bgs)
PCB		
PCBs (total)	0.364 J {A}	0.077 U
INORG		
Arsenic	6.6	5
Chromium (total)	26.6	44.4 {A}
Copper	39 J	24.3 J
Lead	96 {A}	7.8
Mercury	0.35 {A}	0.037 U
Nickel	124 J {A}	145 J {A}
Zinc	76.7	32.3

SB204	10/6/2006 2–2.5(ft bgs)
INORG	
Arsenic	2.1
Chromium (total)	38.9 {A}
Copper	26.7
Lead	21.1
Mercury	0.03 B
Nickel	341 {A}
Zinc	88.9

B213–PE01D	6/13/2016 8–8.5(ft bgs)
INORG	
Nickel	121 {A}

B1301–PE02	4/22/2016 3.5–4(ft bgs)
VOC	
Acetone	0.016
INORG	
Chromium (total)	42.2 {A}
Copper	20.1
Lead	10.9
Mercury	0.016 J
Nickel	213 {A}
Zinc	51.7

B1301–PE01	4/22/2016 3.5–4(ft bgs)
VOC	
Acetone	0.011
INORG	
Chromium (total)	48.5 {A}
Copper	19
Lead	10.4
Mercury	0.018 U
Nickel	247 {A}
Zinc	31.9

B1301–PE21	4/22/2016 5.5–6(ft bgs)
VOC	
Acetone	0.026/0.031
INORG	
Chromium (total)	35.7 {A}/39.5 {A}
Copper	19/28.9
Lead	17.3/21.1
Mercury	0.06/0.075
Nickel	265 {A}/341 {A}
Zinc	41/59.7

B1301–PE04	4/22/2016 3.5–4(ft bgs)
VOC	
Acetone	0.0051 U
INORG	
Chromium (total)	51.8 {A}
Copper	28.8
Lead	11.4
Mercury	0.017 U
Nickel	258 {A}
Zinc	46.6

B1301–PE03	4/22/2016 3.5–4(ft bgs)
VOC	
Acetone	0.015
INORG	
Chromium (total)	29.4
Copper	16.7
Lead	30.1
Mercury	0.069
Nickel	209 {A}
Zinc	94.3

B213–PE04	4/26/2016 8–8.5(ft bgs)
VOC	
Acetone	0.016
SVOC	
Benzo(b)fluoranthene	0.037 U
Chrysene	0.37 U
Indeno(1,2,3–cd)pyrene	0.037 U
PCB	
PCBs (total)	0.076 U
INORG	
Arsenic	1.9 J
Chromium (total)	23.2
Copper	16.2
Lead	12.4
Mercury	0.018 J
Nickel	118 {A}
Zinc	32.2

B213–PE03	4/26/2016 8–8.5(ft bgs)
VOC	
Acetone	0.022
SVOC	
Benzo(b)fluoranthene	0.037 U
Chrysene	0.37 U
Indeno(1,2,3–cd)pyrene	0.037 U
PCB	
PCBs (total)	0.075 U
INORG	
Arsenic	3.2 U
Chromium (total)	18
Copper	14.9
Lead	11
Mercury	0.013 J
Nickel	20.3
Zinc	28.7

B214	12/13/2010 2.5–3(ft bgs)	12/13/2010 7–7.5(ft bgs)
PCB		
PCBs (total)	0.078 U	0.077 U
INORG		
Arsenic	4.1	2.6
Chromium (total)	23.2	22.5
Copper	33.7 J	26.7 J
Lead	140 {A}	7.3
Mercury	0.11	0.034 J
Nickel	84.6 J {A}	93.8 J {A}
Zinc	330 {A}	37.6

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- SOIL BORING (2006)
- MONITORING WELL
- INITIAL SOIL SCREENING BORING (OCTOBER 2010)
- ADDITIONAL DELINEATION SOIL BORING (NOVEMBER-DECEMBER 2010)
- STORM WATER TRENCH DRAIN
- INTERCEPTOR CHANNEL (INSTALLED FEBRUARY - MARCH 2011)-NOT TO BE EXCAVATED
- FORMER RAILROAD
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION
- POST-EXCAVATION DOCUMENTATION SAMPLE LOCATION
- EXCAVATION AREA
- AREA OF POTENTIAL RCRA HAZARDOUS WASTE FOR LEAD

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Xylenes (total)	0.26
SVOC	
Benzo(b)fluoranthene	1
Chrysene	1
Indeno(1,2,3-cd)pyrene	0.5
PEST	
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Zinc	109

U -- Not Detected.
J -- Estimated Concentration.
D -- Dilution.
F -- MS/MSD RPD exceeds control limits
* -- LCS or LCSD is outside acceptance limits.
B -- Compound found in the blank and sample.
SCO -- Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
{A} -- Concentration exceeds the Unrestricted SCO.

30 0 30 60 90
Scale in Feet

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS (B1301, B202, B204 & B212-B216) UNRESTRICTED CRITERIA ONLY

RAMBOLL ENVIRON

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

PREPARED BY: JS	DATE: 01/11/2017	PLATE
DRAFTED BY: TSP	SCALE: AS SHOWN	3B
APPROVED BY: BK	PROJECT: 2116443A	

AOC15A–PE52	9/22/2016 5.5–6(ft bgs)
INORG	
Chromium (total)	59.5 [A]
Copper	20.8
Lead	10.1
Nickel	272 [A]
Zinc	49.5

AOC15A–PE53	9/22/2016 2.5–3(ft bgs)
INORG	
Chromium (total)	134 [A]
Copper	51.5 [A]
Lead	60.4
Nickel	173 [A]
Zinc	45.2

10" DIAMETER CLAY WASTEWATER PIPING

6" DIAMETER CLAY WASTEWATER PIPING

AOC15A–PE48	9/21/2016 4.5–5(ft bgs)
PCB	
PCBs (total)	0.074 U
INORG	
Chromium (total)	51.9 [A]
Copper	62.5 [A]
Lead	16
Nickel	383 [A]
Zinc	48.3

AOC15A–PE50	9/22/2016 3.5–4(ft bgs)
INORG	
Chromium (total)	76 [A]/76.3 [A]
Copper	23.8/25.1
Lead	9.9/10.8
Nickel	232 [A]/239 [A]
Zinc	52.3/52.8

AOC15A–PE10	12/3/2015 1.5–2(ft bgs)
INORG	
Chromium (total)	63.1 [A]
Lead	38.7

AOC15A–PE54	9/22/2016 2.5–3(ft bgs)
INORG	
Chromium (total)	73.5 [A]
Copper	28.9
Lead	7.7
Nickel	167 [A]
Zinc	34.9

AOC15A–PE32	7/13/2016 8.5–9(ft bgs)	7/21/2016 12.5–13(ft bgs)
PCB		
PCBs (total)	0.077 U	0.076 U
INORG		
Chromium (total)	429 [A]	–
Copper	60.1 [A]	–
Lead	6.5	–
Nickel	351 [A]	–
Zinc	29.7	–

AOC15A–PE29	6/14/2016 1–1.5(ft bgs)
INORG	
Chromium (total)	47.7 [A]
Copper	45.6
Lead	94.5 [A]
Nickel	84 [A]
Zinc	23.6

AOC15A–PE09	6/14/2016 4–4.5(ft bgs)
INORG	
Chromium (total)	39 F1 [A]
Copper	33.4
Lead	28.9
Nickel	36.2 [A]
Zinc	16.5

AOC15A–PE35	7/21/2016 10.5–11(ft bgs)	7/21/2016 12.5–13(ft bgs)
PCB		
PCBs (total)	0.36 J [A]	0.075 U

AOC15A–PE30	7/1/2016 4–4.5(ft bgs)	7/1/2016 7–7.5(ft bgs)
PCB		
PCBs (total)	0.079 U	0.074 U

AOC15A–PE22	7/21/2016 13–13.5(ft bgs)
PCB	
PCBs (total)	0.076 U

AOC15A–PE39	7/21/2016 10.5–11(ft bgs)
PCB	
PCBs (total)	0.075 U

AOC15A–PE51	9/22/2016 6–6.5(ft bgs)
INORG	
Chromium (total)	54.8 [A]
Copper	24.6
Lead	6.9
Nickel	402 [A]
Zinc	36.4

AOC15A–PE10A	6/20/2016 5.5–6(ft bgs)
INORG	
Chromium (total)	45.8 [A]

AOC15A–PE31	7/7/2016 6–6.5(ft bgs)
INORG	
Chromium (total)	74.5 [A]
Copper	23.1
Lead	6.8
Nickel	589 [A]
Zinc	48.1

AOC15–BS02	12/8/2016 0–0.5(ft bgs)
INORG	
Chromium (total)	47.3 [A]/45.2 [A]
Copper	35.5/35.4
Lead	53.9/50.8
Nickel	103 [A]/106 [A]
Zinc	133 [A]/136 [A]

AOC15A–PE43	9/8/2016 12.5–13(ft bgs)	9/16/2016 13.5–14(ft bgs)
INORG		
Chromium (total)	434 [A]	69.3 [A]

AOC15A–PE40	8/31/2016 11.5–12(ft bgs)
INORG	
Chromium (total)	38 [A]

AOC15A–PE36	7/21/2016 10.5–11(ft bgs)	7/21/2016 12.5–13(ft bgs)
PCB		
PCBs (total)	0.073 U/0.073 U	0.075 U

B1504	11/30/2010 1–1.5(ft bgs)	11/30/2010 2–2.5(ft bgs)	11/30/2010 3–3.5(ft bgs)
INORG			
Lead	197 [A]	15	12.5
Nickel	73 [A]	63.2 [A]	50.8 [A]

AOC15A–PE34	7/21/2016 12.5–13(ft bgs)
PCB	
PCBs (total)	0.074 U

AOC15A–PE08	11/20/2015 4–4.5(ft bgs)
INORG	
Chromium (total)	75.1 [A]
Copper	35.4
Lead	23.1
Nickel	170 [A]
Zinc	46.3

AOC15A–PE01	12/3/2015 5.5–6(ft bgs)
INORG	
Chromium (total)	43 F1 [A]
Copper	16.2
Lead	6.7
Nickel	400 [A]
Zinc	32.1

AOC15A–PE41A	9/8/2016 11.5–12(ft bgs)
INORG	
Chromium (total)	78.2 [A]

AOC15B–PE02	12/3/2015 3–3.5(ft bgs)
INORG	
Nickel	304 [A]

AOC15A–PE21	11/20/2015 4–4.5(ft bgs)
INORG	
Chromium (total)	33.6 [A]
Copper	109 [A]
Lead	137 [A]
Nickel	132 [A]
Zinc	87.8

AOC15B–PE01	12/3/2015 1.5–2(ft bgs)
INORG	
Nickel	185 [A]

AOC15A–PE11	12/3/2015 6–6.5(ft bgs)
INORG	
Chromium (total)	37 [A]
Copper	24.2
Lead	5.9
Nickel	236 [A]
Zinc	41.5

AOC15A–PE47	9/9/2016 13–13.5(ft bgs)
INORG	
Chromium (total)	25.9

AOC15A–PE45	8/31/2016 11.5–12(ft bgs)
INORG	
Chromium (total)	55.5 [A]

AOC15A–PE42	8/31/2016 11.5–12(ft bgs)
INORG	
Chromium (total)	103 [A]

AOC15A–PE16	11/20/2015 2–2.5(ft bgs)
INORG	
Chromium (total)	104 [A]
Lead	66 [A]

AOC15A–PE20	11/20/2015 6–6.5(ft bgs)
INORG	
Chromium (total)	40.6 [A]
Copper	12.3
Lead	16.8
Nickel	165 [A]
Zinc	32.8

AOC15–BS01	12/8/2016 0–0.5(ft bgs)
INORG	
Chromium (total)	32.4 [A]
Copper	60.5 F1 [A]
Lead	6.6
Nickel	180 [A]
Zinc	39.9

AOC15A–PE02	12/3/2015 1–1.5(ft bgs)	12/3/2015 5.5–6(ft bgs)
INORG		
Chromium (total)	66.6 [A]	71.3 [A]
Copper	–	44.5
Lead	281 [A]	9
Nickel	–	317 [A]
Zinc	–	50

AOC15C–PE01	9/19/2016 1–1.5(ft bgs)
INORG	
Lead	76.2 [A]

AOC15A–PE17	6/21/2016 5.5–6(ft bgs)	7/1/2016 8–8.5(ft bgs)	7/1/2016 10.5–11(ft bgs)
PCB			
PCBs (total)	–	0.076 U	0.268 J [A]
INORG			
Chromium (total)	89 [A]	–	–

B1501	10/5/2006 1–1.5(ft bgs)	10/5/2006 3–3.5(ft bgs)
INORG		
Chromium (total)	97.5 [A]	56.4 [A]
Copper	67.3 [A]	31.2
Lead	1430 [A]	11
Mercury	0.23 [A]	0.019 U
Nickel	79.4 [A]	175 [A]
Zinc	94.4	61.2

AOC15C–PE02	9/19/2016 3–3.5(ft bgs)
INORG	
Lead	95.5 [A]

AOC15A–PE46	9/8/2016 13–13.5(ft bgs)
INORG	
Chromium (total)	21.4

AOC15A–PE44	8/31/2016 9.5–10(ft bgs)
INORG	
Chromium (total)	95.9 [A]

AOC15A–PE07	11/18/2015 0.5–1(ft bgs)
INORG	
Chromium (total)	48.3 F1 [A]
Lead	40.6

AOC15A–PE06	11/20/2015 1.5–2(ft bgs)
INORG	
Chromium (total)	175 [A]
Lead	10.6

AOC15A–PE33	7/21/2016 13–13.5(ft bgs)
PCB	
PCBs (total)	0.075 U

AOC15A–PE12	12/3/2015 6–6.5(ft bgs)
INORG	
Chromium (total)	39.6 [A]
Copper	93 [A]
Lead	8.5
Nickel	194 [A]
Zinc	53.5

AOC15A–PE37	7/21/2016 10.5–11(ft bgs)	7/21/2016 12.5–13(ft bgs)
PCB		
PCBs (total)	0.075 U	0.078 U

AOC15A–PE38	7/21/2016 10.5–11(ft bgs)	7/21/2016 12.5–13(ft bgs)
PCB		
PCBs (total)	0.076 U	0.075 U

AOC15A–PE13	6/20/2016 8–8.5(ft bgs)	6/20/2016 11.5–12(ft bgs)
PCB		
PCBs (total)	0.076 U	0.075 U
INORG		
Chromium (total)	49.7 [A]	–

AOC15A–PE18	4/14/2016 5.5–6(ft bgs)
INORG	
Chromium (total)	45.4 [A]
Copper	32.8
Lead	6.7
Nickel	269 [A]
Zinc	46.5

AOC15A–PE26	5/11/2016 4–4.5(ft bgs)
INORG	
Lead	6

AOC15A–PE28	4/29/2016 1.5–2(ft bgs)
INORG	
Chromium (total)	30.3 [A]
Copper	21.1
Lead	24.4
Nickel	128 [A]
Zinc	45.9

AOC15A–PE03	4/14/2016 5.5–6(ft bgs)
INORG	
Chromium (total)	67.7 [A]
Copper	38.7
Lead	13.7
Nickel	163 [A]
Zinc	55.2

AOC15A–PE25	4/14/2016 1.5–2(ft bgs)
INORG	
Chromium (total)	34 [A]
Copper	25.9
Lead	7.9
Nickel	168 [A]
Zinc	65.8

AOC15A–PE04	4/14/2016 7–7.5(ft bgs)
INORG	
Chromium (total)	36.6 [A]
Copper	24.6
Lead	28.9
Nickel	258 [A]
Zinc	67.4

AOC15A–PE24	4/14/2016 1.5–2(ft bgs)
INORG	
Chromium (total)	68.8 [A]
Copper	48.8
Lead	122 [A]
Nickel	291 [A]
Zinc	93.5

AOC15A–PE19	4/14/2016 7.5–8(ft bgs)	6/20/2016 8.5–9(ft bgs)	6/20/2016 12–12.5(ft bgs)
PCB			
PCBs (total)	–	0.073 U	0.079 U
INORG			
Chromium (total)	46.9 [A]	–	–
Copper	59.9 [A]	–	–
Lead	5.6	–	–
Nickel	252 [A]	–	–
Zinc	32.2	–	–

AOC15A–PE27	4/29/2016 1.5–2(ft bgs)
INORG	
Chromium (total)	69.6 [A]
Copper	45.9
Lead	196 [A]
Nickel	227 [A]
Zinc	110 [A]

AOC15A–PE23	4/29/2016 3–3.5(ft bgs)
INORG	
Chromium (total)	89.1 [A]
Copper	21.5
Lead	9.3
Nickel	379 [A]
Zinc	57.5

AOC15A–PE05	4/14/2016 7–7.5(ft bgs)
INORG	
Chromium (total)	45.8 F1 [A]
Copper	31 F1
Lead	16.6
Nickel	228 [A]
Zinc	71.8 F1

AOC 15B

AOC 15C

AOC 15A

LOCATION OF REACTOR VAULT FOUND IN SUBSURFACE, NOVEMBER 2015

TRASH PIT EXCAVATION AREA

SB25B STORAGE EXCAVATION AREA

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- SOIL BORING (2006)
- MONITORING WELL
- ADDITIONAL DELINEATION SOIL BORING (NOVEMBER-DECEMBER 2010)
- STORM WATER TRENCH DRAIN
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION
- EXCAVATION AREA
- SAMPLE LOCATION NO LONGER IN PLACE; REGRADED DURING IRM ACTIVITIES

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U – Not Detected.
J – Estimated Concentration.
D – Dilution.
F – MS/MSD RPD exceeds control limits
* – LCS or LCSD is outside acceptance limits.
B – Compound found in the blank and sample.
SCO – Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
{A} – Concentration exceeds the Unrestricted SCO.

10 0 10 20
SCALE IN FEET

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

REMEDIAL ACTION DETAILS AND SUMMARIZED POST-REMEDIAL SAMPLING RESULTS IN AOC 15 UNRESTRICTED CRITERIA ONLY

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

RAMBOLL ENVIRON

PREPARED BY: JS	DATE: 01/09/2017	PLATE 4
DRAFTED BY: TSP	SCALE: AS SHOWN	
APPROVED BY: BK	PROJECT: 2116443A	

TPENNISI 1/13/17
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LOCATION OF REACTOR VAULT FOUND IN SUBSURFACE, NOVEMBER 2015

STORAGE EXCAVATION AREA

TRASH PIT EXCAVATION AREA

SB25B

SB25B–PE08	11/18/2015 1.5–2(ft bgs)
INORG	
Chromium (total)	143 [A]
Lead	8.6

SB25B–PE01E	7/1/2016 0.5–1(ft bgs)	7/1/2016 6–6.5(ft bgs)
INORG		
Chromium (total)	–	52.3 [A]
Lead	45	5.8

SB25B–PE09	6/21/2016 6–6.5(ft bgs)
INORG	
Chromium (total)	89.4 [A]
Copper	61 [A]
Lead	7.9
Nickel	624 [A]

SB25–PE05	10/22/2008 4–4.5(ft bgs)
INORG	
Arsenic	3
Chromium (total)	56 [A]
Copper	38.3
Lead	57.9
Mercury	0.019 U
Nickel	149 [A]
Zinc	37.6

SB25–PE04	10/22/2008 4–4.5(ft bgs)
INORG	
Arsenic	3.2
Chromium (total)	43 [A]
Copper	46.8
Lead	7.7
Mercury	0.019 U
Nickel	235 [A]
Zinc	30.7

SB25–PE01	10/22/2008 5–5.5(ft bgs)
INORG	
Arsenic	3.1/3
Chromium (total)	62.1 [A]/50.9 [A]
Copper	36.2/27.3
Lead	17.2/18.1
Mercury	0.019 U/0.019 U
Nickel	183 [A]/150 [A]
Zinc	45/37.1

SB25–PE14	10/29/2008 1.5–2(ft bgs)
INORG	
Arsenic	14.9 [A]
Chromium (total)	72.5 [A]
Copper	34.9
Lead	327 [A]
Mercury	0.08
Nickel	183 [A]
Zinc	445 [A]

SB25–PE08	10/29/2008 1–1.5(ft bgs)
INORG	
Arsenic	3.9
Chromium (total)	60 [A]
Copper	46.6
Lead	280 [A]
Mercury	0.5 [A]
Nickel	71.8 [A]
Zinc	181 [A]

SB25–PE02	10/29/2008 5–5.5(ft bgs)
INORG	
Arsenic	3
Chromium (total)	26.8
Copper	24
Lead	49.5
Mercury	0.06
Nickel	89.2 [A]
Zinc	37.8

SB25–PE07	10/31/2008 2.5–3(ft bgs)
INORG	
Arsenic	6.5
Chromium (total)	71.4 [A]
Copper	34.4
Lead	314 [A]
Mercury	0.04
Nickel	163 [A]
Zinc	157 [A]

SB25–PE03	10/22/2008 4–4.5(ft bgs)
INORG	
Arsenic	3.8
Chromium (total)	58 [A]
Copper	24
Lead	30.8
Mercury	0.02 U
Nickel	137 [A]
Zinc	66.6

SB25–PE06A	10/31/2008 1–1.5(ft bgs)
INORG	
Arsenic	3.4
Chromium (total)	32.5 [A]
Copper	21.5
Lead	58.2
Mercury	0.11
Nickel	102 [A]
Zinc	42.2

SB25B–PE06	11/18/2015 1.5–2(ft bgs)
INORG	
Chromium (total)	51.3 [A]
Lead	30

SB25–PE10	10/23/2008 0.5–1(ft bgs)
INORG	
Arsenic	11.6
Chromium (total)	263 [A]
Copper	141 [A]
Lead	654 [A]
Mercury	0.38 [A]
Nickel	126 [A]
Zinc	513 [A]

SB25B–PE04A	11/23/2015 0.5–1(ft bgs)
INORG	
Chromium (total)	53.7 [A]
Lead	47

SB25–PE11	10/23/2008 1–1.5(ft bgs)
INORG	
Arsenic	3
Chromium (total)	202 [A]
Copper	71 [A]
Lead	420 [A]
Mercury	0.03 B
Nickel	102 [A]
Zinc	124 [A]

SB25B–PE07	11/18/2015 1.5–2(ft bgs)
INORG	
Chromium (total)	34.8 [A]
Lead	86 [A]

SB25B–PE05A	11/23/2015 0.5–1(ft bgs)
INORG	
Lead	181 [A]

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- SOIL BORING (2006)
- MONITORING WELL
- SOIL SAMPLE
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION
- EXCAVATION AREA
- NOTE: THE NORTHERN PORTION OF AOC SB25B WAS EXTENDED INTO THE AOC15A EXCAVATION TO A TOTAL DEPTH OF 5.5 FT BGS.

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U – Not Detected.
J – Estimated Concentration.
D – Dilution.
F – MS/MSD RPD exceeds control limits
* – LCS or LCSD is outside acceptance limits.
B – Compound found in the blank and sample.
SCO – Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
(A) – Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

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SCALE IN FEET

REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN SB25B AND STORAGE BUILDING UNRESTRICTED CRITERIA ONLY

RAMBOLL ENVIRON

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

PREPARED BY: JS	DATE: 01/13/2017
DRAFTED BY: TSP	SCALE: AS SHOWN
APPROVED BY: BK	PROJECT: 2116443A

PLATE 4A

MBLEI 1/16/17 [DATA_PE SB25B AND STORAGE_(UNR)_2116443]
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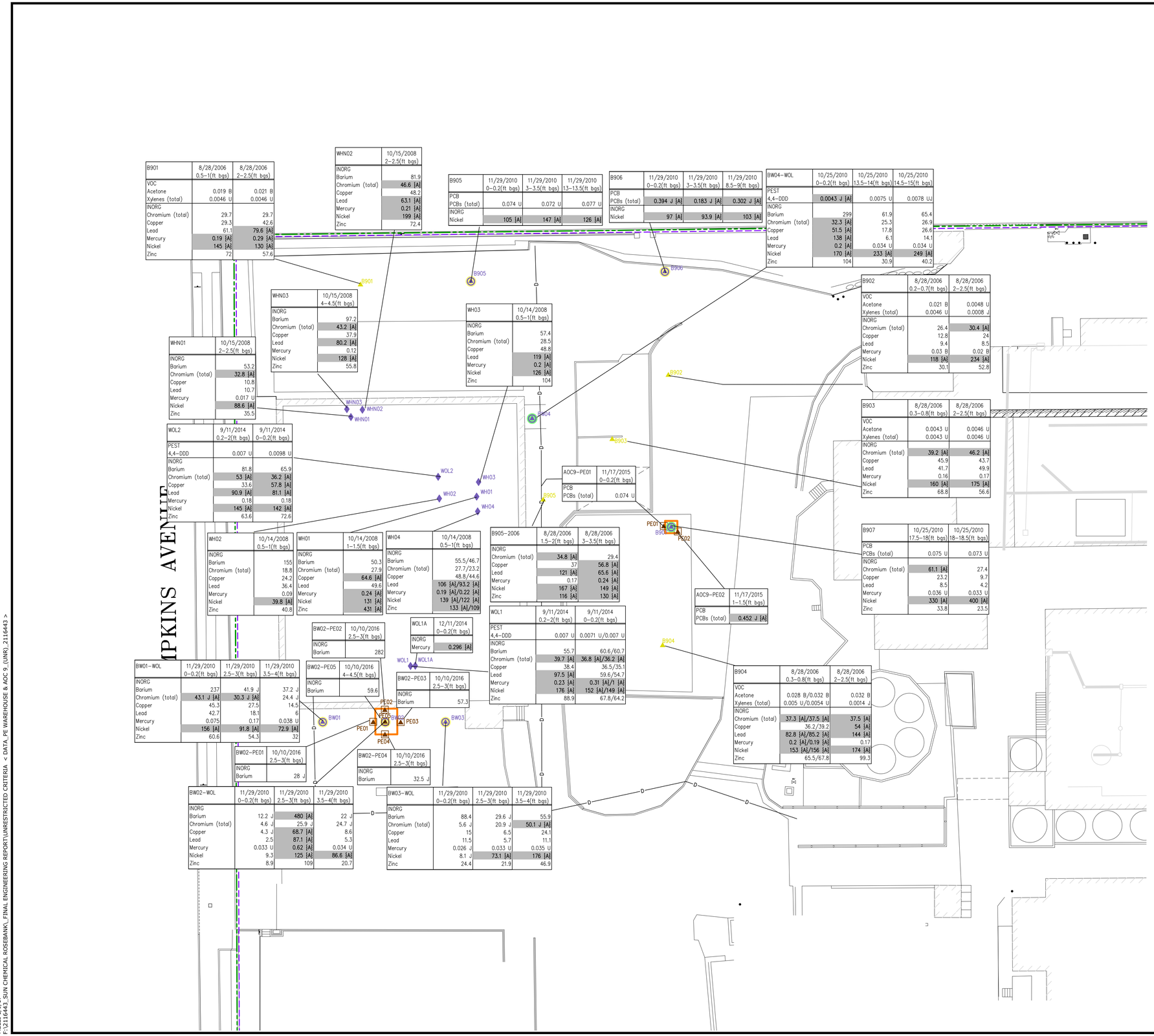


B901	8/28/2006 0.5–1(ft bgs)	8/28/2006 2–2.5(ft bgs)
VOC		
Acetone	0.019 B	0.021 B
Xylenes (total)	0.0046 U	0.0046 U
INORG		
Chromium (total)	29.7	29.7
Copper	29.3	42.6
Lead	61.1	79.6 [A]
Mercury	0.19 [A]	0.29 [A]
Nickel	145 [A]	130 [A]
Zinc	72	57.6

WHN02	10/15/2008 2–2.5(ft bgs)
INORG	
Barium	81.9
Chromium (total)	46.6 [A]
Copper	48.2
Lead	63.1 [A]
Mercury	0.21 [A]
Nickel	199 [A]
Zinc	72.4

B905	11/29/2010 0–0.2(ft bgs)	11/29/2010 3–3.5(ft bgs)	11/29/2010 13–13.5(ft bgs)
PCB			
PCBs (total)	0.074 U	0.072 U	0.077 U
INORG			
Nickel	105 [A]	147 [A]	126 [A]

B906	11/29/2010 0–0.2(ft bgs)	11/29/2010 3–3.5(ft bgs)	11/29/2010 8.5–9(ft bgs)
PCB			
PCBs (total)	0.394 J [A]	0.183 J [A]	0.302 J [A]
INORG			
Nickel	97 [A]	93.9 [A]	103 [A]

BW04–WOL	10/25/2010 0–0.2(ft bgs)	10/25/2010 13.5–14(ft bgs)	10/25/2010 14.5–15(ft bgs)
PEST			
4,4–DDD	0.0043 J [A]	0.0075 U	0.0078 UJ
INORG			
Barium	299	61.9	65.4
Chromium (total)	32.3 [A]	25.3	26.9
Copper	51.5 [A]	17.8	26.6
Lead	138 [A]	6.1	14.1
Mercury	0.2 [A]	0.034 U	0.034 U
Nickel	170 [A]	233 [A]	249 [A]
Zinc	104	30.9	40.2

WHN03	10/15/2008 4–4.5(ft bgs)
INORG	
Barium	97.2
Chromium (total)	43.2 [A]
Copper	37.9
Lead	80.2 [A]
Mercury	0.12
Nickel	128 [A]
Zinc	55.8

WH03	10/14/2008 0.5–1(ft bgs)
INORG	
Barium	57.4
Chromium (total)	28.5
Copper	48.8
Lead	119 [A]
Mercury	0.2 [A]
Nickel	126 [A]
Zinc	104

B902	8/28/2006 0.2–0.7(ft bgs)	8/28/2006 2–2.5(ft bgs)
VOC		
Acetone	0.021 B	0.0048 U
Xylenes (total)	0.0046 U	0.0008 J
INORG		
Chromium (total)	26.4	30.4 [A]
Copper	12.8	24
Lead	9.4	8.5
Mercury	0.03 B	0.02 B
Nickel	118 [A]	234 [A]
Zinc	30.1	52.8

WHN01	10/15/2008 2–2.5(ft bgs)
INORG	
Barium	53.2
Chromium (total)	32.8 [A]
Copper	10.8
Lead	10.7
Mercury	0.017 U
Nickel	88.6 [A]
Zinc	35.5

B903	8/28/2006 0.3–0.8(ft bgs)	8/28/2006 2–2.5(ft bgs)
VOC		
Acetone	0.0043 U	0.0046 U
Xylenes (total)	0.0043 U	0.0046 U
INORG		
Chromium (total)	39.2 [A]	46.2 [A]
Copper	45.9	43.7
Lead	41.7	49.9
Mercury	0.16	0.17
Nickel	160 [A]	175 [A]
Zinc	68.8	56.6

WOL2	9/11/2014 0.2–2(ft bgs)	9/11/2014 0–0.2(ft bgs)
PEST		
4,4–DDD	0.007 U	0.0098 U
INORG		
Barium	81.8	65.9
Chromium (total)	53 [A]	36.2 [A]
Copper	33.6	57.8 [A]
Lead	90.9 [A]	81.1 [A]
Mercury	0.18	0.18
Nickel	145 [A]	142 [A]
Zinc	63.6	72.6

AOC9–PE01	11/17/2015 0–0.2(ft bgs)
PCB	
PCBs (total)	0.074 U

B905–2006	8/28/2006 1.5–2(ft bgs)	8/28/2006 3–3.5(ft bgs)
INORG		
Chromium (total)	34.8 [A]	29.4
Copper	37	56.8 [A]
Lead	121 [A]	65.6 [A]
Mercury	0.17	0.24 [A]
Nickel	167 [A]	149 [A]
Zinc	116 [A]	130 [A]

B907	10/25/2010 17.5–18(ft bgs)	10/25/2010 18–18.5(ft bgs)
PCB		
PCBs (total)	0.075 U	0.073 U
INORG		
Chromium (total)	61.1 [A]	27.4
Copper	23.2	9.7
Lead	8.5	4.2
Mercury	0.036 U	0.033 U
Nickel	330 [A]	400 [A]
Zinc	33.8	23.5

WH02	10/14/2008 0.5–1(ft bgs)
INORG	
Barium	155
Chromium (total)	18.8
Copper	24.2
Lead	36.4
Mercury	0.09
Nickel	39.8 [A]
Zinc	40.8

WH01	10/14/2008 1–1.5(ft bgs)
INORG	
Barium	50.3
Chromium (total)	27.9
Copper	64.6 [A]
Lead	49.6
Mercury	0.24 [A]
Nickel	131 [A]
Zinc	431 [A]

WH04	10/14/2008 0.5–1(ft bgs)
INORG	
Barium	55.5/46.7
Chromium (total)	27.7/23.2
Copper	48.8/44.6
Lead	106 [A]/93.2 [A]
Mercury	0.19 [A]/0.22 [A]
Nickel	139 [A]/122 [A]
Zinc	133 [A]/109

AOC9–PE02	11/17/2015 1–1.5(ft bgs)
PCB	
PCBs (total)	0.452 J [A]

WOL1	9/11/2014 0.2–2(ft bgs)	9/11/2014 0–0.2(ft bgs)
PEST		
4,4–DDD	0.007 U	0.0071 U/0.007 U
INORG		
Barium	55.7	60.6/60.7
Chromium (total)	39.7 [A]	36.8 [A]/36.2 [A]
Copper	38.4	36.5/35.1
Lead	97.5 [A]	59.6/54.7
Mercury	0.23 [A]	0.31 [A]/1 [A]
Nickel	176 [A]	152 [A]/149 [A]
Zinc	88.9	67.8/64.2

WOL1A	12/11/2014 0–0.2(ft bgs)
INORG	
Mercury	0.296 [A]

BW02–PE02	10/10/2016 2.5–3(ft bgs)
INORG	
Barium	282

BW02–PE05	10/10/2016 4–4.5(ft bgs)
INORG	
Barium	59.6

BW02–PE03	10/10/2016 2.5–3(ft bgs)
INORG	
Barium	57.3

BW02–PE01	10/10/2016 2.5–3(ft bgs)
INORG	
Barium	28 J

BW02–PE04	10/10/2016 2.5–3(ft bgs)
INORG	
Barium	32.5 J

BW01–WOL	11/29/2010 0–0.2(ft bgs)	11/29/2010 2.5–3(ft bgs)	11/29/2010 3.5–4(ft bgs)
INORG			
Barium	237	41.9 J	37.2 J
Chromium (total)	43.1 J [A]	30.3 J [A]	24.4 J
Copper	45.3	27.5	14.5
Lead	42.7	18.1	6
Mercury	0.075	0.17	0.038 U
Nickel	156 [A]	91.8 [A]	72.9 [A]
Zinc	60.6	54.3	32

BW02–WOL	11/29/2010 0–0.2(ft bgs)	11/29/2010 2.5–3(ft bgs)	11/29/2010 3.5–4(ft bgs)
INORG			
Barium	12.2 J	480 [A]	22 J
Chromium (total)	4.6 J	25.9 J	24.7 J
Copper	4.3 J	68.7 [A]	8.6
Lead	2.5	87.1 [A]	5.3
Mercury	0.033 U	0.62 [A]	0.034 U
Nickel	9.3	125 [A]	86.6 [A]
Zinc	8.9	109	20.7

BW03–WOL	11/29/2010 0–0.2(ft bgs)	11/29/2010 2.5–3(ft bgs)	11/29/2010 3.5–4(ft bgs)
INORG			
Barium	88.4	29.6 J	55.9
Chromium (total)	5.6 J	20.9 J	50.1 J [A]
Copper	15	6.5	24.1
Lead	11.5	5.7	11.1
Mercury	0.026 J	0.033 U	0.035 U
Nickel	8.1 J	73.1 [A]	176 [A]
Zinc	24.4	21.9	46.9

B904	8/28/2006 0.3–0.8(ft bgs)	8/28/2006 2–2.5(ft bgs)
VOC		
Acetone	0.028 B/0.032 B	0.032 B
Xylenes (total)	0.005 U/0.0054 U	0.0014 J
INORG		
Chromium (total)	37.3 [A]/37.5 [A]	37.5 [A]
Copper	36.2/39.2	54 [A]
Lead	82.8 [A]/85.2 [A]	144 [A]
Mercury	0.2 [A]/0.19 [A]	0.17
Nickel	153 [A]/156 [A]	174 [A]
Zinc	65.5/67.8	99.3

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- SOIL BORING (2006)
- INITIAL SOIL SCREENING BORING (OCTOBER 2010)
- ADDITIONAL DELINEATION SOIL BORING (NOVEMBER-DECEMBER 2010)
- SOIL SAMPLE
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION
- EXCAVATION AREA

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U -- Not Detected.
J -- Estimated Concentration.
D -- Dilution.
F -- MS/MSD RPD exceeds control limits
* -- LCS or LCSD is outside acceptance limits.
B -- Compound found in the blank and sample.
SCO -- Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
{A} -- Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

20 0 20 40
SCALE IN FEET

REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN AOC 9 AND WAREHOUSE/OFFICE/LABORATORY UNRESTRICTED CRITERIA ONLY

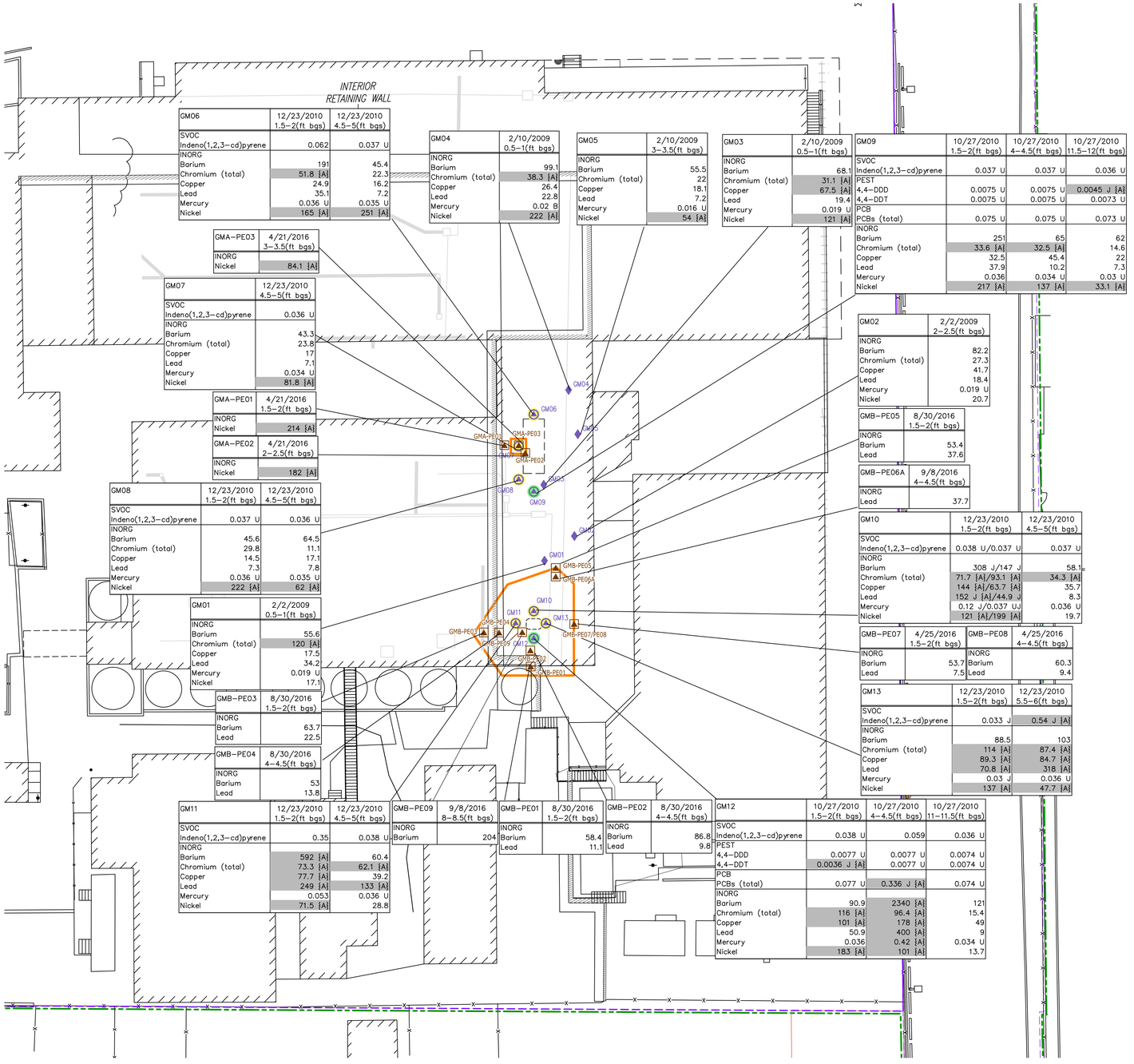
SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

RAMBOLL ENVIRON

PREPARED BY: JS	DATE: 01/09/2017
DRAFTED BY: TSP	SCALE: AS SHOWN
APPROVED BY: BK	PROJECT: 2116443A

PLATE 5

MBLEI 1/9/17
F:\2116443_SUN CHEMICAL ROSEBANK_FINAL ENGINEERING REPORT\UNRESTRICTED CRITERIA < DATA_PE WAREHOUSE & AOC 9_(UNR)_2116443 >



LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- INITIAL SOIL SCREENING BORING (OCTOBER 2010)
- ADDITIONAL DELINEATION SOIL BORING (NOVEMBER-DECEMBER 2010)
- SOIL SAMPLE
- STORM WATER TRENCH DRAIN
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION
- EXCAVATION AREA

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U – Not Detected.
J – Estimated Concentration.
D – Dilution.
F – MS/MSD RPD exceeds control limits
* – LCS or LCSD is outside acceptance limits.
B – Compound found in the blank and sample.
SCO – Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
{A} – Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

20 0 20 40
SCALE IN FEET

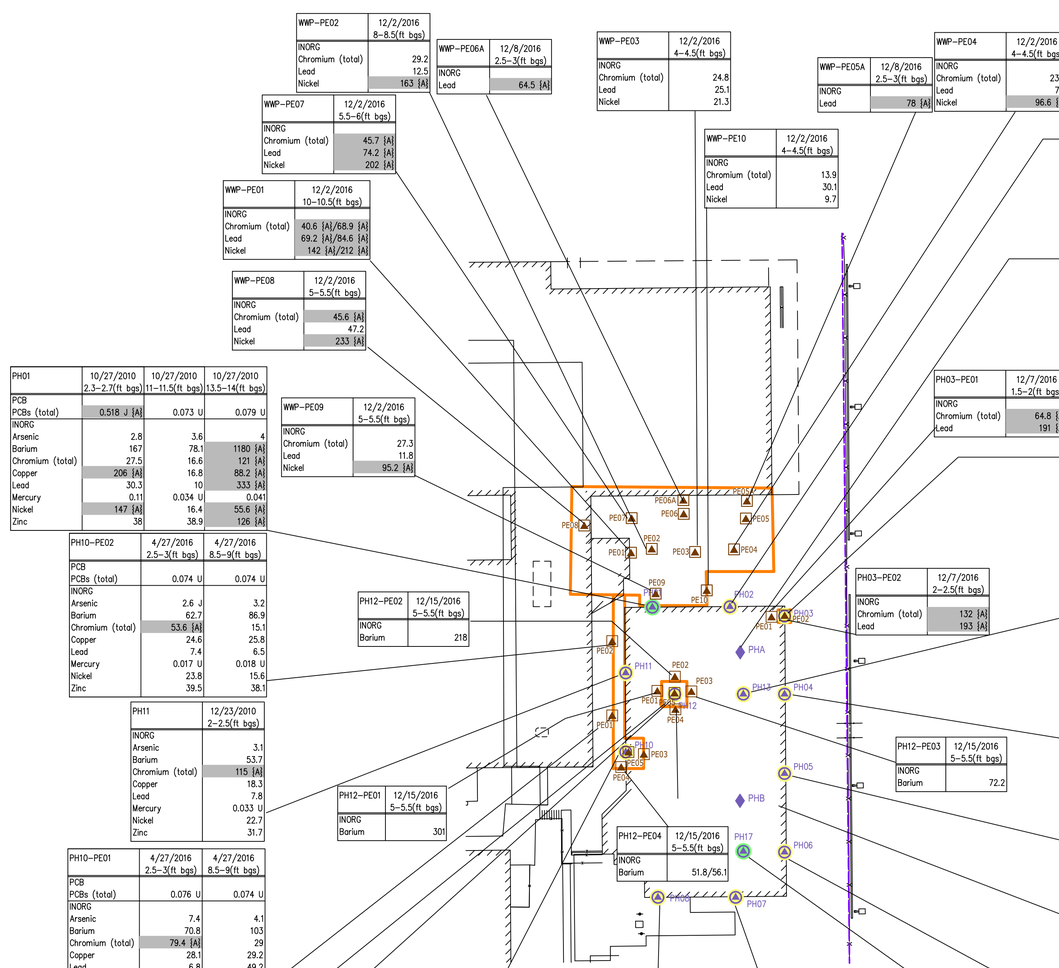
REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN GRIND AND MIX AREA UNRESTRICTED CRITERIA ONLY

RAMBOLL ENVIRON

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

PREPARED BY: JS	DATE: 01/09/2017	PLATE 6
DRAFTED BY: TSP	SCALE: AS SHOWN	
APPROVED BY: BK	PROJECT: 2116443A	

TPENNISI 1/13/17
F:\2116443_SUN CHEMICAL ROSEBANK_FINAL ENGINEERING REPORT\UNRESTRICTED CRITERIA < DATA_PE GRIND AND MIX_(UNR)_2116443 >



WWP-PE02	12/2/2016 8–8.5(ft bgs)
INORG	
Chromium (total)	29.2
Lead	12.5
Nickel	163 [A]

WWP-PE06A	12/8/2016 2.5–3(ft bgs)
INORG	
Lead	64.5 [A]

WWP-PE03	12/2/2016 4–4.5(ft bgs)
INORG	
Chromium (total)	24.8
Lead	25.1
Nickel	21.3

WWP-PE05A	12/8/2016 2.5–3(ft bgs)
INORG	
Lead	78 [A]

WWP-PE04	12/2/2016 4–4.5(ft bgs)
INORG	
Chromium (total)	23.4
Lead	7.8
Nickel	96.6 [A]

WWP-PE07	12/2/2016 5.5–6(ft bgs)
INORG	
Chromium (total)	45.7 [A]
Lead	74.2 [A]
Nickel	202 [A]

WWP-PE10	12/2/2016 4–4.5(ft bgs)
INORG	
Chromium (total)	13.9
Lead	30.1
Nickel	9.7

WWP-PE01	12/2/2016 10–10.5(ft bgs)
INORG	
Chromium (total)	40.6 [A]/68.9 [A]
Lead	69.2 [A]/84.6 [A]
Nickel	142 [A]/212 [A]

WWP-PE08	12/2/2016 5–5.5(ft bgs)
INORG	
Chromium (total)	45.6 [A]
Lead	47.2
Nickel	233 [A]

PH02	12/14/2010 1.5–2(ft bgs)	12/14/2010 4–4.5(ft bgs)	12/14/2010 5–5.5(ft bgs)
INORG			
Arsenic	3.6	3	3.8
Barium	260	74.7	64.8
Chromium (total)	74 [A]	44.4 [A]	28
Copper	110 [A]	33.5	68.2 [A]
Lead	74.2 [A]	21	120 [A]
Mercury	0.035 U	0.066	0.26 [A]
Nickel	34.4 J [A]	260 J [A]	168 J [A]
Zinc	72.7 J	41.4 J	63.3 J

PHA	9/11/2014 0.2–2(ft bgs)	9/11/2014 0–0.2(ft bgs)
PCB		
PCBs (total)	0.07 U	0.076 U
INORG		
Arsenic	3.9	5.5
Barium	121	274
Chromium (total)	43.5 [A]	62.2 [A]
Copper	37.1	50.6 [A]
Lead	47.8	86.3 [A]
Mercury	0.027	0.12
Nickel	274 [A]	151 [A]
Zinc	48.2	61.1

PH03	12/14/2010 1.5–2(ft bgs)	12/14/2010 2.5–3(ft bgs)	12/14/2010 3.5–4(ft bgs)
INORG			
Arsenic	3.5	5.3	4.1
Barium	193	204	117
Chromium (total)	426 [A]	96.6 [A]	93.5 [A]
Copper	34.3	52.9 [A]	38.7
Lead	783 [A]	114 [A]	64.3 [A]
Mercury	0.066	0.041	0.073
Nickel	80.7 J [A]	129 J [A]	125 J [A]
Zinc	67 J	103 J	71.4 J

PH01	10/27/2010 2.3–2.7(ft bgs)	10/27/2010 11–11.5(ft bgs)	10/27/2010 13.5–14(ft bgs)
PCB			
PCBs (total)	0.518 J [A]	0.073 U	0.079 U
INORG			
Arsenic	2.8	3.6	4
Barium	167	78.1	1180 [A]
Chromium (total)	27.5	16.6	121 [A]
Copper	206 [A]	16.8	88.2 [A]
Lead	30.3	10	333 [A]
Mercury	0.11	0.034 U	0.041
Nickel	147 [A]	16.4	55.6 [A]
Zinc	38	38.9	126 [A]

WWP-PE09	12/2/2016 5–5.5(ft bgs)
INORG	
Chromium (total)	27.3
Lead	11.8
Nickel	95.2 [A]

PH03-PE01	12/7/2016 1.5–2(ft bgs)
INORG	
Chromium (total)	64.8 [A]
Lead	191 [A]

PH13	12/14/2010 2–2.5(ft bgs)	12/14/2010 3–3.5(ft bgs)	12/14/2010 4–4.5(ft bgs)
INORG			
Arsenic	3.8/3	3.3	4.8
Barium	90.6/79.5	58	71.1
Chromium (total)	51.2 [A]/31.8 [A]	29.3	35.2 [A]
Copper	46.6/43.1	68.5 [A]	69.7 [A]
Lead	33.6/24.1	19.5	28.8
Mercury	0.16/0.15	0.037 U	0.069
Nickel	236 J [A]/197 J [A]	280 J [A]	661 J [A]
Zinc	47.9 J/45.4 J	42.2 J	53.2 J

PH10–PE02	4/27/2016 2.5–3(ft bgs)	4/27/2016 8.5–9(ft bgs)
PCB		
PCBs (total)	0.074 U	0.074 U
INORG		
Arsenic	2.6 J	3.2
Barium	62.7	86.9
Chromium (total)	53.6 [A]	15.1
Copper	24.6	25.8
Lead	7.4	6.5
Mercury	0.017 U	0.018 U
Nickel	23.8	15.6
Zinc	39.5	38.1

PH12–PE02	12/15/2016 5–5.5(ft bgs)
INORG	
Barium	218

PH03–PE02	12/7/2016 2–2.5(ft bgs)
INORG	
Chromium (total)	132 [A]
Lead	193 [A]

PH04	12/14/2010 2–2.5(ft bgs)	12/14/2010 4–4.5(ft bgs)	12/14/2010 5–5.5(ft bgs)
INORG			
Arsenic	2.8	1.5	2.9
Barium	52.6	28 J	54
Chromium (total)	98.6 [A]	18.9	26.4
Copper	17.6	23.9	10.2
Lead	18.2	28.3	14.9
Mercury	0.036	0.12	0.039 U
Nickel	273 J [A]	80.5 J [A]	82.4 J [A]
Zinc	38 J	26 J	34.8 J

PH11	12/23/2010 2–2.5(ft bgs)
INORG	
Arsenic	3.1
Barium	53.7
Chromium (total)	115 [A]
Copper	18.3
Lead	7.8
Mercury	0.033 U
Nickel	22.7
Zinc	31.7

PH12–PE01	12/15/2016 5–5.5(ft bgs)
INORG	
Barium	301

PH12–PE03	12/15/2016 5–5.5(ft bgs)
INORG	
Barium	72.2

PH05	12/23/2010 4.5–5(ft bgs)	12/23/2010 5.5–6(ft bgs)	12/23/2010 6.5–7(ft bgs)
INORG			
Arsenic	2.2	1.4/1.4	2.2
Barium	61.5	40.6 J/35.8 J	61.8
Chromium (total)	26.3	23.1/25.7	45.7 [A]
Copper	18.2	16.5/15.5	40.9
Lead	14.8	10.5/10.3	10.6
Mercury	0.037 U	0.035 U/0.033 U	0.035 U
Nickel	183 [A]	96.3 [A]/93.7 [A]	196 [A]
Zinc	31.5	34/36.1	40.4

PH10–PE01	4/27/2016 2.5–3(ft bgs)	4/27/2016 8.5–9(ft bgs)
PCB		
PCBs (total)	0.076 U	0.074 U
INORG		
Arsenic	7.4	4.1
Barium	70.8	103
Chromium (total)	79.4 [A]	29
Copper	28.1	29.2
Lead	6.8	49.2
Mercury	0.017 U	0.023
Nickel	34.3 [A]	32.8 [A]
Zinc	36.2	70.4

PH12–PE04	12/15/2016 5–5.5(ft bgs)
INORG	
Barium	51.8/56.1

PHB	9/11/2014 0.2–2(ft bgs)	9/11/2014 0–0.2(ft bgs)
PCB		
PCBs (total)	0.069 U	0.073 U
INORG		
Arsenic	3.9	4
Barium	163	92
Chromium (total)	74.1 [A]	65.7 [A]
Copper	40.1	40.6
Lead	135 [A]	22.8
Mercury	0.033	0.036
Nickel	282 [A]	304 [A]
Zinc	54.3	47.2

PH06	12/23/2010 6–6.5(ft bgs)	12/23/2010 9.5–10(ft bgs)
INORG		
Arsenic	4.1	15.6 [A]
Barium	77.1	102
Chromium (total)	27.4	23.5
Copper	30.4	144 [A]
Lead	48.9	29.5
Mercury	0.036 U	0.089
Nickel	260 [A]	80.1 [A]
Zinc	54.3	236 [A]

PH12–PE05	12/15/2016 6.5–7(ft bgs)
INORG	
Barium	39.8 J

PH12	12/14/2010 2–2.5(ft bgs)	12/14/2010 4–4.5(ft bgs)	12/14/2010 5–5.5(ft bgs)
INORG			
Arsenic	3.2	3	4.3
Barium	62.2	115	816 [A]
Chromium (total)	29.7	57.2 [A]	69.6 [A]
Copper	69 [A]	85 [A]	166 [A]
Lead	27.6	40.4	319 [A]
Mercury	0.037 U	0.057	0.13
Nickel	228 J [A]	221 J [A]	32.8 J [A]
Zinc	46.6 B	44.6 B	69.5 B

PH10	12/23/2010 4–4.5(ft bgs)	12/23/2010 5–5.5(ft bgs)	12/23/2010 6–6.5(ft bgs)
INORG			
Arsenic	3.6	1.6	2.7
Barium	147	62.8	62.3
Chromium (total)	133 [A]	748 [A]	85 [A]
Copper	64.4 [A]	29.5	17.3
Lead	67.6 [A]	11	8.1
Mercury	0.082	0.035 U	0.033 U
Nickel	190 [A]	20	16.9
Zinc	67.8	42.1	37.1

PH08	12/23/2010 5.5–6(ft bgs)	12/23/2010 10–10.5(ft bgs)	12/23/2010 11–11.5(ft bgs)
INORG			
Arsenic	3.1	3.6	3.9
Barium	114	66.7	66.9
Chromium (total)	33.2 [A]	12.3	17.7
Copper	23.2	28.8	24.7
Lead	85.9 [A]	9.1	12.2
Mercury	0.034	0.033 U	0.031 U
Nickel	43.2 [A]	16.5	46.7 [A]
Zinc	43.9	30.8	32

PH07	12/14/2010 5–5.5(ft bgs)	12/14/2010 6–6.5(ft bgs)	12/14/2010 8–8.5(ft bgs)
INORG			
Arsenic	13.7 [A]	4.5	8.2
Barium	64.1	46	55.2
Chromium (total)	28.6	32 [A]	53.9 [A]
Copper	108 [A]	43.5	38.3
Lead	33.7	19.6	32.1
Mercury	0.073	0.069	0.036 U
Nickel	165 J [A]	256 J [A]	171 J [A]
Zinc	74.6 J	82.8 J	87.7

PH17	10/27/2010 8–8.5(ft bgs)	10/27/2010 17–17.5(ft bgs)
PCB		
PCBs (total)	0.332 J [A]	0.077 U
INORG		
Arsenic	4.3	2.2
Barium	105	65.9
Chromium (total)	36.3 [A]	20.1
Copper	38.5	29.9
Lead	69.1 [A]	9.1
Mercury	0.07	0.033 U
Nickel	178 [A]	81.1 [A]
Zinc	63.8	38.2

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- INITIAL SOIL SCREENING BORING (OCTOBER 2010)
- ADDITIONAL DELINEATION SOIL BORING (NOVEMBER-DECEMBER 2010)
- SOIL SAMPLE
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION
- EXCAVATION AREA

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U – Not Detected.
J – Estimated Concentration.
D – Dilution.
F – MS/MSD RPD exceeds control limits
* – LCS or LCSD is outside acceptance limits.
B – Compound found in the blank and sample.
SCO – Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
(A) – Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

30 0 30 60
SCALE IN FEET

REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN POWERHOUSE AND WASTEWATER PIPING AREA UNRESTRICTED CRITERIA ONLY

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

RAMBOLL ENVIRON

PREPARED BY: JS	DATE: 01/09/2017	PLATE 7
DRAFTED BY: TSP	SCALE: AS SHOWN	
APPROVED BY: BK	PROJECT: 2116443A	

TPENNISI 1/13/17
F:\2116443_SUN CHEMICAL ROSEBANK_FINAL ENGINEERING REPORT\UNRESTRICTED CRITERIA < DATA_PE POWERHOUSE_(UNR)_2116443 >

B101	8/28/2006 0.5–1(ft bgs)	8/28/2006 2.5–3(ft bgs)	8/28/2006 3.5–4(ft bgs)
VOC			
Acetone	0.57 U	0.54 U	0.1 [A]
Xylenes (total)	0.74 [A]	0.54 U	0.0069 U
INORG			
Chromium (total)	84 [A]	84.5 [A]	72.2 [A]
Copper	121 [A]	76.2 [A]	46.6
Lead	290 [A]	317 [A]	61.9
Mercury	0.32 [A]	0.24 [A]	0.06
Nickel	100 [A]	135 [A]	156 [A]
Zinc	118 [A]	81.8	86.9

B1415	11/29/2010 1–1.5(ft bgs)	11/29/2010 2–2.5(ft bgs)	11/29/2010 3–3.5(ft bgs)
PCB			
PCBs (total)	0.075 U/0.074 U	0.077 U	0.076 U
INORG			
Barium	37.1 J/37.3 J	86.6	366 [A]
Cadmium	1.1 U/1 U	1 U	0.17 J
Chromium (total)	22.6 J/21.4 J	44.3 J [A]	41.9 J [A]
Copper	12.9/11.7	34.2	30
Lead	76.2 [A]/57	168 [A]	491 [A]
Nickel	38.6 [A]/37 [A]	102 [A]	86.6 [A]
Zinc	26.7/21.3	60.9	67.7

B103	10/4/2006 1.5–2(ft bgs)
INORG	
Chromium (total)	29.8
Copper	21.8
Lead	109 [A]
Mercury	0.09
Nickel	41.1 [A]
Zinc	96.8

B104	10/4/2006 3.5–4(ft bgs)	10/4/2006 6–6.5(ft bgs)
INORG		
Chromium (total)	63.7 [A]	49.6 [A]
Copper	23.9	16.2
Lead	9.5	7.1
Mercury	0.019 U	0.017 U
Nickel	226 [A]	229 [A]
Zinc	63.3	34.8

B102	8/28/2006 0.5–1(ft bgs)	8/28/2006 1.5–2(ft bgs)	8/28/2006 3.5–4(ft bgs)
VOC			
Acetone	0.047	0.035	0.1 [A]
Xylenes (total)	0.0055 U	0.0054 U	0.0058 U
INORG			
Chromium (total)	70.9 [A]	40.1 [A]	511 [A]
Copper	55.5 [A]	23.8	41.6
Lead	126 [A]	22.8	182 [A]
Mercury	0.26 [A]	0.08	0.14
Nickel	116 [A]	162 [A]	173 [A]
Zinc	110 [A]	40.4	685 [A]

B105	10/4/2006 1.5–2(ft bgs)	10/4/2006 2.5–3(ft bgs)
VOC		
Acetone	0.056 B [A]	0.07 B [A]
Xylenes (total)	0.012	0.0093
INORG		
Chromium (total)	53.1 [A]	57.5 [A]
Copper	123 [A]	47.7
Lead	244 [A]	110 [A]
Mercury	0.18	0.06
Nickel	85.1 [A]	131 [A]
Zinc	189 [A]	100

B102–PE02	9/20/2016 3.5–4(ft bgs)
INORG	
Chromium (total)	69.2 [A]

B102–PE03	9/20/2016 3.5–4(ft bgs)
INORG	
Chromium (total)	37.9 [A]

B102–PE01	9/20/2016 3.5–4(ft bgs)
INORG	
Chromium (total)	40 [A]

B102–PE05	9/20/2016 4–4.5(ft bgs)
INORG	
Chromium (total)	68.2 [A]

B102–PE04	9/20/2016 3.5–4(ft bgs)
INORG	
Chromium (total)	67 [A]

B106	10/4/2006 1.5–2(ft bgs)	10/4/2006 3.5–4(ft bgs)
VOC		
Acetone	0.024 B	0.0047 U
Xylenes (total)	0.095	0.0012 J
INORG		
Chromium (total)	40.5 [A]	38.5 [A]
Copper	26	29
Lead	9.1	7.7
Mercury	0.02 B	0.019 U
Nickel	134 [A]	139 [A]
Zinc	34.4	37.9

B1411	10/4/2006 1.5–2(ft bgs)	10/4/2006 3.5–4(ft bgs)
PCB		
PCBs (total)	0.074 U	0.077 U
INORG		
Barium	39.1 B	31.3 B
Cadmium	0.11 U	0.12 U
Chromium (total)	41.1 [A]	51.7 [A]
Copper	32.6	32.2
Lead	9	6.6
Nickel	116 [A]	117 [A]
Zinc	32.3	38

AOC14D–PE02	9/29/2016 4–4.5(ft bgs)
INORG	
Cadmium	0.75 U

AOC14D–PE01	9/29/2016 1.5–2(ft bgs)
INORG	
Cadmium	0.79 U

B1416	11/30/2010 0.5–1(ft bgs)	11/30/2010 1.5–2(ft bgs)	11/30/2010 2.5–3(ft bgs)
PCB			
PCBs (total)	0.081 U	0.077 U	0.077 U
INORG			
Barium	89.8	60.8	55.7
Cadmium	1.2 U	8.5 [A]	1.1 U
Chromium (total)	36.6 [A]	63.7 [A]	38.4 [A]
Copper	29.3	137 [A]	26.9
Lead	86.5 [A]	181 [A]	10.7
Nickel	57.9 J [A]	179 J [A]	166 J [A]
Zinc	57.2	192 [A]	67.1

B1404	8/28/2006 1.5–2(ft bgs)	8/28/2006 6–6.5(ft bgs)
PCB		
PCBs (total)	0.067 U	0.067 U
INORG		
Barium	35.8 B	71.1
Cadmium	0.089 U	0.096 U
Chromium (total)	24.6	67 [A]
Copper	7.7	20.4
Lead	3.3	7.9
Nickel	12.8	273 [A]
Zinc	13.5	57.8

B1414	10/25/2010 0–0.2(ft bgs)	10/25/2010 5.5–6(ft bgs)	10/25/2010 15.5–16(ft bgs)
PCB			
PCBs (total)	0.072 U	0.076 U	0.078 U
INORG			
Barium	48.9	33.2 J	59.1
Cadmium	1 U	1.1 U	1.1 U
Chromium (total)	18.4	32.8 [A]	45.5 [A]
Copper	27.1	15.7	19.7
Lead	26.8	6.6	9.1
Nickel	162 [A]	161 [A]	292 [A]
Zinc	32.4	23.5	45.7

B1413	11/29/2010 1–1.5(ft bgs)	11/29/2010 2–2.5(ft bgs)	11/29/2010 3–3.5(ft bgs)
PCB			
PCBs (total)	0.181 J [A]	0.073 U	0.081 U
INORG			
Barium	27.6 J	40.4 J	52.1
Cadmium	1.1 U	1.1 U	1.2 U
Chromium (total)	12.7 J	18	24.4
Copper	30.8	18.9	30.2
Lead	41.1	7.3	108 [A]
Nickel	119 [A]	78.6 J [A]	94.5 J [A]
Zinc	33.9	28.6	42.4

AOC14A–PE03A	10/10/2016 1–1.5(ft bgs)
INORG	
Chromium (total)	39.6 [A]
Lead	42.9
Nickel	149 [A]

AOC14A–PE04A	10/10/2016 1–1.5(ft bgs)
INORG	
Chromium (total)	38 [A]
Lead	256 [A]
Nickel	66.9 [A]

B1422	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)	7/25/2011 3–3.5(ft bgs)
INORG				
Barium	98.4	40 J	78.7/67.2	84.8
Lead	–	–	26.2	49.2
Nickel	48.3 [A]	18.5	278 [A]/217 [A]	327 [A]

AOC14A–PE01A	10/10/2016 1–1.5(ft bgs)
INORG	
Chromium (total)	35.8 [A]
Lead	173 [A]
Nickel	203 [A]

B1402	8/28/2006 6–6.5(ft bgs)
PCB	
PCBs (total)	0.067 U
INORG	
Barium	51.2
Cadmium	0.12 U
Chromium (total)	51.1 [A]
Copper	28.2
Lead	10.9
Nickel	224 [A]
Zinc	56.1

B1420	10/25/2010 13.5–14(ft bgs)
PCB	
PCBs (total)	0.08 U
INORG	
Barium	73.1
Cadmium	1.1 U
Chromium (total)	43.4 [A]
Copper	22.1
Lead	9
Nickel	350 [A]
Zinc	44.1

B1418	10/25/2010 7–7.5(ft bgs)	10/25/2010 17–17.5(ft bgs)
PCB		
PCBs (total)	0.077 U	0.086 U
INORG		
Barium	22.1 J	36.2 J
Cadmium	1.2 U	1.3 U
Chromium (total)	28.5	29.1
Copper	27.1	13.4
Lead	13.2	4.7
Nickel	119 [A]	355 [A]
Zinc	34.1	25.5

AOC 14E
AOC 01
AOC 14D
AOC 14C
AOC 14B
AOC 14A
FORMER CONCRETE FOOTER LOCATION IN SUBSURFACE
MW-8

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- SOIL BORING (2006)
- MONITORING WELL
- INITIAL SOIL SCREENING BORING (OCTOBER 2010)
- ADDITIONAL DELINEATION SOIL BORING (NOVEMBER-DECEMBER 2010)
- EXCAVATION AREA

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U – Not Detected.
J – Estimated Concentration.
D – Dilution.
F – MS/MSD RPD exceeds control limits
* – LCS or LCSD is outside acceptance limits.
B – Compound found in the blank and sample.
SCO – Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
{A} – Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

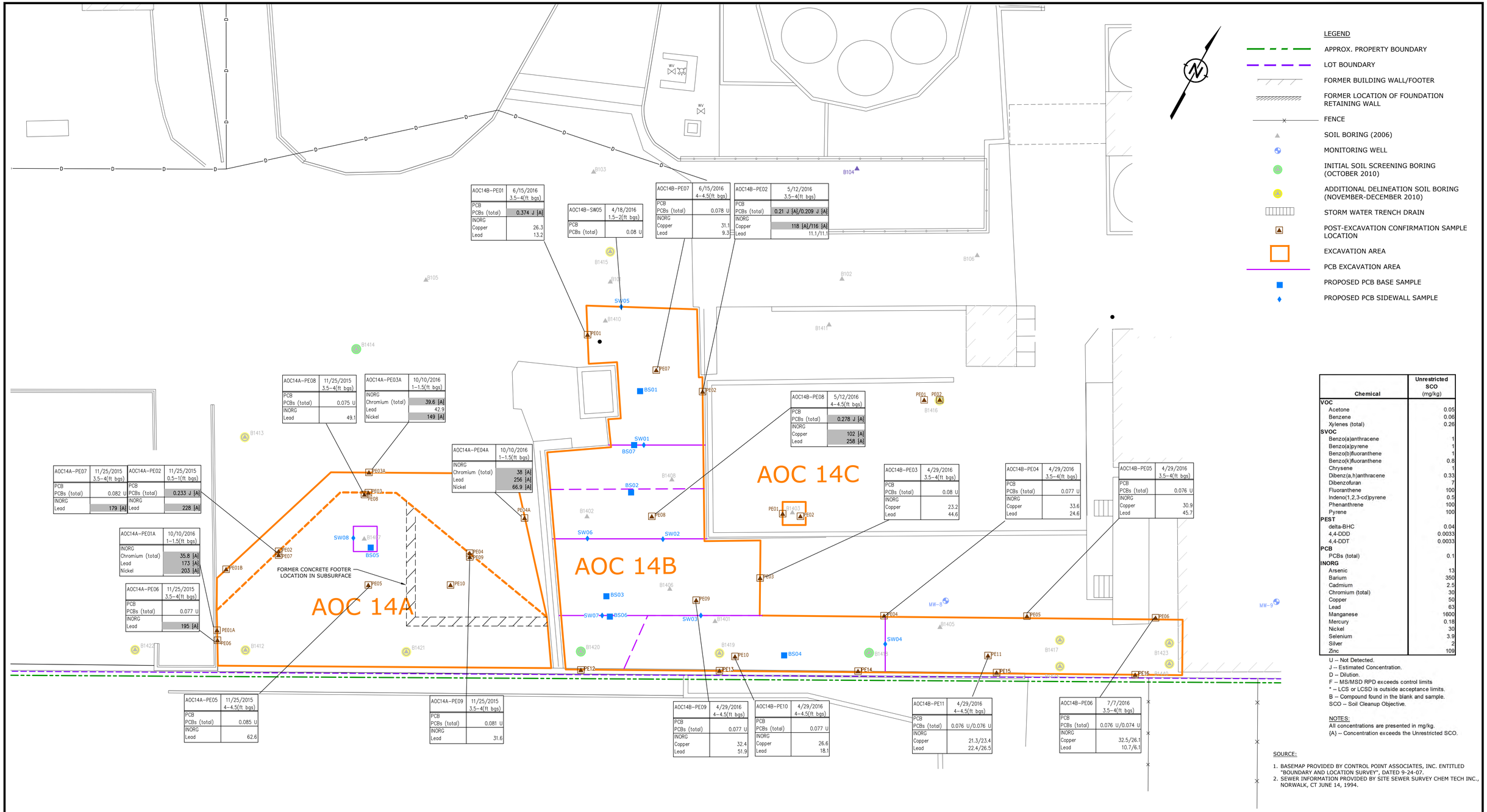
10 0 10 20 30
Scale in Feet

REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN AOC 1 & 14 UNRESTRICTED CRITERIA ONLY

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

RAMBOLL ENVIRON

PREPARED BY: JS	DATE: 01/13/2017	PLATE 8
DRAFTED BY: TSP	SCALE: AS SHOWN	
APPROVED BY: BK	PROJECT: 2116443A	



Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U – Not Detected.
J – Estimated Concentration.
D – Dilution.
F – MS/MSD RPD exceeds control limits
* – LCS or LCSD is outside acceptance limits.
B – Compound found in the blank and sample.
SCO – Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
(A) – Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

SOURCE:

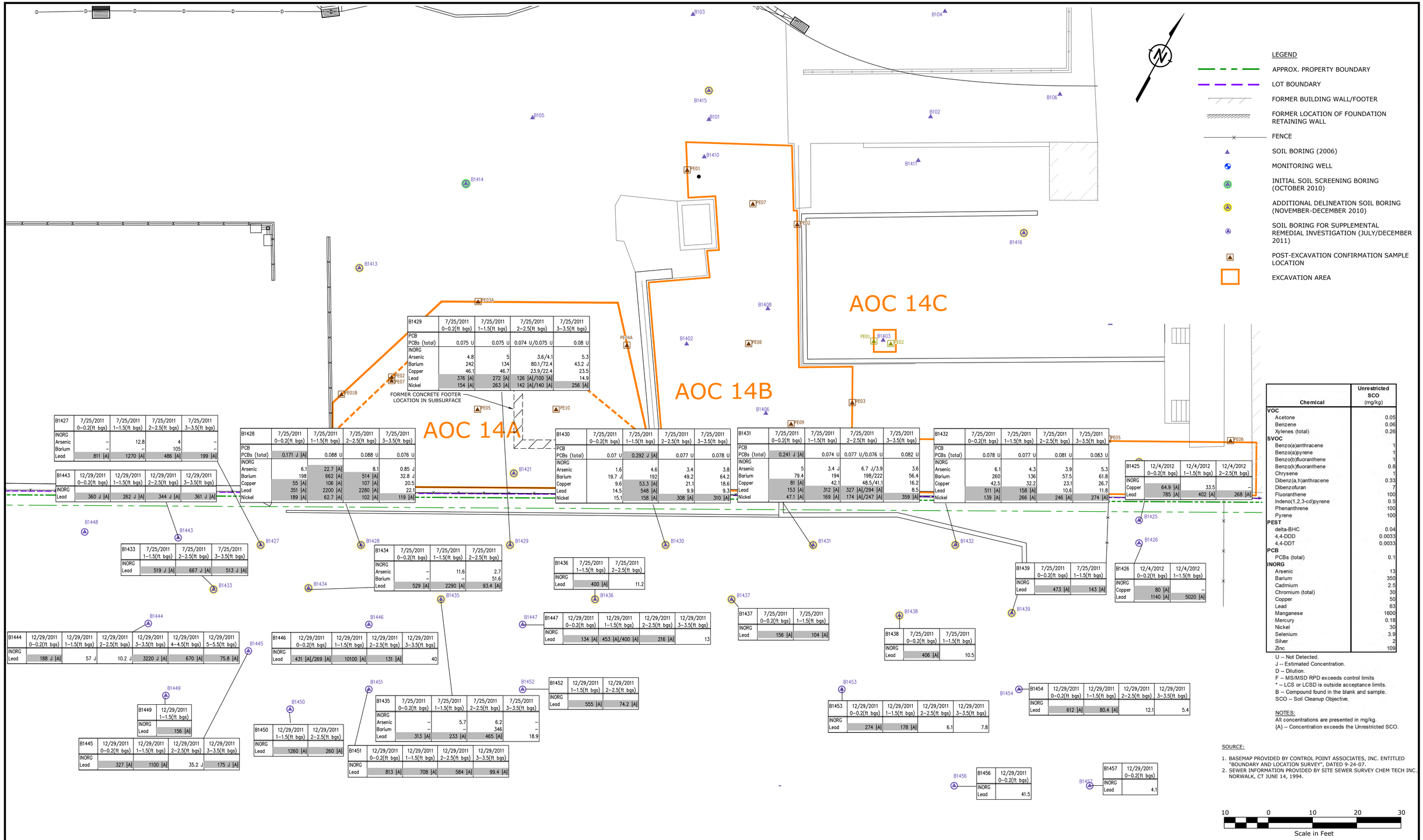
1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN AOC 14A & AOC 14B UNRESTRICTED CRITERIA ONLY

RAMBOLL ENVIRON

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

PREPARED BY: JS	DATE: 01/09/2017	PLATE 8 A
DRAFTED BY: TSP	SCALE: AS SHOWN	
APPROVED BY: BK	PROJECT: 2116443A	



B1427	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)	7/25/2011 3–3.5(ft bgs)
INORG				
Arsenic	–	12.8	4	–
Barium	–	–	105	–
Lead	811 [A]	1270 [A]	486 [A]	199 [A]

B1443	12/29/2011 0–0.2(ft bgs)	12/29/2011 1–1.5(ft bgs)	12/29/2011 2–2.5(ft bgs)	12/29/2011 3–3.5(ft bgs)
INORG				
Lead	360 J [A]	262 J [A]	344 J [A]	361 J [A]

B1428	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)	7/25/2011 3–3.5(ft bgs)
PCB				
PCBs (total)	0.171 J [A]	0.088 U	0.088 U	0.076 U
INORG				
Arsenic	6.1	22.7 [A]	8.1	0.85 J
Barium	198	662 [A]	514 [A]	32.8 J
Copper	55 [A]	106 [A]	107 [A]	20.5
Lead	351 [A]	2200 [A]	2280 [A]	22.1
Nickel	189 [A]	62.7 [A]	102 [A]	119 [A]

B1429	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)	7/25/2011 3–3.5(ft bgs)
PCB				
PCBs (total)	0.075 U	0.075 U	0.074 U/0.075 U	0.08 U
INORG				
Arsenic	4.8	5	3.6/4.1	5.3
Barium	242	134	80.1/72.4	43.2 J
Copper	46.1	46.7	23.9/22.4	23.5
Lead	376 [A]	272 [A]	126 [A]/100 [A]	14.9
Nickel	154 [A]	263 [A]	142 [A]/140 [A]	256 [A]

B1430	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)	7/25/2011 3–3.5(ft bgs)
PCB				
PCBs (total)	0.07 U	0.292 J [A]	0.077 U	0.078 U
INORG				
Arsenic	1.6	4.6	3.4	3.8
Barium	19.7 J	192	49.2	64.2
Copper	9.6	53.3 [A]	21.1	18.6
Lead	14.5	548 [A]	9.9	9.3
Nickel	15.1	158 [A]	308 [A]	310 [A]

B1431	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)	7/25/2011 3–3.5(ft bgs)
PCB				
PCBs (total)	0.241 J [A]	0.074 U	0.077 U/0.076 U	0.082 U
INORG				
Arsenic	5	3.4 J	6.7 J/3.9	3.6
Barium	79.4	194	198/222	56.4
Copper	81 [A]	42.1	48.5/41.1	16.2
Lead	153 [A]	312 [A]	327 [A]/294 [A]	8.5
Nickel	47.1 [A]	169 [A]	174 [A]/247 [A]	359 [A]

B1432	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)	7/25/2011 3–3.5(ft bgs)
PCB				
PCBs (total)	0.078 U	0.077 U	0.081 U	0.083 U
INORG				
Arsenic	6.1	4.3	3.9	5.3
Barium	260	136	57.5	61.8
Copper	42.5	32.2	23.1	26.7
Lead	511 [A]	158 [A]	10.6	11.8
Nickel	139 [A]	266 [A]	246 [A]	274 [A]

B1425	12/4/2012 0–0.2(ft bgs)	12/4/2012 1–1.5(ft bgs)	12/4/2012 2–2.5(ft bgs)
INORG			
Copper	64.9 [A]	33.5	–
Lead	785 [A]	402 [A]	268 [A]

B1444	12/29/2011 0–0.2(ft bgs)	12/29/2011 1–1.5(ft bgs)	12/29/2011 2–2.5(ft bgs)	12/29/2011 3–3.5(ft bgs)	12/29/2011 4–4.5(ft bgs)	12/29/2011 5–5.5(ft bgs)
INORG						
Lead	188 J [A]	57 J	10.2 J	3220 J [A]	670 [A]	75.8 [A]

B1446	12/29/2011 0–0.2(ft bgs)	12/29/2011 1–1.5(ft bgs)	12/29/2011 2–2.5(ft bgs)	12/29/2011 3–3.5(ft bgs)
INORG				
Lead	431 [A]/269 [A]	10100 [A]	131 [A]	40

B1447	12/29/2011 0–0.2(ft bgs)	12/29/2011 1–1.5(ft bgs)	12/29/2011 2–2.5(ft bgs)	12/29/2011 3–3.5(ft bgs)
INORG				
Lead	134 [A]	453 [A]/400 [A]	216 [A]	13

B1445	12/29/2011 0–0.2(ft bgs)	12/29/2011 1–1.5(ft bgs)	12/29/2011 2–2.5(ft bgs)	12/29/2011 3–3.5(ft bgs)
INORG				
Lead	327 [A]	1100 [A]	35.2 J	175 J [A]

B1449	12/29/2011 1–1.5(ft bgs)
INORG	
Lead	156 [A]

B1450	12/29/2011 1–1.5(ft bgs)	12/29/2011 2–2.5(ft bgs)
INORG		
Lead	1260 [A]	260 [A]

B1435	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)	7/25/2011 3–3.5(ft bgs)
INORG				
Arsenic	–	5.7	6.2	–
Barium	–	–	346	–
Lead	313 [A]	233 [A]	465 [A]	18.9

B1451	12/29/2011 0–0.2(ft bgs)	12/29/2011 1–1.5(ft bgs)	12/29/2011 2–2.5(ft bgs)	12/29/2011 3–3.5(ft bgs)
INORG				
Lead	813 [A]	708 [A]	584 [A]	99.4 [A]

B1452	12/29/2011 1–1.5(ft bgs)	12/29/2011 2–2.5(ft bgs)
INORG		
Lead	555 [A]	74.2 [A]

B1453	12/29/2011 0–0.2(ft bgs)	12/29/2011 1–1.5(ft bgs)	12/29/2011 2–2.5(ft bgs)	12/29/2011 3–3.5(ft bgs)
INORG				
Lead	274 [A]	178 [A]	6.1	7.8

B1454	12/29/2011 0–0.2(ft bgs)	12/29/2011 1–1.5(ft bgs)	12/29/2011 2–2.5(ft bgs)	12/29/2011 3–3.5(ft bgs)
INORG				
Lead	612 [A]	80.4 [A]	12.1	5.4

B1456	12/29/2011 0–0.2(ft bgs)
INORG	
Lead	41.5

B1457	12/29/2011 0–0.2(ft bgs)
INORG	
Lead	4.1

B1433	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)	7/25/2011 3–3.5(ft bgs)
INORG			
Lead	519 J [A]	667 J [A]	513 J [A]

B1434	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)
INORG			
Arsenic	–	11.6	2.7
Barium	–	–	51.6
Lead	529 [A]	2290 [A]	93.4 [A]

B1436	7/25/2011 1–1.5(ft bgs)	7/25/2011 2–2.5(ft bgs)
INORG		
Lead	400 [A]	11.2

B1437	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)
INORG		
Lead	156 [A]	104 [A]

B1438	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)
INORG		
Lead	406 [A]	10.5

B1439	7/25/2011 0–0.2(ft bgs)	7/25/2011 1–1.5(ft bgs)
INORG		
Lead	473 [A]	143 [A]

B1426	12/4/2012 0–0.2(ft bgs)	12/4/2012 1–1.5(ft bgs)
INORG		
Copper	80 [A]	–
Lead	1140 [A]	5020 [A]

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- SOIL BORING (2006)
- MONITORING WELL
- INITIAL SOIL SCREENING BORING (OCTOBER 2010)
- ADDITIONAL DELINEATION SOIL BORING (NOVEMBER-DECEMBER 2010)
- SOIL BORING FOR SUPPLEMENTAL REMEDIAL INVESTIGATION (JULY/DECEMBER 2011)
- POST-EXCAVATION CONFIRMATION SAMPLE LOCATION
- EXCAVATION AREA

U -- Not Detected.
J -- Estimated Concentration.
D -- Dilution.
F -- MS/MSD RPD exceeds control limits
* -- LCS or LCSD is outside acceptance limits.
B -- Compound found in the blank and sample.
SCO -- Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
{A} -- Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

10 0 10 20 30
Scale in Feet

REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN AOC 14 OFF-SITE SAMPLES UNRESTRICTED CRITERIA ONLY

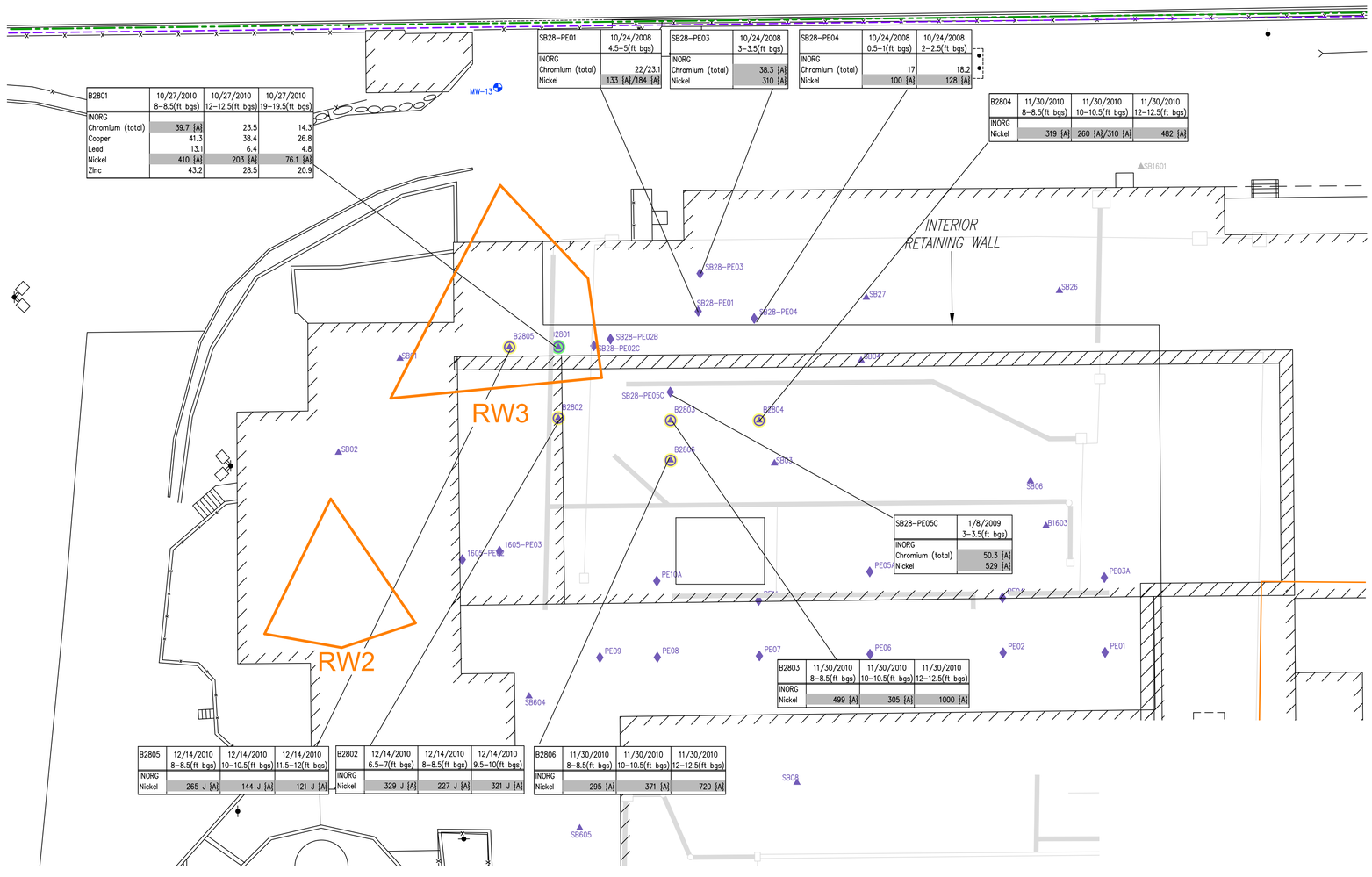
SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

RAMBOLL ENVIRON

PREPARED BY: JS	DATE: 01/09/2017
DRAFTED BY: TSP	SCALE: AS SHOWN
APPROVED BY: BK	PROJECT: 2116443A

PLATE 8B

MODIFIED 1/9/17 [DATA_PE_AOC 14 OFF-SITE_(UNR)_2116443]
C:\Projects\Sun Chemical - Rosebank\Data\Working\Figures\UNRESTRICTED CRITERIA



LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- SOIL BORING (2006)
- MONITORING WELL
- SOIL SAMPLE
- STORM WATER TRENCH DRAIN
- ADDITIONAL DELINEATION SOIL BORING (NOVEMBER-DECEMBER 2010)
- EXCAVATION AREA

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U – Not Detected.
J – Estimated Concentration.
D – Dilution.
F – MS/MSD RPD exceeds control limits
* – LCS or LCSD is outside acceptance limits.
B – Compound found in the blank and sample.
SCO – Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
{A} – Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

15 0 15 30
SCALE IN FEET

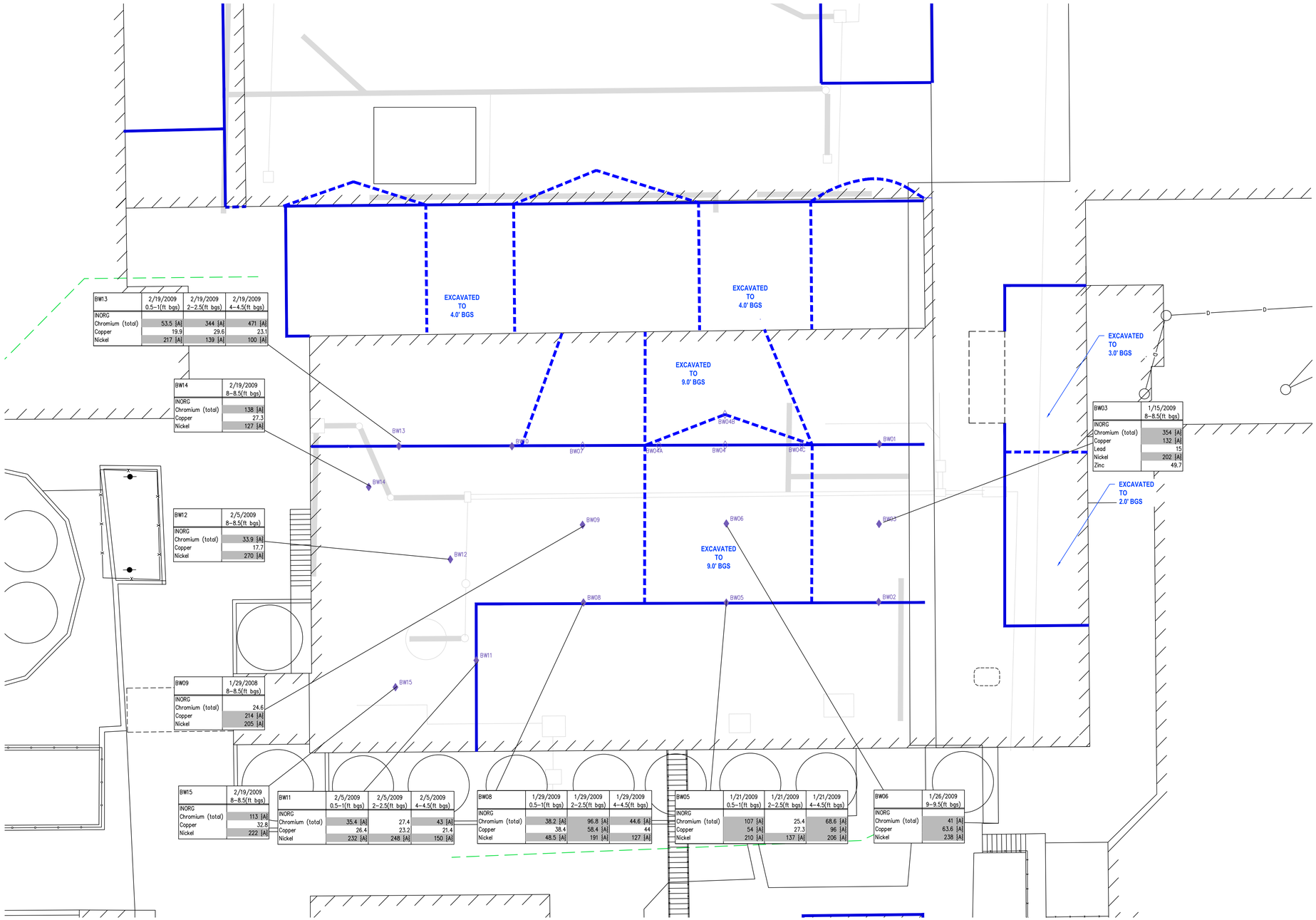
REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN SECONDARY PRODUCTION AREA UNRESTRICTED CRITERIA ONLY

RAMBOLL ENVIRON

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

PREPARED BY: JS	DATE: 01/09/2017	PLATE 9
DRAFTED BY: TSP	SCALE: AS SHOWN	
APPROVED BY: BK	PROJECT: 2116443A	

TPERNIS 1/11/17
C:\2116443_SUN CHEMICAL ROSEBANK_FINAL ENGINEERING REPORT\UNRESTRICTED CRITERIA < DATA_PE_SECONDARY PRODUCTION_(UNR)_2116443 >



BW13	2/19/2009 0.5–1(ft bgs)	2/19/2009 2–2.5(ft bgs)	2/19/2009 4–4.5(ft bgs)
INORG			
Chromium (total)	53.5 [A]	344 [A]	471 [A]
Copper	19.9	29.6	23.1
Nickel	217 [A]	139 [A]	100 [A]

BW14	2/19/2009 8–8.5(ft bgs)
INORG	
Chromium (total)	138 [A]
Copper	27.3
Nickel	127 [A]

BW12	2/5/2009 8–8.5(ft bgs)
INORG	
Chromium (total)	33.9 [A]
Copper	17.7
Nickel	270 [A]

BW09	1/29/2008 8–8.5(ft bgs)
INORG	
Chromium (total)	24.6
Copper	214 [A]
Nickel	205 [A]

BW15	2/19/2009 8–8.5(ft bgs)
INORG	
Chromium (total)	113 [A]
Copper	32.8
Nickel	222 [A]

BW11	2/5/2009 0.5–1(ft bgs)	2/5/2009 2–2.5(ft bgs)	2/5/2009 4–4.5(ft bgs)
INORG			
Chromium (total)	35.4 [A]	27.4	43 [A]
Copper	26.4	23.2	21.4
Nickel	232 [A]	248 [A]	150 [A]

BW08	1/29/2009 0.5–1(ft bgs)	1/29/2009 2–2.5(ft bgs)	1/29/2009 4–4.5(ft bgs)
INORG			
Chromium (total)	38.2 [A]	96.8 [A]	44.6 [A]
Copper	38.4	58.4 [A]	44
Nickel	48.5 [A]	191 [A]	127 [A]

BW05	1/21/2009 0.5–1(ft bgs)	1/21/2009 2–2.5(ft bgs)	1/21/2009 4–4.5(ft bgs)
INORG			
Chromium (total)	107 [A]	25.4	68.6 [A]
Copper	54 [A]	27.3	96 [A]
Nickel	210 [A]	137 [A]	206 [A]

BW06	1/26/2009 9–9.5(ft bgs)
INORG	
Chromium (total)	41 [A]
Copper	63.6 [A]
Nickel	238 [A]

BW03	1/15/2009 8–8.5(ft bgs)
INORG	
Chromium (total)	354 [A]
Copper	132 [A]
Lead	15
Nickel	202 [A]
Zinc	49.7

LEGEND

- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FORMER LOCATION OF UNDERGROUND PIPING/SUMPS
- FORMER WASH TANK AND TRENCH
- FENCE
- EXCAVATION AREA
- ADDITIONAL EXCAVATION AREA
- POST-EXCAVATION SOIL SAMPLING LOCATION, JANUARY/FEBRUARY 2009
- POST-EXCAVATION SOIL SAMPLING LOCATION REMOVED DURING SUBSEQUENT EXCAVATION
- SOIL BORING LOCATION, AUGUST/OCTOBER 2006, JUNE 2008
- MONITORING WELL LOCATION

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U – Not Detected.
J – Estimated Concentration.
D – Dilution.
F – MS/MSD RPD exceeds control limits
* – LCS or LCSD is outside acceptance limits.
B – Compound found in the blank and sample.
SCO – Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
(A) – Concentration exceeds the Unrestricted SCO.

SOURCE:

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SURVEY", DATED 9-24-07.
2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

10 0 10 20
SCALE IN FEET

REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN BLUEWING AREA UNRESTRICTED CRITERIA ONLY

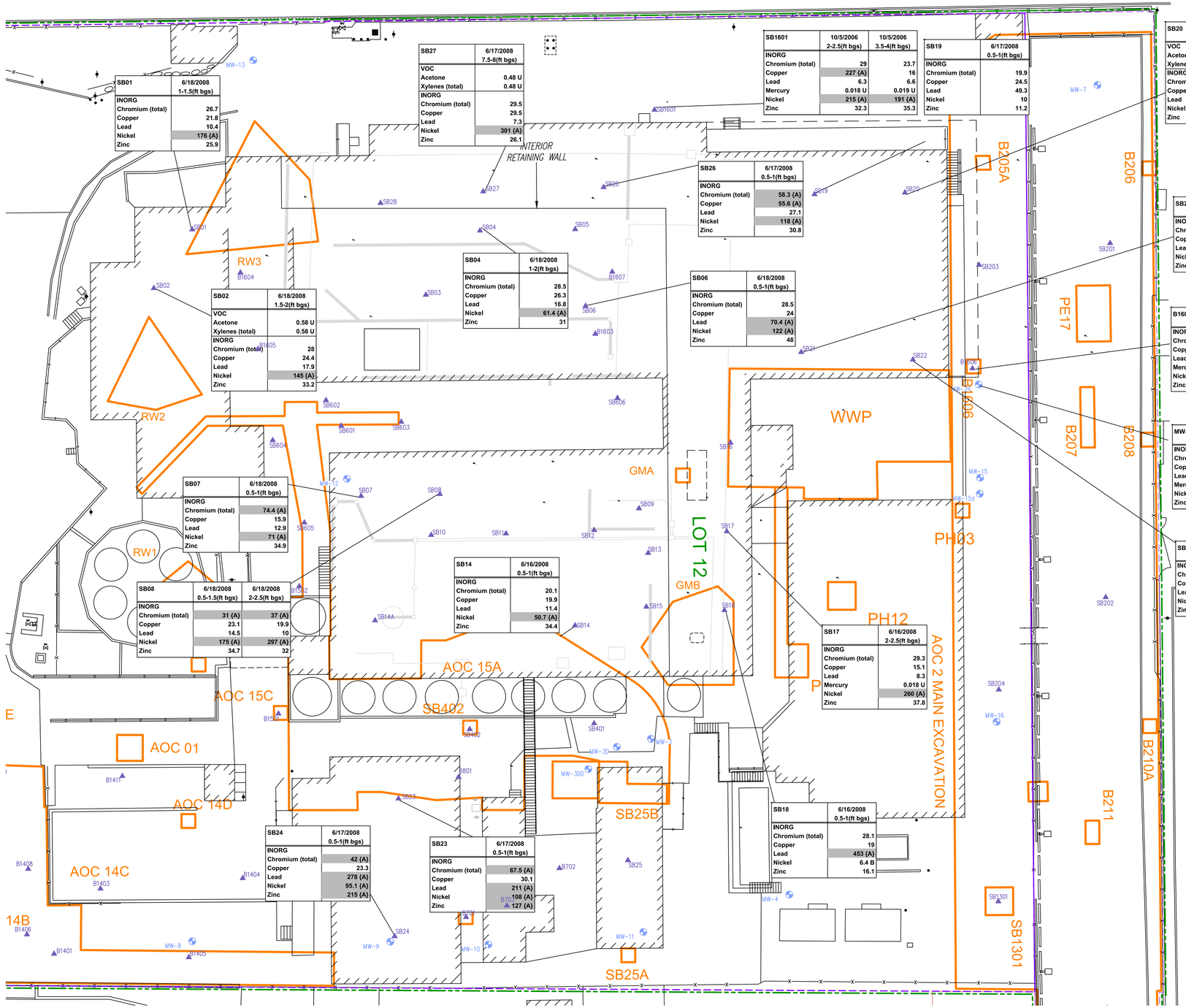
RAMBOLL ENVIRON

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

PREPARED BY: JS	DATE: 01/09/2017
DRAFTED BY: TSP	SCALE: AS SHOWN
APPROVED BY: BK	PROJECT: 2116443A

PLATE 10

TPENNISI 1/1/17
P:\2116443_SUN CHEMICAL ROSEBANK_FINAL ENGINEERING REPORT\UNRESTRICTED CRITERIA < DATA_PE BLUEWING (UNR)_2116443 >



SB01	6/18/2008 1-1.5(ft bgs)
INORG	
Chromium (total)	26.7
Copper	21.8
Lead	10.4
Nickel	176 (A)
Zinc	25.9

SB27	6/17/2008 7.5-8(ft bgs)
VOC	
Acetone	0.48 U
Xylenes (total)	0.48 U
INORG	
Chromium (total)	29.5
Copper	29.5
Lead	7.3
Nickel	301 (A)
Zinc	26.1

SB1601	10/5/2006 2-2.5(ft bgs)	10/5/2006 3.5-4(ft bgs)
INORG		
Chromium (total)	29	23.7
Copper	227 (A)	16
Lead	6.3	6.6
Mercury	0.018 U	0.019 U
Nickel	215 (A)	191 (A)
Zinc	32.3	35.3

SB19	6/17/2008 0.5-1(ft bgs)
INORG	
Chromium (total)	19.9
Copper	24.5
Lead	49.3
Nickel	10
Zinc	11.2

SB20	6/16/2008 0.5-1(ft bgs)
VOC	
Acetone	0.03 B
Xylenes (total)	0.0052 U
INORG	
Chromium (total)	21.8
Copper	15.7
Lead	8.5
Nickel	122 (A)
Zinc	17.9

SB26	6/17/2008 0.5-1(ft bgs)
INORG	
Chromium (total)	58.3 (A)
Copper	55.6 (A)
Lead	27.1
Nickel	118 (A)
Zinc	30.8

SB21	6/16/2008 0.5-1(ft bgs)
INORG	
Chromium (total)	18.5
Copper	18.8
Lead	10.8
Nickel	57.4 (A)
Zinc	23.2

SB04	6/18/2008 1-2(ft bgs)
INORG	
Chromium (total)	28.5
Copper	26.3
Lead	16.8
Nickel	61.4 (A)
Zinc	31

SB06	6/18/2008 0.5-1(ft bgs)
INORG	
Chromium (total)	28.5
Copper	24
Lead	70.4 (A)
Nickel	122 (A)
Zinc	48

B1606	10/5/2006 3.5-4(ft bgs)
INORG	
Chromium (total)	34 (A)
Copper	18.8
Lead	16.2
Mercury	0.019 U
Nickel	190 (A)
Zinc	35.6

SB02	6/18/2008 1.5-2(ft bgs)
VOC	
Acetone	0.58 U
Xylenes (total)	0.58 U
INORG	
Chromium (total)	28
Copper	24.4
Lead	17.9
Nickel	145 (A)
Zinc	33.2

MW-2	8/28/2006 2-2.5(ft bgs)	8/28/2006 4-4.5(ft bgs)
INORG		
Chromium (total)	113 (A)	29.3
Copper	87 (A)	17.6
Lead	20.5	6.3
Mercury	0.02 U	0.016 U
Nickel	623 (A)	218 (A)
Zinc	49.2	33.4

SB07	6/18/2008 0.5-1(ft bgs)
INORG	
Chromium (total)	74.4 (A)
Copper	15.9
Lead	12.9
Nickel	71 (A)
Zinc	34.9

SB22	6/16/2008 0.5-1(ft bgs)
INORG	
Chromium (total)	21.9
Copper	15.8
Lead	9.1
Nickel	107 (A)
Zinc	23.7

SB08	6/18/2008 0.5-1.5(ft bgs)	6/18/2008 2-2.5(ft bgs)
INORG		
Chromium (total)	31 (A)	37 (A)
Copper	23.1	19.9
Lead	14.5	10
Nickel	175 (A)	297 (A)
Zinc	34.7	32

SB14	6/16/2008 0.5-1(ft bgs)
INORG	
Chromium (total)	20.1
Copper	19.9
Lead	11.4
Nickel	50.7 (A)
Zinc	34.4

SB17	6/16/2008 2-2.5(ft bgs)
INORG	
Chromium (total)	29.3
Copper	15.1
Lead	8.3
Mercury	0.018 U
Nickel	260 (A)
Zinc	37.8

SB24	6/17/2008 0.5-1(ft bgs)
INORG	
Chromium (total)	42 (A)
Copper	23.3
Lead	278 (A)
Nickel	95.1 (A)
Zinc	215 (A)

SB23	6/17/2008 0.5-1(ft bgs)
INORG	
Chromium (total)	67.5 (A)
Copper	30.1
Lead	211 (A)
Nickel	108 (A)
Zinc	127 (A)

SB18	6/16/2008 0.5-1(ft bgs)
INORG	
Chromium (total)	28.1
Copper	19
Lead	453 (A)
Nickel	6.4 B
Zinc	16.1

LEGEND

- APPROX. PROPERTY BOUNDARY
- LOT BOUNDARY
- FORMER BUILDING WALL/FOOTER
- FORMER LOCATION OF FOUNDATION RETAINING WALL
- FENCE
- SOIL BORING (2006)
- MONITORING WELL
- STORM WATER TRENCH DRAIN
- EXCAVATION AREA

Chemical	Unrestricted SCO (mg/kg)
VOC	
Acetone	0.05
Benzene	0.06
Xylenes (total)	0.26
SVOC	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Phenanthrene	100
Pyrene	100
PEST	
delta-BHC	0.04
4,4-DDD	0.0033
4,4-DDT	0.0033
PCB	
PCBs (total)	0.1
INORG	
Arsenic	13
Barium	350
Cadmium	2.5
Chromium (total)	30
Copper	50
Lead	63
Manganese	1600
Mercury	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109

U -- Not Detected.
J -- Estimated Concentration.
D -- Dilution.
F -- MS/MSD RPD exceeds control limits
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SCO -- Soil Cleanup Objective.

NOTES:
All concentrations are presented in mg/kg.
(A) -- Concentration exceeds the Unrestricted SCO.

SOURCE:

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2. SEWER INFORMATION PROVIDED BY SITE SEWER SURVEY CHEM TECH INC., NORWALK, CT JUNE 14, 1994.

20 0 20 40
SCALE IN FEET

REMEDIAL ACTION DETAILS AND SUMMARIZED POST REMEDIAL SAMPLING RESULTS IN AOC 16, MW-2 AND SUBSLAB AREA UNRESTRICTED CRITERIA ONLY

RAMBOLL ENVIRON

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY
441 TOMPKINS AVE.
STATEN ISLAND, NY

PREPARED BY: JS	DATE: 01/09/2017
DRAFTED BY: TSP	SCALE: AS SHOWN
APPROVED BY: BK	PROJECT: 2116443A

PLATE 11

TPENNISI 1/13/17
F:\2116443_SUN CHEMICAL ROSEBANK_FINAL ENGINEERING REPORT\UNRESTRICTED CRITERIA < DATA_PE_AOC 16 & SUBSLAB_(UNR)_2116443 >

APPENDIX P
ENVIRONMENTAL EASEMENT

manatt
manatt | phelps | phillips

James Walsh
Manatt, Phelps & Phillips, LLP
Direct Dial: (518) 431-6717
E-mail: JWalsh@manatt.com

May 18, 2017

Bradford D. Burns, Esq.
Senior Attorney
NYS Department of Environmental Conservation
Office of General Counsel
625 Broadway, 14th Floor
Albany, NY 12233-1500

Re: Sun Chemical Corporation
Site No. C243024

Dear Mr. Burns:

The environmental easement for the above site has been filed with the Office of the Richmond County Clerk and the Notice to Municipality has also been delivered to the Office of the Richmond County Clerk. Attached are the following documents:

- Certified copy of environmental easement, as recorded.
- Copy of Notice to Municipality.
- Proof of mailing of the Notice to Municipality, in the form of a Certified Mail Receipt and a signed receipt by the Office of the Richmond County Clerk.

If you need additional information, please contact me.

Sincerely,

Jim Walsh

JW

Cc: G. Andrzejewski
W. Faure
W. Kraft
G. Walker
T. Wolff

204044849.1

manatt
manatt | phelps | phillips

James Walsh
Manatt, Phelps & Phillips, LLP
Direct Dial: (518) 431-6717
E-mail: JWalsh@manatt.com

May 3, 2017

BY CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Office of the Richmond County Clerk
130 Stuyvesant Place - 2nd Floor
Staten Island, New York 10301

Re: Environmental Easement for 441-443 Tompkins Avenue, Richmond County, NY

Dear Sir/Madame:

Attached please find a copy of an environmental easement granted to the New York State Department of Environmental Conservation ("Department")

on October 4, 2016,

by Sun Chemical Corporation f/k/a SUN/DIC Acquisition Corp.,

for property at 441-443 Tompkins Avenue, Richmond County, New York,

Tax Map No. Block 2846 Lot 12,

DEC Site No: C243024.

This Environmental Easement restricts future use of the above-referenced property to restricted residential, commercial and industrial uses. Any on-site activity must be done in accordance with the Environmental Easement and the Site Management Plan which is incorporated into the Environmental Easement. Department approval is also required prior to any groundwater use.

Article 71, Section 71-3607 of the New York State Environmental Conservation Law requires that:

1. Whenever the department is granted an environmental easement, it shall provide each affected local government with a copy of such easement and shall

also provide a copy of any documents modifying or terminating such environmental easement.

2. Whenever an affected local government receives an application for a building permit or any other application affecting land use or development of land that is subject to an environmental easement and that may relate to or impact such easement, the affected local government shall notify the department and refer such application to the department. The department shall evaluate whether the application is consistent with the environmental easement and shall notify the affected local government of its determination in a timely fashion, considering the time frame for the local government's review of the application. The affected local government shall not approve the application until it receives approval from the department.

An electronic version of every environmental easement that has been accepted by the Department is available to the public at: http://www.dec.ny.gov/chemical/36045.html. Please forward this notice to your building and/or planning departments, as applicable, to ensure your compliance with these provisions of New York State Environmental Conservation Law. If you have any questions or comments regarding this matter, please do not hesitate to contact me.

Sincerely,

James Walsh

JW

203904530.1

Office of the
Richmond County Clerk
130 Stuyvesant Place
Staten Island, NY 10301

Hon. Stephen J. Fiala, County Clerk

ACS-000000000552357-000000000734414-009

Recording and Endorsement Cover Page

Document Type: EASEMENT COMMERCIAL
Document Page Count: 9

PRESENTER:
ROYAL ABSTRACT OF NEW YORK LLC
181679
125 PARK AVENUE, SUITE 1610
NEW YORK,NY 10017

RETURN TO:
ROYAL ABSTRACT OF NEW YORK LLC
181679
125 PARK AVENUE, SUITE 1610
NEW YORK,NY 10017

PROPERTY DATA # OF BLOCKS 1 # OF LOTS 1

Block	Lot	Unit
2846	12	Entire Lot

PARTIES

GRANTOR	GRANTEE
SUN CHEMICAL CORPORATION	THE PEOPLE OF THE STATE OF NEW YORK
35 WATERVIEW BOULEVARD	625 BROADWAY
PARSIPPANY,NJ 07054	ALBANY,NY 12233
"And Others"	"And Others"

SUPPORTING DOCUMENTS

RPT
TP-584

PAYMENT DETAIL

Make Checks Payable to:

Richmond County Clerk: 53.00 Recording Fee

Total Payments For This Document: 53.00

FEES PAID

EXAM AG DATE APR 10 2017

LAND DOC# 648572
23Z-EASEMENT
RETT: 6800 $.00
RPT: 6800 $.00
04/11/2017 11:56:53 A.M.
RECEIPT: 15816 FEE: $53.00
RICHMOND COUNTY CLERK

RECORDED IN RICHMOND COUNTY
APR 11 2017

County: Richmond Site No: C243024 Brownfield Cleanup Agreement Index : A2-0614-0109

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made as of this 4th day of October, 2016 between Owner(s) Sun Chemical Corporation f/k/a SUN/DIC Acquisition Corp., having an office at 35 Waterview Boulevard, Parsippany, New Jersey 07054, Attention: Gary Andrzejewski, County of Morris, State of New Jersey (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

Block 2846 Lot 12

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 441 - 443 Tompkins Avenue in the City of New York, County of Richmond and State of New York, known and designated on the tax map of the New York City Department of Finance as tax map parcel number: Block 2846 Lot 12, being the same as that property conveyed to Grantor by deed dated December 31, 1986 and recorded in the Richmond County Clerk's Office at Reel 0347, Page 0177. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 4.659 +/- acres, and is hereinafter more fully described in the Land Title Survey dated June 13, 2014 and last revised on October 6, 2015 prepared by James C. Weed, P.L.S. of Control Point Associates, Inc., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation

181679

Prem: 443 Tompkins Avenue
Staten Island NY 10305

established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: A2-0614-0109, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the New York City Department of Health and Mental Hygiene to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation

pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved b the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: C243024
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail

County: Richmond Site No: C243024 Brownfield Cleanup Agreement Index : A2-0614-0109

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Sun Chemical Corporation f/k/a SUN/DIC Acquisition Corp.:

By: _____

Print Name: Gary Andrzejewski

Title: Corp. V.P. Env. Affairs Date: 9/14/2016

Grantor's Acknowledgment

STATE OF ~~NEW YORK~~ ILLINOIS)
) ss:
COUNTY OF COOK)

On the 14th day of September, in the year 20 16 before me, the undersigned, personally appeared Gary Andrzejewski, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Deborah L Cochrane
Notary Public – State of ~~New York~~ ILLINOIS

Official Seal
Deborah L Cochrane
Notary Public State of Illinois
My Commission Expires 08/24/2018

County: Richmond Site No: C243024 Brownfield Cleanup Agreement Index : A2-0614-0109

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 4th day of October, in the year 2016, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public – State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH6032146
Qualified in Schenectady County
Commission Expires August 22, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

Metes and Bounds Description
Environmental Easement
Lot 12, Block 2846
Rosebank, Borough of Staten Island
Richmond County, City & State of New York

BEGINNING at a point formed by intersection of the southerly line of Chestnut Avenue (variable width) with the easterly line of Tompkins Avenue (70' Wide), from said point of beginning running, thence;

1. Along said easterly line of Tompkins Avenue, South 29 Degrees – 14 Minutes – 07 Seconds East, a distance of 343.08 feet to a point, thence;

2. Along the dividing line between Lot 12 and Lots 1, 259, 258, 257, 275, 255, 254, 253, 252, 300, 315 & 314, Block 2846, North 61 Degrees – 20 Minutes – 30 Seconds East, a distance of 583.59 feet to a point, thence;

3. Along the dividing line between Lot 12 and Lot 54, Block 2846, North 29 Degrees – 34 Minutes – 50 Seconds West, a distance of 353.70 feet to a point, thence;

4. Along the aforementioned southerly line of Chestnut Avenue, South 60 Degrees – 17 Minutes – 49 Seconds West, a distance of 581.45 feet to the point and place of beginning.

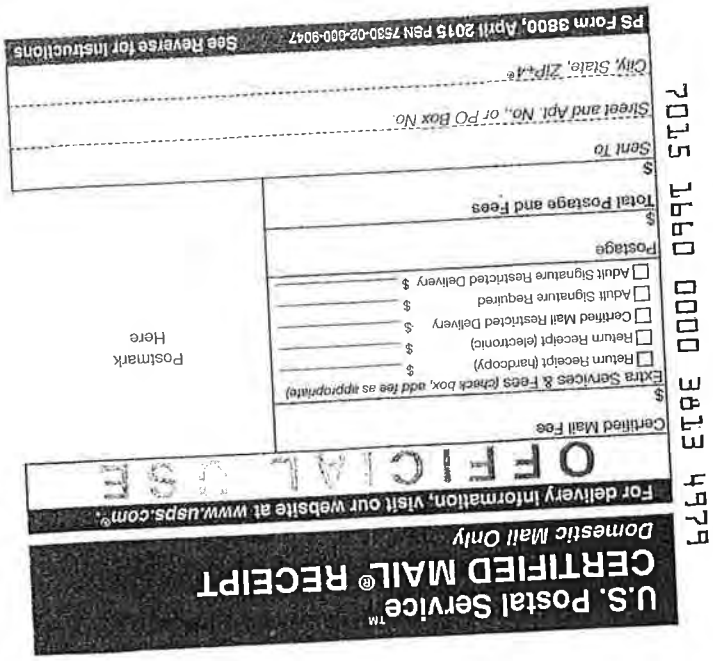
Containing 202,933 Square Feet or 4.659 Acres

163215

State of New York, County of Richmond, ss:
I, Stephen J. Fiala, County Clerk and Clerk of the Supreme Court, Richmond County and Recording Officer for Richmond County do hereby certify that I have compared this copy with the original filed or recorded in my office on April 11, 2017
and it is a correct transcript therefrom and of the whole of the original. Witness my hand and seal of said County and Court on

APR 20 2017

COUNTY CLERK



SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Office of the Richmond County Clerk
130 Stuyvesant Place, 2nd Floor
Staten Island, NY 10301

9590 9403 0766 5196 5489 81

2. Article Number *(Transfer from service label)*

7015 1660 0000 3813 4979

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, April 2015 PSN 7530-02-000-9053 Domestic Return Receipt

Office of the
Richmond County Clerk
130 Stuyvesant Place
Staten Island, NY 10301

Hon. Stephen J. Fiala, County Clerk

ACS-000000000552357-000000000734414-009

Recording and Endorsement Cover Page

Document Type: EASEMENT COMMERCIAL
Document Page Count: 9

PRESENTER:	RETURN TO:
ROYAL ABSTRACT OF NEW YORK LLC 181679 125 PARK AVENUE, SUITE 1610 NEW YORK,NY 10017	ROYAL ABSTRACT OF NEW YORK LLC 181679 125 PARK AVENUE, SUITE 1610 NEW YORK,NY 10017

PROPERTY DATA # OF BLOCKS 1 # OF LOTS 1

Block	Lot	Unit
2846	12	Entire Lot

PARTIES

GRANTOR	GRANTEE
SUN CHEMICAL CORPORATION 35 WATERVIEW BOULEVARD PARSIPPANY,NJ 07054 "And Others"	THE PEOPLE OF THE STATE OF NEW YORK 625 BROADWAY ALBANY,NY 12233 "And Others"

SUPPORTING DOCUMENTS

RPT
TP-584

PAYMENT DETAIL

Make Checks Payable to:

Richmond County Clerk: 53.00 Recording Fee

FEES PAID

Total Payments For This Document: 53.00

EXAM AG DATE APR 10 2017

LAND DOC# 648572
23Z-EASEMENT
RETT: 6800 $.00
RPT: 6800 $.00
04/11/2017 11:56:53 A.M.
RECEIPT: 15816 FEE: $53.00
RICHMOND COUNTY CLERK

RECORDED IN RICHMOND COUNTY
APR 11 2017
COUNTY CLERK

County: Richmond Site No: C243024 Brownfield Cleanup Agreement Index : A2-0614-0109

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36
OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made as of this 4th day of October, 2016 between Owner(s) Sun Chemical Corporation f/k/a SUN/DIC Acquisition Corp., having an office at 35 Waterview Boulevard, Parsippany, New Jersey 07054, Attention: Gary Andrzejewski, County of Morris, State of New Jersey (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

BLOCK 2846 LOT 12

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 441 - 443 Tompkins Avenue in the City of New York, County of Richmond and State of New York, known and designated on the tax map of the New York City Department of Finance as tax map parcel number: Block 2846 Lot 12, being the same as that property conveyed to Grantor by deed dated December 31, 1986 and recorded in the Richmond County Clerk's Office at Reel 0347, Page 0177. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 4.659 +/- acres, and is hereinafter more fully described in the Land Title Survey dated June 13, 2014 and last revised on October 6, 2015 prepared by James C. Weed, P.L.S. of Control Point Associates, Inc., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation

181679

Prem: 443 Tompkins Avenue
Staten Island NY 10305

established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: A2-0614-0109, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the New York City Department of Health and Mental Hygiene to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation

pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved b the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

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Site Number: C243024
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Albany New York 12233-5500

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NYSDEC
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All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Sun Chemical Corporation f/k/a SUN/DIC Acquisition Corp.:

By: _____

Print Name: Gary Andrzejewski

Title: Corp. VP, Gen. Atty. Date: 9/14/2016

Grantor's Acknowledgment

STATE OF ~~NEW YORK~~ ILLINOIS)
) ss:
COUNTY OF COOK)

On the 14th day of September, in the year 20 16 before me, the undersigned, personally appeared Gary Andrzejewski, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Deborah L Cochrane
Notary Public – State of ~~New York~~ ILLINOIS

Official Seal
Deborah L Cochrane
Notary Public State of Illinois
My Commission Expires 08/24/2018

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 4th day of October, in the year 2016, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public – State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH6032146
Qualified in Schenectady County
Commission Expires August 22, 2018

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Metes and Bounds Description
Environmental Easement
Lot 12, Block 2846
Rosebank, Borough of Staten Island
Richmond County, City & State of New York

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1. Along said easterly line of Tompkins Avenue, South 29 Degrees – 14 Minutes – 07 Seconds East, a distance of 343.08 feet to a point, thence;

2. Along the dividing line between Lot 12 and Lots 1, 259, 258, 257, 275, 255, 254, 253, 252, 300, 315 & 314, Block 2846, North 61 Degrees – 20 Minutes – 30 Seconds East, a distance of 583.59 feet to a point, thence;

3. Along the dividing line between Lot 12 and Lot 54, Block 2846, North 29 Degrees – 34 Minutes – 50 Seconds West, a distance of 353.70 feet to a point, thence;

4. Along the aforementioned southerly line of Chestnut Avenue, South 60 Degrees – 17 Minutes – 49 Seconds West, a distance of 581.45 feet to the point and place of beginning.

Containing 202,933 Square Feet or 4.659 Acres

163214

State of New York, County of Richmond, ss:
I, Stephen J. Fiala, County Clerk and Clerk of the Supreme Court, Richmond County and Recording Officer for Richmond County do hereby certify that I have compared this copy with the original filed or recorded in my office on April 11, 2017
and it is a correct transcript therefrom and of the whole of the original. Witness my hand and seal of said County and Court on

APR 20 2017

COUNTY CLERK

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

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130 Stuyvesant Place, 2nd Floor
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2. Article Number *(Transfer from service label)*
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CHESTNUT AVENUE

(VARIABLE WIDTH)
(TITLE VESTED ON 7-28-89)
ONE-WAY TRAFFIC

(ASPHALT ROADWAY)

TOMPKINS AVENUE

(70' WIDE)
(TITLE VESTED ON 11-20-81)
TWO-WAY TRAFFIC

(ASPHALT ROADWAY)

BUTLER PLACE

(50' WIDE)
TWO-WAY TRAFFIC

TILSON PLACE

(VARIABLE WIDTH)
(ASPHALT ROADWAY)
TWO-WAY TRAFFIC

KALTENMEIER LANE

ST. MARY'S AVENUE

(VARIABLE WIDTH)
(ASPHALT ROADWAY)
ONE-WAY TRAFFIC

P.O.B.
BLOCK 2846
LOT 12
S: 15497.402'
W: 8477.560'
DEED LINE

S60°17'49"W 581.45'

S: 15209.292'
W: 7972.511'

N29°43'50"W 583.59'

N61°20'30"E

S: 15796.777'
W: 8310.003'

S: 15516.895'
W: 7797.906'

BLOCK 2846
LOT 12
N/F REPUTED OWNER
SUN/DIC ACQUISITION CORP.
REEL 347, PG. 177
(PARCEL 1)

BLOCK 2846
LOT 1
N/F REPUTED OWNER
CHURCH OF ST. JOSEPH

BLOCK 2846
LOT 54
N/F REPUTED OWNER
SUN/DIC ACQUISITION CORP.
REEL 347, PG. 171
(OUT PARCEL)

BLOCK 2846
LOT 300
N/F REPUTED OWNER
FRED & MARY P. CARULLO/
GATEWAY ARMS REALTY CORP

BLOCK 2846
LOT 315
N/F REPUTED OWNER
GABRIELLE FISHER
DOC. #447275

BLOCK 2846
LOT 314
N/F REPUTED OWNER
SUN/DIC ACQUISITION CORP.
REEL 347, PG. 177
(PARCEL 2)

BLOCK 2846
LOT 249
N/F REPUTED OWNER
NEW YORK STATE PSC

BLOCK 2846
LOT 247
N/F REPUTED OWNER
NEW YORK STATE PSC

BLOCK 2846
LOT 56

BLOCK 2846
LOT 57

BLOCK 2846
LOT 113

BLOCK 2846
LOT 114

BLOCK 2846
LOT 175

BLOCK 2846
LOT 176

BLOCK 2846
LOT 244

BLOCK 2846
LOT 243

N/F REPUTED OWNER
L. 3988, PG. 255

N/F THE STATEN ISLAND RAPID TRANSIT RAILWAY (PER REF. #3)

LOT LINE (PER REF. #1) (TYP)

TAX MAP LOT LINE

DEED LINE

WIDENING LINE (TYP)

TRENCH DRAIN

BLOCK 2846 LOT 259 N/F REPUTED OWNER ST. JOSEPH R.C. CHURCH

BLOCK 2846 LOT 258 N/F REPUTED OWNER MARIA ANN DOC. #44002

BLOCK 2846 LOT 257 N/F REPUTED OWNER ELIZABETH MADDEN DOC. #445153

BLOCK 2846 LOT 255 N/F REPUTED OWNER RICHMOND R.E. LLC (DOC. #445154) L. 14000, PG. 276

BLOCK 2846 LOT 254 N/F REPUTED OWNER MARIA ANN DOC. #233632

BLOCK 2846 LOT 254 N/F REPUTED OWNER MARIA ANN DOC. #233785

BLOCK 2846 LOT 253 N/F REPUTED OWNER FRANK & AMELIA FERRITA L. 1045, PG. 219

BLOCK 2846 LOT 252 N/F REPUTED OWNER S.I. REALTY OF N.Y. LLC DOC. #398113

LEGEND

- HYDRANT
- PIV — POSITION INDICATOR VALVE
- WATER VALVE
- GAS VALVE
- OH — OVERHEAD WIRES
- UTILITY POLE
- UTILITY POLE/LIGHT POLE
- GUY WIRE
- FIELD MARKER
- MW-1 — MONITORING WELL
- SIGN
- BOLLARD
- C.L.F. — CHAIN LINK FENCE
- D.C. — DEPRESSED CURB
- E.O.P. — EDGE OF PAVEMENT
- L.S.A. — LANDSCAPED AREA
- T.C. — TOP OF INNER CASING (NORTH RIM)
- RRT — RAILROAD TIE
- S.F.C.C. — STEEL FACED CONCRETE CURB
- D.W.P. — DETECTABLE WARNING PAD
- AREA LIGHT
- 10 — PARKING SPACE COUNT
- 1.0' — DENOTES OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE
- ENVIRONMENTAL EASEMENT AREA

REFERENCES:

1. THE OFFICIAL TAX MAP OF THE BOROUGH OF STATEN ISLAND, RICHMOND COUNTY, CITY & STATE OF NEW YORK, SHEET #12,
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, CITY OF NEW YORK, NEW YORK, BRONX, RICHMOND, NEW YORK, QUEENS, AND KINGS COUNTIES" PANEL 327 OF 457 MAP NUMBER 3604970327F, MAP REVISED: SEPT., 5, 2007.
3. MAP ENTITLED "CITY OF NEW YORK-BOROUGH OF RICHMOND, OFFICE OF THE PRESIDENT, BUREAU OF ENGINEERING MAP, ESTABLISHING THE LINES AND GRADES OF A STREET SYSTEM WITHIN THE AREA BOUNDED BY: WILLOW AVENUE, U.S. PIERHEAD LINE, ARTHUR VON BRIESEN PARK, BAY STREET, WADSWORTH AVENUE AND TOMPKINS AVENUE, ALSO SHOWING EXISTING AND PROPOSED SEWER EASEMENTS WITHIN THE SAID AREA IN SECTION 12 AND 13" DATED JULY 12, 1967.
4. MAP ENTITLED "CITY OF NEW YORK-BOROUGH OF STATEN ISLAND, OFFICE OF THE PRESIDENT, BUREAU OF ENGINEERING MAP, MODIFYING THE GRADES AND STREET TREATMENT OF CHESTNUT AVENUE FROM TOMPKINS AVENUE TO ANDERSON STREET IN SECTION 12" DATED SEPTEMBER 19, 1986.
5. MAP ENTITLED "CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION ACQUISITION AND DAMAGE MAP IN THE MATTER OF ACQUIRING TITLE TO A PORTION OF CHESTNUT AVENUE BETWEEN TOMPKINS AVENUE AND ANDERSON STREET, ONE PERMANENT SLOPE EASEMENT, FOUR DEMOLITION EASEMENTS AND TWO TEMPORARY CONSTRUCTION EASEMENTS ON CHESTNUT AVENUE BETWEEN STREET FOR A PERIOD OF 24 MONTHS FROM THE DATE OF TITLE VESTING" DATED OCTOBER 3, 1988.
6. MAP ENTITLED "BOUNDARY & LOCATION SURVEY, SUN CHEMICAL CORPORATION, TOMPKINS AVENUE, LOTS 12, 54 & 314, BLOCK 2846, ROSEBANK, BOROUGH OF STATEN ISLAND, RICHMOND COUNTY, CITY & STATE OF NEW YORK" PREPARED BY CONTROL POINT ASSOCIATES, INC, DATED 9-24-2007 LAST REVISED 7-9-2008 AS REV. NO. 1
7. MAP ENTITLED "SUN CHEMICAL CORPORATION, ROSEBANK FACILITY;PROPOSED INTERCEPTOR CHANNEL, 441 TOMPKINS AVENUE, STATEN ISLAND, NY" PREPARED BY ENVIRON ENGINEERS OF NORTH CAROLINA, PC, DATED 6-29-2010.

METES AND BOUNDS DESCRIPTION
ENVIRONMENTAL EASEMENT
LOT 12, BLOCK 2846
ROSEBANK, BOROUGH OF STATEN ISLAND
RICHMOND COUNTY, CITY & STATE OF NEW YORK

BEGINNING AT A POINT FORMED BY INTERSECTION OF THE SOUTHERLY LINE OF CHESTNUT AVENUE (VARIABLE WIDTH) WITH THE EASTERLY LINE OF TOMPKINS AVENUE (70' WIDE), FROM SAID POINT OF BEGINNING RUNNING, THENCE;

1. ALONG SAID EASTERLY LINE OF TOMPKINS AVENUE, SOUTH 29 DEGREES - 14 MINUTES - 07 SECONDS EAST, A DISTANCE OF 343.08 FEET TO A POINT, THENCE;
2. ALONG THE DIVIDING LINE BETWEEN LOT 12 AND LOTS 1, 259, 258, 257, 275, 255, 254, 253, 252, 300, 315 & 314, BLOCK 2846, NORTH 61 DEGREES - 20 MINUTES - 30 SECONDS EAST, A DISTANCE OF 583.59 FEET TO A POINT, THENCE;
3. ALONG THE DIVIDING LINE BETWEEN LOT 12 AND LOT 54, BLOCK 2846, NORTH 29 DEGREES - 34 MINUTES - 50 SECONDS WEST, A DISTANCE OF 353.70 FEET TO A POINT, THENCE;
4. ALONG THE AFOREMENTIONED SOUTHERLY LINE OF CHESTNUT AVENUE, SOUTH 60 DEGREES - 17 MINUTES - 49 SECONDS WEST, A DISTANCE OF 581.45 FEET TO THE POINT AND PLACE OF BEGINNING.

CONTAINING 202,933 SQUARE FEET OR 4.659 ACRES

THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL EASEMENT HELD BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PURSUANT TO TITLE 36 ARTICLE 71 OF THE NEW YORK ENVIRONMENTAL CONSERVATION LAW, THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THIS EASEMENT ARE SET FOR IN THE SITE MANAGEMENT PLAN (SMP). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY, THE SMP CAN BE OBTAINED FROM NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NY 12233 OR AT DERVEB@DEC.NY.GOV

VICINITY MAP
© 2008 DeLorme. Street Atlas USA

NOTES:

1. PROPERTY KNOWN AS LOT 12, BLOCK 2846 AS SHOWN ON THE TAX MAP OF THE BOROUGH OF STATEN ISLAND, RICHMOND COUNTY, CITY & STATE OF NEW YORK, SHEET #12.
2. AREA = 202,933 S.F. OR 4.659 AC.
3. THE LOCATION OF ALL UNDERGROUND UTILITIES HAVE NOT BEEN SHOWN. UTILITY INFORMATION SHOWN IS LIMITED TO VISIBLE UTILITY HARDWARE AND UTILITY MARKOUTS AT THE SURFACE AND DOES NOT INCLUDE SUCH ITEMS AS SUBSURFACE PIPING, UTILITY LINES, ETC. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.
4. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC, AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
5. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREIN.
6. BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL FLOODPLAIN) PER REF. #2.
7. THE EXISTENCE OF UNDERGROUND STORAGE TANKS, IF ANY, WAS NOT KNOWN AT THE TIME OF THE FIELD SURVEY.
8. THE OFFSETS SHOWN ARE NOT TO BE USED FOR THE CONSTRUCTION OF ANY STRUCTURE, FENCE, PERMANENT ADDITION, ETC.
9. ENCROACHMENTS AND VAULTS, IF ANY, BELOW SURFACE NOT SHOWN HEREON.
10. COORDINATE VALUES AND BEARINGS ARE IN THE SYSTEM ESTABLISHED BY THE UNITED STATES COAST & GEODETIC SURVEY FOR THE BOROUGH OF STATEN ISLAND, CITY OF NEW YORK.
11. THERE WERE NO NATURAL STREAMS OR WATERCOURSES VISIBLE AT THE TIME OF THE FIELD SURVEY.
12. MONITORING WELL NO. 2 WAS DESTROYED.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.

ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES.

PREPARED BY:
CONTROL POINT ASSOCIATES, INC.
35 TECHNOLOGY DRIVE
WARREN, NJ 07059
908.668.0099 - 908.668.9595 FAX

MT. LAUREL, NJ 609.857.2099
CHALFONT, PA 215.712.9800
SOUTHBOROUGH, MA 508.948.3000
MANHATTAN, NY 646.780.0411

NO.	DATE	BY	DESCRIPTION	APPROVED
2	10-6-15	J.P.J.	REVISE PER FIELD UPDATE	P.J.
1	6-16-14	E.S.E.	REVISE PER CLIENT'S REVIEW	P.J.

REVISIONS

PROJECT NAME
SUN CHEMICAL CORPORATION
LOT 12, BLOCK 2846
TOMPKINS AVENUE
ROSEBANK, BOROUGH OF STATEN ISLAND
RICHMOND COUNTY, CITY & STATE OF NEW YORK

DRAWING TITLE
BOUNDARY & LOCATION SURVEY

SEAL & SIGNATURE

NOT VALID UNTIL SEALED

10-06-2015
JAMES C. WEED DATE
NEW YORK PROFESSIONAL LAND SURVEYOR #50765

FIELD DATE:	9-30-15 6-10-14
FIELD BK:	11-30
F. B. PAGE:	130
DATE:	6-13-14
SCALE:	1"=30'
PROJECT No:	C07376.01
DRAWING BY:	AH
CHK BY:	ESE
APPROVED BY:	PJ
DWG No:	V-001.0.0
CAD FILE No:	C07376.01B&L
PAGE No:	1 OF 1

APPENDIX Q
PROCESS AND PERFORMANCE
GROUNDWATER MONITORING DATA

Geo-Cleanse®
INTERNATIONAL, INC.

February 8, 2016

Mr. Bill Kraft
Ramboll Environ
214 Carnegie Center
Princeton, NJ 08540

RE: Injection Summary Report – Sun Chemical

Dear Mr. Kraft:

Geo-Cleanse International, Inc. (Geo-Cleanse) is pleased to present Ramboll Environ (Ramboll) the following letter report summarizing the recently completed in-situ chemical oxidation (ISCO) treatment program at the Sun Chemical Site (the site) located in Staten Island, NY. Geo-Cleanse, in collaboration with Ramboll, designed the ISCO treatment program based upon review of site information, which was provided to Geo-Cleanse by Ramboll. Catalyzed hydrogen peroxide[1] (CHP) injection was implemented via the Geo-Cleanse® Process in order to address the chlorinated volatile organic compounds (CVOCs) present at the site. The primary contaminants of concern are 1,1-dichloroethane (1,1-DCA) and 1,1-dichloroethene (1,1-DCE). The goal of the treatment program is to reduce the groundwater concentrations in MW-3 to levels observed in the surrounding monitoring wells (MW-3D, MW-4, MW-9, and MW-10), which are currently at concentrations conductive to natural attenuation levels.

The purpose of this letter report is to summarize the field activities and data generated during the injection event, which includes adherence to health and safety protocols, installation of injection and vent wells, reagent injection (including volumes and concentration), and process monitoring results. The process monitoring results include monitoring of groundwater geochemistry, offgas production resulting from the oxidation reactions, and injection pressures throughout the treatment program.

Health and Safety

Geo-Cleanse is committed to, and experienced with, meticulous health and safety reviews and the "safety culture" commonly in place with large manufacturing facilities, Department of Defense sites, and active commercial properties. The site-specific Health and Safety Plan (HASP) dated November 19, 2015 was prepared not only with a focus on site workers but also with the understanding that the health and safety of the public is paramount. Every effort was made during the field implementation to ensure a safe injection program. Some of the efforts made by the project team (Geo-Cleanse and Ramboll Environ) to ensure safety success include the following:

(1) HASP Review & Daily Tailgate Meetings. A comprehensive HASP review was conducted as part of the mobilization effort which included the entire project team. Daily health and safety tailgate briefings were conducted prior to the start of each day. Topics covered in the daily tailgate meetings included HASP review,

[1] ISCO with hydrogen peroxide is commonly referred to as Fenton's reagent or modified Fenton's reagent. However, the process as implemented in the field differs significantly from "classical" Fenton's reagent chemistry. "Catalyzed hydrogen peroxide" (CHP) is, therefore, a term recommended by Watts and Teel (2005) to more accurately reflect the suite of chemical reactions associated with hydrogen peroxide ISCO and to differentiate it from classical Fenton chemistry.

hazards associated with the tasks being conducted that day, as well as any concerns from the previous day. The tailgate meeting logs, which summarized each meeting, are included in this report as Attachment 1.

(2) Exclusion Zone Delineation. A temporary exclusion zone was established around the perimeter of the work area in order to protect the public and other on-site contractors from accidental contact with equipment or reagents, as well as to protect the field equipment during the overnight hours. Proper signage was incorporated in the exclusion zone to help demarcate the work area clearly.

(3) Breathing Zone Monitoring. Breathing zone monitoring, utilizing a photo-ionization detector (PID), was performed several times each day. The monitoring was conducted from several locations within the treatment area. The breathing zone never had a PID reading greater than 0.0 ppm-v. The PID calibration log is provided in Attachment 2**.**

(4) Personal Protective Equipment and Equipment Inspections. Personal protective equipment (PPE) was donned appropriately by site workers. Injection equipment, injection hoses, and fittings were inspected prior to injection each day, and monitored throughout the day to ensure there were no leaks.

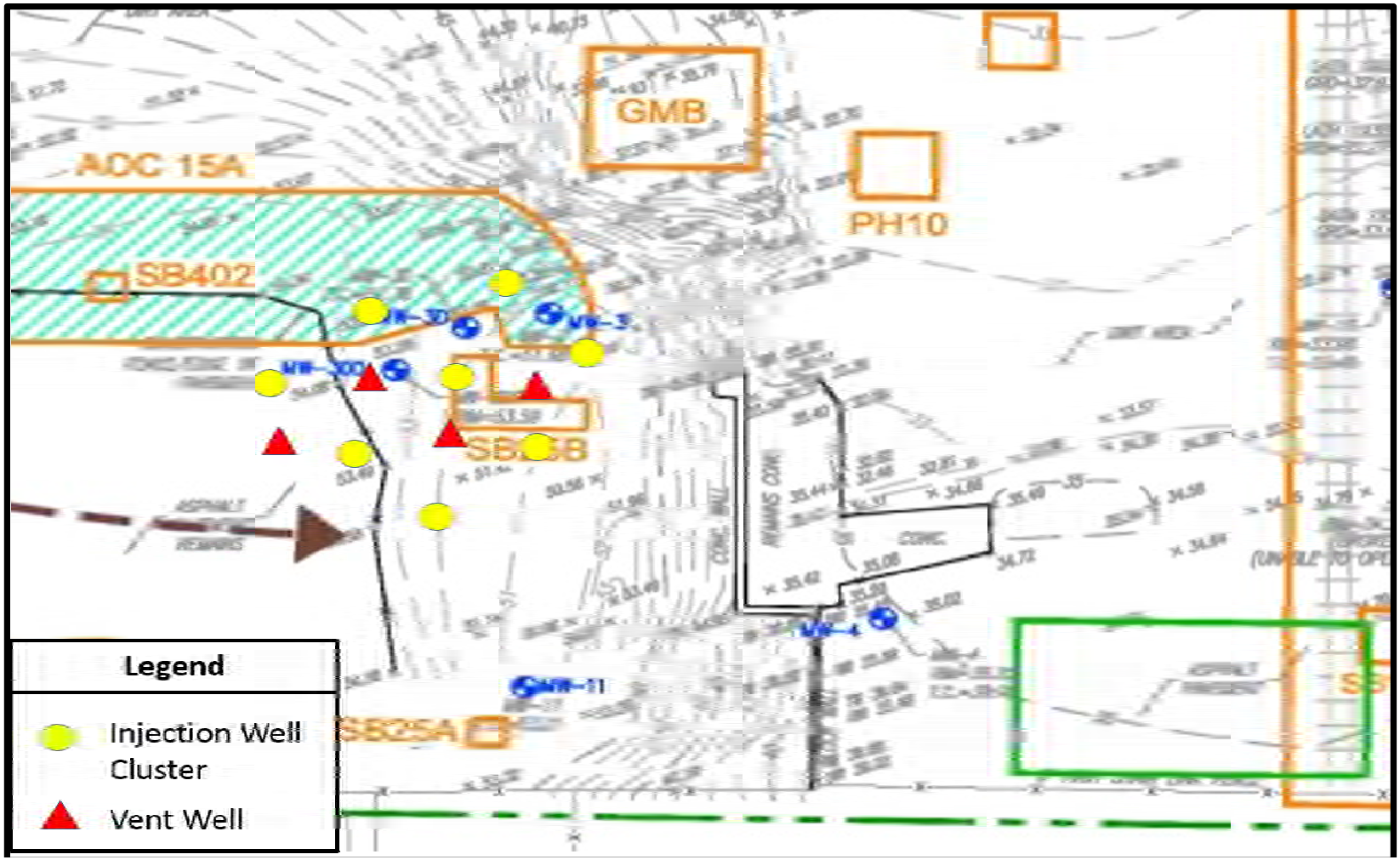
(5) Tanker Inspection Protocol. A Tanker Inspection Protocol (TIP) was developed as a supplement to the HASP to summarize routine procedures for inspection of the hydrogen peroxide drop trailer, and to summarize response actions and contact information in the event of a leak or other tanker related emergencies. A copy of the TIP was left with the site security guards in the event of a tanker related emergency when Geo-Cleanse personal was not present at the site. The tanker inspection checklist was preformed twice a week, and are included in this report as Attachment 3.

Injection and Vent Well Installation

The installation event consisted of 11 field days between November 23, 2015 and December 8, 2015. A Geo-Cleanse representative was present for the first four days of the event. Throughout the installation event, a total of 24 injection wells and 4 vent wells were installed in the approximate 1,800 square foot area surrounding the MW-3 cluster (Figure 1). The injection wells were installed to cover a 25-ft treatment interval ranging from 16 to 41 feet below grade surface (ft-bgs) in reference to MW-3. In order to target this zone effectively, injection wells were installed across three distinct zones (shallow, intermediate, and deep). The injection wells were installed as clusters, each cluster containing a shallow, intermediate, and deep injector. A total of eight clusters were installed in a grid-like pattern with approximately 15-ft spacing between each cluster. For cost efficiency, the shallow and deep injectors were installed within the same borehole, with the intermediate injectors in their own borehole. The construction logs for each well installed during this event are included in Attachment 4.

The injection wells installed on site were constructed with 1-inch diameter, schedule 80 CPVC screen and riser, which is compatible with the elevated temperatures and reagents commonly associated with CHP. The injection wells were installed via sonic drilling methods. The total depth of each injection well of the same distinct zone varied across the site due to surface elevation differences created by active excavation within the treatment area. Total well depth, well type, well diameter, and screen length for all wells can be found in Table 1.

Figure 1. Treatment Area Map



The vent wells were constructed with 1.25-inch Schedule 80 CPVC screen and riser. The vent wells served as controlled pressure relief points and additional process monitoring locations throughout the treatment program. The vent wells were installed via sonic drilling methods to total depths ranging from 27-33 ft-bgs.

Table 1. Injection and Vent Well Specifications

Location	Well Type	Well Diameter (in)	Well Depth (ft-bgs)	Screen Length (ft)	Location	Well Type	Well Diameter (in)	Well Depth (ft-bgs)	Screen Length (ft)
S-01	Injection	1	18	5	D-01	Injection	1	35	5
S-02	Injection	1	21	5	D-02	Injection	1	38	5
S-03	Injection	1	18	5	D-03	Injection	1	35	5
S-04	Injection	1	21	5	D-04	Injection	1	38	5
S-05	Injection	1	21	5	D-05	Injection	1	38	5
S-06	Injection	1	18	5	D-06	Injection	1	35	5
S-07	Injection	1	24	5	D-07	Injection	1	41	5
S-08	Injection	1	24	5	D-08	Injection	1	41	5
I-01	Injection	1	26	5	VW-01	Vent	1.25	30	27
I-02	Injection	1	29	5	VW-02	Vent	1.25	27	24
I-03	Injection	1	26	5	VW-03	Vent	1.25	30	27
I-04	Injection	1	29	5	VW-04	Vent	1.25	33	30
I-05	Injection	1	29	5					
I-06	Injection	1	26	5					
I-07	Injection	1	32	5					
I-08	Injection	1	26	5					

S- Shallow Injector
I- Intermediate Injector
D- Deep Injector

Injection Activates

The ISCO treatment program was conducted from December 21, 2015 – January 19, 2016, which consisted of 2 day for site set-up, 17 days of active injection, and 2 days for demobilization. In addition to more standard demobilization activities, Geo-Cleanse removed mud from the tires and underbody of any vehicle or trailer that left the site to ensure no mud was tracked off the site. The injection volumes (pre-treatment, catalysts solution, 34% hydrogen peroxide, and total CHP solution) for each location are provided in Table 2.

Prior to introduction of the oxidant, a pre-treatment solution was injected into each location to establish the proper geochemical conditions conducive for an efficient CHP reaction and to test the integrity of the injection wells. Geo-Cleanse was able to inject 15-50 gallons of a pre-treatment solution into each injection well, establish a 1.0 gallon per minute (gpm) flow rate, and establish the proper geochemical conditions across the site. This volume, although important to the success of the treatment program, is not included in the CHP solution concentration calculations since it was not injected simultaneously with the oxidant.

Geo-Cleanse began injection of CHP solution across the site once the pre-treatment injection was complete (December 28, 2015). A total of 5,094 gal. (approximately 48,036lbs.) of 34% hydrogen peroxide was diluted with approximately 13,087 gal. of catalyst solution, for a total CHP solution of 18,181 gallons

Table 2. Injection Volumes and Concentrations

Location	Pre-Treatment (gal)	Catalyst Solution (gal)	34% Hydrogen Peroxide (gal)	Total CHP Solution (gal)	CHP Solution Concentration (%)
S-01	15	537	231	768	10.2
S-02	50	603	244	847	9.8
S-03	50	597	218	815	9.1
S-04	15	399	154	553	9.5
S-05	50	598	214	812	9.0
S-06	15	586	209	795	8.9
S-07	50	432	174	606	9.8
S-08	50	592	214	806	9.0
I-01	50	473	185	658	9.6
I-02	50	633	256	889	9.8
I-03	50	487	196	683	9.8
I-04	20	448	184	632	9.9
I-05	50	415	178	593	10.2
I-06	15	622	251	873	9.8
I-07	50	595	234	829	9.6
I-08	50	370	145	515	9.6
D-01	50	541	229	770	10.1
D-02	50	717	295	1,012	9.9
D-03	50	700	280	980	9.7
D-04	54	351	141	492	9.7
D-05	50	846	339	1,185	9.7
D-06	30	544	193	737	8.9
D-07	50	595	201	796	8.6
D-08	50	406	129	535	8.2
Total	**1,014**	**13,087**	**5,094**	**18,181**	**9.5**

Key observations regarding the distribution of the reagents are as follows:

- The CHP solution concentration ranged from 8.2% -10.2%, with an average concentration of 9.5%.
- The average per injection well volume for the shallow interval was 750 gallons, which ranged from 553 gallons (S-4) to 847 gallons (S-2).
- The average per injection well volume for the intermediate interval was 709 gallons, which ranged from 515 gallons (I-4) to 889 gallons (I-2).
- The average per injection well volume for the deep interval was 813 gallons, which ranged from 492 gallons (D-4) to 1,185 gallons (D-5)
- A maximum total flowrate of 1.5 gpm per location was established and maintained throughout the treatment program. The number of wells injected into simultaneously was maximized at 3 locations.
- The injection pressures ranged from 0 to 30 pounds per square inch (psi).

Process Monitoring Results

Process monitoring refers to field analyses of groundwater and offgases collected during the treatment program. The process monitoring data is utilized to determine if appropriate geochemical conditions were established, reagents were distributed effectively, and if an efficient oxidation reaction was occurring.

Groundwater Results

Groundwater samples were collected from a selective group of injection, vent, and monitoring wells once each work day and field analyzed for pH, dissolved iron concentrations, hydrogen peroxide concentrations, temperature, PID headspace (which provides a qualitative assessment of VOC concentrations in the groundwater sample), and temperature. The groundwater results are summarized as daily averages in Table 3 and the daily groundwater sampling logs are provided in Attachment 5.

Table 3. Daily Avgerage Groundwater Process Monitoring Results

Date (d/m/yr)	pH (s.u)	Iron (mg/L)	Hydrogen Peroxide (mg/L)	PID Headspace (ppm-v)	Temperature (°F)
*12/22/15	7.0	9.7	0	3.5	64
12/28/15	4.0	4.5	0	4.4	61
12/30/15	5.4	1.4	5,857	1.4	62
12/31/15	5.9	1.0	7,443	2.7	63
01/04/16	5.9	3.3	2,919	2.8	60
01/05/16	4.8	1.0	6,003	0.6	59
01/06/16	4.8	1.8	9,086	2.2	59
01/07/16	5.8	3.5	7,183	1.9	59
01/08/16	5.3	1.3	7,683	0.7	59
01/11/16	5.3	0.2	7,016	3.6	58
01/12/16	5.1	0.0	8,582	3.5	59
01/13/16	6.1	0.0	813	4.8	56
01/14/16	4.9	0.0	7,504	1.9	56
01/15/16	4.8	0.0	10,287	2.6	61

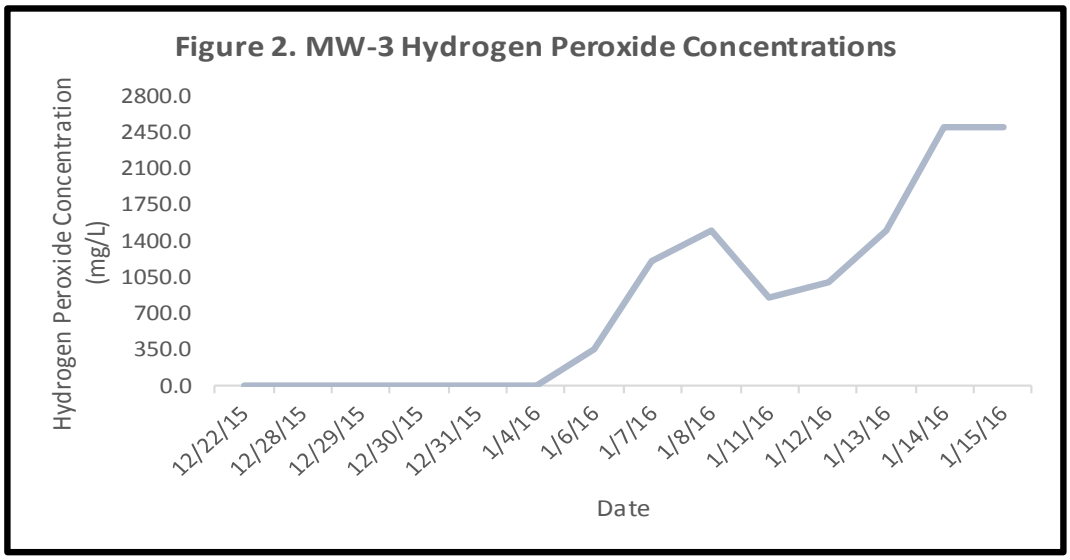
*Baseline sampling event

Key observations regarding the groundwater process monitoring are as follows:

- The Geo-Cleanse® Process generally requires a mildly acidic groundwater pH. Geo-Cleanse has found from empirical field experience that a pH of about 4-6 is most effective. The average groundwater pH was observed to decrease from 7 to 4 initially; however, once the oxidant injection was started the site wide average pH ranged from 6.1 to 4.8.
- Hydrogen Peroxide was well distributed across the site. Concentrations, on average, reached 10,287 mg/L (January 15, 2016) during the injection program. Concentrations in MW-3 increased throughout the treatment program, reaching a maximum concentration of 2,500 mg/L (January 14, 2016)(Figure 2).
- Dissolved iron was observed across the site, but generally at low concentrations (<20 mg/L). As the treatment program progressed, dissolved iron concentrations dropped to 0 mg/L. However, other process

monitoring data (see below) indicate an efficient reaction was occurring despite the generally low iron concentration, indicating that hydrogen peroxide was reacting effectively with autochthonous iron present in the aquifer.

- VOCs dissolved in groundwater will partition into the vapor in an air-filled headspace contained within a sample jar. Consistent with Henry's Law, the concentration of the VOCs in the headspace is proportional to their concentration in the groundwater. The headspace VOC concentration is monitored semi quantitatively with a PID to assess treatment progress and effectiveness. As anticipated based upon the low groundwater CVOC concentrations in MW-3, the VOC concentration in the groundwater headspace was generally low, as anticipated based upon the VOC concentrations present in the groundwater. The average PID headspace increased slightly from 3.5 ppm-v to 4.8 ppm-v.



Offgas Results

Offgas samples were collected from MW-3 and vent wells multiple times each day and analyzed for carbon dioxide concentration, oxygen concentration, and PID measurements. The offgas results are summarized as daily averages in Table 4. The daily offgas monitoring logs are provided in Attachment 6.

CHP oxidation liberates offgases which can also provide valuable information for evaluating treatment progress. Offgases are measured immediately adjacent to the active areas of injection. Oxygen (O_2) is produced by non-productive degradation of hydrogen peroxide in the absence of oxidizable organic material. Carbon dioxide (CO_2) is produced from oxidation of organic compounds and (in carbonate-rich formations) from reaction of acids in the reagents with carbonate solids. Typically, when treatment begins the O_2 concentration is relatively low (commonly less than 20.9% on the first day, reflecting anaerobic subsurface environments) and CO_2 concentration increases to a peak value. As treatment proceeds and the organic mass is destroyed, the CO_2 concentration in the offgas decreases and the O_2 concentration increases. The data collected from the MW-3 and the vent wells is generally more indicative of what the site conditions are due to the longer screen as a majority of the gas generated by the reaction is concentrated above the 5-ft screen length of the injection wells.

Key observations regarding offgas process monitoring results are as follows:

- The CO_2 concentration increased from of 1.4% on the first day of treatment to of 3.9% on January 11, 2016, with an average concentration of 2.2%. Concentrations then to decrease to 1.2% toward the end of the treatment program. Concentrations at individual locations reached 11.4% (AV-2).
- Oxygen concentration gradually increased to >40% (recording limit of instrument) from an average baseline concentration of 20.9%.
- As with the PID readings in the headspace of the groundwater sample jars, VOCs are entrained in the offgases produced by the CHP reaction and their concentration is proportional to the concentration in groundwater. PID offgas measurements indicate a gradual decrease in concentration to an average of 1.4 ppm from an average of 0.4 ppm.

Table 4. Daily Average Offgas Results

Date (d/m/yr)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (%)
*12/28/15	0.0	20.0	1.4
12/29/15	1.4	25.6	1.5
12/30/15	1.0	34.8	1.7
12/31/15	2.4	37.0	1.9
01/04/16	1.6	32.6	0.4
01/05/16	1.4	33.8	0.5
01/06/16	3.3	37.7	0.3
01/07/16	3.2	> 40.0	2.8
01/08/16	2.8	33.1	0.5
01/11/16	3.9	> 40.0	1.3
01/12/16	3.2	> 40.0	1.2
01/13/16	2.3	> 40.0	1.4
01/14/16	1.5	> 40.0	0.3
01/15/16	1.2	> 40.0	0.4

*Baseline sampling event

General Conclusions

1. Appropriate groundwater chemistry conditions conducive to catalyzed hydrogen peroxide oxidation were achieved; based on the following:

    a. Groundwater pH <6 was established and readily maintained during injection.
    b. Peroxide was well distributed across the site. Concentrations on average increased to as high as 10,287 mg/L across the site. Several individual locations increased to concentrations >12,000 mg/L.

c. Iron was observed across the site, but generally at low concentrations (<20 mg/L). Other process monitoring data (see next bullet) indicate an efficient reaction was occurring despite the generally low iron concentration, indicating that hydrogen peroxide was reacting effectively with autochthonous iron present in the aquifer.

2. An efficient and effective reaction was occurring, based upon the following:
    a. Initial increase in CO_2 offgas data based upon offgases monitored from MW-3 and vent wells followed by a subsequent decrease by the end of the CHP injection phase.
3. Reagents can be distributed at least 8 ft from an injection well, based upon the following:
    a. All injection wells were installed at a minimum 8-ft distance from the closest vent well and MW-3.
    b. All vent wells had detectable concentrations of hydrogen peroxide by the end of the CHP injection, ranging from 5 mg/L to 1,200 mg/L. MW-3 also had detectable concentrations of hydrogen peroxide, ranging from 5 mg/L to 2,500 mg/L.

Geo-Cleanse appreciates the opportunity to team with Ramboll Environ on this project and have enjoyed working with you and your project team. If you have any questions regarding this summary report or require any additional information, please contact us at (732) 970-6696 or via e-mail at bconnell@geocleanse.com / mnelson@geocleanse.com. We look forward to working with you in the future.

Sincerely,

Geo-Cleanse International, Inc.

Matthew Nelson
Senior Site Supervisor

C: Jay Shiply – Ramboll Environ
Robert Connell – Geo-Cleanse International, Inc.

Enclosures:

Attachment 1 –Daily Tailgate Safety Meeting Logs
Attachment 2 –Daily Calibration Log
Attachment 3 –Tanker Inspection Checklists
Attachment 4 –Well Construction Logs
Attachment 5 –Daily Groundwater Sampling Logs
Attachment 6 –Daily Offgas Monitoring Logs

Attachment 1

Daily Tailgate Safety Meeting Logs

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 12/2/15

Site Supervisor / Site Safety & Health Supervisor:

Personnel Attending:

Name (Printed)	*Signature*
See HASP	

Topics Addressed:

See HASP

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 12/23/15

Site Supervisor / Site Safety & Health Supervisor: MV

Personnel Attending:

Name (Printed)	*Signature*
Matthew Vella	
Scott Harrigan	

Topics Addressed:

- H_2O_2 Drop Trailer H2S Review
- Slips, Trips, Falls
- Exclusion Zone Requirements
- PPE Requirements
- Questions / Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 12/23/15

Site Supervisor / Site Safety & Health Supervisor: MN

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Scott Harrigan	

Topics Addressed:

- Peroxide Tanker Inspection Protocol
- Slips, Trips, Falls
- Weather Hazards
- Eyewash Station Reviews

Questions/Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 12/28/15

Site Supervisor / Site Safety & Health Supervisor: MJ

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Scott Harrigan	

Topics Addressed:

- Pressurized Lines
- Site C.O.C.s
- Slips, Trips, Falls
- Visitors

Questions / Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 12/29/15

Site Supervisor / Site Safety & Health Supervisor: MN

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Scott Harrigan	

Topics Addressed:

- Weather Hazards (Cold + Wet)
- Slips, Trips, Falls
- Splashing Hazards
- Electrical Hazards

- Questions/Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 12/30/15

Site Supervisor / Site Safety & Health Supervisor: MJ

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Scott Harrigan	

Topics Addressed:

- Subcontractor Management
- Slips, Trips, Falls
- Rally Point Review
- Hospital Route Review

Questions / Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 12/31/15

Site Supervisor / Site Safety & Health Supervisor: MN

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nolan	
Scott Harrigan	

Topics Addressed:

- Staying Focused & Avoiding Distractions
- Slips, Trips, & Falls
- Driving Hazards
- Exclusion Zone PPE

Questions/Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/4/16

Site Supervisor / Site Safety & Health Supervisor: M ✓

Personnel Attending:

Name (Printed)	*Signature*

Topics Addressed:

- HASP Review for AN

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 11/5/16

Site Supervisor / Site Safety & Health Supervisor: MN

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Adam Nadeau	

Topics Addressed:

- Cold Working Hazards
- Slips, Trips, & Falls
- Electrical Safety
- Re-Fueling Procedures
- Questions / Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/6/16

Site Supervisor / Site Safety & Health Supervisor: MN

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Adam Nadeau	

Topics Addressed:

- Slips, Trips, + Falls
- Pressurized Lines / Line Inspection
- Hand Safety

- Questions/Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/7/16

Site Supervisor / Site Safety & Health Supervisor:

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Adam Nadeau	

Topics Addressed:

- Re-Fueling Safety
- Acid Transfer Hazards
- Hydrogen Peroxide Spill Hazards
- Slips, Trips, Falls

- Questions / Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/8/16

Site Supervisor / Site Safety & Health Supervisor: MN

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Adam Nadeau	

Topics Addressed:

- Groundwater Sampling Hazards
- Re-fueling Procedures + Safety
- Staging Focused
- Slips, Trips, + Falls
- Questions/Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/11/16

Site Supervisor / Site Safety & Health Supervisor:

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Adam Nadeau	

Topics Addressed:

- Groundwater Sampling Hazards
- Eye Protection
- Hand Tool Inspection
- Slips, Trips, + Falls
- Questions/Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/12/16

Site Supervisor / Site Safety & Health Supervisor: MN

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Adam Nadeau	

Topics Addressed:

- Refueling Procedures
- Slips, Trips, Falls
- Electrical Safety
- Breathing Zone Monitoring
- Questions/Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/13/16

Site Supervisor / Site Safety & Health Supervisor:

Personnel Attending:

Name (Printed)	*Signature*
Matthew Weber	
Adam Nadeau	

Topics Addressed:

- Hospital Route Map
- Slips, Trips, Falls
- GW Sampling Hazards
- Questions / Concerns! None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/14/16

Site Supervisor / Site Safety & Health Supervisor: MN

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Adam Nadeau	

Topics Addressed:

- Refueling Hazards
- Rally Point Review
- Hand Safety
- Slips, Trips, Falls
- Questions / Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/15/16

Site Supervisor / Site Safety & Health Supervisor:

Personnel Attending:

Name (Printed)	*Signature*
Matthew Neka	
Adam Nadeau	

Topics Addressed:

- PPE Required for Paver Washing
- De-Mob Hazards & PPE
- Slips, Trips, + Falls
- Staying Focused
- Questions/ Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/18/16

Site Supervisor / Site Safety & Health Supervisor: MN

Personnel Attending:

Name (Printed)	*Signature*
Matthew Nelson	
Adam Nadeau	

Topics Addressed:

- Sub - Contractor Managment
- De - Mob Hazards
- Trail Touring Hazards
- Slips, Trips, + Falls
- Questions / Concerns: None

DAILY TAILGATE SAFETY MEETING LOG

Site Name: Ramboll- Sun Chemical Site

Date: 1/19/16

Site Supervisor / Site Safety & Health Supervisor:

Personnel Attending:

Name (Printed)	*Signature*
Matt Nelson	
Adam Nadeau	

Topics Addressed:

- Power Washing PPE
- Hand Safety
- Slips, Trips, Falls

- Questions / Concerns: None

Attachment 2

Daily Calibration Logs

GEO-CLEANSE INTERNATIONAL, INC.

Daily Calibration Form

Ramboll- Sun Chemical Site

Equipment Type	Calibration Gas Required	Calibration Standard	Calibration Result	Print Name	Signature	Date	Time
Mini RAE Lite	Isobutylene	100	99.9	Matt Nelson		12/23/15	1200
Mini RAE Lite	Isobutylene	100	100.1	Matt Nelson		12/24/15	1000
Mini RAE Lite	Isobutylene	100	99.4	Matt Nelson		12/29/15	0930
Mini RAE Lite	Isobutylene	100	100.0	Matt Nelson		12/30/15	1045
Mini RAE Lite	Isobutylene	100	100.1	Matt Nelson		12/31/15	1030
MiniRAE Lite	Isobutylene	100	100.0	Adam Nadeau		1/4/16	1030
MiniRAE Lite	Isobutylene	100	100.2	Adam Nadeau		1/5/16	0950
MiniRAE Lite	Isobutylene	100	100.1	Adam Nadeau		1/6/16	1000
MiniRAE Lite	Isobutylene	100	100.0	Adam Nadeau		1/7/16	1030
MiniRAE Lite	Isobutylene	100	100.0	Adam Nadeau		1/8/16	1015
MiniRAE 3000	Isobutylene	100	100.0	Adam Nadeau		1/11/16	1030
MiniRAE 3000	Isobutylene	100	100.0	Adam Nadeau		1/12/16	1030
MiniRAE 3000	Isobutylene	100	100.0	Adam Nadeau		1/13/16	1015
MiniRAE 3000	Isobutylene	100	100.0	Adam Nadeau		1/14/16	1015
MiniRAE 3000	Isobutylene	100	99.9	Adam Nadeau		1/15/16	0830

Attachment 3

Tanker Inspection Checklists

Tanker Inspection Checklist

Date: 12/23/15
Inspector Name and Signature: Matt Nelson

On the following checklist, check each item yes or no. Provide additional notes as needed on the form.

Item	Yes	No
Exclusion Area		
Exclusion Area properly demarcated?	X	
Exclusion Area includes tanker?	X	
Any repairs or improvements neceesary to tape or demarcation?		X
Placard		
Is tanker properly placarded?	X	
Valves		
Hydraulic valve operating properly?	X	
Ball valve operating properly?	X	
Any leaking valves?		X
General Trailer Conditions		
Tanker in good condition?	X	
Any visible leaks?		X
Any creases or dents in trailer body?		X
Any leaking lubricants or other fluids?		X
Any broken lights?		X
Do tires appear to be properly inflated?	X	
Blocking and Landing Gear		
Is trailer placed on reasonably flat and level ground?	X	
Are tires chocked?	X	
Are landing gear stabilized on planks (if necessary)?	X	
General Housekeeping		
Valves closed and locked?	X	
Hoses disconnected and staged properly?	X	
Additional Comments		

Tanker Inspection Checklist

Date: 12/29/15
Inspector Name and Signature: Matt Nelson

On the following checklist, check each item yes or no. Provide additional notes as needed on the form.

Item	Yes	No
Exclusion Area		
Exclusion Area properly demarcated?	X	
Exclusion Area includes tanker?	X	
Any repairs or improvements neceesary to tape or demarcation?		X
Placard		
Is tanker properly placarded?	X	
Valves		
Hydraulic valve operating properly?	X	
Ball valve operating properly?	X	
Any leaking valves?		X
General Trailer Conditions		
Tanker in good condition?	X	
Any visible leaks?		X
Any creases or dents in trailer body?		X
Any leaking lubricants or other fluids?		X
Any broken lights?		X
Do tires appear to be properly inflated?	X	
Blocking and Landing Gear		
Is trailer placed on reasonably flat and level ground?	X	
Are tires chocked?	X	
Are landing gear stabilized on planks (if necessary)?	X	
General Housekeeping		
Valves closed and locked?	X	
Hoses disconnected and staged properly?	X	
Additional Comments		

Tanker Inspection Checklist

Date: 12/31/15
Inspector Name and Signature: Matt Weka

On the following checklist, check each item yes or no. Provide additional notes as needed on the form.

Item	Yes	No
Exclusion Area		
Exclusion Area properly demarcated?	X	
Exclusion Area includes tanker?	X	
Any repairs or improvements neceesary to tape or demarcation?		X
Placard		
Is tanker properly placarded?	X	
Valves		
Hydraulic valve operating properly?	X	
Ball valve operating properly?	X	
Any leaking valves?		X
General Trailer Conditions		
Tanker in good condition?	X	
Any visible leaks?		X
Any creases or dents in trailer body?		X
Any leaking lubricants or other fluids?		X
Any broken lights?		X
Do tires appear to be properly inflated?	X	
Blocking and Landing Gear		
Is trailer placed on reasonably flat and level ground?	X	
Are tires chocked?	X	
Are landing gear stabilized on planks (if necessary)?	X	
General Housekeeping		
Valves closed and locked?	X	
Hoses disconnected and staged properly?	X	
Additional Comments		

Tanker Inspection Checklist

Date: 1/4/16
Inspector Name and Signature: Matt Nelson

On the following checklist, check each item yes or no. Provide additional notes as needed on the form.

Item	Yes	No
Exclusion Area		
Exclusion Area properly demarcated?	✓	
Exclusion Area includes tanker?	✓	
Any repairs or improvements neceesary to tape or demarcation?		✓
Placard		
Is tanker properly placarded?	✓	
Valves		
Hydraulic valve operating properly?	✓	
Ball valve operating properly?	✓	
Any leaking valves?		✓
General Trailer Conditions		
Tanker in good condition?	✓	
Any visible leaks?		✓
Any creases or dents in trailer body?		✓
Any leaking lubricants or other fluids?		✓
Any broken lights?		✓
Do tires appear to be properly inflated?	✓	
Blocking and Landing Gear		
Is trailer placed on reasonably flat and level ground?	✓	
Are tires chocked?	✓	
Are landing gear stabilized on planks (if necessary)?	✓	
General Housekeeping		
Valves closed and locked?	✓	
Hoses disconnected and staged properly?	✓	
Additional Comments		

Tanker Inspection Checklist

Date: 1/8/16
Inspector Name and Signature: Matt Nelson

On the following checklist, check each item yes or no. Provide additional notes as needed on the form.

Item	Yes	No
Exclusion Area		
Exclusion Area properly demarcated?	✓	
Exclusion Area includes tanker?	✓	
Any repairs or improvements neceesary to tape or demarcation?		✓
Placard		
Is tanker properly placarded?	✓	
Valves		
Hydraulic valve operating properly?	✓	
Ball valve operating properly?	✓	
Any leaking valves?		✓
General Trailer Conditions		
Tanker in good condition?	✓	
Any visible leaks?		✓
Any creases or dents in trailer body?		✓
Any leaking lubricants or other fluids?		✓
Any broken lights?		✓
Do tires appear to be properly inflated?	✓	
Blocking and Landing Gear		
Is trailer placed on reasonably flat and level ground?	✓	
Are tires chocked?	✓	
Are landing gear stabilized on planks (if necessary)?	✓	
General Housekeeping		
Valves closed and locked?	✓	
Hoses disconnected and staged properly?	✓	
Additional Comments		

Tanker Inspection Checklist

Date: 1/11/16
Inspector Name and Signature: Matt Nelson

On the following checklist, check each item yes or no. Provide additional notes as needed on the form.

Item	Yes	No
Exclusion Area		
Exclusion Area properly demarcated?	X	
Exclusion Area includes tanker?	X	
Any repairs or improvements neceesary to tape or demarcation?		X
Placard		
Is tanker properly placarded?	X	
Valves		
Hydraulic valve operating properly?	X	
Ball valve operating properly?	X	X
Any leaking valves?		X
General Trailer Conditions		
Tanker in good condition?	X	
Any visible leaks?		X
Any creases or dents in trailer body?		X
Any leaking lubricants or other fluids?		X
Any broken lights?		X
Do tires appear to be properly inflated?	X	
Blocking and Landing Gear		
Is trailer placed on reasonably flat and level ground?	X	
Are tires chocked?	X	
Are landing gear stabilized on planks (if necessary)?	X	
General Housekeeping		
Valves closed and locked?	X	
Hoses disconnected and staged properly?	X	
Additional Comments		

Tanker Inspection Checklist

Date: 1/15/16
Inspector Name and Signature: Matt Nelson

On the following checklist, check each item yes or no. Provide additional notes as needed on the form.

Item	Yes	No
Exclusion Area		
Exclusion Area properly demarcated?	✓	
Exclusion Area includes tanker?	✓	
Any repairs or improvements neceesary to tape or demarcation?		✓
Placard		
Is tanker properly placarded?	✓	
Valves		
Hydraulic valve operating properly?	✓	
Ball valve operating properly?	✓	
Any leaking valves?		✓
General Trailer Conditions		
Tanker in good condition?	✓	
Any visible leaks?		✓
Any creases or dents in trailer body?		✓
Any leaking lubricants or other fluids?		✓
Any broken lights?		✓
Do tires appear to be properly inflated?	✓	
Blocking and Landing Gear		
Is trailer placed on reasonably flat and level ground?	✓	
Are tires chocked?	✓	
Are landing gear stabilized on planks (if necessary)?	✓	
General Housekeeping		
Valves closed and locked?	✓	
Hoses disconnected and staged properly?	✓	
Additional Comments		

Attachment 4

Well Construction Logs

Geo-Cleanse International, Inc. • 400 State Rt 34, Suite B • Matawan, NJ 07747
Telephone (732) 970-6696 • Fax (732) 970-6697 • E-mail contact@geocleanse.com

Dual Injector Construction Log

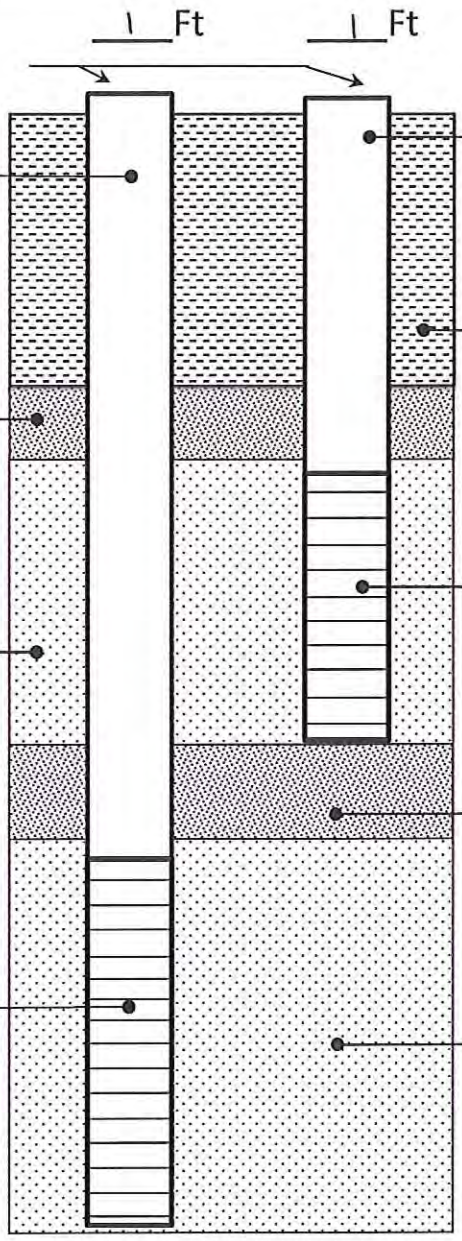
Project: Ramboll: Sun Chemical
Location: Staten Island, NY

Page 1 of 1
Date: GI NA

Consultant / Rep(s):	Ramboll/ Jay	Well No.:	D-1 + S-1
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike/ Jeff	PID Type:	
Drill Rig / Method:	Sonic MRS 50k	PID Lamp:	

Approx. Location: See Map

Finish Construction (Circle)
Flushmount / Stick-up



Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 30

Barrier Sand:
Material: –
Size: 00
Interval: 11 to 12

Filter Sand:
Material: –
Size: 1
Interval: 12 to 16

Screen w/ end cap:
Material: Sch 80 CPVC
Size: 10 slot
Interval: 30 to 35

Riser:
Material: Sch 40 CPVC
Size: 1"
Interval: 0 to 13

Grout:
Depth: 0 to 11 Portland: 95 %
Bentonite: 5 %
Water: – gal

Screen w/ end cap:
Material: Sch 80 CPVC
Size: 10 slot
Interval: 13 to 18

Barrier Sand:
Material: –
Size: 00
Interval: 18 to 29

Filter Sand:
Material: –
Size: 1
Interval: 29 to 35

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Injection Well Construction Log

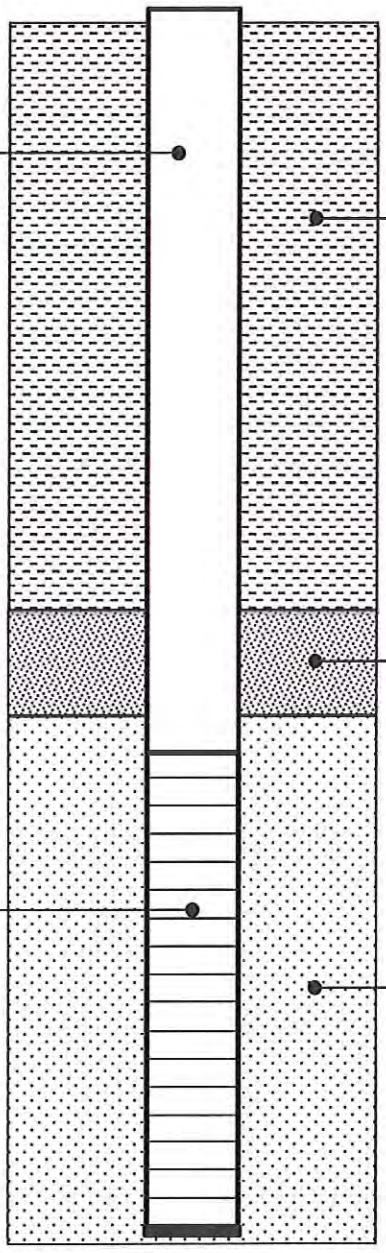
Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

Page 1 of 1
Date: GCI NA

Consultant / Rep(s): Ramboll/ Jay	Well No.: I-1	Approx. Location
GCI Rep(s): Matt Nelson	Boring No.:	see Map
Drilling Contractor: Summit	Injector No.:	
Driller / Helper: Mike / Jeff	PID Type: MiniRAE 3k	
Drill Rig / Method: Sonic MRS 50K	PID Lamp: 10.6	

Finish Construction (Circle)
Flushmount / Stick-up

1 Ft



Riser:
Material: Sch 40 CPVC
Size: 1"
Interval: 0 to 21

Grout:
Depth: 0 to 19
Portland: 95 %
Bentonite: 5 %
Water: – gal

Barrier Sand:
Material: –
Size: 00
Interval: 19 to 20

Screen w/ end cap:
Material: Sch 80 CPVC
Slot Size: 10 Slot
Interval: 21 to 26

Filter Sand:
Material: –
Size: 1
Interval: 20 to 26

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Dual Injector Construction Log

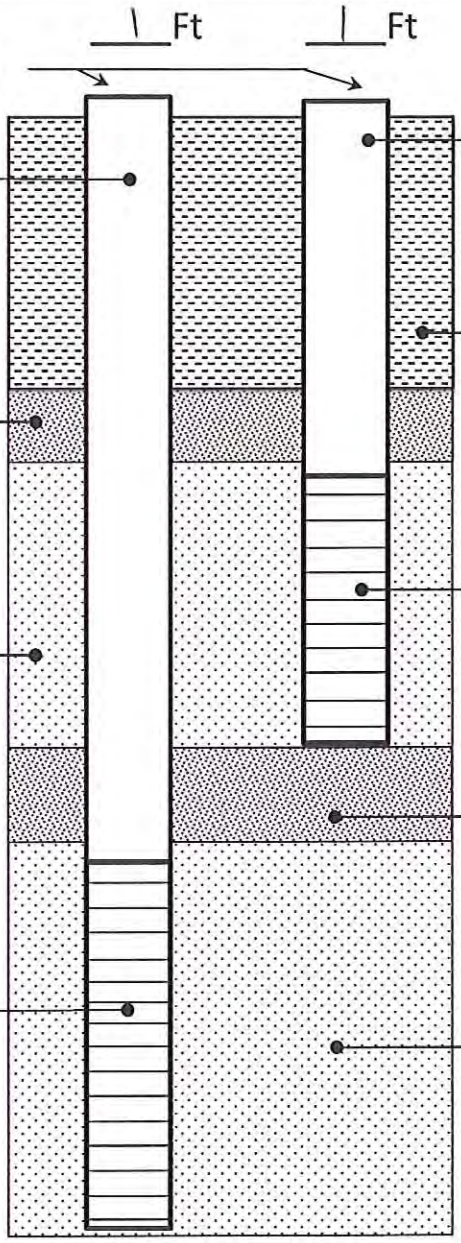
Project: Ramboll: Sun Chemical
Location: Staten Island, NY

Page 1 of 1
Date: 11/30/15

Consultant / Rep(s):	Ramboll/ Jay	Well No.:	D-2 S-2
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike/ Jeff	PID Type:	
Drill Rig / Method:	Sonic MRS 50k	PID Lamp:	

Approx. Location: See Map

Finish Construction (Circle)
Flushmount / Stick-up



Riser:
Material: Sch 40 CPVC
Size: 1"
Interval: 0 to 33

Barrier Sand:
Material: -
Size: 00
Interval: 14 to 15

Filter Sand:
Material: -
Size: 1
Interval: 15 to 21

Screen w/ end cap:
Material: Sch 40 CPVC
Size: 10 Slot
Interval: 33 to 36

Riser:
Material: Sch 40 CPVC
Size: 1"
Interval: 0 to 16

Grout:
Depth: 0 to 14 Portland: 95 %
Bentonite: 5 %
Water: - gal

Screen w/ end cap:
Material: Sch 40 CPVC
Size: 10 Slot
Interval: 16 to 21

Barrier Sand:
Material: -
Size: 00
Interval: 21 to 32

Filter Sand:
Material: -
Size: 1
Interval: 32 to 36

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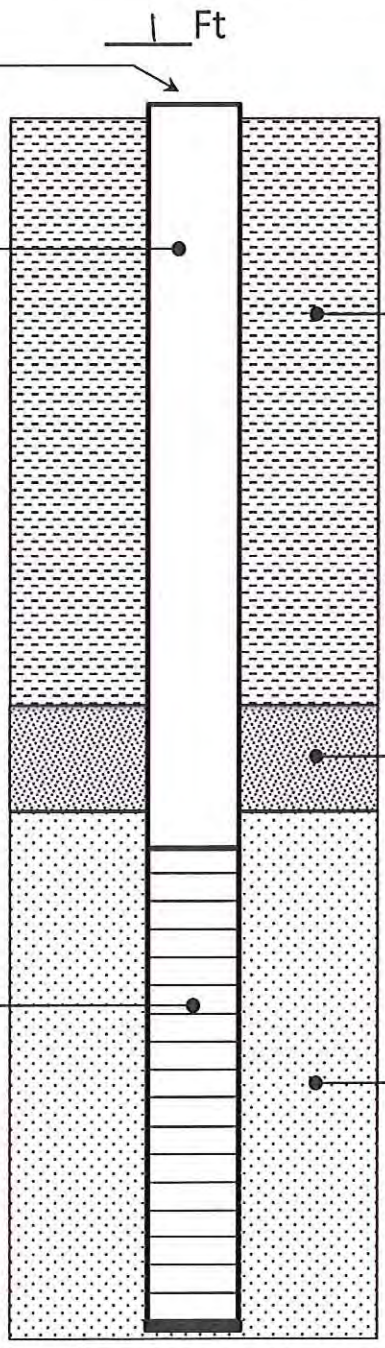
Injection Well Construction Log

Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

Page 1 of 1
Date: 12/1/15

Consultant / Rep(s): Ramboll/ Jay	Well No.: F-2	Approx. Location
GCI Rep(s): Matt Nelson	Boring No.:	See Map
Drilling Contractor: Summit	Injector No.:	
Driller / Helper: Mike / Jeff	PID Type: MiniRAE 3k	
Drill Rig / Method: Sonic MRS 50K	PID Lamp: 10.6	



Finish Construction (Circle)
Flushmount / Stick-up

Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 24

Grout:
Depth: 0 to 22
Portland: 95 %
Bentonite: 5 %
Water: - gal

Barrier Sand:
Material: -
Size: 00
Interval: 22 to 23

Screen w/ end cap:
Material: Sch 40 CPVC
Slot Size: 10 Slot
Interval: 24 to 29

Filter Sand:
Material: -
Size: 1
Interval: 23 to 29

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Dual Injector Construction Log

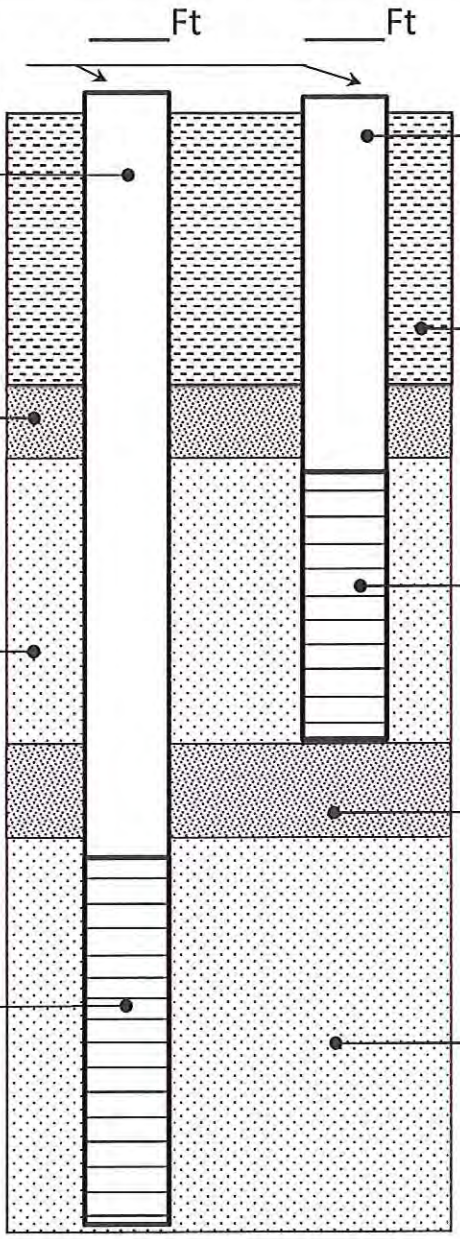
Project: Ramboll: Sun Chemical
Location: Staten Island, NY

Page 1 of 1
Date: 6/25/14

Consultant / Rep(s):	Ramboll/ Jay	Well No.:	D-3 S-3
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike/ Jeff	PID Type:	
Drill Rig / Method:	Sonic MRS 50k	PID Lamp:	

Approx. Location: See Map

Finish Construction (Circle)
Flushmount / Stick-up



Riser:
Material: Sch 40 CPVC
Size: 1"
Interval: 0 to 33

Barrier Sand:
Material: —
Size: 00
Interval: 11 to 12

Filter Sand:
Material: —
Size: 1
Interval: 12 to 14

Screen w/ end cap:
Material: Sch 80 CPVC
Size: 10 Slot
Interval: 33 to 35

Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 13

Grout:
Depth: 0 to 11 Portland: 95 %
Bentonite: 5 %
Water: — gal

Screen w/ end cap:
Material: Sch 40 CPVC
Size: 10 Slot
Interval: 13 to 14

Barrier Sand:
Material: —
Size: 00
Interval: 14 to 32

Filter Sand:
Material: —
Size: 1
Interval: 32 to 35

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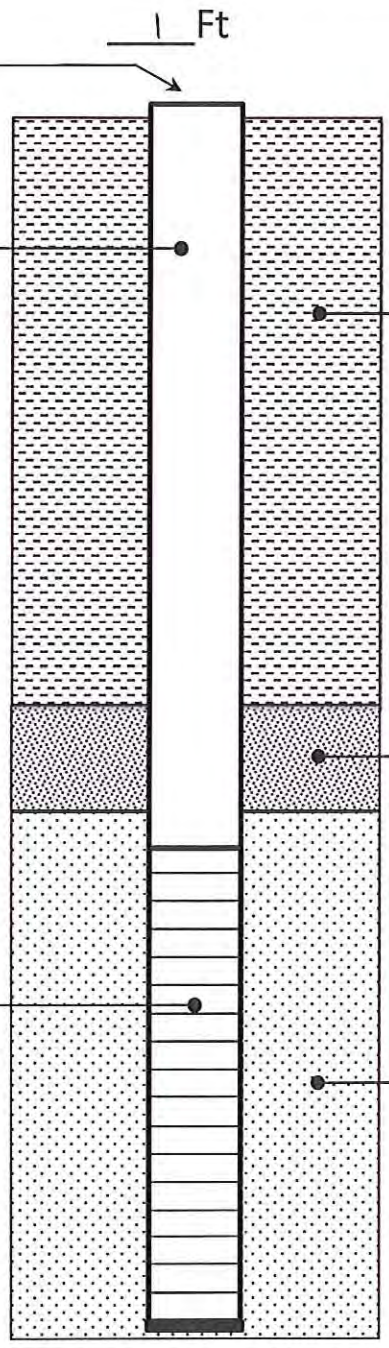
Injection Well Construction Log

Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

Page 1 of 1
Date: 6cI NA

Consultant / Rep(s): Ramboll/ Jay	Well No.: I-3	Approx. Location
GCI Rep(s): Matt Nelson	Boring No.:	See Map
Drilling Contractor: Summit	Injector No.:	
Driller / Helper: Mike / Jeff	PID Type: MiniRAE 3k	
Drill Rig / Method: Sonic MRS 50K	PID Lamp: 10.6	



Finish Construction (Circle)
Flushmount / Stick-up

Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 21

Grout:
Depth: 0 to 19
Portland: 95 %
Bentonite: 5 %
Water: – gal

Barrier Sand:
Material: –
Size: 00
Interval: 19 to 20

Screen w/ end cap:
Material: Sch 40 CPVC
Slot Size: 10 Slot
Interval: 21 to 26

Filter Sand:
Material: –
Size: 1
Interval: 20 to 26

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Dual Injector Construction Log

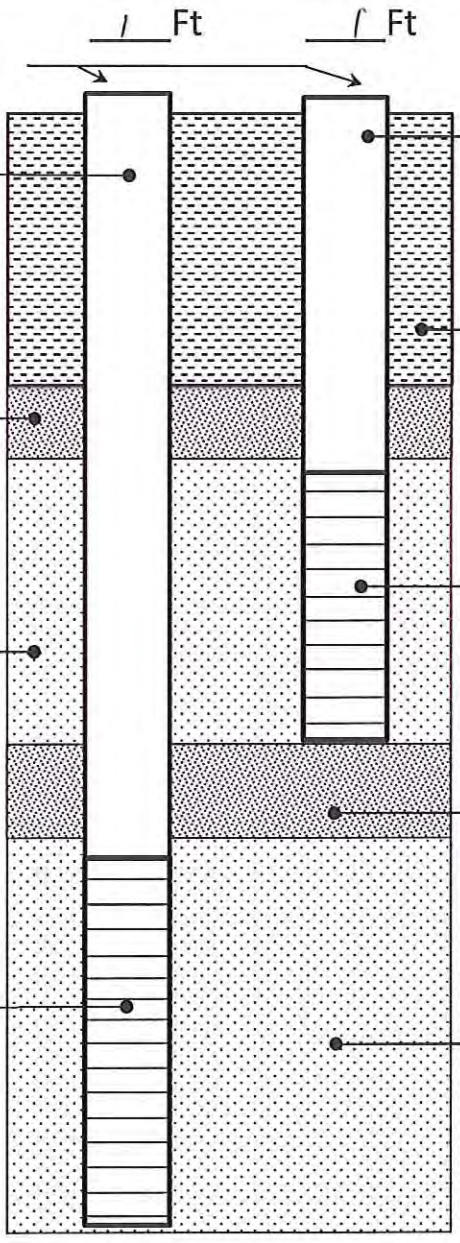
Project: Ramboll: Sun Chemical
Location: Staten Island, NY

Page 1 of 1
Date: 12/1/15

Consultant / Rep(s):	Ramboll/ Jay	Well No.:	D-4 S-4
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike/ Jeff	PID Type:	
Drill Rig / Method:	Sonic MRS 50k	PID Lamp:	

Approx. Location: See Map

Finish Construction (Circle)
Flushmount / Stick-up



Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 33

Barrier Sand:
Material: –
Size: 00
Interval: 16 to 17

Filter Sand:
Material: 00
Size: 1
Interval: 17 to 21

Screen w/ end cap:
Material: Sch 80 CPVC
Size: 10 slot
Interval: 33 to 36

Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 18

Grout:
Depth: 0 to 16 Portland: 95 %
Bentonite: 5 %
Water: – gal

Screen w/ end cap:
Material: Sch 80 CPVC
Size: 10 slot
Interval: 18 to 21

Barrier Sand:
Material: –
Size: 00
Interval: 21 to 32

Filter Sand:
Material: ✓
Size: 1
Interval: 32 to 36

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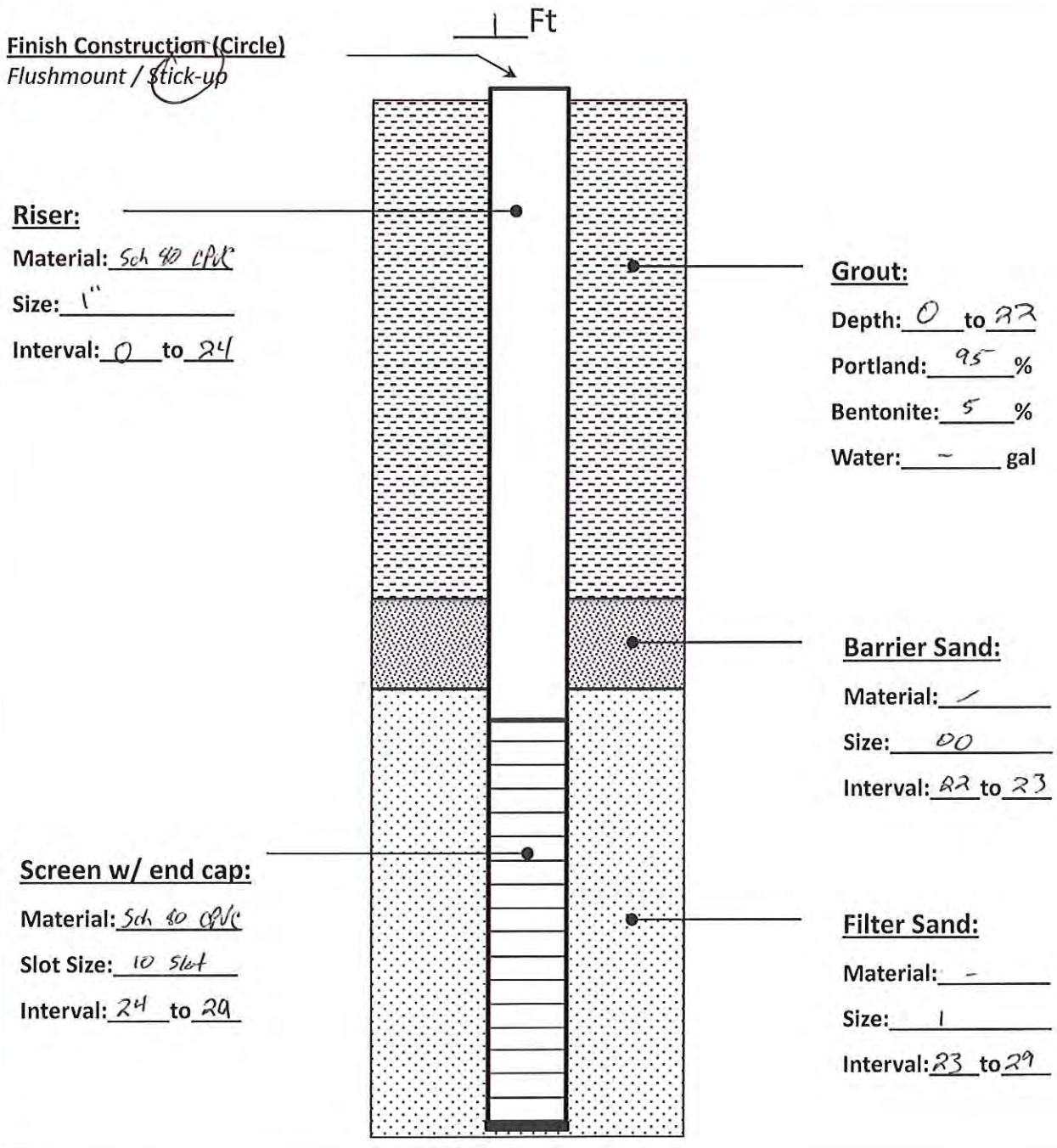
Injection Well Construction Log

Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

Page 1 of 1
Date: 6/27 NA

Consultant / Rep(s):	Ramboll/ Jay	Well No.:	I-4
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike / Jeff	PID Type:	MiniRAE 3k
Drill Rig / Method:	Geo. MRS 50	PID Lamp:	10.6

Approx. Location: See Map



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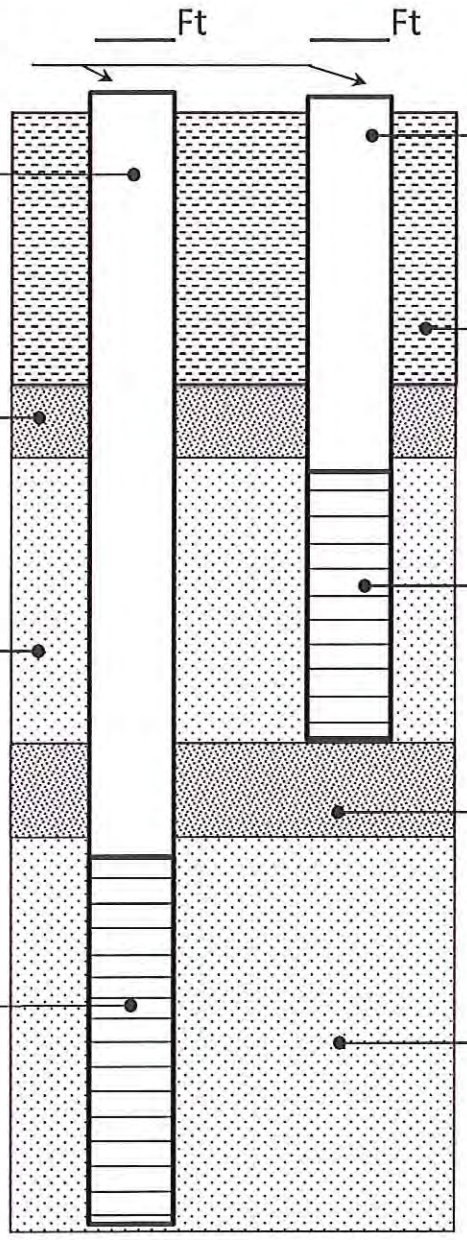
Dual Injector Construction Log

Project: Ramboll: Sun Chemical
Location: Staten Island, NY

Page 1 of 1
Date: 6cI NA

Consultant / Rep(s):	Ramboll/ Jay	Well No.:	D-5 S-5
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike/ Jeff	PID Type:	
Drill Rig / Method:	Sonic MRS 50k	PID Lamp:	

Approx. Location: See Map



Finish Construction (Circle)
Flushmount / Stick-up

Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 33

Barrier Sand:
Material: —
Size: 00
Interval: 16 to 17

Filter Sand:
Material: —
Size: 1
Interval: 17 to 21

Screen w/ end cap:
Material: Sch 80 CPVC
Size: 10 Slot
Interval: 33 to 36

Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 14

Grout:
Depth: 0 to 16 Portland: 95 %
Bentonite: 5 %
Water: - gal

Screen w/ end cap:
Material: Sch 80 CPVC
Size: 10 Slot
Interval: 14 to 21

Barrier Sand:
Material: —
Size: 00
Interval: 21 to 32

Filter Sand:
Material: —
Size: 1
Interval: 32 to 38

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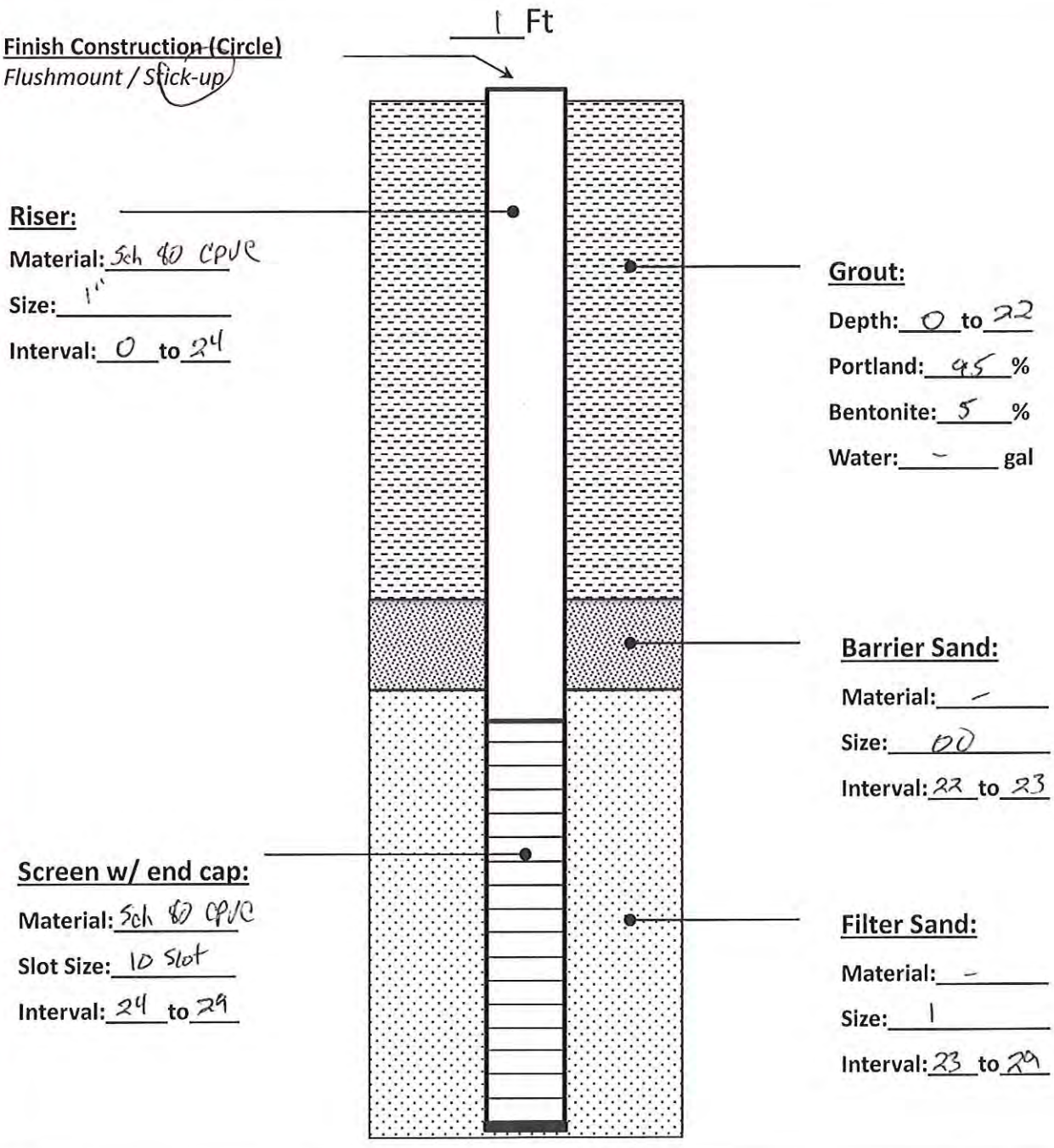
Injection Well Construction Log

Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

Page 1 of 1
Date: GCI NA

Consultant / Rep(s):	Ramboll/ Jay	Well No.:	I-5
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike / Jeff	PID Type:	MiniRAE 3k
Drill Rig / Method:	Sonic MRS-50	PID Lamp:	10.6

Approx. Location: see Map



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Dual Injector Construction Log

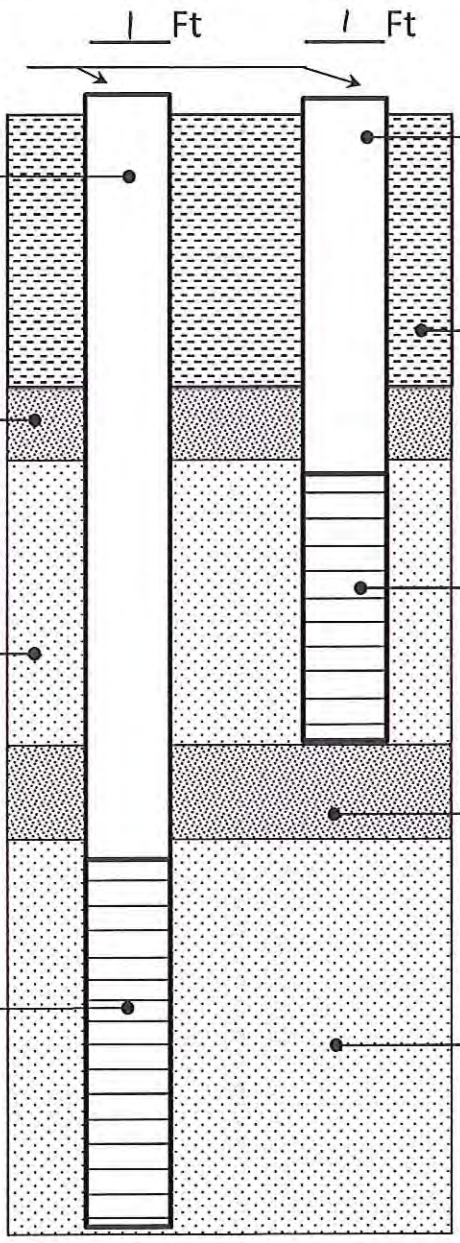
Project: Ramboll: Sun Chemical
Location: Staten Island, NY
Page 1 of 1
Date: GCI NA

Consultant / Rep(s): Ramboll/ Jay
GCI Rep(s): Matt Nelson
Drilling Contractor: Summit
Driller / Helper: Mike/ Jeff
Drill Rig / Method: Sonic MRS 50k

Well No.: D-6 S-6
Boring No.:
Injector No.:
PID Type:
PID Lamp:

Approx. Location: See Map

Finish Construction (Circle)
Flushmount / Stick-up



Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 30

Barrier Sand:
Material: —
Size: 00
Interval: 11 to 12

Filter Sand:
Material: —
Size: 1
Interval: 12 to 14

Screen w/ end cap:
Material: Sch 40 CPVC
Size: 10 Slot
Interval: 30 to 35

Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 18

Grout:
Depth: 0 to 11 Portland: 95 %
Bentonite: 5 %
Water: — gal

Screen w/ end cap:
Material: Sch 40 CPVC
Size: 10 Slot
Interval: 13 to 18

Barrier Sand:
Material: —
Size: 00
Interval: 18 to 29

Filter Sand:
Material: —
Size: 1
Interval: 29 to 35

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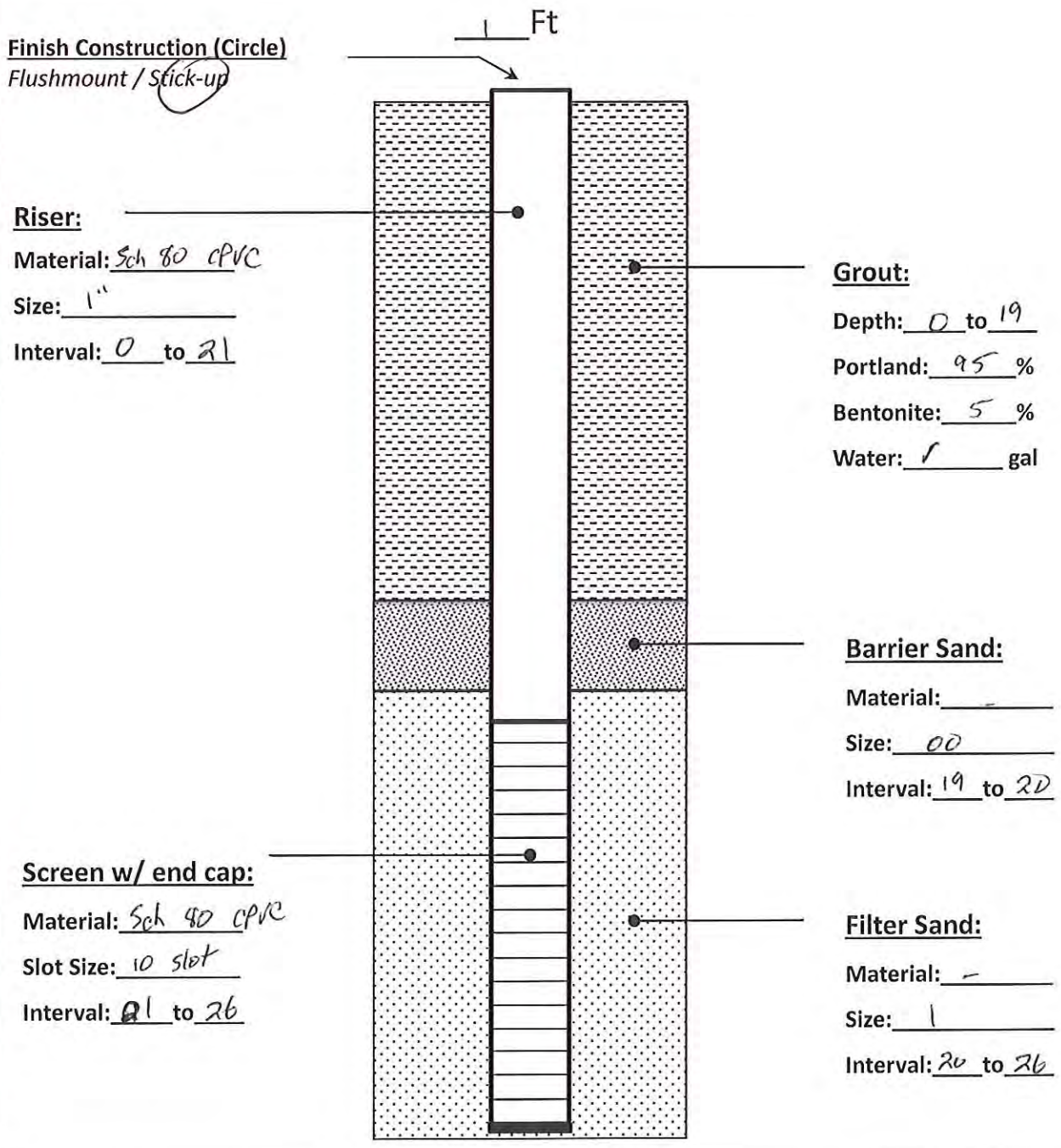
Injection Well Construction Log

Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

Page 1 of 1
Date: GCI NA

Consultant / Rep(s):	Ramboll/ Jay	Well No.:	I-6
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike / Jeff	PID Type:	MiniRAE 3k
Drill Rig / Method:	Sonic MRS 50	PID Lamp:	10.6

Approx. Location: see Map



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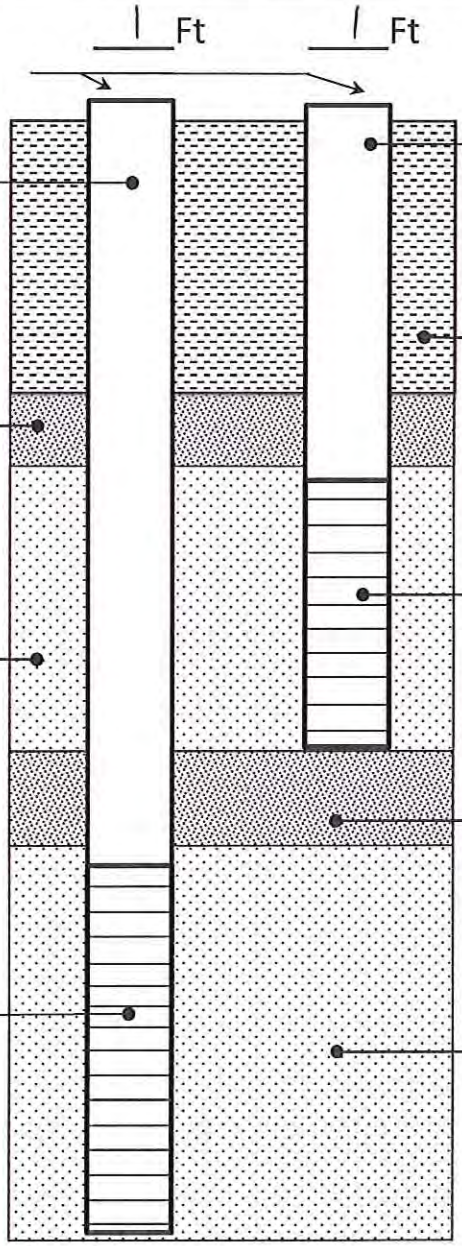
Dual Injector Construction Log

Project: Ramboll: Sun Chemical
Location: Staten Island, NY

Page 1 of 1
Date: 11/24/15

Consultant / Rep(s):	Ramboll/ Jay	Well No.:	D-7 S-7
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike/ Jeff	PID Type:	
Drill Rig / Method:	Sonic MRS 50k	PID Lamp:	

Approx. Location: See Map



Finish Construction (Circle)
Flushmount / Stick-up

Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 36

Barrier Sand:
Material: -
Size: 00
Interval: 17 to 18

Filter Sand:
Material: -
Size: 1
Interval: ~~18~~ to 24

Screen w/ end cap:
Material: Sch 80 CPVC
Size: 10 Slot
Interval: 36 to 41

Riser:
Material: Sch 80 CPVC
Size: 1"
Interval: 0 to 21

Grout:
Depth: 0 to 17 Portland: 95 %
Bentonite: 5 %
Water: - gal

Screen w/ end cap:
Material: Sch 80 CPVC
Size: 10 Slot
Interval: ~~19~~ to 24

Barrier Sand:
Material: -
Size: 00
Interval: 24 to 35

Filter Sand:
Material: -
Size: 1
Interval: 35 to 41

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Injection Well Construction Log

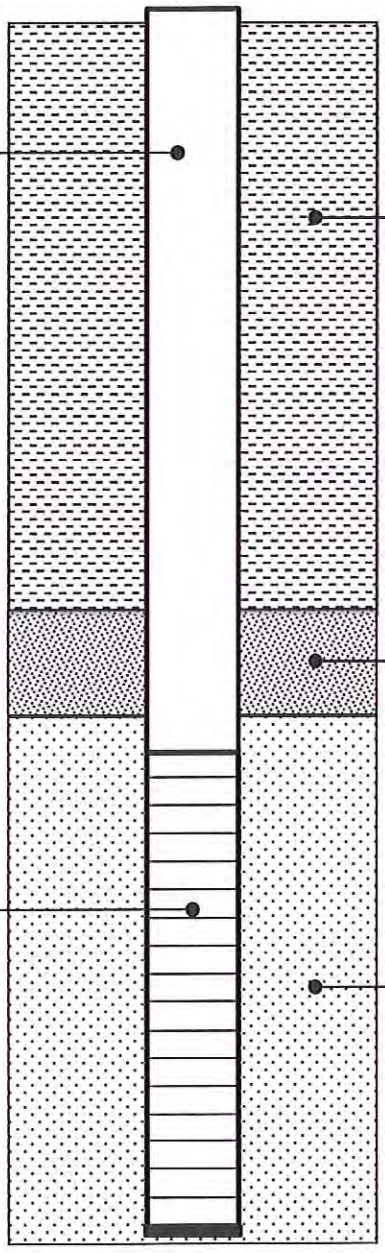
Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

Page 1 of 1
Date: 11/25/15

Consultant / Rep(s): Ramboll/ Jay	Well No.: I-7	Approx. Location
GCI Rep(s): Matt Nelson	Boring No.:	see Map
Drilling Contractor: Summit	Injector No.:	
Driller / Helper: Mike / Jeff	PID Type: MiniRAE 3k	
Drill Rig / Method: Sonic MRS 50	PID Lamp: 10.6	

1 Ft

Finish Construction (Circle)
Flushmount / Stick-up



Riser:
Material: Sch 40 cPVC
Size: 1"
Interval: 0 to 27

Grout:
Depth: 0 to 25
Portland: 95 %
Bentonite: 5 %
Water: ~ gal

Barrier Sand:
Material: —
Size: 00
Interval: 25 to 26

Screen w/ end cap:
Material: Sch 80 cPVC
Slot Size: 10 Slot
Interval: 27 to 32

Filter Sand:
Material: —
Size: 1
Interval: 26 to 32

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Dual Injector Construction Log

Project: Ramboll: Sun Chemical
Location: Staten Island, NY

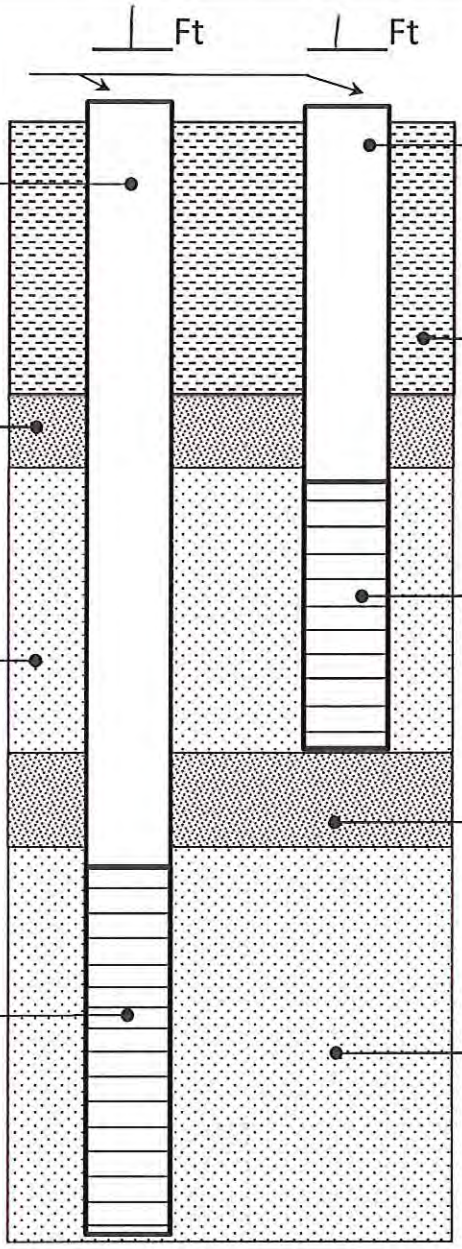
Page 1 of 1
Date: 11/24/15

Consultant / Rep(s): Ramboll/ Jay
GCI Rep(s): Matt Nelson
Drilling Contractor: Summit
Driller / Helper: Mike/ Jeff
Drill Rig / Method: Sonic MRS 50k

Well No.: DI 54
Boring No.:
Injector No.:
PID Type:
PID Lamp:

Approx. Location: See Map

Finish Construction (Circle)
Flushmount / Stick-up



Riser:
Material: Sch 40 CPVC
Size: 1"
Interval: 0 to 36

Barrier Sand:
Material: /
Size: 00
Interval: 17 to 16

Filter Sand:
Material: /
Size: 1
Interval: 16 to 24

Screen w/ end cap:
Material: Sch 40 CPVC
Size: 10 Slot
Interval: 36 to 41

Riser:
Material: Sch 40 CPVC
Size: 1"
Interval: 0 to 19

Grout:
Depth: 0 to 17 Portland: 95 %
Bentonite: 5 %
Water: - gal

Screen w/ end cap:
Material: Sch 40 CPVC
Size: 10 Slot
Interval: 19 to 24

Barrier Sand:
Material:
Size: 00
Interval: 24 to 35

Filter Sand:
Material: -
Size: 1
Interval: 35 to 41

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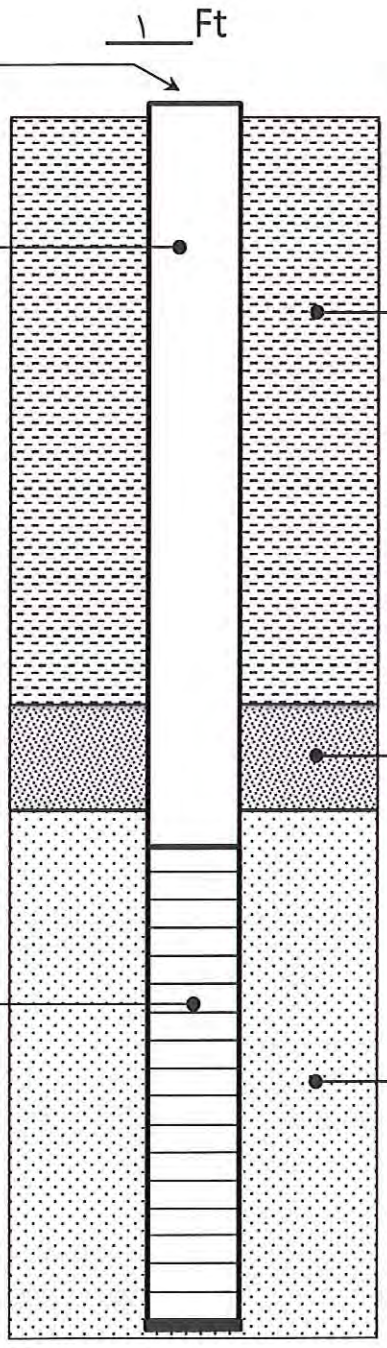
Injection Well Construction Log

Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

Page 1 of 1
Date: 11/25/15

Consultant / Rep(s):	Ramboll/ Say	Well No.:	I-4
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike/ Seff	PID Type:	MiniRAE 3k
Drill Rig / Method:	Sonic MES-50	PID Lamp:	10.6

Approx. Location: see Map



Finish Construction (Circle)
Flushmount / Stick-up

Riser:
Material: Sch 40 CPVC
Size: 1"
Interval: 0 to 27

Grout:
Depth: 0 to 25
Portland: 95 %
Bentonite: 5 %
Water: - gal

Barrier Sand:
Material: -
Size: 00
Interval: 25 to 26

Screen w/ end cap:
Material: Sch 40 CPVC
Slot Size: 10 slot
Interval: 27 to 32

Filter Sand:
Material: -
Size: 1
Interval: 26 to 32

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Vent Construction Log

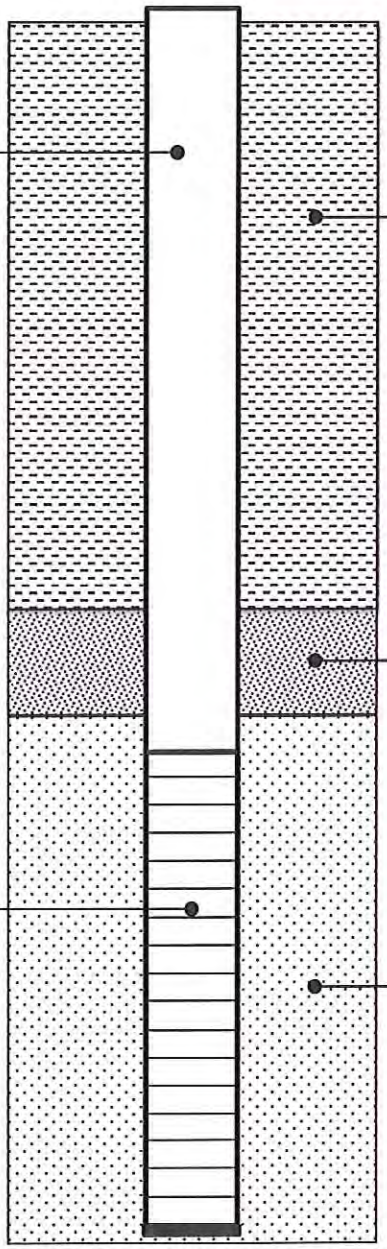
Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

Page 1 of 1
Date: 11/30/15

Consultant / Rep(s): Ramboll/ Jay	Well No.: VW-1	Approx. Location
GCI Rep(s): Matt Nelson	Boring No.:	See Map
Drilling Contractor: Summit	Injector No.:	
Driller / Helper: Mike / Jeff	PID Type: MiniRAE 3k	
Drill Rig / Method: Sonic MPS-50	PID Lamp: 10.6	

Finish Construction (Circle)
Flushmount / Stick-up

2 Ft



Riser:
Material: Sch 80 CPVC
Size: 1¼"
Interval: 0 to 3

Grout:
Depth: 0 to 2
Portland: 95 %
Bentonite: 5 %
Water: — gal

Barrier Sand:
Material: —
Size: 00
Interval: 2 to 2.5

Screen w/ end cap:
Material: Sch 80 CPVC
Slot Size: 10 slot
Interval: 3 to 30

Filter Sand:
Material: —
Size: 1
Interval: 2.5 to 30

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Vent Construction Log

Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

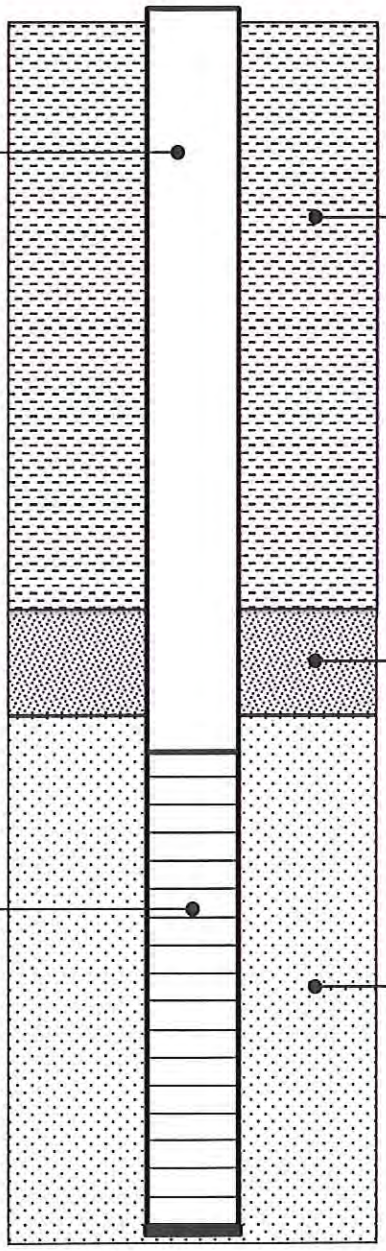
Page 1 of 1
Date: GCI NA

Consultant / Rep(s):	Ramboll/ Jay	Well No.:	VW-2
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike / Jeff	PID Type:	MiniRAE 3k
Drill Rig / Method:	Sonic MRS-50	PID Lamp:	10.6

Approx. Location: See Map

Finish Construction (Circle)
Flushmount / Stick-up

2 Ft



Riser:
Material: Sch 40 cPVC
Size: 1¼"
Interval: 0 to 3

Grout:
Depth: 0 to 2
Portland: 95 %
Bentonite: 5 %
Water: — gal

Barrier Sand:
Material: —
Size: 00
Interval: 2 to 2.5

Screen w/ end cap:
Material: Sch 80 cPVC
Slot Size: 10 Slot
Interval: 3 to 27

Filter Sand:
Material: /
Size: 1
Interval: 2.5 to 27

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Vent Construction Log

Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

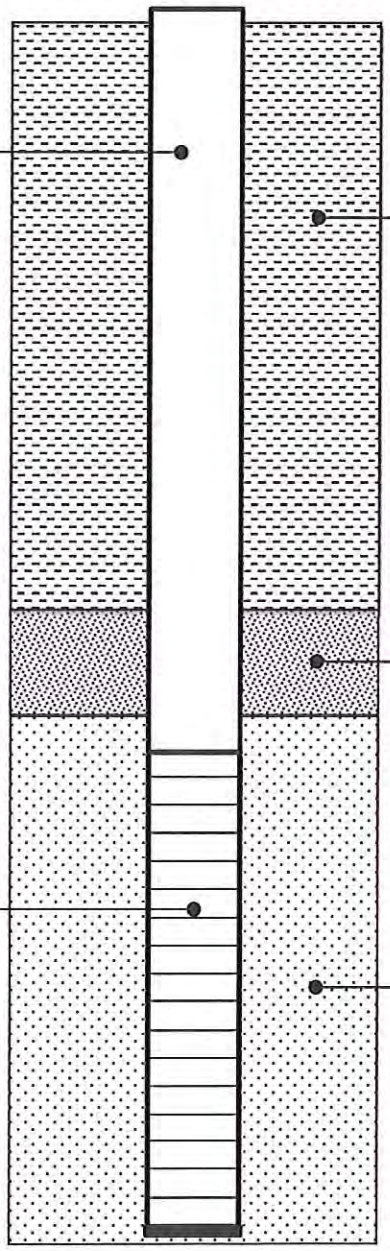
Page 1 of 1
Date: 6/6/11

Consultant / Rep(s):	Ramboll/ Ray	Well No.:	VW-3
GCI Rep(s):	Matt Nelson	Boring No.:	
Drilling Contractor:	Summit	Injector No.:	
Driller / Helper:	Mike / Jeff	PID Type:	MiniRAE 3k
Drill Rig / Method:	Sonic MRS-50	PID Lamp:	10.6

Approx. Location: see Map

Finish Construction (Circle)
Flushmount / Stick-up

2 Ft



Riser:
Material: Sch 40 CPVC
Size: 1"
Interval: 0 to 3

Grout:
Depth: 0 to 2
Portland: 95 %
Bentonite: 5 %
Water: ✓ gal

Barrier Sand:
Material: ✓
Size: #0
Interval: 2 to 2.5

Screen w/ end cap:
Material: Sch 80 CPVC
Slot Size: 10 Slot
Interval: 3 to 30

Filter Sand:
Material: ✓
Size: #1
Interval: 2.5 to 30

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Vent Construction Log

Project: Ramboll- Sun Chemical Site
Location: Staten Island, NY

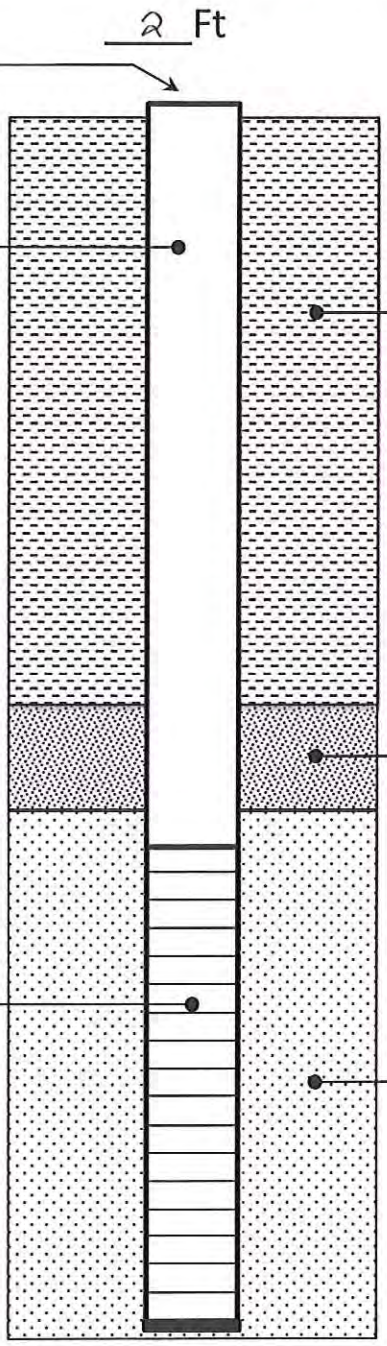
Page 1 of 1
Date: 11/23/15

Consultant / Rep(s): Ramboll/ Say
GCI Rep(s): Matt Nelson
Drilling Contractor: Summit
Driller / Helper: Mike / Jeff
Drill Rig / Method: Sonic MPS-50

Well No.: VW-41
Boring No.:
Injector No.:
PID Type: MiniRAE 3k
PID Lamp: 10.6

Approx. Location: see Map

Finish Construction (Circle)
Flushmount / Stick-up



Riser:
Material: Sch 40 cPVC
Size: 1 1/4"
Interval: 0 to 3

Grout:
Depth: 0 to 2
Portland: 95 %
Bentonite: 5 %
Water: - gal

Barrier Sand:
Material: -
Size: 00
Interval: 2 to 2.5

Screen w/ end cap:
Material: Sch 40 CPVC
Slot Size: 10 slot
Interval: 3 to 33

Filter Sand:
Material: -
Size: 1
Interval: 2.5 to 33

Attachment 5

Daily Groundwater Sampling Logs

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Pg 1/1

Site: Ramboll- Sun Chemical Site Personnel: SH

Date: 12/22/15

PID Cal- 100.0

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
S-1	0845	7	0	0	1.0	64
S-2		7	15	0	6.2	63
S-3		7	10	0	1.1	64
S-4		7	10	0	3.2	64
S-5		7	0	0	6.4	64
S-6		7	10	0	2.0	63
S-7		7	5	0	21.5	65
S-8		7	5	0	1.6	64
I-1		7	0	0	2.4	64
I-2		7	0	0	0.3	64
I-3		7	10	0	0.8	63
I-4		7	5	0	2.1	65
I-5		7	20	0	4.0	64
I-6		7	20	0	0.1	64
I-7		7	0	0	5.8	64
I-8		7	5	0	4.7	63
D-1		7	15	0	0.3	65
D-2		7	10	0	0.6	66
D-3		7	10	0	0.8	64
D-4		7	10	0	0.9	63
D-5		7	20	0	1.5	63
D-6		7	20	0	15.1	64
D-7		7	5	0	8.9	64
D-8		7	0	0	1.3	64
VW-1		7	10	0	3.4	65
VW-2		7	15	0	0.6	63
VW-3		7	20	0	0.6	63
VW-4		7	20	0	0.2	63
MW-3		7	10	0	7.4	63
MW-3D		7	10	0	0.9	63

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site **Personnel:** SH, MW

Date: 12/28/15 PID Cal-100.0

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
S-4	0815	6	5	0	3.4	61
S-5	"	3	10	0	6.2	61
S-6	"	3	5	0	2.1	63
I-2	"	5	0	0	0.5	60
I-3	"	5	10	0	0.9	62
I-7	"	2	5	0	5.6	61
D-1	"	2	0	0	0.4	62
D-6	"	5	5	0	15.4	60
D-8	"	2	5	0	1.5	61
MW-3	"	7	0	0	7.7	61

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site **Personnel:** SH, MN

Date: 12/29/15 PID cal-100.0

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
S-3	0730	2	0	>12,000	0.2	62
S-5	"	5	0	2,400	0.6	61
I-2	"	5	0	6,000	0.6	61
I-8	"	2	0	>12,000	0.3	62
D-1	"	3	0	>12,000	0.3	61
D-7	"	3	0	>12,000	0.3	63
D-8	"	2	0	>12,000	0.3	60
AV-1	"	7	0	15	1.4	61
AV-4	"	7	0	5	1.0	61
MW-3	"	7	0	0	3.1	62

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site Personnel: SH/MW

Date: 12/30/15 PID cal. 100.0

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp (°F)
S-1	0800	5	0	>12,000	0.3	62
S-8	"	5	0	8,000	0.2	63
I-3	"	3	0	>12,000	0.2	62
I-7	"	3	0	>12,000	0.2	63
D-2	"	6	0	>12,000	0.6	60
D-6	"	6	0	6,000	0.3	61
AV-1	"	7	0	2,400	1.0	64
AV-2	"	7	0	15	0.4	62
AV-3	"	7	5	5	0.7	61
AV-4	"	7	10	0	1.0	61
MW-3	"	7	0	5	10.8	61

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site Personnel: S U, M N

Date: 12/31/15

PID Cal - 100.2

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
S-2	0806	6	0	>12,000	0.2	62
S-6	"	6	0	>12,000	0.0	63
I-1	"	5	0	>12,000	0.2	63
I-5	"	6	0	>12,000	0.1	63
I-6	"	6	0	2,400	0.1	65
D-3	"	5	0	>12,000	0.2	64
D-5	"	5	0	>12,000	0.0	64
AV-3	"	7	5	10	0.4	63
AV-4	"	7	5	15	0.1	64
MW-3	"	7	0	5	25.4	63

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site **Personnel:** AN, MN

Date: 1/4/2016

PID Cal: 100.0 ppm

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
[illegible]-1	0800	4.5	0	>12,000	0.2	58
S-3	"	6.0	0	700	0.4	62
I-3	"	6.5	0	1,200	0.4	60
S-4	"	7.0	0	1,000	0.3	60
I-8	"	4.0	0	>12,000	0.3	60
V-1	"	7.0	20	0	5.1	62
V-3	"	7.0	5	0	0.3	60
V-4	"	7.0	0	0	0.5	60
MW-3	"	7.0	5	0	18.1	62

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site Personnel: AN, MN

Date: 1/5/16

PID Cal: 100.2 ppm

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
I-1	1000	4.0	0	6,000	0.2	60
I-5	"	3.0	0	>12,000	0.5	60
D-5	"	5.0	0	>12,000	0.4	60
VW-1	"	7.0	0	5	1.1	58
VW-3	"	7.0	5	10	0.8	58

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site Personnel: AN, MN

Date: 1/7/16

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
S-4	0845	5.5	5	712,000	0.3	58
S-8	↓	6.0	0	7,000	0.5	60
I-1		6.0	0	4,600	0.4	58
I-2		5.5	0	712,000	0.3	58
I-6		5.5	5	712,000	0.3	58
I-7		6.0	0	712,000	0.4	58
D-3		5.0	10	712,000	0.4	58
VW-2		6.5	5	12,~	0.6	60
VW-3		6.0	5	140~	0.7	60
MW-3	✓	6.0	5	1200	15.1	60

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site Personnel: AN, MN

Date: 1/6/16

PID Cal. 100.1 ppm

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
S-1	0830	4.5	0	3,600	0.8	58
S-2	"	6.5	0	>12,000	0.7	59
S-5	"	6.5	0	>12,000	1.0	58
D-2	"	4.5	6	>12,000	0.4	60
D-4	"	4.5	7.5	>12,000	0.6	60
D-6	"	3.0	0	>12,000	0.8	60
MW-3	✓	6.0	0	350	10.4	60

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site Personnel: AN, MW

Date: 1/8/16

PID Cal 1100.0 ppm

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp (°F)
S-1	1030	5.0	0	>12,000	0.1	58
S-2	"	5.0	0	>12,000	0.1	58
S-5	"	5.5	0	>12,000	0.2	58
S-8	"	5.5	0	>12,000	0.3	57
I-4	"	6.5	0	4800	0.1	60
I-7	"	3.0	7.5	>12,000	0.1	58
D-3	"	4.0	0	>12,000	0.1	58
VW-2	"	6.0	5	1000	0.3	60
VW-3	"	6.0	0	250	2.1	60
MW-3	"	6.0	0	1500	3.5	58

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site Personnel: AN, MN

Date: 1/11/16

PID Cal: 100.0ppm

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
S-1	0830	6.0	0	4,800	5.3	58
S-2		6.0	0	>12,000	6.1	58
S-3		6.5	0	7.5	5.7	58
S-4		6.5	0	2,400	4.1	58
S-5		6.0	0	2,400	5.9	58
S-6		6.0	0	2,400	1.3	58
S-7		6.0	0	7,000	2.2	58
S-8		5.5	0	850	4.6	58
I-1		3.5	0	>12,000	6.2	58
I-2		5.5	0	>12,000	3.9	58
I-3		5.5	0	7,000	5.4	56
I-4		5.5	0	3,600	1.4	58
I-5		5.5	0	>12,000	4.6	58
I-6		5.0	0	>12,000	5.1	58
I-7		3.5	0	>12,000	1.2	58
I-8		5.5	5	>12,000	0.5	60
D-1		5.0	0	>12,000	4.5	60
D-2		5.0	0	>12,000	3.8	60
D-3		5.5	0	>12,000	4.9	60
D-4		5.0	0	>12,000	1.1	58
D-5		3.5	0	>12,000	2.5	58
D-6		3.5	0	>12,000	6.1	60
D-7		4.5	0	>12,000	1.9	60
D-8		3.0	0	>12,000	1.1	60
VW-1		6.0	0	180	2.5	58
VW-2		6.0	0	1000	1.9	58
VW-3		6.0	0	850	1.5	58
VW-4		6.0	0	210	1.8	58
MW-3		6.0	0	610	10.4	58
MW-3D	V	7.0	0	0	3.2	58

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site **Personnel:** LH, MN

Date: 1/12/16

PID CAL: 100.00

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp (°F)
S-1	0830	4.5	0	712,000	2.1	58
S-5		5.0	0	712,000	1.7	58
I-2		5.0	0	712,000	2.2	58
I-4		5.5	0	712,000	1.9	58
I-7		3.5	0	712,000	1.5	59
MW-3		6.0	0	1500	11.9	60
VW-3		6.5	0	60	3.0	60

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site

Personnel: AN, MN

Date: 1/13/16

PID Cal: 100.0 ppm

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
VW-1	0830	7.0	0	5	2.4	56
VW-2	↓	7.0	0	12.5	3.0	56
VW-3		7.0	0	0	3.0	56
VW-4		6.0	0	210	2.4	56
MW-3		6.5	0	1500	13.2	56

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site Personnel: AW, MN

Date: 1/14/16

PID Cal: 100.0 ppm

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp. (°F)
S-3	0830	6.0	0	20	0.2	56
S-8	"	5.5	0	>12,000	0.1	56
I-2	"	2.5	0	>12,000	0.3	56
I-4	"	3.5	0	>12,000	0.1	56
D-1	"	5.0	0	>12,000	0.4	54
D-5	"	5.0	0	>12,000	0.4	56
VW-1	"	6.0	0	250	1.0	54
MW-3	"	6.0	0	2100	12.3	56

GEO-CLEANSE® DAILY GROUNDWATER MONITORING LOG

Site: Ramboll- Sun Chemical Site **Personnel:** AN, MN

Date: 1/15/16

PID Cal: 99.9 ppm

Location	Time	pH	Iron (ppm)	Peroxide (ppm)	PID Headspace (ppm)	Temp (°F)
MW-3	0830	6.0	0	2500	13.5	60
D-4		5	0	712,000	1.9	62
D-7		4	0	712,000	0.4	62
I-1		4	0	712,000	1.3	60
I-4		4.5	0	712,000	1.7	60
S-5		5	0	712,000	0.1	61
S-6		5	0	712,000	0.0	62

Attachment 6

Daily Offgas Monitoring Logs

Baseline

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site **Personnel:** MV, SH

Date: 12/25/15

BASELINE

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
AV-03	1400,1400	–	1.0	19.4	0.5	
AV-01		–	3.2	>40	3.2	
AV-04		–	1.1	17.8	1.1	
AV-02		–	0.3	25.2	1.0	

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site
Date: 12/30/15

Personnel: MN, SH

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
VW-4	13:30	-	0.5	30.5	1.5	
I-6		24	(SH)	-	-	Injecting
AV-3		-	3.8 ~~4.5~~	>40.0	4.5	
S-8		-	0.8	>40.0	0.4	
AV-1		-	1.4	>40.0	1.9	
MW-3		-	0.0	20.9	0.3	
S-1		-	0.2	31.5	0.5	
I-1		8	-	-	-	Injecting
S-3		15	-	-	-	Injecting
AV-2		-	0.5	>40.0	4.1	
I-3		-	0.5	35.2	0.4	

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site **Personnel:** MN, SH

Date: 12/31/15

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
I-4	1150	12	-	-	-	Injecting
S-1	"	8	-	-	-	Injecting
VW-1	"		9.6	7.6	3.0	
VW-2	"		0.3	37.4	0.9	
VW-3	"		4.6	>4.8	2.9	
VW-4	"		0.6	35.6	0.5	
MW-3	"		0	20.9	0.0	
I-5	1350	5	-	-	-	Injecting
AV-3	"	-	5.1	>40.0	4.1	
AV-1	"	-	4.7	>40.0	3.5	
AV-2	"	-	1.0	>40.0	0.7	
S-6	"	-	4.8	35.9	3.0	
AV-4	"	-	0.8	>40.0	0.2	
I-6	"	15	-	-	-	Injecting

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site

Personnel: MN / AN

Date: 1/4/15

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
S-3	1215	10	-	-	-	Injecting
S-5	↓	12	-	-	-	Injecting
I-6		16	-	-	-	Injecting
VW-4			0.9	35.0	0.0	
VW-3			1.9	31.2	0.0	
VW-1			4.8	>40	0.4	
MW-3			0.0	20.9	0.0	
VW-2			0.0	23.9	0.3	
S-6			-	-	-	Mounding
I-3			-	-	-	Mounding
D-3			-	-	-	Mounding
D-5	↓		-	-	-	Mounding
I-7	1445	14	-	-	-	Injecting
I-6	↓		-	-	-	Injecting
I-3		4	-	-	-	Injecting
VW-4			0.8	>40	1.0	
VW-3			3.1	>40	1.4	
VW-1			3.9	>40	0.3	
MW-3			0.0	20.9	0.0	
VW-2			0.8	25.9	0.4	
S-7			-	-	-	Mounding
S-6			-	-	-	Mounding
S-3	↓		-	-	-	Mounding

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site **Personnel:** MW, AW

Date: 1/5/15

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
D-4	1300		–	–	–	Injecting
S-6			–	–	–	Injecting
S-2			–	–	–	Injecting
VW-1			5.9	7.6	0.0	
VW-2			0	22.3	0.0	
VW-3			2.2	7.6	0.0	
VW-4			0.4	33.4	0.0	
MW-3			0	20.9	0.0	
D-5	1530	0	–	–	–	Injecting
D-6		10	–	–	–	Injecting
S-3		10	–	–	–	Injecting
VW-1			3.8	>40	2.2	
VW-2			1.0	>40	0.4	
VW-3			1.8	>40	1.9	
VW-4			0.8	>40	0.7	
MW-3			0.0	20.9	0.0	
S-5			–	–	–	Monitoring
S-6			–	–	–	Monitoring
I-5			–	–	–	Monitoring

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site **Personnel:** MM. AN

Date: 1/6/16

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
I-4	1315		—	—	—	Injecting
S-8			—	—	—	Injecting
S-4			—	—	—	Injecting
AV-1			0.2	23.3	0.1	
AV-2			11.4	7.4.0	0.0	
AV-3			3.0	7.4.0	0.0	
AV-4			0.8	7.4.0	0.0	
MW-3			0.4	7.4.0	1.0	

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site **Personnel:** MN, AN

Date: 1/7/16

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
D-5	1150	10	-	-	-	Injecting
I-6	↓	10	-	-	-	↓
S-2	↓	12	-	-	-	↓
VW-1	↓	↓	10.8	>40	1.9	↓
VW-2	↓	↓	1.4	>40	1.3	↓
VW-3	↓	↓	3.6	>40	1.1	↓
VW-4	↓	↓	0.9	>40	1.3	↓
MW-3	↓	↓	0.3	>40	0.1	↓
S-5	↓	↓	-	-	-	Mounding
I-5	↓	↓	-	-	-	↓
I-2	↓	↓	-	-	-	↓
D-1	1440	↓	-	-	-	Injecting
D-5	↓	↓	-	-	-	↓
I-4	↓	↓	-	-	-	↓
VW-1	↓	↓	10.2	>40	0.5	↓
VW-2	↓	↓	0.4	>40	0.4	↓
VW-3	↓	↓	3.4	>40	0.8	↓
VW-4	↓	↓	0.8	>40	0.5	↓
MW-3	↓	↓	0.7	>40	20.1	↓
I-1	↓	↓	-	-	-	Mounding
S-5	↓	↓	-	-	-	↓
S-4	↓	↓	-	-	-	↓

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site **Personnel:** AN, MN

Date: 1/8/16

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
I-5	1205		-	-	-	Injecting
D-2	↓		-	-	-	↓
I-3	↓		-	-	-	↓
VW-1	↓		9.3	>40	0.7	
VW-2	↓		0.0	20.9	0.1	
VW-3	↓		3.1	>40	0.2	
VW-4	↓		0.8	>40	0.3	
MW-3	↓		0.0	22.1	0	
S-5	↓		-	-	-	Mounding
I-2	↓		-	-	-	↓
S-3	↓		-	-	-	↓
S-2			-	-	-	
D-3	1445		-	-	-	Injecting
D-1	↓		-	-	-	↓
S-3	↓		-	-	-	Mounding
VW-1	↓		9.7	>40	1.3	
VW-2	↓		0.1	24.3	0.3	
VW-3	↓		4.0	>40	1.9	
VW-4	↓		0.8	>40	0.1	
MW-3	✓		0.0	24.0	0.2	

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site **Personnel:** MN, AN

Date: 1/11/16

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
I-7	11:30	20	–	–	–	Injecting
I-1	↓	17	–	–	–	↓
S-6	↓	12	–	–	–	↓
S-7	↓		–	–	–	Mounding
S-1	↓		–	–	–	↓
VW-1	↓		3.1	>40	1.6	
VW2	↓		9.4	>40	3.4	
VW-3	↓		7.5	>40	4.1	
VW-4	↓		1.2	>40	0.2	
MW-3	↓		0.4	>40	1.9	
D-5	14:50	15	–	–	–	Injecting
D-4	↓	17	–	–	–	↓
D-6	↓	12	–	–	–	↓
vw-1	↓		8.5	>40	0.9	
vw-2	↓		6.0	>40	0.1	
vw-3	↓		1.8	>40	0.3	
VW-4	↓		0.6	>40	0.0	
mw-3	↓		0.2	>40	0.2	
S-5	↓		–	–	–	Mounding
I-4	↓		–	–	–	↓
S-6	↓		–	–	–	↓

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site **Personnel:** MN, AN

Date: 1/12/16

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
S-4	10^{30}	10	–	–	–	Injecting
I-5	↓	10	–	–	–	↓
S-7		15	–	–	–	
S-5		–	–	–	–	Mounding
I-4		–	–	–	–	↓
VW-1			5.1	740	1.2	
VW-2			6.2	740	1.9	
VW-3			1.5	740	0.1	
VW-4			0.9	740	1.1	
MW-3	↓		2.1	740	1.7	
I-2	13^{30}	12	–	–	–	Injecting
S-6	↓	15	–	–	–	↓
D-4		15	–	–	–	
S-3			–	–	–	Mounding
D-2			–	–	–	↓
I-4			–	–	–	
D-4			–	–	–	
VW-1			6.3	740	0.9	
VW-2			5.7	740	2.3	
VW-3			1.6	740	0.1	
VW-4			0.9	740	1.2	
MW-3	↓		1.9	740	1.5	

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site **Personnel:** 1/13/16

Date: MN, AN

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
O-1	1055	15	–	–	–	Injector
I-8	↓	9	–	–	–	↓
S-5	↓	15	–	–	–	↓
I-1	↓	↓	–	–	–	Blanding
S-1	↓	↓	–	–	–	↓
S-6	↓	↓	–	–	–	↓
I-5	↓	↓	–	–	–	↓
VW-1	↓	↓	1.4	740	0.1	↓
VW-2	↓	↓	4.1	740	0.1	↓
VW-3	↓	↓	3.4	740	0.9	↓
VW-4	↓	↓	0.9	740	1.3	↓
MW-3	↓	↓	1.1	740	1.5	↓
I-1	1330	10	–	–	–	Injector
S-4	↓	15	–	–	–	↓
S-2	↓	0	–	–	–	↓
VW-1	↓	↓	3.5	746	0.1	↓
VW-2	↓	↓	4.0	740	1.1	↓
VW-3	↓	↓	2.1	740	1.0	↓
VW-4	↓	↓	1.1	740	4.1	↓
MW-3	↓	↓	1.0	740	3.9	↓

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site
Date: 1/14/16
Personnel: MN, AN

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
I-6	1045	10	-	-	-	Injecting
S-1	↓	10	"	-	"	
D-5		20	-	-	-	
S-6		-	-	-	-	Mounding
VW-1			3.2	740	0.4	
VW-2			2.4	740	0.4	
VW-3			0.5	740	0.9	
VW-4	↓		1.0	740	0.0	
MW-3			0.1	740	0.1	
D-3	1300	0	-	-	-	Injecting
D-2	↓	20	"	-	-	↓
D-5		17	-	-	-	
I-3		-	-	-	-	Mounding
S-3		-	-	-	-	↓
I-2		-	-	-	-	
S-2		-	-	-	-	
I-5		-	-	-	-	
S-5		-	-	-	-	
VW-1			4.5	740	0.1	
VW-2			1.7	740	0.4	
VW-3			0.5	740	0.5	
VW-4			1.1	740	0.0	
MW-3	↓		0.0	740	0.4	

GEO-CLEANSE® DAILY OFFGAS MONITORING LOG

Perform a Minimum of 2 Full Rounds Daily

Site: Ramboll- Sun Chemical Site

Date: 1/15/16

Personnel: MN, AN

Location	Time	Head Pressure (psi)	Carbon Dioxide (%)	Oxygen (%)	PID Headspace (ppm)	Comments
S-8	1015	0	-	-	-	Injecting
I-3	↓	15	-	-	-	↓
S-5	↓	15	-	-	-	↓
D-8	↓	-	-	-	-	Monitoring
S-3	↓	-	-	-	-	↓
D-5	↓	-	-	-	-	↓
VW-1	↓	↓	2.9	>40	0.1	↓
VW-2	↓	↓	1.0	740	0.9	↓
VW-3	↓	↓	0.1	740	0.0	↓
VW-4	↓	↓	0.4	740	1.0	↓
MW-3	↓	↓	0.0	740	0.0	↓
D-1	1360	15	-	-	-	Injecting
D-2	↓	20	-	-	-	↓
I-1	↓	-	-	-	-	Monitoring
S-1	↓	-	-	-	-	↓
I-2	↓	-	-	-	-	↓
S-2	↓	-	-	-	-	↓
MW-3	↓	↓	ckd 0.3	740	0.0	↓
VW-1	↓	↓	4.1	740	0.9	↓
VW-2	↓	↓	1.1	740	0.0	↓

ATTACHMENT A
NYSDEC TEXT FROM WEBPAGE (HTTP://WWW.DEC.NY.GOV/REGULATIONS/61794.HTML)

Index of Standards, Criteria and Guidance (SCGs) for Investigation and Remediation of Inactive Hazardous Waste Disposal Sites

The Division of Environmental Remediation (DER) performs environmental investigations and cleanup of Inactive Hazardous Waste Disposal Sites in accordance with the appropriate, relevant, and applicable requirements. This includes DER's regulations and guidance documents as well as regulations and guidance from other divisions within the New York State Department of Environmental Conservation, other State Agencies and Departments and external agencies such as the U.S. Environmental Protection Agency (USEPA) and the Occupational Safety and Health Agency (OSHA).

This page lists some of the Standards, Criteria and Guidance documents used in the remediation program. You can scroll through the entire list or click on a particular Division or Department on the bookmarks in the "On This Page" section to the right to find that Division's or Department's particular guidance and regulation(s) that applies to the New York State Remedial Program.

Division of Environmental Remediation SCGs

SCG Document	Description
Remedial Guidance and Policy Documents	Includes a listing of DER guidance.
6 NYCRR Part 364 - Waste Transporters	Waste transporter permit requirements
6 NYCRR Part 370 - Hazardous Waste Management System: General	Definitions of terms and general standards applicable to Parts 370-374 & 376
6 NYCRR Part 371 - Identification and Listing of Hazardous Wastes	Hazardous waste determinations
6 NYCRR Part 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities	Manifest system and record keeping, certain management standards
6 NYCRR Subpart 374-1 - Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities	Requirements for recyclable materials, hazardous waste burned for energy recovery, used oil burned for energy recovery, precious metal recovery, spent lead acid battery reclamation
6 NYCRR Subpart 374-2 - Standards for the Management of Used Oil	Regulates the management of used oil
6 NYCRR Subpart 373-2 - Final Status Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities	Hazardous waste management standards (e.g., contingency plan; releases from SWMUs; closure/post-closure; container/management; tank management; surface impoundments; waste piles; landfills; incinerators; etc.)
6 NYCRR Subpart 373-3 - Interim Status Standards for Owners and Operators of Hazardous Waste Facilities	Similar to 373-2
6 NYCRR Part 375 - Environmental Remediation Programs	Requirements regarding remedial programs, private party programs, state funded programs, state assistance to municipalities
6 NYCRR Part 376 - Land Disposal Restrictions	Identifies hazardous waste restricted from land disposal defines land disposal

Division of Materials Management SCGs

SCG Document	Description
6 NYCRR Part 360 - Solid Waste Management Facilities	Solid waste management facility requirements landfill closures; C&D landfill requirements; used oil; medical waste; etc.
6 NYCRR Subpart 373-4 - Facility Standards for the collection of household hazardous waste and hazardous waste from conditionally exempt small quantity generators	Hazardous waste management standards collection of household hazardous waste hazardous waste from conditionally. except small quantity generators

Division of Water SCGs

SCG Document	Description
Technical and Operational Guidance Series (TOGS)	Includes a listing of DOW guidance including TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
6 NYCRR Part 702.15(a), (b), (c), (d), (e) & (f)	Empowers NYSDEC to apply and enforce guidance where there is no promulgated standard
6 NYCRR Part 700-706 - NYSDEC Water Quality Regulations for Surface Waters and Groundwater	700 - Definitions, Samples and Tests; 701 - Classifications Surface Waters and Groundwaters; 702 - Derivation and Use of Standards and Guidance Values; 703 - Surface Water and Groundwater Quality Standards and Groundwater Effluent Standards
6 NYCRR Part 750-757 - Implementation of NPDES Program in NYS	Regulations regarding the SPDES program

Division of Fish and Wildlife and Marine Resources SCGs

SCG Document	Description
Fish, Wildlife and Marine Resource Guide	Presents hazardous material guidance including Fish and Wildlife impact Analysis and the Technical Screening of Contaminated Sediments
6 NYCRR Part 182 - Endangered & Threatened Species of Fish & Wildlife	Lists endangered, threatened species and species of special concern and prohibits taking except under permit
6 NYCRR Part 608 - Use and Protection of Waters	Protect certain classified streams permits for impoundments, structures, dredge, and fill
6 NYCRR Part 661 (Cp. 10) - Tidal Wetlands Land Use Regulations	Limit/preclude excavation, filling, regrading in vegetated tidal wetlands or portions of adjacent areas
6 NYCRR Part 663 - Freshwater Wetlands Permit Requirements	Procedural requirements for various activities in wetlands and adjacent areas and standards for permit issuance
6 NYCRR Part 664 - Freshwater Wetlands Maps and Classifications	Depicts and delineates freshwater wetlands
6 NYCRR Part 665 - Local Government Implementation of the Freshwater Wetlands Act & Statewide Minimum Land - Use Regulations for Freshwater Wetlands	Provides for optional local regulatory authority regarding use and development of freshwater wetlands
6 NYCRR Part 666 - Administration and Management of the Wild, Scenic and Recreational Rivers System in New York State Excepting the Adirondack Park	Procedural requirements for administration and management of the wild, scenic and recreational rivers

Division of Environmental Permits SCGs

SCG Document	Description
DEC Permits Guidance	Listing of guidance for permits
6 NYCRR Part 621 - Uniform Procedures	Permit processing requirements

Division of Air Resources SCGs

SCG Document	Description
Air Guidance and Policy Documents	Includes a listing of DAR guidance including Air guide One - Guidelines for the Control of Toxic Ambient Air Contaminants
6 NYCRR Part 200 (200.6) - General Provisions	Prohibits contravention of AAQS or causes air pollution
6 NYCRR Part 201 - Permits and Registrations	Prohibits construction and/or operation without a permit and/or

Outdoors
NYS Department of State - Coastal Resources Online
USEPA - Laws, Policy and Guidance for Federal Superfund
OSHA - 29 CFR Part 1910.120 - Hazardous Waste Operations and Emergency Response
US Army Corps of Engineers
National Park Service - 16 USC 470 - National Historic Preservation Act
USEPA - Part 300 - National Oil and Hazardous Substances Pollution Contingency Plan

Contact for this Page

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This Page Covers

	certificate
6 NYCRR Part 211 (211.1) - General Prohibitions	Prohibits emissions which are injurious to human, plant, or animal life or causes a nuisance
6 NYCRR Part 212 - Process Operations	Establishes control requirements
6 NYCRR Part 227-1 - Stationary Combustion Installations	Requirement for stationary combustion installations
6 NYCRR Part 231 - New Source Review in Non-attainment Areas and Ozone Transport Regions	Requirements for non-attainment areas and ozone transport regions
6 NYCRR Part 257 - Air Quality Standards	Applicable air quality standards

NYS Department of Health SCGs (see "Links Leaving DEC's Website" above right)

SCG Document	Description
10 NYCRR Part 5 - Public Water Supplies	Includes appendix 5-A Recommended Standards for Water Works and Appendix 5-B Standards for Water Wells.
Guidance for Evaluating Soil Vapor Intrusion in New York	For use in exposure assessments for vapor intrusion
Chemicals in Sports Fish and Game	Advisories of eating sportfish and game due to chemicals at levels of concern
10 NYCRR Part 170 - Sources of Water Supply	Protecting public water supplies
Health and Safety in the Home, Work Place or Outdoors	Includes guidance on indoor air, lead, radon, etc.

NYS Department of State SCGs (see "Links Leaving DEC's Website" above right)

SCG Document	Description
Consistency Reviews	Guidance to insure federal and state "actions" in coastal areas are consistent with Coastal Management Program
State Coastal Policies	Policies regarding development in coastal areas
Part 600 - Department of State, Waterfront Revitalization and Coastal Resources Act	"Coastal Area" includes Lakes Erie and Ontario, the St. Lawrence and Niagara rivers, the Hudson river south of the federal dam at Troy, the East river, the Harlem river, the Kill van Kull and Arthur Kill, Long Island sound, and the Atlantic Ocean, etc.

U.S. Environmental Protection Agency SCGs (see "Links Leaving DEC's Website" above right)

SCG Document	Description
Laws, Policy and Guidance for Federal Superfund	Provides a listing of federal rules, regulations and guidance for the Superfund
National Contingency Plan	Provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants
Waste Cleanup and Risk Assessment	Human health risk assessments

OSHA SCGs (see "Links Leaving DEC's Website" above right)

SCG Document	Description
29 CFR Part 1910.120 - Hazardous Waste Operations and Emergency Response	Health and Safety

U.S. Army Corp of Engineers SCGs (see "Links Leaving DEC's Website" above right)

SCG Document	Description
Protection of Wetlands	Minimize destruction, loss, or degradation of wetlands
33 USC 466 Section 404 - Clean Water Act	Control disturbances in wetlands
33 CFR Parts 320 -330 - Regulatory Programs of the Corps of Engineers	Wetlands permits

United States Miscellaneous SCGs (see "Links Leaving DEC's Website" above right)

SCG Document	Description

16 USC 470 - National Historic Preservation Act	Determine if site may have significance, mitigate impacts