Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54245** Instrument ID **SVMS4** Method: **SW8270**

LCS Sample ID: **SLCSS1-54245-54245** Units: **µg/Kg** Analysis Date: **12/19/13 04:41 PM**

Client ID: Run ID: **SVMS4_131219A** SeqNo: **2588453** Prep Date: **12/18/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	548.7	160	666.7	0	82.3	50-110	0			
2,4,6-Trichlorophenol	546.3	160	666.7	0	81.9	45-110	0			
2,4-Dichlorophenol	558.3	160	666.7	0	83.7	45-110	0			
2,4-Dimethylphenol	504.7	330	666.7	0	75.7	30-105	0			
2,4-Dinitrophenol	524	660	666.7	0	78.6	15-130	0			J
2,4-Dinitrotoluene	617.7	160	666.7	0	92.6	50-115	0			
2,6-Dinitrotoluene	626.7	160	666.7	0	94	50-110	0			
2-Chloronaphthalene	588	6.7	666.7	0	88.2	45-105	0			
2-Chlorophenol	644	160	666.7	0	96.6	45-105	0			
2-Methylnaphthalene	594	6.7	666.7	0	89.1	45-105	0			
2-Methylphenol	576.3	160	666.7	0	86.4	40-105	0			
2-Nitroaniline	606	660	666.7	0	90.9	45-120	0			J
2-Nitrophenol	600	160	666.7	0	90	40-110	0			
3-Nitroaniline	282.3	660	666.7	0	42.3	25-150	0			J
4-Bromophenyl phenyl ether	596	160	666.7	0	89.4	45-115	0			
4-Chloro-3-methylphenol	608.7	160	666.7	0	91.3	45-115	0			
4-Chloroaniline	619.3	660	666.7	0	92.9	15-110	0			J
4-Chlorophenyl phenyl ether	577	160	666.7	0	86.5	45-110	0			
4-Methylphenol	540	160	666.7	0	81	40-105	0			
4-Nitroaniline	328.7	660	666.7	0	49.3	35-150	0			J
4-Nitrophenol	418.7	660	666.7	0	62.8	15-140	0			J
Acenaphthene	559.3	6.7	666.7	0	83.9	45-110	0			
Acenaphthylene	576.7	6.7	666.7	0	86.5	45-105	0			
Anthracene	612.3	6.7	666.7	0	91.8	55-105	0			
Benzo(a)anthracene	691.3	6.7	666.7	0	104	50-110	0			
Benzo(a)pyrene	636	6.7	666.7	0	95.4	50-110	0			B
Benzo(b)fluoranthene	588	6.7	666.7	0	88.2	45-115	0			B
Benzo(g,h,i)perylene	661.7	6.7	666.7	0	99.2	40-125	0			B
Benzo(k)fluoranthene	679.7	6.7	666.7	0	102	45-115	0			B
Bis(2-chloroethoxy)methane	580.7	160	666.7	0	87.1	45-110	0			
Bis(2-chloroethyl)ether	565.7	160	666.7	0	84.8	40-105	0			
Bis(2-chloroisopropyl)ether	546	160	666.7	0	81.9	20-115	0			
Bis(2-ethylhexyl)phthalate	641.3	330	666.7	0	96.2	45-125	0			
Butyl benzyl phthalate	616.7	160	666.7	0	92.5	50-125	0			
Carbazole	599.7	160	666.7	0	89.9	50-150	0			
Chrysene	618	6.7	666.7	0	92.7	55-110	0			B
Dibenzo(a,h)anthracene	697.7	6.7	666.7	0	105	40-125	0			
Dibenzofuran	590	160	666.7	0	88.5	50-105	0			
Diethyl phthalate	600.7	330	666.7	0	90.1	50-115	0			
Dimethyl phthalate	582.3	330	666.7	0	87.3	50-110	0			
Di-n-butyl phthalate	610.3	330	666.7	0	91.5	55-110	0			
Di-n-octyl phthalate	632	160	666.7	0	94.8	40-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **54245** Instrument ID **SVMS4** Method: **SW8270**

Fluoranthene	630.3	6.7	666.7	0	94.5	55-115	0	B
Fluorene	609.3	6.7	666.7	0	91.4	50-110	0	
Hexachlorobenzene	584	160	666.7	0	87.6	45-120	0	
Hexachlorobutadiene	558.3	160	666.7	0	83.7	40-115	0	
Hexachlorocyclopentadiene	472.3	330	666.7	0	70.8	40-115	0	
Hexachloroethane	549.3	160	666.7	0	82.4	35-110	0	
Indeno(1,2,3-cd)pyrene	674	6.7	666.7	0	101	40-120	0	B
Isophorone	557.3	160	666.7	0	83.6	45-110	0	
Naphthalene	552.7	6.7	666.7	0	82.9	40-105	0	
Nitrobenzene	614	160	666.7	0	92.1	40-115	0	
N-Nitrosodi-n-propylamine	606	160	666.7	0	90.9	40-115	0	
N-Nitrosodiphenylamine	681.7	160	666.7	0	102	50-115	0	
Pentachlorophenol	653.3	330	666.7	0	98	25-120	0	
Phenanthrene	592	6.7	666.7	0	88.8	50-110	0	B
Phenol	622	160	666.7	0	93.3	40-100	0	
Pyrene	603	6.7	666.7	0	90.4	45-125	0	B
Surr: 2,4,6-Tribromophenol	*1429*	0	*1667*	0	*85.8*	*34-140*	0	
Surr: 2-Fluorobiphenyl	*1363*	0	*1667*	0	*81.8*	*12-100*	0	
Surr: 2-Fluorophenol	*1462*	0	*1667*	0	*87.7*	*33-117*	0	
Surr: 4-Terphenyl-d14	*1573*	0	*1667*	0	*94.4*	*25-137*	0	
Surr: Nitrobenzene-d5	*1345*	0	*1667*	0	*80.7*	*37-107*	0	
Surr: Phenol-d6	*1388*	0	*1667*	0	*83.3*	*40-106*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54245** Instrument ID **SVMS4** Method: **SW8270**

MS Sample ID: **1312802-19A MS** Units: **µg/Kg** Analysis Date: **12/19/13 10:08 PM**

Client ID: **BUF-SW06-121213** Run ID: **SVMS4_131219A** SeqNo: **2588455** Prep Date: **12/18/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	1017	320	1316	0	77.2	50-110	0			
2,4,6-Trichlorophenol	923.4	320	1316	0	70.1	45-110	0			
2,4-Dichlorophenol	881.9	320	1316	0	67	45-110	0			
2,4-Dimethylphenol	623.9	650	1316	0	47.4	30-105	0			J
2,4-Dinitrophenol	ND	1,300	1316	0	0	15-130	0			S
2,4-Dinitrotoluene	1151	320	1316	0	87.4	50-115	0			
2,6-Dinitrotoluene	1156	320	1316	0	87.8	50-110	0			
2-Chloronaphthalene	926.7	13	1316	0	70.4	45-105	0			
2-Chlorophenol	949.1	320	1316	0	72.1	45-105	0			
2-Methylnaphthalene	945.1	13	1316	4.655	71.4	45-105	0			
2-Methylphenol	866.8	320	1316	0	65.8	40-105	0			
2-Nitroaniline	1121	1,300	1316	0	85.2	45-120	0			J
2-Nitrophenol	870.7	320	1316	0	66.1	40-110	0			
3-Nitroaniline	1158	1,300	1316	0	88	25-110	0			J
4-Bromophenyl phenyl ether	1120	320	1316	0	85	45-115	0			
4-Chloro-3-methylphenol	1095	320	1316	0	83.2	45-115	0			
4-Chloroaniline	909.6	1,300	1316	0	69.1	15-110	0			J
4-Chlorophenyl phenyl ether	1054	320	1316	0	80	45-110	0			
4-Methylphenol	824	320	1316	0	62.6	40-105	0			
4-Nitroaniline	1381	1,300	1316	0	105	35-150	0			
4-Nitrophenol	765.4	1,300	1316	0	58.1	15-140	0			J
Acenaphthene	955	13	1316	0	72.5	45-110	0			
Acenaphthylene	966.2	13	1316	0	73.4	45-105	0			
Anthracene	1117	13	1316	0	84.8	55-105	0			
Benzo(a)anthracene	1252	13	1316	0	95.1	50-110	0			
Benzo(a)pyrene	1040	13	1316	5.986	78.5	50-110	0			B
Benzo(b)fluoranthene	1050	13	1316	9.311	79.1	45-115	0			B
Benzo(g,h,i)perylene	1058	13	1316	5.653	79.9	40-125	0			B
Benzo(k)fluoranthene	1088	13	1316	4.323	82.3	45-115	0			B
Bis(2-chloroethoxy)methane	864.2	320	1316	0	65.6	45-110	0			
Bis(2-chloroethyl)ether	780.6	320	1316	0	59.3	40-105	0			
Bis(2-chloroisopropyl)ether	774	320	1316	0	58.8	20-115	0			
Bis(2-ethylhexyl)phthalate	1195	650	1316	28.6	88.6	45-125	0			
Butyl benzyl phthalate	1161	320	1316	17.96	86.8	50-125	0			
Carbazole	1091	320	1316	0	82.8	50-150	0			
Chrysene	1119	13	1316	12.64	84	55-110	0			B
Dibenzo(a,h)anthracene	1091	13	1316	0	82.9	40-125	0			
Dibenzofuran	1067	320	1316	5.653	80.6	50-105	0			
Diethyl phthalate	1130	650	1316	0	85.8	50-115	0			
Dimethyl phthalate	1092	650	1316	12.3	82	50-110	0			
Di-n-butyl phthalate	1121	650	1316	7.316	84.6	55-110	0			
Di-n-octyl phthalate	1112	320	1316	0	84.4	40-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **54245** Instrument ID **SVMS4** Method: **SW8270**

Fluoranthene	1159	13	1316	20.95	86.5	55-115	0	B
Fluorene	1129	13	1316	0	85.7	50-110	0	
Hexachlorobenzene	1112	320	1316	0	84.5	45-120	0	
Hexachlorobutadiene	796.4	320	1316	0	60.5	40-115	0	
Hexachlorocyclopentadiene	579.8	650	1316	0	44	40-115	0	J
Hexachloroethane	786.5	320	1316	0	59.7	35-110	0	
Indeno(1,2,3-cd)pyrene	1073	13	1316	4.655	81.1	40-120	0	B
Isophorone	817.4	320	1316	0	62.1	45-110	0	
Naphthalene	826	13	1316	3.658	62.5	40-105	0	
Nitrobenzene	913.5	320	1316	0	69.4	40-115	0	
N-Nitrosodi-n-propylamine	891.1	320	1316	0	67.7	40-115	0	
N-Nitrosodiphenylamine	1229	320	1316	0	93.4	50-115	0	
Pentachlorophenol	573.3	650	1316	0	43.5	25-120	0	J
Phenanthrene	1152	13	1316	41.57	84.4	50-110	0	B
Phenol	940.5	320	1316	14.3	70.4	40-100	0	
Pyrene	1091	13	1316	14.96	81.8	45-125	0	B
Surr: 2,4,6-Tribromophenol	*2471*	0	*3291*	0	*75.1*	*34-140*	0	
Surr: 2-Fluorobiphenyl	*2196*	0	*3291*	0	*66.7*	*12-100*	0	
Surr: 2-Fluorophenol	*2121*	0	*3291*	0	*64.5*	*33-117*	0	
Surr: 4-Terphenyl-d14	*2962*	0	*3291*	0	*90*	*25-137*	0	
Surr: Nitrobenzene-d5	*1980*	0	*3291*	0	*60.2*	*37-107*	0	
Surr: Phenol-d6	*2063*	0	*3291*	0	*62.7*	*40-106*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54245** Instrument ID **SVMS4** Method: **SW8270**

MSD Sample ID: **1312802-19A MSD** Units: **µg/Kg** Analysis Date: **12/19/13 10:39 PM**

Client ID: **BUF-SW06-121213** Run ID: **SVMS4_131219A** SeqNo: **2588457** Prep Date: **12/18/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	1046	320	1318	0	79.4	50-110	1017	2.84	30	
2,4,6-Trichlorophenol	999.4	320	1318	0	75.8	45-110	923.4	7.91	30	
2,4-Dichlorophenol	911.8	320	1318	0	69.2	45-110	881.9	3.33	30	
2,4-Dimethylphenol	625.2	650	1318	0	47.4	30-105	623.9	0	30	J
2,4-Dinitrophenol	ND	1,300	1318	0	0	15-130	0	0	30	S
2,4-Dinitrotoluene	1123	320	1318	0	85.2	50-115	1151	2.51	30	
2,6-Dinitrotoluene	1206	320	1318	0	91.5	50-110	1156	4.28	30	
2-Chloronaphthalene	937.5	13	1318	0	71.1	45-105	926.7	1.16	30	
2-Chlorophenol	936.8	320	1318	0	71.1	45-105	949.1	1.3	30	
2-Methylnaphthalene	961.2	13	1318	4.655	72.6	45-105	945.1	1.69	30	
2-Methylphenol	858.4	320	1318	0	65.1	40-105	866.8	0.97	30	
2-Nitroaniline	1095	1,300	1318	0	83.1	45-120	1121	0	30	J
2-Nitrophenol	855.1	320	1318	0	64.9	40-110	870.7	1.81	30	
3-Nitroaniline	1385	1,300	1318	0	105	25-110	1158	17.9	30	
4-Bromophenyl phenyl ether	1143	320	1318	0	86.7	45-115	1120	2.08	30	
4-Chloro-3-methylphenol	1109	320	1318	0	84.2	45-115	1095	1.29	30	
4-Chloroaniline	1124	1,300	1318	0	85.3	15-110	909.6	0	30	J
4-Chlorophenyl phenyl ether	1078	320	1318	0	81.8	45-110	1054	2.32	30	
4-Methylphenol	818.9	320	1318	0	62.1	40-105	824	0.623	30	
4-Nitroaniline	1623	1,300	1318	0	123	35-150	1381	16.1	30	
4-Nitrophenol	745.8	1,300	1318	0	56.6	15-140	765.4	0	30	J
Acenaphthene	980.3	13	1318	0	74.4	45-110	955	2.62	30	
Acenaphthylene	979.6	13	1318	0	74.3	45-105	966.2	1.38	30	
Anthracene	1127	13	1318	0	85.5	55-105	1117	0.92	30	
Benzo(a)anthracene	1274	13	1318	0	96.7	50-110	1252	1.77	30	
Benzo(a)pyrene	1067	13	1318	5.986	80.5	50-110	1040	2.6	30	B
Benzo(b)fluoranthene	1073	13	1318	9.311	80.7	45-115	1050	2.15	30	B
Benzo(g,h,i)perylene	1102	13	1318	5.653	83.2	40-125	1058	4.12	30	B
Benzo(k)fluoranthene	1094	13	1318	4.323	82.7	45-115	1088	0.521	30	B
Bis(2-chloroethoxy)methane	853.8	320	1318	0	64.8	45-110	864.2	1.2	30	
Bis(2-chloroethyl)ether	774.1	320	1318	0	58.7	40-105	780.6	0.833	30	
Bis(2-chloroisopropyl)ether	761.6	320	1318	0	57.8	20-115	774	1.62	30	
Bis(2-ethylhexyl)phthalate	1187	650	1318	28.6	87.9	45-125	1195	0.676	30	
Butyl benzyl phthalate	1130	320	1318	17.96	84.4	50-125	1161	2.72	30	
Carbazole	1128	320	1318	0	85.6	50-150	1091	3.36	30	
Chrysene	1113	13	1318	12.64	83.5	55-110	1119	0.55	30	B
Dibenzo(a,h)anthracene	1107	13	1318	0	84	40-125	1091	1.48	30	
Dibenzofuran	1090	320	1318	5.653	82.3	50-105	1067	2.11	30	
Diethyl phthalate	1125	650	1318	0	85.3	50-115	1130	0.485	30	
Dimethyl phthalate	1089	650	1318	12.3	81.7	50-110	1092	0.264	30	
Di-n-butyl phthalate	1109	650	1318	7.316	83.6	55-110	1121	1.02	30	
Di-n-octyl phthalate	1088	320	1318	0	82.6	40-130	1112	2.12	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **54245** Instrument ID **SVMS4** Method: **SW8270**

Fluoranthene	1202	13	1318	20.95	89.6	55-115	1159	3.61	30	B
Fluorene	1145	13	1318	0	86.9	50-110	1129	1.43	30	
Hexachlorobenzene	1154	320	1318	0	87.5	45-120	1112	3.64	30	
Hexachlorobutadiene	783.3	320	1318	0	59.4	40-115	796.4	1.65	30	
Hexachlorocyclopentadiene	506	650	1318	0	38.4	40-115	579.8	0	30	JS
Hexachloroethane	786	320	1318	0	59.6	35-110	786.5	0.0687	30	
Indeno(1,2,3-cd)pyrene	1118	13	1318	4.655	84.5	40-120	1073	4.13	30	B
Isophorone	799.8	320	1318	0	60.7	45-110	817.4	2.18	30	
Naphthalene	848.5	13	1318	3.658	64.1	40-105	826	2.69	30	
Nitrobenzene	884.8	320	1318	0	67.1	40-115	913.5	3.2	30	
N-Nitrosodi-n-propylamine	878.2	320	1318	0	66.6	40-115	891.1	1.46	30	
N-Nitrosodiphenylamine	1253	320	1318	0	95.1	50-115	1229	1.9	30	
Pentachlorophenol	843.3	650	1318	0	64	25-120	573.3	38.1	30	R
Phenanthrene	1185	13	1318	41.57	86.8	50-110	1152	2.8	30	B
Phenol	931.6	320	1318	14.3	69.6	40-100	940.5	0.956	30	
Pyrene	1119	13	1318	14.96	83.8	45-125	1091	2.54	30	B
Surr: 2,4,6-Tribromophenol	*2644*	0	*3294*	0	*80.3*	*34-140*	2471	*6.77*	*40*	
Surr: 2-Fluorobiphenyl	*2183*	0	*3294*	0	*66.3*	*12-100*	2196	*0.593*	*40*	
Surr: 2-Fluorophenol	*2067*	0	*3294*	0	*62.8*	*33-117*	2121	*2.57*	*40*	
Surr: 4-Terphenyl-d14	*2905*	0	*3294*	0	*88.2*	*25-137*	2962	*1.94*	*40*	
Surr: Nitrobenzene-d5	*1905*	0	*3294*	0	*57.8*	*37-107*	1980	*3.87*	*40*	
Surr: Phenol-d6	*2039*	0	*3294*	0	*61.9*	*40-106*	2063	*1.19*	*40*	

The following samples were analyzed in this batch:

1312802-13A	1312802-14A	1312802-15A
1312802-16A	1312802-17A	1312802-19A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54332** Instrument ID **SVMS4** Method: **SW8270**

MBLK Sample ID: **SBLKS1-54332-54332** Units: **µg/Kg** Analysis Date: **12/23/13 09:20 AM**

Client ID: Run ID: **SVMS4_131223A** SeqNo: **2592017** Prep Date: **12/20/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1`-Biphenyl	ND	330								
2,4,5-Trichlorophenol	ND	160								
2,4,6-Trichlorophenol	ND	160								
2,4-Dichlorophenol	ND	160								
2,4-Dimethylphenol	ND	330								
2,4-Dinitrophenol	ND	660								
2,4-Dinitrotoluene	ND	160								
2,6-Dinitrotoluene	ND	160								
2-Chloronaphthalene	ND	6.7								
2-Chlorophenol	ND	160								
2-Methylnaphthalene	ND	6.7								
2-Methylphenol	ND	160								
2-Nitroaniline	ND	660								
2-Nitrophenol	ND	160								
3,3´-Dichlorobenzidine	ND	660								
3-Nitroaniline	ND	660								
4,6-Dinitro-2-methylphenol	ND	330								
4-Bromophenyl phenyl ether	ND	160								
4-Chloro-3-methylphenol	ND	160								
4-Chloroaniline	ND	660								
4-Chlorophenyl phenyl ether	ND	160								
4-Methylphenol	ND	160								
4-Nitroaniline	ND	660								
4-Nitrophenol	ND	660								
Acenaphthene	ND	6.7								
Acenaphthylene	ND	6.7								
Acetophenone	ND	330								
Anthracene	ND	6.7								
Atrazine	ND	330								
Benzaldehyde	ND	330								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(g,h,i)perylene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Bis(2-chloroethoxy)methane	ND	160								
Bis(2-chloroethyl)ether	ND	160								
Bis(2-chloroisopropyl)ether	ND	160								
Bis(2-ethylhexyl)phthalate	ND	330								
Butyl benzyl phthalate	ND	160								
Caprolactam	ND	330								
Carbazole	ND	160								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **54332** Instrument ID **SVMS4** Method: **SW8270**

Chrysene	ND	6.7					
Dibenzo(a,h)anthracene	ND	6.7					
Dibenzofuran	ND	160					
Diethyl phthalate	ND	330					
Dimethyl phthalate	ND	330					
Di-n-butyl phthalate	ND	330					
Di-n-octyl phthalate	ND	160					
Fluoranthene	ND	6.7					
Fluorene	ND	6.7					
Hexachlorobenzene	ND	160					
Hexachlorobutadiene	ND	160					
Hexachlorocyclopentadiene	ND	330					
Hexachloroethane	ND	160					
Indeno(1,2,3-cd)pyrene	ND	6.7					
Isophorone	ND	160					
Naphthalene	ND	6.7					
Nitrobenzene	ND	160					
N-Nitrosodi-n-propylamine	ND	160					
N-Nitrosodiphenylamine	ND	160					
Pentachlorophenol	ND	330					
Phenanthrene	ND	6.7					
Phenol	ND	160					
Pyrene	ND	6.7					
Surr: 2,4,6-Tribromophenol	*1130*	0	*1667*	0	*67.8*	*34-140*	0
Surr: 2-Fluorobiphenyl	*1360*	0	*1667*	0	*81.6*	*12-100*	0
Surr: 2-Fluorophenol	*1539*	0	*1667*	0	*92.4*	*33-117*	0
Surr: 4-Terphenyl-d14	*1714*	0	*1667*	0	*103*	*25-137*	0
Surr: Nitrobenzene-d5	*1390*	0	*1667*	0	*83.4*	*37-107*	0
Surr: Phenol-d6	*1431*	0	*1667*	0	*85.9*	*40-106*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54332** Instrument ID **SVMS4** Method: **SW8270**

LCS Sample ID: **SLCSS1-54332-54332** Units: **µg/Kg** Analysis Date: **12/23/13 08:48 AM**

Client ID: Run ID: **SVMS4_131223A** SeqNo: **2592016** Prep Date: **12/20/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	513.3	160	666.7	0	77	50-110	0			
2,4,6-Trichlorophenol	505.7	160	666.7	0	75.8	45-110	0			
2,4-Dichlorophenol	500.3	160	666.7	0	75	45-110	0			
2,4-Dimethylphenol	491	330	666.7	0	73.6	30-105	0			
2,4-Dinitrophenol	343	660	666.7	0	51.4	15-130	0			J
2,4-Dinitrotoluene	574.3	160	666.7	0	86.1	50-115	0			
2,6-Dinitrotoluene	548.7	160	666.7	0	82.3	50-110	0			
2-Chloronaphthalene	514.3	6.7	666.7	0	77.1	45-105	0			
2-Chlorophenol	579.7	160	666.7	0	86.9	45-105	0			
2-Methylnaphthalene	411	6.7	666.7	0	61.6	45-105	0			
2-Methylphenol	534.7	160	666.7	0	80.2	40-105	0			
2-Nitroaniline	546.3	660	666.7	0	81.9	45-120	0			J
2-Nitrophenol	531.7	160	666.7	0	79.7	40-110	0			
3-Nitroaniline	429.3	660	666.7	0	64.4	25-150	0			J
4-Bromophenyl phenyl ether	544.7	160	666.7	0	81.7	45-115	0			
4-Chloro-3-methylphenol	551.7	160	666.7	0	82.7	45-115	0			
4-Chloroaniline	599.7	660	666.7	0	89.9	15-110	0			J
4-Chlorophenyl phenyl ether	521.7	160	666.7	0	78.2	45-110	0			
4-Methylphenol	490.3	160	666.7	0	73.5	40-105	0			
4-Nitroaniline	527.3	660	666.7	0	79.1	35-150	0			J
4-Nitrophenol	382.7	660	666.7	0	57.4	15-140	0			J
Acenaphthene	503	6.7	666.7	0	75.4	45-110	0			
Acenaphthylene	518.7	6.7	666.7	0	77.8	45-105	0			
Anthracene	591	6.7	666.7	0	88.6	55-105	0			
Benzo(a)anthracene	683	6.7	666.7	0	102	50-110	0			
Benzo(a)pyrene	623	6.7	666.7	0	93.4	50-110	0			
Benzo(b)fluoranthene	615.7	6.7	666.7	0	92.3	45-115	0			
Benzo(g,h,i)perylene	650	6.7	666.7	0	97.5	40-125	0			
Benzo(k)fluoranthene	624.3	6.7	666.7	0	93.6	45-115	0			
Bis(2-chloroethoxy)methane	506.7	160	666.7	0	76	45-110	0			
Bis(2-chloroethyl)ether	495	160	666.7	0	74.2	40-105	0			
Bis(2-chloroisopropyl)ether	514.3	160	666.7	0	77.1	20-115	0			
Bis(2-ethylhexyl)phthalate	695	330	666.7	0	104	45-125	0			
Butyl benzyl phthalate	641.3	160	666.7	0	96.2	50-125	0			
Carbazole	601	160	666.7	0	90.1	50-150	0			
Chrysene	625	6.7	666.7	0	93.7	55-110	0			
Dibenzo(a,h)anthracene	666.7	6.7	666.7	0	100	40-125	0			
Dibenzofuran	524	160	666.7	0	78.6	50-105	0			
Diethyl phthalate	573	330	666.7	0	85.9	50-115	0			
Dimethyl phthalate	523	330	666.7	0	78.4	50-110	0			
Di-n-butyl phthalate	623	330	666.7	0	93.4	55-110	0			
Di-n-octyl phthalate	647	160	666.7	0	97	40-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **54332** Instrument ID **SVMS4** Method: **SW8270**

Fluoranthene	641	6.7	666.7	0	96.1	55-115	0
Fluorene	556.7	6.7	666.7	0	83.5	50-110	0
Hexachlorobenzene	579	160	666.7	0	86.8	45-120	0
Hexachlorobutadiene	498.7	160	666.7	0	74.8	40-115	0
Hexachlorocyclopentadiene	347.7	330	666.7	0	52.1	40-115	0
Hexachloroethane	523.7	160	666.7	0	78.5	35-110	0
Indeno(1,2,3-cd)pyrene	673	6.7	666.7	0	101	40-120	0
Isophorone	500.7	160	666.7	0	75.1	45-110	0
Naphthalene	493.3	6.7	666.7	0	74	40-105	0
Nitrobenzene	544.7	160	666.7	0	81.7	40-115	0
N-Nitrosodi-n-propylamine	557	160	666.7	0	83.5	40-115	0
N-Nitrosodiphenylamine	663.3	160	666.7	0	99.5	50-115	0
Pentachlorophenol	735.3	330	666.7	0	110	25-120	0
Phenanthrene	569.7	6.7	666.7	0	85.4	50-110	0
Phenol	560.3	160	666.7	0	84	40-100	0
Pyrene	610.7	6.7	666.7	0	91.6	45-125	0
Surr: 2,4,6-Tribromophenol	*1388*	0	*1667*	0	*83.3*	*34-140*	0
Surr: 2-Fluorobiphenyl	*1234*	0	*1667*	0	*74.1*	*12-100*	0
Surr: 2-Fluorophenol	*1470*	0	*1667*	0	*88.2*	*33-117*	0
Surr: 4-Terphenyl-d14	*1672*	0	*1667*	0	*100*	*25-137*	0
Surr: Nitrobenzene-d5	*1260*	0	*1667*	0	*75.6*	*37-107*	0
Surr: Phenol-d6	*1249*	0	*1667*	0	*74.9*	*40-106*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54332** Instrument ID **SVMS4** Method: **SW8270**

MS Sample ID: **13121018-02B MS** Units: **µg/Kg** Analysis Date: **12/23/13 09:51 AM**

Client ID: Run ID: **SVMS4_131223A** SeqNo: **2592018** Prep Date: **12/20/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	1150	320	1331	0	86.4	50-110	0			
2,4,6-Trichlorophenol	1139	320	1331	0	85.6	45-110	0			
2,4-Dichlorophenol	1107	320	1331	0	83.2	45-110	0			
2,4-Dimethylphenol	1186	660	1331	0	89.1	30-105	0			
2,4-Dinitrophenol	697.9	1,300	1331	0	52.4	15-130	0			J
2,4-Dinitrotoluene	1158	320	1331	0	87	50-115	0			
2,6-Dinitrotoluene	1175	320	1331	0	88.3	50-110	0			
2-Chloronaphthalene	1095	13	1331	0	82.3	45-105	0			
2-Chlorophenol	1152	320	1331	0	86.5	45-105	0			
2-Methylnaphthalene	858.9	13	1331	10.39	63.8	45-105	0			
2-Methylphenol	1126	320	1331	0	84.6	40-105	0			
2-Nitroaniline	1177	1,300	1331	0	88.4	45-120	0			J
2-Nitrophenol	1092	320	1331	0	82.1	40-110	0			
3-Nitroaniline	1120	1,300	1331	0	84.1	25-110	0			J
4-Bromophenyl phenyl ether	1123	320	1331	0	84.4	45-115	0			
4-Chloro-3-methylphenol	1217	320	1331	0	91.5	45-115	0			
4-Chloroaniline	1170	1,300	1331	0	87.9	15-110	0			J
4-Chlorophenyl phenyl ether	1145	320	1331	0	86	45-110	0			
4-Methylphenol	1046	320	1331	0	78.6	40-105	0			
4-Nitroaniline	1378	1,300	1331	0	104	35-150	0			
4-Nitrophenol	840.9	1,300	1331	0	63.2	15-140	0			J
Acenaphthene	1206	13	1331	31.48	88.2	45-110	0			
Acenaphthylene	1128	13	1331	4.544	84.5	45-105	0			
Anthracene	1269	13	1331	46.09	91.9	55-105	0			
Benzo(a)anthracene	2470	13	1331	264.5	166	50-110	0			S
Benzo(a)pyrene	2293	13	1331	284	151	50-110	0			S
Benzo(b)fluoranthene	3118	13	1331	534.6	194	45-115	0			S
Benzo(g,h,i)perylene	1433	13	1331	99.97	100	40-125	0			
Benzo(k)fluoranthene	2007	13	1331	269.4	131	45-115	0			S
Bis(2-chloroethoxy)methane	1045	320	1331	0	78.5	45-110	0			
Bis(2-chloroethyl)ether	1026	320	1331	0	77.1	40-105	0			
Bis(2-chloroisopropyl)ether	1102	320	1331	0	82.8	20-115	0			
Bis(2-ethylhexyl)phthalate	1221	660	1331	0	91.8	45-125	0			
Butyl benzyl phthalate	1200	320	1331	4.219	89.9	50-125	0			
Carbazole	1546	320	1331	111.7	108	50-150	0			
Chrysene	2695	13	1331	487.5	166	55-110	0			S
Dibenzo(a,h)anthracene	1180	13	1331	31.48	86.3	40-125	0			
Dibenzofuran	1279	320	1331	58.42	91.7	50-105	0			
Diethyl phthalate	1172	660	1331	0	88.1	50-115	0			
Dimethyl phthalate	1096	660	1331	0	82.3	50-110	0			
Di-n-butyl phthalate	1137	660	1331	0	85.4	55-110	0			
Di-n-octyl phthalate	1215	320	1331	0	91.3	40-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **54332** Instrument ID **SVMS4** Method: **SW8270**

Fluoranthene	4738	13	1331	1211	265	55-115	0	SE
Fluorene	1326	13	1331	26.29	97.7	50-110	0	
Hexachlorobenzene	1164	320	1331	0	87.5	45-120	0	
Hexachlorobutadiene	1010	320	1331	0	75.9	40-115	0	
Hexachlorocyclopentadiene	436.4	660	1331	0	32.8	40-115	0	JS
Hexachloroethane	1056	320	1331	0	79.3	35-110	0	
Indeno(1,2,3-cd)pyrene	1589	13	1331	107.1	111	40-120	0	
Isophorone	1088	320	1331	0	81.8	45-110	0	
Naphthalene	1042	13	1331	13.96	77.2	40-105	0	
Nitrobenzene	1198	320	1331	0	90	40-115	0	
N-Nitrosodi-n-propylamine	1189	320	1331	0	89.3	40-115	0	
N-Nitrosodiphenylamine	1319	320	1331	0	99.1	50-115	0	
Pentachlorophenol	1603	660	1331	0	120	25-120	0	S
Phenanthrene	3527	13	1331	870.5	200	50-110	0	S
Phenol	1191	320	1331	0	89.5	40-100	0	
Pyrene	3768	13	1331	872.8	218	45-125	0	S
Surr: 2,4,6-Tribromophenol	*2853*	0	*3327*	0	*85.8*	*34-140*	0	
Surr: 2-Fluorobiphenyl	*2520*	0	*3327*	0	*75.8*	*12-100*	0	
Surr: 2-Fluorophenol	*2668*	0	*3327*	0	*80.2*	*33-117*	0	
Surr: 4-Terphenyl-d14	*3060*	0	*3327*	0	*92*	*25-137*	0	
Surr: Nitrobenzene-d5	*2923*	0	*3327*	0	*87.9*	*37-107*	0	
Surr: Phenol-d6	*2585*	0	*3327*	0	*77.7*	*40-106*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54332** Instrument ID **SVMS4** Method: **SW8270**

MSD Sample ID: **13121018-02B MSD** Units: **µg/Kg** Analysis Date: **12/23/13 10:22 AM**

Client ID: Run ID: **SVMS4_131223A** SeqNo: **2592019** Prep Date: **12/20/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	1087	310	1290	0	84.2	50-110	1150	5.59	30	
2,4,6-Trichlorophenol	1083	310	1290	0	83.9	45-110	1139	5.08	30	
2,4-Dichlorophenol	1046	310	1290	0	81.1	45-110	1107	5.63	30	
2,4-Dimethylphenol	1119	640	1290	0	86.7	30-105	1186	5.8	30	
2,4-Dinitrophenol	409.7	1,300	1290	0	31.7	15-130	697.9	0	30	J
2,4-Dinitrotoluene	1085	310	1290	0	84.1	50-115	1158	6.52	30	
2,6-Dinitrotoluene	1114	310	1290	0	86.3	50-110	1175	5.3	30	
2-Chloronaphthalene	1043	13	1290	0	80.8	45-105	1095	4.91	30	
2-Chlorophenol	1131	310	1290	0	87.6	45-105	1152	1.81	30	
2-Methylnaphthalene	824.5	13	1290	10.39	63.1	45-105	858.9	4.08	30	
2-Methylphenol	1065	310	1290	0	82.5	40-105	1126	5.58	30	
2-Nitroaniline	1117	1,300	1290	0	86.6	45-120	1177	0	30	J
2-Nitrophenol	1023	310	1290	0	79.2	40-110	1092	6.6	30	
3-Nitroaniline	994.8	1,300	1290	0	77.1	25-110	1120	0	30	J
4-Bromophenyl phenyl ether	1076	310	1290	0	83.4	45-115	1123	4.26	30	
4-Chloro-3-methylphenol	1140	310	1290	0	88.3	45-115	1217	6.57	30	
4-Chloroaniline	1090	1,300	1290	0	84.4	15-110	1170	0	30	J
4-Chlorophenyl phenyl ether	1089	310	1290	0	84.4	45-110	1145	5.01	30	
4-Methylphenol	985.8	310	1290	0	76.4	40-105	1046	5.91	30	
4-Nitroaniline	1215	1,300	1290	0	94.2	35-150	1378	0	30	J
4-Nitrophenol	770.3	1,300	1290	0	59.7	15-140	840.9	0	30	J
Acenaphthene	1179	13	1290	31.48	89	45-110	1206	2.19	30	
Acenaphthylene	1076	13	1290	4.544	83	45-105	1128	4.74	30	
Anthracene	1212	13	1290	46.09	90.3	55-105	1269	4.6	30	
Benzo(a)anthracene	2284	13	1290	264.5	156	50-110	2470	7.81	30	S
Benzo(a)pyrene	2120	13	1290	284	142	50-110	2293	7.85	30	S
Benzo(b)fluoranthene	2875	13	1290	534.6	181	45-115	3118	8.08	30	S
Benzo(g,h,i)perylene	1021	13	1290	99.97	71.4	40-125	1433	33.6	30	R
Benzo(k)fluoranthene	2237	13	1290	269.4	152	45-115	2007	10.8	30	S
Bis(2-chloroethoxy)methane	1006	310	1290	0	78	45-110	1045	3.77	30	
Bis(2-chloroethyl)ether	969	310	1290	0	75.1	40-105	1026	5.7	30	
Bis(2-chloroisopropyl)ether	976.8	310	1290	0	75.7	20-115	1102	12.1	30	
Bis(2-ethylhexyl)phthalate	1185	640	1290	0	91.8	45-125	1221	3.02	30	
Butyl benzyl phthalate	1154	310	1290	4.219	89.1	50-125	1200	3.91	30	
Carbazole	1526	310	1290	111.7	110	50-150	1546	1.28	30	
Chrysene	2497	13	1290	487.5	156	55-110	2695	7.61	30	S
Dibenzo(a,h)anthracene	900.6	13	1290	31.48	67.4	40-125	1180	26.9	30	
Dibenzofuran	1266	310	1290	58.42	93.6	50-105	1279	0.962	30	
Diethyl phthalate	1101	640	1290	0	85.3	50-115	1172	6.3	30	
Dimethyl phthalate	1041	640	1290	0	80.6	50-110	1096	5.16	30	
Di-n-butyl phthalate	1082	640	1290	0	83.8	55-110	1137	4.96	30	
Di-n-octyl phthalate	1381	310	1290	0	107	40-130	1215	12.8	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54332** Instrument ID **SVMS4** Method: **SW8270**

Fluoranthene	4622	13	1290	1211	264	55-115	4738	2.47	30	SE
Fluorene	1283	13	1290	26.29	97.4	50-110	1326	3.27	30	
Hexachlorobenzene	1099	310	1290	0	85.1	45-120	1164	5.79	30	
Hexachlorobutadiene	972.3	310	1290	0	75.3	40-115	1010	3.8	30	
Hexachlorocyclopentadiene	260	640	1290	0	20.1	40-115	436.4	0	30	JS
Hexachloroethane	972.9	310	1290	0	75.4	35-110	1056	8.17	30	
Indeno(1,2,3-cd)pyrene	1181	13	1290	107.1	83.2	40-120	1589	29.5	30	
Isophorone	981.9	310	1290	0	76.1	45-110	1088	10.3	30	
Naphthalene	1011	13	1290	13.96	77.3	40-105	1042	3.01	30	
Nitrobenzene	1072	310	1290	0	83.1	40-115	1198	11	30	
N-Nitrosodi-n-propylamine	1074	310	1290	0	83.2	40-115	1189	10.2	30	
N-Nitrosodiphenylamine	1261	310	1290	0	97.7	50-115	1319	4.44	30	
Pentachlorophenol	1505	640	1290	0	117	25-120	1603	6.32	30	
Phenanthrene	3778	13	1290	870.5	225	50-110	3527	6.86	30	S
Phenol	1105	310	1290	0	85.6	40-100	1191	7.52	30	
Pyrene	3680	13	1290	872.8	218	45-125	3768	2.35	30	S
Surr: 2,4,6-Tribromophenol	*2678*	0	*3226*	0	*83*	*34-140*	2853	*6.32*	*40*	
Surr: 2-Fluorobiphenyl	*2416*	0	*3226*	0	*74.9*	*12-100*	2520	*4.21*	*40*	
Surr: 2-Fluorophenol	*2783*	0	*3226*	0	*86.3*	*33-117*	2668	*4.21*	*40*	
Surr: 4-Terphenyl-d14	*2941*	0	*3226*	0	*91.2*	*25-137*	3060	*3.97*	*40*	
Surr: Nitrobenzene-d5	*2370*	0	*3226*	0	*73.5*	*37-107*	2923	*20.9*	*40*	
Surr: Phenol-d6	*2410*	0	*3226*	0	*74.7*	*40-106*	2585	*6.98*	*40*	

The following samples were analyzed in this batch: 1312802-18A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54253** Instrument ID **VMS8** Method: **SW8260B**

MBLK Sample ID: **MBLK-54253-54253** Units: **µg/Kg** Analysis Date: **12/18/13 03:49 PM**

Client ID: Run ID: **VMS8_131218A** SeqNo: **2586218** Prep Date: **12/12/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	ND	30								
1,1,2,2-Tetrachloroethane	ND	30								
1,1,2-Trichloroethane	ND	30								
1,1,2-Trichlorotrifluoroethane	ND	30								
1,1-Dichloroethane	ND	30								
1,1-Dichloroethene	ND	30								
1,2,4-Trichlorobenzene	ND	30								
1,2-Dibromo-3-chloropropane	ND	30								
1,2-Dibromoethane	ND	30								
1,2-Dichlorobenzene	ND	30								
1,2-Dichloroethane	ND	30								
1,2-Dichloropropane	ND	30								
1,3-Dichlorobenzene	ND	30								
1,4-Dichlorobenzene	ND	30								
2-Butanone	ND	200								
2-Hexanone	ND	30								
4-Methyl-2-pentanone	ND	30								
Acetone	ND	100								
Benzene	ND	30								
Bromodichloromethane	ND	30								
Bromoform	ND	30								
Bromomethane	ND	75								
Carbon disulfide	ND	30								
Carbon tetrachloride	ND	30								
Chlorobenzene	ND	30								
Chloroethane	ND	100								
Chloroform	ND	30								
Chloromethane	ND	100								
cis-1,2-Dichloroethene	ND	30								
cis-1,3-Dichloropropene	ND	30								
Cyclohexane	ND	30								
Dibromochloromethane	ND	30								
Dichlorodifluoromethane	ND	30								
Ethylbenzene	ND	30								
Isopropylbenzene	ND	30								
Methyl acetate	ND	200								
Methyl tert-butyl ether	ND	30								
Methylcyclohexane	ND	30								
Methylene chloride	ND	30								
Styrene	ND	30								
Tetrachloroethene	ND	30								
Toluene	ND	30								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **54253** Instrument ID **VMS8** Method: **SW8260B**

trans-1,2-Dichloroethene	ND	30					
trans-1,3-Dichloropropene	ND	30					
Trichloroethene	ND	30					
Trichlorofluoromethane	ND	30					
Vinyl chloride	ND	30					
Xylenes, Total	ND	90					
Surr: 1,2-Dichloroethane-d4	*963*	0	*1000*	0	*96.3*	*70-130*	0
Surr: 4-Bromofluorobenzene	*968.5*	0	*1000*	0	*96.8*	*70-130*	0
Surr: Dibromofluoromethane	*990*	0	*1000*	0	*99*	*70-130*	0
Surr: Toluene-d8	*968*	0	*1000*	0	*96.8*	*70-130*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54253** Instrument ID **VMS8** Method: **SW8260B**

LCS Sample ID: **LCS-54253-54253** Units: **µg/Kg** Analysis Date: **12/18/13 01:48 PM**

Client ID: Run ID: **VMS8_131218A** SeqNo: **2586216** Prep Date: **12/12/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	935.5	30	1000	0	93.6	70-135	0			
1,1,2,2-Tetrachloroethane	994	30	1000	0	99.4	55-130	0			
1,1,2-Trichloroethane	954.5	30	1000	0	95.4	60-125	0			
1,1-Dichloroethane	905.5	30	1000	0	90.6	75-125	0			
1,1-Dichloroethene	891	30	1000	0	89.1	65-135	0			
1,2,4-Trichlorobenzene	1002	30	1000	0	100	65-130	0			
1,2-Dibromo-3-chloropropane	880	30	1000	0	88	40-135	0			
1,2-Dibromoethane	1066	30	1000	0	107	70-125	0			
1,2-Dichlorobenzene	976.5	30	1000	0	97.6	75-120	0			
1,2-Dichloroethane	974	30	1000	0	97.4	70-135	0			
1,2-Dichloropropane	936	30	1000	0	93.6	70-120	0			
1,3-Dichlorobenzene	966.5	30	1000	0	96.6	70-125	0			
1,4-Dichlorobenzene	958	30	1000	0	95.8	70-125	0			
2-Butanone	872.5	200	1000	0	87.2	30-160	0			
2-Hexanone	914	30	1000	0	91.4	45-145	0			
4-Methyl-2-pentanone	1300	30	1000	0	130	45-145	0			
Acetone	840	100	1000	0	84	20-160	0			
Benzene	916.5	30	1000	0	91.6	75-125	0			
Bromodichloromethane	937.5	30	1000	0	93.8	70-130	0			
Bromoform	966	30	1000	0	96.6	55-135	0			
Bromomethane	927	75	1000	0	92.7	30-160	0			
Carbon disulfide	836.5	30	1000	0	83.6	45-160	0			
Carbon tetrachloride	933.5	30	1000	0	93.4	65-135	0			
Chlorobenzene	957.5	30	1000	0	95.8	75-125	0			
Chloroethane	794.5	100	1000	0	79.4	40-155	0			
Chloroform	902	30	1000	0	90.2	70-125	0			
Chloromethane	745	100	1000	0	74.5	50-130	0			
cis-1,2-Dichloroethene	926.5	30	1000	0	92.6	65-125	0			
cis-1,3-Dichloropropene	980	30	1000	0	98	70-125	0			
Dibromochloromethane	933	30	1000	0	93.3	65-135	0			
Dichlorodifluoromethane	661.5	30	1000	0	66.2	35-135	0			
Ethylbenzene	935.5	30	1000	0	93.6	75-125	0			
Isopropylbenzene	924.5	30	1000	0	92.4	75-130	0			
Methyl tert-butyl ether	1038	30	1000	0	104	75-125	0			
Methylene chloride	906	30	1000	0	90.6	55-145	0			
Styrene	983	30	1000	0	98.3	75-125	0			
Tetrachloroethene	1100	30	1000	0	110	64-140	0			
Toluene	917.5	30	1000	0	91.8	70-125	0			
trans-1,2-Dichloroethene	950	30	1000	0	95	65-135	0			
trans-1,3-Dichloropropene	985	30	1000	0	98.5	65-125	0			
Trichloroethene	963.5	30	1000	0	96.4	75-125	0			
Trichlorofluoromethane	777.5	30	1000	0	77.8	25-185	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54253** Instrument ID **VMS8** Method: **SW8260B**

Vinyl chloride	806.5	30	1000	0	80.6	60-125	0
Xylenes, Total	2844	90	3000	0	94.8	75-125	0
Surr: 1,2-Dichloroethane-d4	*930*	0	*1000*	0	*93*	*70-130*	0
Surr: 4-Bromofluorobenzene	*981*	0	*1000*	0	*98.1*	*70-130*	0
Surr: Dibromofluoromethane	*986.5*	0	*1000*	0	*98.6*	*70-130*	0
Surr: Toluene-d8	*991.5*	0	*1000*	0	*99.2*	*70-130*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54253** Instrument ID **VMS8** Method: **SW8260B**

MS Sample ID: **1312802-19A MS** Units: **µg/Kg** Analysis Date: **12/21/13 10:26 AM**

Client ID: **BUF-SW06-121213** Run ID: **VMS7_131220B** SeqNo: **2591742** Prep Date: **12/12/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	1904	60	2000	0	95.2	70-135	0			
1,1,2,2-Tetrachloroethane	1984	60	2000	0	99.2	55-130	0			
1,1,2-Trichloroethane	2021	60	2000	0	101	60-125	0			
1,1-Dichloroethane	1878	60	2000	0	93.9	75-125	0			
1,1-Dichloroethene	1823	60	2000	0	91.2	65-135	0			
1,2,4-Trichlorobenzene	2091	60	2000	0	105	65-130	0			
1,2-Dibromo-3-chloropropane	1801	60	2000	0	90	40-135	0			
1,2-Dibromoethane	2067	60	2000	0	103	70-125	0			
1,2-Dichlorobenzene	1924	60	2000	0	96.2	75-120	0			
1,2-Dichloroethane	1982	60	2000	0	99.1	70-135	0			
1,2-Dichloropropane	1945	60	2000	0	97.2	70-120	0			
1,3-Dichlorobenzene	1855	60	2000	0	92.8	70-125	0			
1,4-Dichlorobenzene	1855	60	2000	0	92.8	70-125	0			
2-Butanone	1991	400	2000	0	99.6	30-160	0			
2-Hexanone	1912	60	2000	0	95.6	45-145	0			
4-Methyl-2-pentanone	2629	60	2000	0	131	45-145	0			
Acetone	1889	200	2000	0	94.4	20-160	0			
Benzene	1966	60	2000	0	98.3	75-125	0			
Bromodichloromethane	1918	60	2000	0	95.9	70-130	0			
Bromoform	1600	60	2000	0	80	55-135	0			
Bromomethane	906	150	2000	0	45.3	30-160	0			
Carbon disulfide	1778	60	2000	0	88.9	45-160	0			
Carbon tetrachloride	1647	60	2000	0	82.4	65-135	0			
Chlorobenzene	1930	60	2000	0	96.5	75-125	0			
Chloroethane	230	200	2000	0	11.5	40-155	0			S
Chloroform	1817	60	2000	0	90.8	70-125	0			
Chloromethane	1332	200	2000	0	66.6	50-130	0			
cis-1,2-Dichloroethene	1911	60	2000	0	95.6	65-125	0			
cis-1,3-Dichloropropene	1993	60	2000	0	99.6	70-125	0			
Dibromochloromethane	1633	60	2000	0	81.6	65-135	0			
Dichlorodifluoromethane	1207	60	2000	0	60.4	35-135	0			
Ethylbenzene	1944	60	2000	0	97.2	75-125	0			
Isopropylbenzene	1791	60	2000	0	89.6	75-130	0			
Methyl tert-butyl ether	1812	60	2000	0	90.6	75-125	0			
Methylene chloride	1645	60	2000	0	82.2	55-145	0			
Styrene	1945	60	2000	0	97.2	75-125	0			
Tetrachloroethene	1766	60	2000	0	88.3	64-140	0			
Toluene	1962	60	2000	0	98.1	70-125	0			
trans-1,2-Dichloroethene	1793	60	2000	0	89.6	65-135	0			
trans-1,3-Dichloropropene	1993	60	2000	0	99.6	65-125	0			
Trichloroethene	1898	60	2000	0	94.9	75-125	0			
Trichlorofluoromethane	1562	60	2000	0	78.1	25-185	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54253** Instrument ID **VMS8** Method: **SW8260B**

Vinyl chloride	1463	60	2000	0	73.2	60-125	0
Xylenes, Total	5460	180	6000	0	91	75-125	0
Surr: 1,2-Dichloroethane-d4	*2031*	0	*2000*	0	*102*	*70-130*	0
Surr: 4-Bromofluorobenzene	*2021*	0	*2000*	0	*101*	*70-130*	0
Surr: Dibromofluoromethane	*1991*	0	*2000*	0	*99.6*	*70-130*	0
Surr: Toluene-d8	*2031*	0	*2000*	0	*102*	*70-130*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54253** Instrument ID **VMS8** Method: **SW8260B**

MSD Sample ID: **1312802-19A MSD** Units: **µg/Kg** Analysis Date: **12/21/13 10:53 AM**

Client ID: **BUF-SW06-121213** Run ID: **VMS7_131220B** SeqNo: **2591743** Prep Date: **12/12/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	1874	60	2000	0	93.7	70-135	1904	1.59	30	
1,1,2,2-Tetrachloroethane	2009	60	2000	0	100	55-130	1984	1.25	30	
1,1,2-Trichloroethane	2003	60	2000	0	100	60-125	2021	0.895	30	
1,1-Dichloroethane	1834	60	2000	0	91.7	75-125	1878	2.37	30	
1,1-Dichloroethene	1743	60	2000	0	87.2	65-135	1823	4.49	30	
1,2,4-Trichlorobenzene	2407	60	2000	0	120	65-130	2091	14.1	30	
1,2-Dibromo-3-chloropropane	1835	60	2000	0	91.8	40-135	1801	1.87	30	
1,2-Dibromoethane	2052	60	2000	0	103	70-125	2067	0.728	30	
1,2-Dichlorobenzene	1956	60	2000	0	97.8	75-120	1924	1.65	30	
1,2-Dichloroethane	1989	60	2000	0	99.4	70-135	1982	0.353	30	
1,2-Dichloropropane	1958	60	2000	0	97.9	70-120	1945	0.666	30	
1,3-Dichlorobenzene	1871	60	2000	0	93.6	70-125	1855	0.859	30	
1,4-Dichlorobenzene	1902	60	2000	0	95.1	70-125	1855	2.5	30	
2-Butanone	1922	400	2000	0	96.1	30-160	1991	3.53	30	
2-Hexanone	2111	60	2000	0	106	45-145	1912	9.89	30	
4-Methyl-2-pentanone	2626	60	2000	0	131	45-145	2629	0.114	30	
Acetone	1892	200	2000	0	94.6	20-160	1889	0.159	30	
Benzene	1919	60	2000	0	96	75-125	1966	2.42	30	
Bromodichloromethane	1895	60	2000	0	94.8	70-130	1918	1.21	30	
Bromoform	1617	60	2000	0	80.8	55-135	1600	1.06	30	
Bromomethane	968	150	2000	0	48.4	30-160	906	6.62	30	
Carbon disulfide	1717	60	2000	0	85.8	45-160	1778	3.49	30	
Carbon tetrachloride	1615	60	2000	0	80.8	65-135	1647	1.96	30	
Chlorobenzene	1904	60	2000	0	95.2	75-125	1930	1.36	30	
Chloroethane	203	200	2000	0	10.2	40-155	230	12.5	30	S
Chloroform	1799	60	2000	0	90	70-125	1817	0.996	30	
Chloromethane	1324	200	2000	0	66.2	50-130	1332	0.602	30	
cis-1,2-Dichloroethene	1891	60	2000	0	94.6	65-125	1911	1.05	30	
cis-1,3-Dichloropropene	1949	60	2000	0	97.4	70-125	1993	2.23	30	
Dibromochloromethane	1648	60	2000	0	82.4	65-135	1633	0.914	30	
Dichlorodifluoromethane	1183	60	2000	0	59.2	35-135	1207	2.01	30	
Ethylbenzene	1937	60	2000	0	96.8	75-125	1944	0.361	30	
Isopropylbenzene	1805	60	2000	0	90.2	75-130	1791	0.779	30	
Methyl tert-butyl ether	1820	60	2000	0	91	75-125	1812	0.441	30	
Methylene chloride	1613	60	2000	0	80.6	55-145	1645	1.96	30	
Styrene	1999	60	2000	0	100	75-125	1945	2.74	30	
Tetrachloroethene	1759	60	2000	0	88	64-140	1766	0.397	30	
Toluene	1941	60	2000	0	97	70-125	1962	1.08	30	
trans-1,2-Dichloroethene	1774	60	2000	0	88.7	65-135	1793	1.07	30	
trans-1,3-Dichloropropene	1987	60	2000	0	99.4	65-125	1993	0.302	30	
Trichloroethene	1838	60	2000	0	91.9	75-125	1898	3.21	30	
Trichlorofluoromethane	1493	60	2000	0	74.6	25-185	1562	4.52	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54253** Instrument ID **VMS8** Method: **SW8260B**

Vinyl chloride	1418	60	2000	0	70.9	60-125	1463	3.12	30
Xylenes, Total	5456	180	6000	0	90.9	75-125	5460	0.0733	30
Surr: 1,2-Dichloroethane-d4	*2029*	0	*2000*	0	*101*	*70-130*	2031	*0.0985*	*30*
Surr: 4-Bromofluorobenzene	*2029*	0	*2000*	0	*101*	*70-130*	2021	*0.395*	*30*
Surr: Dibromofluoromethane	*1951*	0	*2000*	0	*97.6*	*70-130*	1991	*2.03*	*30*
Surr: Toluene-d8	*2036*	0	*2000*	0	*102*	*70-130*	2031	*0.246*	*30*

The following samples were analyzed in this batch:

1312802-07A	1312802-08A	1312802-10A
1312802-13A	1312802-14A	1312802-15A
1312802-16A	1312802-17A	1312802-18A
1312802-19A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54449** Instrument ID **LACHAT** Method: **E335.4 R1.0**

MBLK Sample ID: **MBLK-54449-54449** Units: **mg/L** Analysis Date: **12/23/13 05:28 PM**
Client ID: Run ID: **LACHAT_131223B** SeqNo: **2592988** Prep Date: **12/23/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	0.004641	0.0050								J

MBLK Sample ID: **MBLK-54449-54449** Units: **mg/L** Analysis Date: **12/23/13 05:28 PM**
Client ID: Run ID: **LACHAT_131223B** SeqNo: **2593015** Prep Date: **12/23/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	0.004641	0.0050								J

LCS Sample ID: **LCS-54449-54449** Units: **mg/L** Analysis Date: **12/23/13 05:28 PM**
Client ID: Run ID: **LACHAT_131223B** SeqNo: **2592989** Prep Date: **12/23/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	0.2507	0.0050	0.25	0	100	90-110	0			

LCS Sample ID: **LCS-54449-54449** Units: **mg/L** Analysis Date: **12/23/13 05:28 PM**
Client ID: Run ID: **LACHAT_131223B** SeqNo: **2593016** Prep Date: **12/23/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	0.2507	0.0050	0.25	0	100	82-122	0			

MS Sample ID: **1312850-01D MS** Units: **mg/L** Analysis Date: **12/23/13 05:28 PM**
Client ID: Run ID: **LACHAT_131223B** SeqNo: **2592993** Prep Date: **12/23/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	0.2662	0.0050	0.25	0.002301	106	90-110	0			

MS Sample ID: **1312881-05A MS** Units: **mg/L** Analysis Date: **12/23/13 05:28 PM**
Client ID: Run ID: **LACHAT_131223B** SeqNo: **2593005** Prep Date: **12/23/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	0.234	0.0050	0.25	0.001246	93.1	90-110	0			

MSD Sample ID: **1312850-01D MSD** Units: **mg/L** Analysis Date: **12/23/13 05:28 PM**
Client ID: Run ID: **LACHAT_131223B** SeqNo: **2592994** Prep Date: **12/23/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	0.2559	0.0050	0.25	0.002301	101	90-110	0.2662	3.95	20	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54449** Instrument ID **LACHAT** Method: **E335.4 R1.0**

MSD Sample ID: **1312881-05A MSD** Units: **mg/L** Analysis Date: **12/23/13 05:28 PM**

Client ID: Run ID: **LACHAT_131223B** SeqNo: **2593006** Prep Date: **12/23/13** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	0.2264	0.0050	0.25	0.001246	90.1	90-110	0.234	3.3	20	

The following samples were analyzed in this batch: 1312802-07A 1312802-08A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132615** Instrument ID **WETCHEM** Method: **A4500-H B-96**

LCS Sample ID: **WLCSW1-131217-R132615** Units: **s.u.** Analysis Date: **12/17/13 03:30 PM**
Client ID: Run ID: **WETCHEM_131217M** SeqNo: **2584009** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	3.93	0	4	0	98.2	90-110	0			

LCS Sample ID: **WLCSW1-131217-R132615** Units: **s.u.** Analysis Date: **12/17/13 03:30 PM**
Client ID: Run ID: **WETCHEM_131217M** SeqNo: **2584018** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	3.93	0	4	0	98.2	90-110	0			

DUP Sample ID: **1312831-01B DUP** Units: **s.u.** Analysis Date: **12/17/13 03:30 PM**
Client ID: Run ID: **WETCHEM_131217M** SeqNo: **2584011** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	7.38	0	0	0	0	0-0	7.38	0	20	

DUP Sample ID: **1312802-09A DUP** Units: **s.u.** Analysis Date: **12/17/13 03:30 PM**
Client ID: **BUF-LW02-121213** Run ID: **WETCHEM_131217M** SeqNo: **2584022** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	0.5	0	0	0	0	0-0	0.5	0	20	H

The following samples were analyzed in this batch: 1312802-07A 1312802-08A 1312802-09A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132655** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R132655** Units: **% of sample** Analysis Date: **12/17/13 04:50 PM**
Client ID: Run ID: **MOIST_131217C** SeqNo: **2584772** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R132655** Units: **% of sample** Analysis Date: **12/17/13 04:50 PM**
Client ID: Run ID: **MOIST_131217C** SeqNo: **2584768** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1312718-13B DUP** Units: **% of sample** Analysis Date: **12/17/13 04:50 PM**
Client ID: Run ID: **MOIST_131217C** SeqNo: **2584741** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	4.07	0.050	0	0	0	0-0	3.77	7.65	20	

DUP Sample ID: **1312802-13A DUP** Units: **% of sample** Analysis Date: **12/17/13 04:50 PM**
Client ID: **BUF-SW01-121213** Run ID: **MOIST_131217C** SeqNo: **2584766** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	3.07	0.050	0	0	0	0-0	3.17	3.21	20	

The following samples were analyzed in this batch: 1312802-13A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132738** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R132738** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587287** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R132738** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587283** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1312857-01A DUP** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587261** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	27.95	0.050	0	0	0	0-0	27.82	0.466	20	

DUP Sample ID: **1312896-17A DUP** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587273** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	2.2	0.050	0	0	0	0-0	2.19	0.456	20	

The following samples were analyzed in this batch:

1312802-15A 1312802-16A 1312802-17A
1312802-18A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132746** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R132746** Units: **% of sample** Analysis Date: **12/18/13 06:50 PM**

Client ID: Run ID: **MOIST_131218C** SeqNo: **2586572** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R132746** Units: **% of sample** Analysis Date: **12/18/13 06:50 PM**

Client ID: Run ID: **MOIST_131218C** SeqNo: **2586568** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1312775-08A DUP** Units: **% of sample** Analysis Date: **12/18/13 06:50 PM**

Client ID: Run ID: **MOIST_131218C** SeqNo: **2586554** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	6.11	0.050	0	0	0	0-0	6.36	4.01	20	

DUP Sample ID: **1312946-07B DUP** Units: **% of sample** Analysis Date: **12/18/13 06:50 PM**

Client ID: Run ID: **MOIST_131218C** SeqNo: **2586566** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	14.03	0.050	0	0	0	0-0	13.88	1.07	20	

The following samples were analyzed in this batch: 1312802-14A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132791** Instrument ID **WETCHEM** Method: **D93**

LCS Sample ID: **LCS-R132791-R132791** Units: **°F** Analysis Date: **12/19/13 08:00 AM**

Client ID: Run ID: **WETCHEM_131219E** SeqNo: **2587209** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Flashpoint, P-M Closed-cup	82	0	81	0	101	97-103	0			

DUP Sample ID: **1312776-01A Duplicate** Units: **°F** Analysis Date: **12/19/13 08:00 AM**

Client ID: Run ID: **WETCHEM_131219E** SeqNo: **2587235** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Flashpoint, P-M Closed-cup	162	0	0	0	0	0-0	0			

The following samples were analyzed in this batch: 1312802-07A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132817** Instrument ID **WETCHEM** Method: **SW9030**

MBLK Sample ID: **MB-R132817-R132817** Units: **mg/L** Analysis Date: **12/19/13 04:00 PM**

Client ID: Run ID: **WETCHEM_131219N** SeqNo: **2587692** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	ND	1.0								

LCS Sample ID: **LCS-R132817-R132817** Units: **mg/L** Analysis Date: **12/19/13 04:00 PM**

Client ID: Run ID: **WETCHEM_131219N** SeqNo: **2587693** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	6.992	1.0	10.75	0	65	60-140		0		

The following samples were analyzed in this batch: 1312802-07A 1312802-08A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132889** Instrument ID **WETCHEM** Method: **SW7.3.4.2**

MBLK Sample ID: **WBLKW1-122013-R132889** Units: **mg/Kg** Analysis Date: **12/20/13 09:00 AM**

Client ID: Run ID: **WETCHEM_131220E** SeqNo: **2589433** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	ND	100								

LCS Sample ID: **WLCSW1-122013-R132889** Units: **mg/Kg** Analysis Date: **12/20/13 09:00 AM**

Client ID: Run ID: **WETCHEM_131220E** SeqNo: **2589434** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	1397	100	2149	0	65	60-120		0		

The following samples were analyzed in this batch: 1312802-07A 1312802-08A 1312802-09A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132890** Instrument ID **WETCHEM** Method: **SW7.3.3.2**

MBLK Sample ID: **WBLKW1-122013-R132890** Units: **mg/Kg** Analysis Date: **12/20/13 09:00 AM**

Client ID: Run ID: **WETCHEM_131220F** SeqNo: **2589446** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	ND	100								

LCS Sample ID: **WLCSW1-122013-R132890** Units: **mg/Kg** Analysis Date: **12/20/13 09:00 AM**

Client ID: Run ID: **WETCHEM_131220F** SeqNo: **2589447** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	124.8	100	125	0	99.8	75-125		0		

MS Sample ID: **1312896-01A MS** Units: **mg/Kg** Analysis Date: **12/20/13 09:00 AM**

Client ID: Run ID: **WETCHEM_131220F** SeqNo: **2589454** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	234.9	100	250	0	94	50-150		0		

MSD Sample ID: **1312896-01A MSD** Units: **mg/Kg** Analysis Date: **12/20/13 09:00 AM**

Client ID: Run ID: **WETCHEM_131220F** SeqNo: **2589455** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	234.9	100	250	0	94	50-150	234.9	0	35	

The following samples were analyzed in this batch: 1312802-07A 1312802-08A 1312802-09A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132895** Instrument ID **WETCHEM** Method: **D93**

LCS Sample ID: **LCS-R132895-R132895** Units: **°F** Analysis Date: **12/20/13 09:30 AM**

Client ID: Run ID: **WETCHEM_131220G** SeqNo: **2589533** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Flashpoint, P-M Closed-cup	82	0	81	0	101	97-103	0			

The following samples were analyzed in this batch: 1312802-08A 1312802-09A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1312802
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132960** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R132960** Units: **% of sample** Analysis Date: **12/20/13 10:30 AM**

Client ID: Run ID: **MOIST_131220A** SeqNo: **2591999** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R132960** Units: **% of sample** Analysis Date: **12/20/13 10:30 AM**

Client ID: Run ID: **MOIST_131220A** SeqNo: **2591993** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **13121013-09A DUP** Units: **% of sample** Analysis Date: **12/20/13 10:30 AM**

Client ID: Run ID: **MOIST_131220A** SeqNo: **2591975** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	69.02	0.050	0	0	0	0-0	70.49	2.11	20	

DUP Sample ID: **1312802-19A DUP** Units: **% of sample** Analysis Date: **12/20/13 10:30 AM**

Client ID: **BUF-SW06-121213** Run ID: **MOIST_131220A** SeqNo: **2591984** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	18.71	0.050	0	0	0	0-0	18.77	0.32	20	H

The following samples were analyzed in this batch: 1312802-19A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

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Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 2

COC ID: 94535

ALS Project Manager: TBS | ALS Work Order #: 1312802

Customer Information		Project Information	
Purchase Order		Project Name	Buffum MKE Site
Work Order	20405.012.001.2252.77	Project Number	20405.016.001.2252.00
Company Name	Weston Solutions, Inc	Bill To Company	Weston Solutions, Inc
Send Report To	Lisa Graczyk	Invoice Attn	Lisa Graczyk
Address	20 North Wacker Drive Suite 1210	Address	20 North Wacker Drive Suite 1210
City/State/Zip	Chicago, IL 60606	City/State/Zip	Chicago, IL 60606
Phone	(312) 424-3300	Phone	(312) 424-3300
Fax	(312) 424-3330	Fax	(312) 424-3330
e-Mail Address	lgraczyk@css-dynamac.com	e-Mail Address	

Parameter/Method Request for Analysis

A	Lead - 6010/6020
B	PCBs - SW 846 8082
C	Volatiles / 8260B
D	SVOC / 8270C
E	PCBs / 8082
F	RCRA Metals / 6010
G	TCLP Metals
H	TCLP VOCs
I	TCLP SVOC
J	Reactivity / IGNITABILITY 1010/1020 CORROSIVITY / Flammability / cyanide sulfide

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BUF-PC01-121213	12/12/13	1234	PC		1	X	X									
2	BUF-PC02-121213	12/12/13	1250	PC		1	X	X									
3	BUF-PC03-121213	12/12/13	1312	PC		1	X	X									
4	BUF-PC04-121213	12/12/13	1459	PC		1	X	X									
5	BUF-PC04D-121213	12/12/13	1500	PC		1	X	X									
6	BUF-PC05-121213	12/12/13	16:00	PC		1	X	X									
7	BUF-LW01-121213	12/12/13	11:46	LW		4			X	X	X	X	H	H	H	X	G/H/I
8	BUF-LW01D-121213	12/12/13	11:48	LW		4			X	X	X	X	H	H	H	X	G/H/I
9	BUF-LW02-121213	12/12/13	15:10	LW		2										X	No Cyn Sulfide
10	BUF-TB01-121213 (only ½ full)		-	Water		1			X								

Sampler(s) Please Print & Sign: [signature]

Shipment Method: Courier

Required Turnaround Time: (Check Box) ☒ Std 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other

Results Due Date:

Notes: H = Hold / No Cyn Sulf on LW02

Relinquished by: [signature]	Date: 12/13/13	Time: 1300	Received by: [signature]
Relinquished by: [signature]	Date: 12/15/13	Time: 15:10	Received by (Laboratory): [signature] 12/16/13 0800
Logged by (Laboratory): DES	Date: 12/16/13	Time: 1500	Checked by (Laboratory): TBS

Cooler ID	Cooler Temp.
	4.4°c

QC Package: (Check One Box Below)
☑ Level II Std QC ☐ TRRP CheckList
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Chain of Custody Form

Page 2 of 2

COC ID: 94526

Houston, TX +1 281 530 5656 | Spring City, PA +1 610 948 4903 | South Charleston, WV +1 304 356 3168 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

ALS Project Manager: TJS | ALS Work Order #: 1312802

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Buffum MKE Site	A	METALS TAL / SW 846 6010/6020/7470
Work Order	20405.012.001.2252.77	Project Number	20405.016.001.2252.00	B	PCB / SW 846 8082
Company Name	Weston Solutions, Inc	Bill To Company	Weston Solutions, Inc	C	Volatiles / 8260B
Send Report To	Lisa Graczyk	Invoice Attn	Lisa Graczyk	D	SVOCs / 8270C
Address	20 North Wacker Drive Suite 1210	Address	20 North Wacker Drive Suite 1210	E	PCBs / 8082
				F	RCRA Metals / 6010
City/State/Zip	Chicago, IL 60606	City/State/Zip	Chicago, IL 60606	G	TCLP Metals
Phone	(312) 424-3300	Phone	(312) 424-3300	H	TCLP VOCs
Fax	(312) 424-3330	Fax	(312) 424-3330	I	TCLP SVOC
e-Mail Address	lgraczyk@css-dynamac.com	e-Mail Address		J	Reactivity / IGNITABILITY - 9045D CORROSIVITY 1010/1020 / Flamability / Cyanide Sulfides

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
11	BUF-WP01-121213	12/12/13	10:11	WP		3	X	X									
12	BUF-WP02-121213	12/12/13	12:14	WP		3	X	X									
13	BUF-SW01-121213	12/12/13	09:57	SW		4			X	X	X	X	H	H	H	H	G/H/I/J
14	BUF-SW02-121213	12/12/13	10:28	SW		2			X	X	X	X					
15	BUF-SW03-121213	12/12/13	10:46	SW		4			X	X	X	X	H	H	H	H	G/H/I/J
16	BUF-SW03D-121213	12/12/13	10:52	SW		4			X	X	X	X	H	H	H	H	G/H/I/J
17	BUF-SW04-121213	12/12/13	12:25	SW		4			X	X	X	X	H	H	H	H	G/H/I/J
18	BUF-SW05-121213	12/12/13	15:33	SW		4			X	X	X	X	H	H	H	H	G/H/I/J
19	BUF-SW06-121213	12/12/13	15:51	SW		8			X	X	X	X	MS/MSD H	H	H	H	G/H/I/J
10																	

Sampler(s) Please Print & Sign: [signature]

Shipment Method: Courier

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by: [signature] Date: 12/13/13 Time: 13:00 Received by: [signature]

Relinquished by: [signature] Date: 12/15/13 Time: 15:10 Received by (Laboratory): [signature] 12/16/13 0800

Logged by (Laboratory): DFS Date: 12/16/13 Time: 1500 Checked by (Laboratory): TJS

Notes: H=Hold

Cooler ID	Cooler Temp.
	4.4°C

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other _____
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WESTON - CHI** Date/Time Received: **16-Dec-13 08:00**

Work Order: **1312802** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 16-Dec-13 (Date) Reviewed by: Tom Bramish (eSignature) 17-Dec-13 (Date)

Matrices: Liquid, Wipe, Solid

Carrier name: ALSHN

	Yes	No	Not Present
Shipping container/cooler in good condition?	☑	☐	☐
Custody seals intact on shipping container/cooler?	☐	☐	☑
Custody seals intact on sample bottles?	☐	☐	☑
Chain of custody present?	☑	☐	
Chain of custody signed when relinquished and received?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	
Sample(s) received on ice?	☑	☐	

Temperature(s)/Thermometer(s): 4.4 c

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 12/16/2013 4:16:54 PM

	Yes	No	No VOA vials submitted	N/A
Water - VOA vials have zero headspace?	☐	☐	☑	
Water - pH acceptable upon receipt?	☐	☐		☑
pH adjusted?	☐	☐		☑

pH adjusted by: -

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

BUFFUM MKE SITE
MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN
DATA VALIDATION REPORT

Date: January 17, 2014
Laboratory: ALS Environmental (ALS), Holland, Michigan
Laboratory Project #: 1401135
Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)
Weston Analytical Work Order #/TDD #: 20405.016.001.2252.77/ S05-0001-1310-003

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for three waste solid samples collected for the Buffum MKE Site that were analyzed for the following parameters and U.S. Environmental Protection Agency methods:

- Toxicity Characteristic Leaching Procedure (TCLP) Semivolatile Organic Carbons (SVOC) by SW-846 Method 8270
- TCLP Metals by SW-846 Methods 1311, 6020A and 7470
- Total Cyanide by SW-846 Method 9012A
- Reactive Cyanide by SW-846 7.3.3.2
- Total Sulfide by SW-846 Method 9030
- Reactive Sulfide by SW-846 7.3.4.2
- Ignitability (flashpoint) by ASTM D93
- Corrosivity (pH) by SW-846 Method 9040

A level II data package was requested from ALS. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008 and "Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review" dated January 2010. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

Data Validation Report
Buffum MKE Site
ALS Environmental
Laboratory Project #: 1401135

TCLP SVOCs by SW-846 METHODS 1311 AND 8270

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Prepared	Date Analyzed
BUF-SW04-121213	1401135-04	Solid	12/12/2013	1/9/2014	1/10/2014

2. Holding Times

The holding time was exceeded by two weeks because it was decided to analyze for TCLP SVOCs after the total SVOC results were received. Because TCLP SVOCs were not detected in this sample, the quantitation limits were flagged "UJ" as estimated. Note that the laboratory flagged the results with an "H" to indicate that they were analyzed outside hold time.

3. Blanks

A method blank was analyzed with the TCLP SVOC analysis and was free of target compound contamination above the reporting limits.

4. Surrogate Results

The surrogate recoveries were within laboratory quality control (QC) limits.

5. Laboratory Control Sample (LCS) Results

The percent recoveries for the LCS results were within the laboratory-established QC limits.

6. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results

A site-specific MS and MSD were analyzed using sample BUF-SW04-121213 as the spiked sample. The percent recoveries and relative percent differences (RPD) were within QC limits.

7. Overall Assessment

The TCLP SVOC data are acceptable for use as qualified based on the information received.

Data Validation Report
Buffum MKE Site
ALS Environmental
Laboratory Project #: 1401135

TCLP METALS BY SW-846 METHODS 1311, 6020A, AND 7470

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BUF-SW03-121213	1401135-02	Solid	12/12/2013	1/9/2014
BUF-SW05-121213	1401135-06	Solid	12/12/2013	1/9/2014

2. Holding Times

The samples were analyzed within the required holding time limit of 28 days from sample collection to analysis for mercury and 180 days from sample collection to analysis for all other metals.

3. Blank Results

Method blanks were analyzed with the metals analysis. The blanks were free of target analyte contamination above the reporting limits.

4. LCS Results

The LCS recoveries were within the laboratory-established QC limits.

5. MS and MSD Results

One site-specific MS and MSD were analyzed. The percent recoveries and RPDs were within QC limits except for as follows.

Lead was detected outside QC limits but the sample concentration was more than four times the spike concentration. No qualification was required.

6. Overall Assessment

The metals data are acceptable for use based on the information received.

Data Validation Report
Buffum MKE Site
ALS Environmental
Laboratory Project #: 1401135

GENERAL CHEMISTRY PARAMETERS (Total Cyanide by 9012A, Reactive Cyanide by 7.3.3.2, Total Sulfide by 9030, Reactive Sulfide by 7.3.4.2, Ignitability by ASTM D93, and Corrosivity by 9040)

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BUF-SW03-121213	1401135-02	Solid	12/12/2013	1/9/2014 – 1/13/2014
BUF-SW04-121213	1401135-04	Solid	12/12/2013	1/9/2014 – 1/13/2014
BUF-SW05-121213	1401135-06	Solid	12/12/2013	1/9/2014 – 1/13/2014

2. Holding Times

The sample holding times were exceeded for all general chemistry parameters because these tests were ordered after the first set of analyses were received for these samples. All detected results were flagged "J" and the quantitation limits for non-detected results were flagged "UJ" as estimated.

3. Method Blanks

Method blanks were analyzed with the cyanide and sulfide analyses and were free of target analyte contamination above the reporting limit.

4. LCS Results

The percent recoveries were within QC limits for the LCSs analyzed.

5. Laboratory Duplicate Results

Laboratory duplicates were analyzed and the RPD was within QC limits.

6. MS and MSD Results

Site-specific MS and MSDs were analyzed with the total cyanide and sulfide analyses. The percent recoveries and RPDs were within QC limits except for as follows.

For the MS/MSD using sample BUF-SW03-121213, total sulfide was not recovered. The quantitation limit for sulfide in the samples were flagged "UJ" as estimated.

7. Overall Assessment

The general chemistry data are acceptable for use as qualified based on the information received.

ATTACHMENT

ALS ENVIRONMENTAL
RESULTS SUMMARY WITH QUALIFIERS

14-Jan-2014

Lisa Graczyk
Weston Solutions, Inc
20 North Wacker Drive
Suite 1210
Chicago, IL 60606

Re: **20405.016.001.2252.00/Buffum MKE Site** Work Order: **1401135**

Dear Lisa,

ALS Environmental received 6 samples on 06-Jan-2014 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 27.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

ALS Group USA, Corp

Date: 14-Jan-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: **1401135**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1401135-01	BUF-SW03-121213	Solid		12/12/13 10:46	01/06/14 11:50	☐
1401135-02	BUF-SW03-121213	Tclp Extract		12/12/13 10:46	01/06/14 11:50	☐
1401135-03	BUF-SW04-121213	Solid		12/12/13 12:25	01/06/14 11:50	☐
1401135-04	BUF-SW04-121213	Tclp Extract		12/12/13 12:25	01/06/14 11:50	☐
1401135-05	BUF-SW05-121213	Solid		12/12/13 15:33	01/06/14 11:50	☐
1401135-06	BUF-SW05-121213	Tclp Extract		12/12/13 15:33	01/06/14 11:50	☐

ALS Group USA, Corp

Date: 14-Jan-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
WorkOrder: **1401135**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
°F	Degrees Fahrenheit
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
s.u.	Standard Units

ALS Group USA, Corp

Date: 14-Jan-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401135

Case Narrative

Analytical Comments:

Batch 54793, Method PH_9045_S: The project samples hold time expired prior to the analysis request. The reported pH results should be considered estimated.

Batch 54838, Method CN_9012_S: The project samples hold time expired prior to the analysis request. The reported Total Cyanide results should be considered estimated.

Batch 54749, Method TCLP_1311_SV: The project samples hold time expired prior to the analysis request. The reported TCLP SVOC results should be considered estimated.

QC Comments:

Batch 54860, Method S_9034_S, Sample 1401135-01A MS: The MS and/or MSD recovery was below the control limit. The corresponding Sulfide result in the parent sample may be biased low.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Sample ID: BUF-SW03-121213
Collection Date: 12/12/13 10:46 AM

Work Order: 1401135
Lab ID: 1401135-01
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, TOTAL			**SW9012A**		Prep Date: **01/13/14**	Analyst: **JB**
Cyanide, Total	ND	UJ H	0.55	mg/Kg-dry	1	01/13/14 01:41 PM
CYANIDE, REACTIVE			**SW7.3.3.2**			Analyst: **ND**
Cyanide, Reactive	ND	UJ	110	mg/Kg-dry	1	01/08/14 12:00 PM
FLASHPOINT, OPEN-CUP			**D92**			Analyst: **RLF**
Flashpoint, Open-cup	**>200**	J		**°F**	1	01/10/14 09:00 AM
MOISTURE			**A2540 G**			Analyst: **MEB**
Moisture	**8.1**		**0.050**	**% of sample**	1	12/18/13 04:40 PM
PH			**SW9045D**		Prep Date: **01/09/14**	Analyst: **AT**
pH	**7.5**	J H		**s.u.**	1	01/09/14 10:00 AM
SULFIDE			**SW9034**		Prep Date: **01/13/14**	Analyst: **EE**
Sulfide (Acid Soluble)	ND	UJ	1.1	mg/Kg-dry	1	01/13/14 09:00 AM
SULFIDE, REACTIVE			**SW7.3.4.2**			Analyst: **ND**
Sulfide, Reactive	ND	UJ	110	mg/Kg-dry	1	01/09/14

ZJ
1-17-14

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Sample ID: BUF-SW03-121213
Collection Date: 12/12/13 10:46 AM

Work Order: 1401135
Lab ID: 1401135-02
Matrix: TCLP EXTRACT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP MERCURY BY CVAA			**SW7470A**		Prep Date: **01/09/14**	Analyst: **LR**
Mercury	ND		0.0020	mg/L	1	01/09/14 03:14 PM
TCLP METALS ANALYSIS BY ICP-MS			**SW6020A**		Prep Date: **01/09/14**	Analyst: **ML**
Arsenic	ND		0.010	mg/L	1	01/09/14 02:47 PM
Barium	**0.80**		**0.050**	**mg/L**	1	01/09/14 02:47 PM
Cadmium	**0.52**		**0.0020**	**mg/L**	1	01/09/14 02:47 PM
Chromium	ND		0.020	mg/L	1	01/09/14 02:47 PM
Lead	**75**	*	**0.10**	**mg/L**	10	01/10/14 04:10 PM
Selenium	ND		0.020	mg/L	1	01/09/14 02:47 PM
Silver	ND		0.0050	mg/L	1	01/09/14 02:47 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Sample ID: BUF-SW04-121213
Collection Date: 12/12/13 12:25 PM

Work Order: 1401135
Lab ID: 1401135-03
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, TOTAL			**SW9012A**		Prep Date: **01/13/14**	Analyst: **JB**
Cyanide, Total	ND	UJH	0.78	mg/Kg-dry	1	01/13/14 01:41 PM
CYANIDE, REACTIVE			**SW7.3.3.2**			Analyst: **ND**
Cyanide, Reactive	ND	UJ	160	mg/Kg-dry	1	01/08/14 12:00 PM
FLASHPOINT, OPEN-CUP			**D92**			Analyst: **RLF**
Flashpoint, Open-cup	**>200**	J		**°F**	1	01/13/14 09:30 AM
MOISTURE			**A2540 G**			Analyst: **MEB**
Moisture	**37**		**0.050**	**% of sample**	1	12/18/13 04:40 PM
PH			**SW9045D**		Prep Date: **01/09/14**	Analyst: **AT**
pH	**7.6**	JH		**s.u.**	1	01/09/14 10:00 AM
SULFIDE			**SW9034**		Prep Date: **01/13/14**	Analyst: **EE**
Sulfide (Acid Soluble)	ND	UJ	1.6	mg/Kg-dry	1	01/13/14 09:00 AM
SULFIDE, REACTIVE			**SW7.3.4.2**			Analyst: **ND**
Sulfide, Reactive	ND	UJ	160	mg/Kg-dry	1	01/09/14

LJ
1-17-14

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Sample ID: BUF-SW04-121213
Collection Date: 12/12/13 12:25 PM

Work Order: 1401135
Lab ID: 1401135-04
Matrix: TCLP EXTRACT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP SEMI-VOLATILE ORGANICS			**SW8270**		Prep Date: **01/09/14**	Analyst: **HL**
1,4-Dichlorobenzene	ND	UJ H	0.10	mg/L	1	01/10/14 01:21 PM
2,4,5-Trichlorophenol	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
2,4,6-Trichlorophenol	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
2,4-Dinitrotoluene	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
Hexachloro-1,3-butadiene	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
Hexachlorobenzene	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
Hexachloroethane	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
m-Cresol	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
Nitrobenzene	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
o-Cresol	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
p-Cresol	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
Pentachlorophenol	ND	H	0.40	mg/L	1	01/10/14 01:21 PM
Pyridine	ND	H	0.40	mg/L	1	01/10/14 01:21 PM
Surr: 2,4,6-Tribromophenol	*83.3*		*38-115*	*%REC*	1	01/10/14 01:21 PM
Surr: 2-Fluorobiphenyl	*60.4*		*32-100*	*%REC*	1	01/10/14 01:21 PM
Surr: 2-Fluorophenol	*35.3*		*22-59*	*%REC*	1	01/10/14 01:21 PM
Surr: 4-Terphenyl-d14	*98.9*		*23-112*	*%REC*	1	01/10/14 01:21 PM
Surr: Nitrobenzene-d5	*60.6*		*31-93*	*%REC*	1	01/10/14 01:21 PM
Surr: Phenol-d6	*20.5*		*13-36*	*%REC*	1	01/10/14 01:21 PM

LD
1-17-14

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Sample ID: BUF-SW05-121213
Collection Date: 12/12/13 03:33 PM

Work Order: 1401135
Lab ID: 1401135-05
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, TOTAL			**SW9012A**		Prep Date: **01/13/14**	Analyst: **JB**
Cyanide, Total	ND	UJ H	0.96	mg/Kg-dry	1	01/13/14 01:41 PM
CYANIDE, REACTIVE			**SW7.3.3.2**			Analyst: **ND**
Cyanide, Reactive	ND	UJ	120	mg/Kg-dry	1	01/08/14 12:00 PM
FLASHPOINT, OPEN-CUP			**D92**			Analyst: **RLF**
Flashpoint, Open-cup	**>200**	J		**°F**	1	01/13/14 09:30 AM
MOISTURE			**A2540 G**			Analyst: **MEB**
Moisture	**14**		**0.050**	**% of sample**	1	12/18/13 04:40 PM
PH			**SW9045D**		Prep Date: **01/09/14**	Analyst: **AT**
pH	**10.4**	J H		**s.u.**	1	01/09/14 10:00 AM
SULFIDE			**SW9034**		Prep Date: **01/13/14**	Analyst: **EE**
Sulfide (Acid Soluble)	ND	UJ	1.2	mg/Kg-dry	1	01/13/14 09:00 AM
SULFIDE, REACTIVE			**SW7.3.4.2**			Analyst: **ND**
Sulfide, Reactive	ND	UJ	120	mg/Kg-dry	1	01/09/14

LJ
1-17-14

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Sample ID: BUF-SW05-121213
Collection Date: 12/12/13 03:33 PM

Work Order: 1401135
Lab ID: 1401135-06
Matrix: TCLP EXTRACT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP MERCURY BY CVAA			**SW7470A**		Prep Date: **01/09/14**	Analyst: **LR**
Mercury	ND		0.0020	mg/L	1	01/09/14 03:16 PM
TCLP METALS ANALYSIS BY ICP-MS			**SW6020A**		Prep Date: **01/09/14**	Analyst: **ML**
Arsenic	**0.35**		**0.010**	**mg/L**	1	01/09/14 08:58 PM
Barium	**1.6**		**0.050**	**mg/L**	1	01/09/14 08:58 PM
Cadmium	ND		0.0020	mg/L	1	01/09/14 08:58 PM
Chromium	**0.066**		**0.020**	**mg/L**	1	01/09/14 08:58 PM
Lead	**4.0**		**0.010**	**mg/L**	1	01/09/14 08:58 PM
Selenium	ND		0.020	mg/L	1	01/09/14 08:58 PM
Silver	**0.0081**		**0.0050**	**mg/L**	1	01/09/14 08:58 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 14-Jan-14

Client: Weston Solutions, Inc

Work Order: 1401135

Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54781** Instrument ID **HG1** Method: **SW7470**

MBLK Sample ID: **MBLK-54781-54781** Units: **mg/L** Analysis Date: **01/09/14 02:35 PM**

Client ID: Run ID: **HG1_140109A** SeqNo: **2606893** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

LCS Sample ID: **LCS-54781-54781** Units: **mg/L** Analysis Date: **01/09/14 02:38 PM**

Client ID: Run ID: **HG1_140109A** SeqNo: **2606894** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001852	0.00020	0.002	0	92.6	80-120	0			

MS Sample ID: **13121124-09BMS** Units: **mg/L** Analysis Date: **01/09/14 02:48 PM**

Client ID: Run ID: **HG1_140109A** SeqNo: **2606898** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001991	0.00020	0.002	0.000007	99.2	75-125	0			

MSD Sample ID: **13121124-09BMSD** Units: **mg/L** Analysis Date: **01/09/14 02:50 PM**

Client ID: Run ID: **HG1_140109A** SeqNo: **2606899** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001969	0.00020	0.002	0.000007	98.1	75-125	0.001991	1.11	20	

The following samples were analyzed in this batch: 1401135-02A 1401135-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54782** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-54782-54782** Units: **mg/L** Analysis Date: **01/09/14 02:23 PM**
Client ID: Run ID: **ICPMS1_140109A** SeqNo: **2606984** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Cadmium	ND	0.0020								
Chromium	ND	0.0050								
Selenium	ND	0.0050								
Silver	ND	0.0050								

MBLK Sample ID: **MBLK-54782-54782** Units: **mg/L** Analysis Date: **01/10/14 03:40 PM**
Client ID: Run ID: **ICPMS1_140110A** SeqNo: **2608098** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	ND	0.0050								

LCS Sample ID: **LCS-54782-54782** Units: **mg/L** Analysis Date: **01/09/14 02:29 PM**
Client ID: Run ID: **ICPMS1_140109A** SeqNo: **2606985** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.08922	0.0050	0.1	0	89.2	80-120	0			
Barium	0.08777	0.0050	0.1	0	87.8	80-120	0			
Cadmium	0.09095	0.0020	0.1	0	91	80-120	0			
Chromium	0.0887	0.0050	0.1	0	88.7	80-120	0			
Selenium	0.08864	0.0050	0.1	0	88.6	80-120	0			
Silver	0.08801	0.0050	0.1	0	88	80-120	0			

LCS Sample ID: **LCS-54782-54782** Units: **mg/L** Analysis Date: **01/10/14 03:46 PM**
Client ID: Run ID: **ICPMS1_140110A** SeqNo: **2608099** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.08825	0.0050	0.1	0	88.2	80-120	0			

MS Sample ID: **1401135-02AMS** Units: **mg/L** Analysis Date: **01/09/14 02:59 PM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140109A** SeqNo: **2606990** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.9271	0.050	1	0.00652	92.1	75-125	0			
Barium	1.69	0.050	1	0.7978	89.2	75-125	0			
Cadmium	1.4	0.020	1	0.5155	88.4	75-125	0			
Chromium	0.8983	0.050	1	0.008128	89	75-125	0			
Selenium	0.9096	0.050	1	0.002339	90.7	75-125	0			
Silver	0.8336	0.050	1	0.000849	83.3	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54782** Instrument ID **ICPMS1** Method: **SW6020A**

MS Sample ID: **1401135-02AMS** Units: **mg/L** Analysis Date: **01/10/14 02:45 AM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140109A** SeqNo: **2607197** Prep Date: **01/09/14** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	76.44	0.10	1	73.63	281	80-120	0			SO

MS Sample ID: **1401135-02AMS** Units: **mg/L** Analysis Date: **01/10/14 04:22 PM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140110A** SeqNo: **2608106** Prep Date: **01/09/14** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	77.56	0.50	1	74.64	292	75-125	0			SO

MSD Sample ID: **1401135-02AMSD** Units: **mg/L** Analysis Date: **01/09/14 03:04 PM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140109A** SeqNo: **2606991** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.9311	0.050	1	0.00652	92.5	75-125	0.9271	0.431	20	
Barium	1.712	0.050	1	0.7978	91.4	75-125	1.69	1.29	20	
Cadmium	1.388	0.020	1	0.5155	87.2	75-125	1.4	0.861	20	
Chromium	0.9013	0.050	1	0.008128	89.3	75-125	0.8983	0.333	20	
Selenium	0.9197	0.050	1	0.002339	91.7	75-125	0.9096	1.1	20	
Silver	0.8329	0.050	1	0.000849	83.2	75-125	0.8336	0.084	20	

MSD Sample ID: **1401135-02AMSD** Units: **mg/L** Analysis Date: **01/10/14 02:51 AM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140109A** SeqNo: **2607198** Prep Date: **01/09/14** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	77.71	0.10	1	73.63	408	80-120	76.44	1.65	20	SO

MSD Sample ID: **1401135-02AMSD** Units: **mg/L** Analysis Date: **01/10/14 04:28 PM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140110A** SeqNo: **2608108** Prep Date: **01/09/14** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	78.05	0.50	1	74.64	341	75-125	77.56	0.63	20	SO

The following samples were analyzed in this batch: 1401135-02A 1401135-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54753** Instrument ID **SVMS4** Method: **SW8270**

MBLK Sample ID: **SBLKW1-54753-54753** Units: **µg/L** Analysis Date: **01/10/14 10:08 AM**

Client ID: Run ID: **SVMS4_140110A** SeqNo: **2609035** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
Hexachloro-1,3-butadiene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachloroethane	ND	5.0								
m-Cresol	ND	5.0								
Nitrobenzene	ND	5.0								
o-Cresol	ND	5.0								
p-Cresol	ND	5.0								
Pentachlorophenol	ND	20								
Pyridine	ND	20								
Surr: 2,4,6-Tribromophenol	*37.4*	0	*50*	0	*74.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*31.17*	0	*50*	0	*62.3*	*32-100*	0			
Surr: 2-Fluorophenol	*18.96*	0	*50*	0	*37.9*	*22-59*	0			
Surr: 4-Terphenyl-d14	*41.45*	0	*50*	0	*82.9*	*23-112*	0			
Surr: Nitrobenzene-d5	*31.03*	0	*50*	0	*62.1*	*31-93*	0			
Surr: Phenol-d6	*10.77*	0	*50*	0	*21.5*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54753** Instrument ID **SVMS4** Method: **SW8270**

LCS Sample ID: **SLCSW1-54753-54753** Units: **µg/L** Analysis Date: **01/10/14 08:32 AM**

Client ID: Run ID: **SVMS4_140110A** SeqNo: **2609034** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	13.64	5.0	20	0	68.2	30-110	0			
2,4,5-Trichlorophenol	17.25	5.0	20	0	86.2	50-110	0			
2,4,6-Trichlorophenol	16.18	5.0	20	0	80.9	50-115	0			
2,4-Dinitrotoluene	22.24	5.0	20	0	111	50-120	0			
Hexachloro-1,3-butadiene	14.52	5.0	20	0	72.6	25-105	0			
Hexachlorobenzene	17.51	5.0	20	0	87.6	50-110	0			
Hexachloroethane	13.32	5.0	20	0	66.6	30-95	0			
m-Cresol	9.1	5.0	20	0	45.5	30-110	0			
Nitrobenzene	15.88	5.0	20	0	79.4	45-110	0			
o-Cresol	10.27	5.0	20	0	51.4	40-110	0			
p-Cresol	9.09	5.0	20	0	45.4	30-110	0			
Pentachlorophenol	15.97	20	20	0	79.8	40-115	0			J
Pyridine	4.77	20	20	0	23.8	10-71	0			J
Surr: 2,4,6-Tribromophenol	*42.15*	0	*50*	0	*84.3*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.23*	0	*50*	0	*68.5*	*32-100*	0			
Surr: 2-Fluorophenol	*16.43*	0	*50*	0	*32.9*	*22-59*	0			
Surr: 4-Terphenyl-d14	*41.64*	0	*50*	0	*83.3*	*23-112*	0			
Surr: Nitrobenzene-d5	*32.86*	0	*50*	0	*65.7*	*31-93*	0			
Surr: Phenol-d6	*9.99*	0	*50*	0	*20*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54753** Instrument ID **SVMS4** Method: **SW8270**

MS Sample ID: **1401135-04A MS** Units: **µg/L** Analysis Date: **01/10/14 11:13 AM**

Client ID: **BUF-SW04-121213** Run ID: **SVMS4_140110A** SeqNo: **2609036** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	268.6	100	400	0	67.2	30-110	0			HH
2,4,5-Trichlorophenol	345.4	100	400	0	86.4	50-110	0			HH
2,4,6-Trichlorophenol	318	100	400	0	79.5	50-115	0			HH
2,4-Dinitrotoluene	446.8	100	400	0	112	50-120	0			HH
Hexachloro-1,3-butadiene	289.8	100	400	0	72.4	25-105	0			HH
Hexachlorobenzene	350	100	400	0	87.5	50-110	0			HH
Hexachloroethane	260.8	100	400	0	65.2	30-95	0			HH
m-Cresol	205.8	100	400	0	51.4	30-110	0			HH
Nitrobenzene	325.4	100	400	0	81.4	45-110	0			HH
o-Cresol	231.6	100	400	0	57.9	40-110	0			HH
p-Cresol	205.8	100	400	0	51.4	30-110	0			HH
Pentachlorophenol	353.2	400	400	0	88.3	40-115	0			JHH
Pyridine	104.4	400	400	0	26.1	10-80	0			JHH
Surr: 2,4,6-Tribromophenol	*835*	0	*1000*	0	*83.5*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*651.8*	0	*1000*	0	*65.2*	*32-100*	0			
Surr: 2-Fluorophenol	*362.8*	0	*1000*	0	*36.3*	*22-59*	0			
Surr: 4-Terphenyl-d14	*873.2*	0	*1000*	0	*87.3*	*23-112*	0			
Surr: Nitrobenzene-d5	*671.8*	0	*1000*	0	*67.2*	*31-93*	0			
Surr: Phenol-d6	*218.8*	0	*1000*	0	*21.9*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54753** Instrument ID **SVMS4** Method: **SW8270**

MSD Sample ID: **1401135-04A MSD** Units: **µg/L** Analysis Date: **01/10/14 11:45 AM**

Client ID: **BUF-SW04-121213** Run ID: **SVMS4_140110A** SeqNo: **2609037** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	267.2	100	400	0	66.8	30-110	268.6	0.523	30	HH
2,4,5-Trichlorophenol	349	100	400	0	87.2	50-110	345.4	1.04	30	HH
2,4,6-Trichlorophenol	327.2	100	400	0	81.8	50-115	318	2.85	30	HH
2,4-Dinitrotoluene	449.6	100	400	0	112	50-120	446.8	0.625	30	HH
Hexachloro-1,3-butadiene	291.6	100	400	0	72.9	25-105	289.8	0.619	30	HH
Hexachlorobenzene	357.8	100	400	0	89.4	50-110	350	2.2	30	HH
Hexachloroethane	254.4	100	400	0	63.6	30-95	260.8	2.48	30	HH
m-Cresol	175.8	100	400	0	44	30-110	205.8	15.7	30	HH
Nitrobenzene	319	100	400	0	79.8	45-110	325.4	1.99	30	HH
o-Cresol	197.8	100	400	0	49.4	40-110	231.6	15.7	30	HH
p-Cresol	175.8	100	400	0	44	30-110	205.8	15.7	30	HH
Pentachlorophenol	352.8	400	400	0	88.2	40-115	353.2	0	30	JHH
Pyridine	103.4	400	400	0	25.8	10-80	104.4	0	30	JHH
Surr: 2,4,6-Tribromophenol	*868.4*	0	*1000*	0	*86.8*	*38-115*	835	*3.92*	*0*	
Surr: 2-Fluorobiphenyl	*694.6*	0	*1000*	0	*69.5*	*32-100*	651.8	*6.36*	*0*	
Surr: 2-Fluorophenol	*334.4*	0	*1000*	0	*33.4*	*22-59*	362.8	*8.15*	*0*	
Surr: 4-Terphenyl-d14	*851.8*	0	*1000*	0	*85.2*	*23-112*	873.2	*2.48*	*0*	
Surr: Nitrobenzene-d5	*640.6*	0	*1000*	0	*64.1*	*31-93*	671.8	*4.75*	*0*	
Surr: Phenol-d6	*197*	0	*1000*	0	*19.7*	*13-36*	218.8	*10.5*	*0*	

The following samples were analyzed in this batch: 1401135-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54793** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-54793-54793** Units: **s.u.** Analysis Date: **01/09/14 10:00 AM**

Client ID: Run ID: **WETCHEM_140109H** SeqNo: **2606819** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.92	0	4	0	98	90-110	0			

DUP Sample ID: **1401175-01B DUP** Units: **s.u.** Analysis Date: **01/09/14 10:00 AM**

Client ID: Run ID: **WETCHEM_140109H** SeqNo: **2606824** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.81	0	0	0	0	0-0	7.84	0.383	20	

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54838** Instrument ID **LACHAT** Method: **SW9012A**

MBLK Sample ID: **MBLK-54838-54838** Units: **mg/Kg** Analysis Date: **01/13/14 01:41 PM**

Client ID: Run ID: **LACHAT_140113B** SeqNo: **2608629** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	ND	0.50								

LCS Sample ID: **LCS-54838-54838** Units: **mg/Kg** Analysis Date: **01/13/14 01:41 PM**

Client ID: Run ID: **LACHAT_140113B** SeqNo: **2608630** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	2.574	0.50	2.5	0	103	85-119	0			

MS Sample ID: **1401135-05A MS** Units: **mg/Kg** Analysis Date: **01/13/14 01:41 PM**

Client ID: **BUF-SW05-121213** Run ID: **LACHAT_140113B** SeqNo: **2608634** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	3.449	0.84	4.223	0.3479	73.4	70-130	0			H

MSD Sample ID: **1401135-05A MSD** Units: **mg/Kg** Analysis Date: **01/13/14 01:41 PM**

Client ID: **BUF-SW05-121213** Run ID: **LACHAT_140113B** SeqNo: **2608635** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	3.5	0.85	4.252	0.3479	74.1	70-130	3.449	1.46	30	H

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54860** Instrument ID **WETCHEM** Method: **SW9034**

MBLK Sample ID: **MBLK-54860-54860** Units: **mg/Kg** Analysis Date: **01/13/14 09:00 AM**
Client ID: Run ID: **WETCHEM_140113K** SeqNo: **2609058** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide (Acid Soluble)	ND	1.0								

LCS Sample ID: **LCS-54860-54860** Units: **mg/Kg** Analysis Date: **01/13/14 09:00 AM**
Client ID: Run ID: **WETCHEM_140113K** SeqNo: **2609059** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide (Acid Soluble)	566.4	1.0	1075	0	52.7	21-81	0			

MS Sample ID: **1401135-01A MS** Units: **mg/Kg** Analysis Date: **01/13/14 09:00 AM**
Client ID: **BUF-SW03-121213** Run ID: **WETCHEM_140113K** SeqNo: **2609064** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide (Acid Soluble)	ND	0.99	1066	0	0	21-81	0			S

MSD Sample ID: **1401135-01A MSD** Units: **mg/Kg** Analysis Date: **01/13/14 09:00 AM**
Client ID: **BUF-SW03-121213** Run ID: **WETCHEM_140113K** SeqNo: **2609065** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide (Acid Soluble)	ND	1.0	1073	0	0	21-81	0	0	50	S

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132738** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R132738** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587287** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R132738** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587283** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1312857-01A DUP** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587261** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	27.95	0.050	0	0	0	0-0	27.82	0.466	20	

DUP Sample ID: **1312896-17A DUP** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587273** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	2.2	0.050	0	0	0	0-0	2.19	0.456	20	

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R133693** Instrument ID **WETCHEM** Method: **SW7.3.3.2**

MBLK Sample ID: **MB-R133693-R133693** Units: **mg/Kg** Analysis Date: **01/08/14 12:00 PM**

Client ID: Run ID: **WETCHEM_140108M** SeqNo: **2606138** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	ND	100								

LCS Sample ID: **LCS-R133693-R133693** Units: **mg/Kg** Analysis Date: **01/08/14 12:00 PM**

Client ID: Run ID: **WETCHEM_140108M** SeqNo: **2606139** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	117.4	100	125	0	94	75-125		0		

MS Sample ID: **1401128-01A MS** Units: **mg/Kg** Analysis Date: **01/08/14 12:00 PM**

Client ID: Run ID: **WETCHEM_140108M** SeqNo: **2606141** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	230.7	100	250	0	92.3	50-150		0		

MSD Sample ID: **1401128-01A MSD** Units: **mg/Kg** Analysis Date: **01/08/14 12:00 PM**

Client ID: Run ID: **WETCHEM_140108M** SeqNo: **2606142** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	230.7	100	250	0	92.3	50-150	230.7	0	35	

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R133699** Instrument ID **WETCHEM** Method: **SW7.3.4.2**

MBLK Sample ID: **MB-R133699-R133699** Units: **mg/Kg** Analysis Date: **01/09/14**

Client ID: Run ID: **WETCHEM_140109B** SeqNo: **2606173** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	ND	100								

LCS Sample ID: **LCS-R133699-R133699** Units: **mg/Kg** Analysis Date: **01/09/14**

Client ID: Run ID: **WETCHEM_140109B** SeqNo: **2606174** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	1902	100	2149	0	88.5	60-120		0		

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R133811** Instrument ID **WETCHEM** Method: **D92**

LCS Sample ID: **LCS-R133811-R133811** Units: **°F** Analysis Date: **01/10/14 09:00 AM**

Client ID: Run ID: **WETCHEM_140110G** SeqNo: **2607843** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Flashpoint, Open-cup	83	0	81	0	102	97-103	0			

The following samples were analyzed in this batch: 1401135-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R133894** Instrument ID **WETCHEM** Method: **D92**

LCS Sample ID: **LCS-R133894-R133894** Units: **°F** Analysis Date: **01/13/14 09:30 AM**

Client ID: Run ID: **WETCHEM_140113J** SeqNo: **2609015** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Flashpoint, Open-cup	82	0	81	0	101	97-103	0			

The following samples were analyzed in this batch: 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

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Chain of Custody Form

Page _____ of _____

COC ID: 94091

ALS Project Manager: TJB

ALS Work Order #: 1401135

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Buffum MKE Site	A	TCLP METALS
Work Order		Project Number	20405.016.001.2252.00	B	REACTIVE CN
Company Name	Weston Solutions, Inc	Bill To Company	Weston Solutions, Inc	C	REACTIVE S
Send Report To	Lisa Graczyk	Invoice Attn	Lisa Graczyk	D	FP
Address	20 North Wacker Drive Suite 1210	Address	20 North Wacker Drive Suite 1210	E	pH
				F	CN- TOTAL
City/State/Zip	Chicago, IL 60606	City/State/Zip	Chicago, IL 60606	G	S - TOTAL
Phone	(312) 424-3300	Phone	(312) 424-3300	H	MOISTURE
Fax	(312) 424-3330	Fax	(312) 424-3330	I	TCLP SVOCs
e-Mail Address	lgraczyk@css-dynamac.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BUF-SW03-121213	12/12/13	1046	SOLID	8		X	X	X	X	X	X	X	X			
2	BUF-SW04-121213	12/12/13	1225	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	X		
3	BUF-SW05-121213	12/12/13	1533	↓	↓		X	↓	↓	↓	↓	↓	↓	↓			
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign

Shipment Method

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Notes:

Relinquished by:	Date:	Time:	Received by:
Relinquished by: TJB	Date: 01/06/14	Time: 1150	Received by (Laboratory):
Logged by (Laboratory): DES	Date: 1/6/14	Time: 1245	Checked by (Laboratory): TJB

Cooler ID	Cooler Temp.
	4.0 °C

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other _____
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WESTON - CHI** Date/Time Received: **06-Jan-14 11:50**

Work Order: **1401135** Received by: **DS**

Checklist completed by Tom Bramish (eSignature) 06-Jan-14 (Date) Reviewed by: Tom Bramish (eSignature) 06-Jan-14 (Date)

Matrices: misc
Carrier name: ALSHN

	Yes	No	Not Present
Shipping container/cooler in good condition?	☑	☐	☐
Custody seals intact on shipping container/cooler?	☐	☐	☑
Custody seals intact on sample bottles?	☐	☐	☑
Chain of custody present?	☑	☐	
Chain of custody signed when relinquished and received?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	
Sample(s) received on ice?	☑	☐	

Temperature(s)/Thermometer(s): 4 C
Cooler(s)/Kit(s):
Date/Time sample(s) sent to storage: 01/06/14 1:08:58 PM

	Yes	No	No VOA vials submitted	
Water - VOA vials have zero headspace?	☐	☐		☑
Water - pH acceptable upon receipt?	☐	☐	N/A	☑
pH adjusted?	☐	☐	N/A	☑

pH adjusted by: -

Login Notes: The samples are from previous WO #1312802.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

14-Jan-2014

Lisa Graczyk
Weston Solutions, Inc
20 North Wacker Drive
Suite 1210
Chicago, IL 60606

Re: **20405.016.001.2252.00/Buffum MKE Site** Work Order: **1401135**

Dear Lisa,

ALS Environmental received 6 samples on 06-Jan-2014 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 27.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
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ALS Group USA, Corp

Date: 14-Jan-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: **1401135**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1401135-01	BUF-SW03-121213	Solid		12/12/13 10:46	01/06/14 11:50	☐
1401135-02	BUF-SW03-121213	Tclp Extract		12/12/13 10:46	01/06/14 11:50	☐
1401135-03	BUF-SW04-121213	Solid		12/12/13 12:25	01/06/14 11:50	☐
1401135-04	BUF-SW04-121213	Tclp Extract		12/12/13 12:25	01/06/14 11:50	☐
1401135-05	BUF-SW05-121213	Solid		12/12/13 15:33	01/06/14 11:50	☐
1401135-06	BUF-SW05-121213	Tclp Extract		12/12/13 15:33	01/06/14 11:50	☐

ALS Group USA, Corp

Date: 14-Jan-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
WorkOrder: **1401135**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
°F	Degrees Fahrenheit
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
s.u.	Standard Units

ALS Group USA, Corp

Date: 14-Jan-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401135

Case Narrative

Analytical Comments:

Batch 54793, Method PH_9045_S: The project samples hold time expired prior to the analysis request. The reported pH results should be considered estimated.

Batch 54838, Method CN_9012_S: The project samples hold time expired prior to the analysis request. The reported Total Cyanide results should be considered estimated.

Batch 54749, Method TCLP_1311_SV: The project samples hold time expired prior to the analysis request. The reported TCLP SVOC results should be considered estimated.

QC Comments:

Batch 54860, Method S_9034_S, Sample 1401135-01A MS: The MS and/or MSD recovery was below the control limit. The corresponding Sulfide result in the parent sample may be biased low.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401135
Sample ID: BUF-SW03-121213
Lab ID: 1401135-01
Collection Date: 12/12/13 10:46 AM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, TOTAL			**SW9012A**		Prep Date: **01/13/14**	Analyst: **JB**
Cyanide, Total	ND	H	0.55	mg/Kg-dry	1	01/13/14 01:41 PM
CYANIDE, REACTIVE			**SW7.3.3.2**			Analyst: **ND**
Cyanide, Reactive	ND		110	mg/Kg-dry	1	01/08/14 12:00 PM
FLASHPOINT, OPEN-CUP			**D92**			Analyst: **RLF**
Flashpoint, Open-cup	**>200**			**°F**	1	01/10/14 09:00 AM
MOISTURE			**A2540 G**			Analyst: **MEB**
Moisture	**8.1**		**0.050**	**% of sample**	1	12/18/13 04:40 PM
PH			**SW9045D**		Prep Date: **01/09/14**	Analyst: **AT**
pH	**7.5**	H		**s.u.**	1	01/09/14 10:00 AM
SULFIDE			**SW9034**		Prep Date: **01/13/14**	Analyst: **EE**
Sulfide (Acid Soluble)	ND		1.1	mg/Kg-dry	1	01/13/14 09:00 AM
SULFIDE, REACTIVE			**SW7.3.4.2**			Analyst: **ND**
Sulfide, Reactive	ND		110	mg/Kg-dry	1	01/09/14

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401135
Sample ID: BUF-SW03-121213
Lab ID: 1401135-02
Collection Date: 12/12/13 10:46 AM
Matrix: TCLP EXTRACT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP MERCURY BY CVAA			**SW7470A**		Prep Date: **01/09/14**	Analyst: **LR**
Mercury	ND		0.0020	mg/L	1	01/09/14 03:14 PM
TCLP METALS ANALYSIS BY ICP-MS			**SW6020A**		Prep Date: **01/09/14**	Analyst: **ML**
Arsenic	ND		0.010	mg/L	1	01/09/14 02:47 PM
Barium	**0.80**		**0.050**	**mg/L**	1	01/09/14 02:47 PM
Cadmium	**0.52**		**0.0020**	**mg/L**	1	01/09/14 02:47 PM
Chromium	ND		0.020	mg/L	1	01/09/14 02:47 PM
Lead	**75**	*	**0.10**	**mg/L**	10	01/10/14 04:10 PM
Selenium	ND		0.020	mg/L	1	01/09/14 02:47 PM
Silver	ND		0.0050	mg/L	1	01/09/14 02:47 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401135
Sample ID: BUF-SW04-121213
Lab ID: 1401135-03
Collection Date: 12/12/13 12:25 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, TOTAL			**SW9012A**		Prep Date: **01/13/14**	Analyst: **JB**
Cyanide, Total	ND	H	0.78	mg/Kg-dry	1	01/13/14 01:41 PM
CYANIDE, REACTIVE			**SW7.3.3.2**			Analyst: **ND**
Cyanide, Reactive	ND		160	mg/Kg-dry	1	01/08/14 12:00 PM
FLASHPOINT, OPEN-CUP			**D92**			Analyst: **RLF**
Flashpoint, Open-cup	**>200**			**°F**	1	01/13/14 09:30 AM
MOISTURE			**A2540 G**			Analyst: **MEB**
Moisture	**37**		**0.050**	**% of sample**	1	12/18/13 04:40 PM
PH			**SW9045D**		Prep Date: **01/09/14**	Analyst: **AT**
pH	**7.6**	H		**s.u.**	1	01/09/14 10:00 AM
SULFIDE			**SW9034**		Prep Date: **01/13/14**	Analyst: **EE**
Sulfide (Acid Soluble)	ND		1.6	mg/Kg-dry	1	01/13/14 09:00 AM
SULFIDE, REACTIVE			**SW7.3.4.2**			Analyst: **ND**
Sulfide, Reactive	ND		160	mg/Kg-dry	1	01/09/14

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401135
Sample ID: BUF-SW04-121213
Lab ID: 1401135-04
Collection Date: 12/12/13 12:25 PM
Matrix: TCLP EXTRACT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP SEMI-VOLATILE ORGANICS			**SW8270**		Prep Date: **01/09/14**	Analyst: **HL**
1,4-Dichlorobenzene	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
2,4,5-Trichlorophenol	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
2,4,6-Trichlorophenol	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
2,4-Dinitrotoluene	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
Hexachloro-1,3-butadiene	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
Hexachlorobenzene	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
Hexachloroethane	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
m-Cresol	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
Nitrobenzene	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
o-Cresol	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
p-Cresol	ND	H	0.10	mg/L	1	01/10/14 01:21 PM
Pentachlorophenol	ND	H	0.40	mg/L	1	01/10/14 01:21 PM
Pyridine	ND	H	0.40	mg/L	1	01/10/14 01:21 PM
Surr: 2,4,6-Tribromophenol	*83.3*		*38-115*	*%REC*	1	01/10/14 01:21 PM
Surr: 2-Fluorobiphenyl	*60.4*		*32-100*	*%REC*	1	01/10/14 01:21 PM
Surr: 2-Fluorophenol	*35.3*		*22-59*	*%REC*	1	01/10/14 01:21 PM
Surr: 4-Terphenyl-d14	*98.9*		*23-112*	*%REC*	1	01/10/14 01:21 PM
Surr: Nitrobenzene-d5	*60.6*		*31-93*	*%REC*	1	01/10/14 01:21 PM
Surr: Phenol-d6	*20.5*		*13-36*	*%REC*	1	01/10/14 01:21 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401135
Sample ID: BUF-SW05-121213
Lab ID: 1401135-05
Collection Date: 12/12/13 03:33 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, TOTAL			**SW9012A**		Prep Date: **01/13/14**	Analyst: **JB**
Cyanide, Total	ND	H	0.96	mg/Kg-dry	1	01/13/14 01:41 PM
CYANIDE, REACTIVE			**SW7.3.3.2**			Analyst: **ND**
Cyanide, Reactive	ND		120	mg/Kg-dry	1	01/08/14 12:00 PM
FLASHPOINT, OPEN-CUP			**D92**			Analyst: **RLF**
Flashpoint, Open-cup	**>200**			**°F**	1	01/13/14 09:30 AM
MOISTURE			**A2540 G**			Analyst: **MEB**
Moisture	**14**		**0.050**	**% of sample**	1	12/18/13 04:40 PM
PH			**SW9045D**		Prep Date: **01/09/14**	Analyst: **AT**
pH	**10.4**	H		**s.u.**	1	01/09/14 10:00 AM
SULFIDE			**SW9034**		Prep Date: **01/13/14**	Analyst: **EE**
Sulfide (Acid Soluble)	ND		1.2	mg/Kg-dry	1	01/13/14 09:00 AM
SULFIDE, REACTIVE			**SW7.3.4.2**			Analyst: **ND**
Sulfide, Reactive	ND		120	mg/Kg-dry	1	01/09/14

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *14-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401135
Sample ID: BUF-SW05-121213
Lab ID: 1401135-06
Collection Date: 12/12/13 03:33 PM
Matrix: TCLP EXTRACT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP MERCURY BY CVAA			**SW7470A**		Prep Date: **01/09/14**	Analyst: **LR**
Mercury	ND		0.0020	mg/L	1	01/09/14 03:16 PM
TCLP METALS ANALYSIS BY ICP-MS			**SW6020A**		Prep Date: **01/09/14**	Analyst: **ML**
Arsenic	**0.35**		**0.010**	**mg/L**	1	01/09/14 08:58 PM
Barium	**1.6**		**0.050**	**mg/L**	1	01/09/14 08:58 PM
Cadmium	ND		0.0020	mg/L	1	01/09/14 08:58 PM
Chromium	**0.066**		**0.020**	**mg/L**	1	01/09/14 08:58 PM
Lead	**4.0**		**0.010**	**mg/L**	1	01/09/14 08:58 PM
Selenium	ND		0.020	mg/L	1	01/09/14 08:58 PM
Silver	**0.0081**		**0.0050**	**mg/L**	1	01/09/14 08:58 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 14-Jan-14

Client: Weston Solutions, Inc

Work Order: 1401135

Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54781** Instrument ID **HG1** Method: **SW7470**

MBLK Sample ID: **MBLK-54781-54781** Units: **mg/L** Analysis Date: **01/09/14 02:35 PM**

Client ID: Run ID: **HG1_140109A** SeqNo: **2606893** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

LCS Sample ID: **LCS-54781-54781** Units: **mg/L** Analysis Date: **01/09/14 02:38 PM**

Client ID: Run ID: **HG1_140109A** SeqNo: **2606894** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001852	0.00020	0.002	0	92.6	80-120	0			

MS Sample ID: **13121124-09BMS** Units: **mg/L** Analysis Date: **01/09/14 02:48 PM**

Client ID: Run ID: **HG1_140109A** SeqNo: **2606898** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001991	0.00020	0.002	0.000007	99.2	75-125	0			

MSD Sample ID: **13121124-09BMSD** Units: **mg/L** Analysis Date: **01/09/14 02:50 PM**

Client ID: Run ID: **HG1_140109A** SeqNo: **2606899** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001969	0.00020	0.002	0.000007	98.1	75-125	0.001991	1.11	20	

The following samples were analyzed in this batch: 1401135-02A 1401135-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54782** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-54782-54782** Units: **mg/L** Analysis Date: **01/09/14 02:23 PM**
Client ID: Run ID: **ICPMS1_140109A** SeqNo: **2606984** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Cadmium	ND	0.0020								
Chromium	ND	0.0050								
Selenium	ND	0.0050								
Silver	ND	0.0050								

MBLK Sample ID: **MBLK-54782-54782** Units: **mg/L** Analysis Date: **01/10/14 03:40 PM**
Client ID: Run ID: **ICPMS1_140110A** SeqNo: **2608098** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	ND	0.0050								

LCS Sample ID: **LCS-54782-54782** Units: **mg/L** Analysis Date: **01/09/14 02:29 PM**
Client ID: Run ID: **ICPMS1_140109A** SeqNo: **2606985** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.08922	0.0050	0.1	0	89.2	80-120	0			
Barium	0.08777	0.0050	0.1	0	87.8	80-120	0			
Cadmium	0.09095	0.0020	0.1	0	91	80-120	0			
Chromium	0.0887	0.0050	0.1	0	88.7	80-120	0			
Selenium	0.08864	0.0050	0.1	0	88.6	80-120	0			
Silver	0.08801	0.0050	0.1	0	88	80-120	0			

LCS Sample ID: **LCS-54782-54782** Units: **mg/L** Analysis Date: **01/10/14 03:46 PM**
Client ID: Run ID: **ICPMS1_140110A** SeqNo: **2608099** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.08825	0.0050	0.1	0	88.2	80-120	0			

MS Sample ID: **1401135-02AMS** Units: **mg/L** Analysis Date: **01/09/14 02:59 PM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140109A** SeqNo: **2606990** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.9271	0.050	1	0.00652	92.1	75-125	0			
Barium	1.69	0.050	1	0.7978	89.2	75-125	0			
Cadmium	1.4	0.020	1	0.5155	88.4	75-125	0			
Chromium	0.8983	0.050	1	0.008128	89	75-125	0			
Selenium	0.9096	0.050	1	0.002339	90.7	75-125	0			
Silver	0.8336	0.050	1	0.000849	83.3	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54782** Instrument ID **ICPMS1** Method: **SW6020A**

MS Sample ID: **1401135-02AMS** Units: **mg/L** Analysis Date: **01/10/14 02:45 AM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140109A** SeqNo: **2607197** Prep Date: **01/09/14** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	76.44	0.10	1	73.63	281	80-120	0			SO

MS Sample ID: **1401135-02AMS** Units: **mg/L** Analysis Date: **01/10/14 04:22 PM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140110A** SeqNo: **2608106** Prep Date: **01/09/14** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	77.56	0.50	1	74.64	292	75-125	0			SO

MSD Sample ID: **1401135-02AMSD** Units: **mg/L** Analysis Date: **01/09/14 03:04 PM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140109A** SeqNo: **2606991** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.9311	0.050	1	0.00652	92.5	75-125	0.9271	0.431	20	
Barium	1.712	0.050	1	0.7978	91.4	75-125	1.69	1.29	20	
Cadmium	1.388	0.020	1	0.5155	87.2	75-125	1.4	0.861	20	
Chromium	0.9013	0.050	1	0.008128	89.3	75-125	0.8983	0.333	20	
Selenium	0.9197	0.050	1	0.002339	91.7	75-125	0.9096	1.1	20	
Silver	0.8329	0.050	1	0.000849	83.2	75-125	0.8336	0.084	20	

MSD Sample ID: **1401135-02AMSD** Units: **mg/L** Analysis Date: **01/10/14 02:51 AM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140109A** SeqNo: **2607198** Prep Date: **01/09/14** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	77.71	0.10	1	73.63	408	80-120	76.44	1.65	20	SO

MSD Sample ID: **1401135-02AMSD** Units: **mg/L** Analysis Date: **01/10/14 04:28 PM**
Client ID: **BUF-SW03-121213** Run ID: **ICPMS1_140110A** SeqNo: **2608108** Prep Date: **01/09/14** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	78.05	0.50	1	74.64	341	75-125	77.56	0.63	20	SO

The following samples were analyzed in this batch: 1401135-02A 1401135-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54753** Instrument ID **SVMS4** Method: **SW8270**

MBLK Sample ID: **SBLKW1-54753-54753** Units: **µg/L** Analysis Date: **01/10/14 10:08 AM**

Client ID: Run ID: **SVMS4_140110A** SeqNo: **2609035** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
Hexachloro-1,3-butadiene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachloroethane	ND	5.0								
m-Cresol	ND	5.0								
Nitrobenzene	ND	5.0								
o-Cresol	ND	5.0								
p-Cresol	ND	5.0								
Pentachlorophenol	ND	20								
Pyridine	ND	20								
Surr: 2,4,6-Tribromophenol	*37.4*	0	*50*	0	*74.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*31.17*	0	*50*	0	*62.3*	*32-100*	0			
Surr: 2-Fluorophenol	*18.96*	0	*50*	0	*37.9*	*22-59*	0			
Surr: 4-Terphenyl-d14	*41.45*	0	*50*	0	*82.9*	*23-112*	0			
Surr: Nitrobenzene-d5	*31.03*	0	*50*	0	*62.1*	*31-93*	0			
Surr: Phenol-d6	*10.77*	0	*50*	0	*21.5*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54753** Instrument ID **SVMS4** Method: **SW8270**

LCS Sample ID: **SLCSW1-54753-54753** Units: **µg/L** Analysis Date: **01/10/14 08:32 AM**

Client ID: Run ID: **SVMS4_140110A** SeqNo: **2609034** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	13.64	5.0	20	0	68.2	30-110	0			
2,4,5-Trichlorophenol	17.25	5.0	20	0	86.2	50-110	0			
2,4,6-Trichlorophenol	16.18	5.0	20	0	80.9	50-115	0			
2,4-Dinitrotoluene	22.24	5.0	20	0	111	50-120	0			
Hexachloro-1,3-butadiene	14.52	5.0	20	0	72.6	25-105	0			
Hexachlorobenzene	17.51	5.0	20	0	87.6	50-110	0			
Hexachloroethane	13.32	5.0	20	0	66.6	30-95	0			
m-Cresol	9.1	5.0	20	0	45.5	30-110	0			
Nitrobenzene	15.88	5.0	20	0	79.4	45-110	0			
o-Cresol	10.27	5.0	20	0	51.4	40-110	0			
p-Cresol	9.09	5.0	20	0	45.4	30-110	0			
Pentachlorophenol	15.97	20	20	0	79.8	40-115	0			J
Pyridine	4.77	20	20	0	23.8	10-71	0			J
Surr: 2,4,6-Tribromophenol	*42.15*	0	*50*	0	*84.3*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.23*	0	*50*	0	*68.5*	*32-100*	0			
Surr: 2-Fluorophenol	*16.43*	0	*50*	0	*32.9*	*22-59*	0			
Surr: 4-Terphenyl-d14	*41.64*	0	*50*	0	*83.3*	*23-112*	0			
Surr: Nitrobenzene-d5	*32.86*	0	*50*	0	*65.7*	*31-93*	0			
Surr: Phenol-d6	*9.99*	0	*50*	0	*20*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54753** Instrument ID **SVMS4** Method: **SW8270**

MS Sample ID: **1401135-04A MS** Units: **µg/L** Analysis Date: **01/10/14 11:13 AM**

Client ID: **BUF-SW04-121213** Run ID: **SVMS4_140110A** SeqNo: **2609036** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	268.6	100	400	0	67.2	30-110	0			HH
2,4,5-Trichlorophenol	345.4	100	400	0	86.4	50-110	0			HH
2,4,6-Trichlorophenol	318	100	400	0	79.5	50-115	0			HH
2,4-Dinitrotoluene	446.8	100	400	0	112	50-120	0			HH
Hexachloro-1,3-butadiene	289.8	100	400	0	72.4	25-105	0			HH
Hexachlorobenzene	350	100	400	0	87.5	50-110	0			HH
Hexachloroethane	260.8	100	400	0	65.2	30-95	0			HH
m-Cresol	205.8	100	400	0	51.4	30-110	0			HH
Nitrobenzene	325.4	100	400	0	81.4	45-110	0			HH
o-Cresol	231.6	100	400	0	57.9	40-110	0			HH
p-Cresol	205.8	100	400	0	51.4	30-110	0			HH
Pentachlorophenol	353.2	400	400	0	88.3	40-115	0			JHH
Pyridine	104.4	400	400	0	26.1	10-80	0			JHH
Surr: 2,4,6-Tribromophenol	*835*	0	*1000*	0	*83.5*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*651.8*	0	*1000*	0	*65.2*	*32-100*	0			
Surr: 2-Fluorophenol	*362.8*	0	*1000*	0	*36.3*	*22-59*	0			
Surr: 4-Terphenyl-d14	*873.2*	0	*1000*	0	*87.3*	*23-112*	0			
Surr: Nitrobenzene-d5	*671.8*	0	*1000*	0	*67.2*	*31-93*	0			
Surr: Phenol-d6	*218.8*	0	*1000*	0	*21.9*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54753** Instrument ID **SVMS4** Method: **SW8270**

MSD Sample ID: **1401135-04A MSD** Units: **µg/L** Analysis Date: **01/10/14 11:45 AM**

Client ID: **BUF-SW04-121213** Run ID: **SVMS4_140110A** SeqNo: **2609037** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	267.2	100	400	0	66.8	30-110	268.6	0.523	30	HH
2,4,5-Trichlorophenol	349	100	400	0	87.2	50-110	345.4	1.04	30	HH
2,4,6-Trichlorophenol	327.2	100	400	0	81.8	50-115	318	2.85	30	HH
2,4-Dinitrotoluene	449.6	100	400	0	112	50-120	446.8	0.625	30	HH
Hexachloro-1,3-butadiene	291.6	100	400	0	72.9	25-105	289.8	0.619	30	HH
Hexachlorobenzene	357.8	100	400	0	89.4	50-110	350	2.2	30	HH
Hexachloroethane	254.4	100	400	0	63.6	30-95	260.8	2.48	30	HH
m-Cresol	175.8	100	400	0	44	30-110	205.8	15.7	30	HH
Nitrobenzene	319	100	400	0	79.8	45-110	325.4	1.99	30	HH
o-Cresol	197.8	100	400	0	49.4	40-110	231.6	15.7	30	HH
p-Cresol	175.8	100	400	0	44	30-110	205.8	15.7	30	HH
Pentachlorophenol	352.8	400	400	0	88.2	40-115	353.2	0	30	JHH
Pyridine	103.4	400	400	0	25.8	10-80	104.4	0	30	JHH
Surr: 2,4,6-Tribromophenol	*868.4*	0	*1000*	0	*86.8*	*38-115*	835	*3.92*	*0*	
Surr: 2-Fluorobiphenyl	*694.6*	0	*1000*	0	*69.5*	*32-100*	651.8	*6.36*	*0*	
Surr: 2-Fluorophenol	*334.4*	0	*1000*	0	*33.4*	*22-59*	362.8	*8.15*	*0*	
Surr: 4-Terphenyl-d14	*851.8*	0	*1000*	0	*85.2*	*23-112*	873.2	*2.48*	*0*	
Surr: Nitrobenzene-d5	*640.6*	0	*1000*	0	*64.1*	*31-93*	671.8	*4.75*	*0*	
Surr: Phenol-d6	*197*	0	*1000*	0	*19.7*	*13-36*	218.8	*10.5*	*0*	

The following samples were analyzed in this batch: 1401135-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54793** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-54793-54793** Units: **s.u.** Analysis Date: **01/09/14 10:00 AM**

Client ID: Run ID: **WETCHEM_140109H** SeqNo: **2606819** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.92	0	4	0	98	90-110	0			

DUP Sample ID: **1401175-01B DUP** Units: **s.u.** Analysis Date: **01/09/14 10:00 AM**

Client ID: Run ID: **WETCHEM_140109H** SeqNo: **2606824** Prep Date: **01/09/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.81	0	0	0	0	0-0	7.84	0.383	20	

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54838** Instrument ID **LACHAT** Method: **SW9012A**

MBLK Sample ID: **MBLK-54838-54838** Units: **mg/Kg** Analysis Date: **01/13/14 01:41 PM**

Client ID: Run ID: **LACHAT_140113B** SeqNo: **2608629** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	ND	0.50								

LCS Sample ID: **LCS-54838-54838** Units: **mg/Kg** Analysis Date: **01/13/14 01:41 PM**

Client ID: Run ID: **LACHAT_140113B** SeqNo: **2608630** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	2.574	0.50	2.5	0	103	85-119	0			

MS Sample ID: **1401135-05A MS** Units: **mg/Kg** Analysis Date: **01/13/14 01:41 PM**

Client ID: **BUF-SW05-121213** Run ID: **LACHAT_140113B** SeqNo: **2608634** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	3.449	0.84	4.223	0.3479	73.4	70-130	0			H

MSD Sample ID: **1401135-05A MSD** Units: **mg/Kg** Analysis Date: **01/13/14 01:41 PM**

Client ID: **BUF-SW05-121213** Run ID: **LACHAT_140113B** SeqNo: **2608635** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	3.5	0.85	4.252	0.3479	74.1	70-130	3.449	1.46	30	H

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **54860** Instrument ID **WETCHEM** Method: **SW9034**

MBLK Sample ID: **MBLK-54860-54860** Units: **mg/Kg** Analysis Date: **01/13/14 09:00 AM**
Client ID: Run ID: **WETCHEM_140113K** SeqNo: **2609058** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide (Acid Soluble)	ND	1.0								

LCS Sample ID: **LCS-54860-54860** Units: **mg/Kg** Analysis Date: **01/13/14 09:00 AM**
Client ID: Run ID: **WETCHEM_140113K** SeqNo: **2609059** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide (Acid Soluble)	566.4	1.0	1075	0	52.7	21-81	0			

MS Sample ID: **1401135-01A MS** Units: **mg/Kg** Analysis Date: **01/13/14 09:00 AM**
Client ID: **BUF-SW03-121213** Run ID: **WETCHEM_140113K** SeqNo: **2609064** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide (Acid Soluble)	ND	0.99	1066	0	0	21-81	0			S

MSD Sample ID: **1401135-01A MSD** Units: **mg/Kg** Analysis Date: **01/13/14 09:00 AM**
Client ID: **BUF-SW03-121213** Run ID: **WETCHEM_140113K** SeqNo: **2609065** Prep Date: **01/13/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide (Acid Soluble)	ND	1.0	1073	0	0	21-81	0	0	50	S

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R132738** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R132738** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587287** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R132738** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587283** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1312857-01A DUP** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587261** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	27.95	0.050	0	0	0	0-0	27.82	0.466	20	

DUP Sample ID: **1312896-17A DUP** Units: **% of sample** Analysis Date: **12/18/13 04:40 PM**
Client ID: Run ID: **MOIST_131218B** SeqNo: **2587273** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	2.2	0.050	0	0	0	0-0	2.19	0.456	20	

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R133693** Instrument ID **WETCHEM** Method: **SW7.3.3.2**

MBLK Sample ID: **MB-R133693-R133693** Units: **mg/Kg** Analysis Date: **01/08/14 12:00 PM**

Client ID: Run ID: **WETCHEM_140108M** SeqNo: **2606138** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	ND	100								

LCS Sample ID: **LCS-R133693-R133693** Units: **mg/Kg** Analysis Date: **01/08/14 12:00 PM**

Client ID: Run ID: **WETCHEM_140108M** SeqNo: **2606139** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	117.4	100	125	0	94	75-125		0		

MS Sample ID: **1401128-01A MS** Units: **mg/Kg** Analysis Date: **01/08/14 12:00 PM**

Client ID: Run ID: **WETCHEM_140108M** SeqNo: **2606141** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	230.7	100	250	0	92.3	50-150		0		

MSD Sample ID: **1401128-01A MSD** Units: **mg/Kg** Analysis Date: **01/08/14 12:00 PM**

Client ID: Run ID: **WETCHEM_140108M** SeqNo: **2606142** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	230.7	100	250	0	92.3	50-150	230.7	0	35	

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R133699** Instrument ID **WETCHEM** Method: **SW7.3.4.2**

MBLK Sample ID: **MB-R133699-R133699** Units: **mg/Kg** Analysis Date: **01/09/14**

Client ID: Run ID: **WETCHEM_140109B** SeqNo: **2606173** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	ND	100								

LCS Sample ID: **LCS-R133699-R133699** Units: **mg/Kg** Analysis Date: **01/09/14**

Client ID: Run ID: **WETCHEM_140109B** SeqNo: **2606174** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	1902	100	2149	0	88.5	60-120		0		

The following samples were analyzed in this batch: 1401135-01A 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R133811** Instrument ID **WETCHEM** Method: **D92**

LCS Sample ID: **LCS-R133811-R133811** Units: **°F** Analysis Date: **01/10/14 09:00 AM**

Client ID: Run ID: **WETCHEM_140110G** SeqNo: **2607843** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Flashpoint, Open-cup	83	0	81	0	102	97-103	0			

The following samples were analyzed in this batch: 1401135-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401135
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **R133894** Instrument ID **WETCHEM** Method: **D92**

LCS Sample ID: **LCS-R133894-R133894** Units: **°F** Analysis Date: **01/13/14 09:30 AM**

Client ID: Run ID: **WETCHEM_140113J** SeqNo: **2609015** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Flashpoint, Open-cup	82	0	81	0	101	97-103	0			

The following samples were analyzed in this batch: 1401135-03A 1401135-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

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Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

Chain of Custody Form

Page _____ of _____

COC ID: 94091

ALS Project Manager: TJB

ALS Work Order #: 1401135

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Buffum MKE Site	A	TCLP METALS
Work Order		Project Number	20405.016.001.2252.00	B	REACTIVE CN
Company Name	Weston Solutions, Inc	Bill To Company	Weston Solutions, Inc	C	REACTIVE S
Send Report To	Lisa Graczyk	Invoice Attn	Lisa Graczyk	D	FP
Address	20 North Wacker Drive Suite 1210	Address	20 North Wacker Drive Suite 1210	E	pH
				F	CN- TOTAL
City/State/Zip	Chicago, IL 60606	City/State/Zip	Chicago, IL 60606	G	S - TOTAL
Phone	(312) 424-3300	Phone	(312) 424-3300	H	MOISTURE
Fax	(312) 424-3330	Fax	(312) 424-3330	I	TCLP SVOCs
e-Mail Address	lgraczyk@css-dynamac.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BUF-SW03-121213	12/12/13	1046	SOLID	8		X	X	X	X	X	X	X	X			
2	BUF-SW04-121213	12/12/13	1225	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	X		
3	BUF-SW05-121213	12/12/13	1533	↓	↓		X	↓	↓	↓	↓	↓	↓	↓			
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign

Shipment Method

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Notes:

Relinquished by:	Date:	Time:	Received by:
Relinquished by: TJB	Date: 01/06/14	Time: 1150	Received by (Laboratory):
Logged by (Laboratory): DES	Date: 1/6/14	Time: 1245	Checked by (Laboratory): TJB

Cooler ID	Cooler Temp.
	4.0 °C

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other _____
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WESTON - CHI** Date/Time Received: **06-Jan-14 11:50**

Work Order: **1401135** Received by: **DS**

Checklist completed by Tom Bramish (eSignature) 06-Jan-14 (Date) Reviewed by: Tom Bramish (eSignature) 06-Jan-14 (Date)

Matrices: misc
Carrier name: ALSHN

	Yes	No	Not Present
Shipping container/cooler in good condition?	☑	☐	☐
Custody seals intact on shipping container/cooler?	☐	☐	☑
Custody seals intact on sample bottles?	☐	☐	☑
Chain of custody present?	☑	☐	
Chain of custody signed when relinquished and received?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	
Sample(s) received on ice?	☑	☐	

Temperature(s)/Thermometer(s): 4 C
Cooler(s)/Kit(s):
Date/Time sample(s) sent to storage: 01/06/14 1:08:58 PM

	Yes	No	No VOA vials submitted	
Water - VOA vials have zero headspace?	☐	☐		☑
Water - pH acceptable upon receipt?	☐	☐	N/A	☑
pH adjusted?	☐	☐	N/A	☑

pH adjusted by: -

Login Notes: The samples are from previous WO #1312802.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

BUFFUM MKE SITE
MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN
DATA VALIDATION REPORT

Date: January 28, 2014
Laboratory: ALS Environmental (ALS), Holland, Michigan
Laboratory Project #: 1401230
Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)
Weston Analytical Work Order #/TDD #: 20405.016.001.2252.77/ S05-0001-1310-003

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for one waste liquid sample collected for the Buffum MKE Site that was analyzed for the following parameters and U.S. Environmental Protection Agency methods:

- Total Petroleum Hydrocarbons (TPH) as Oil Range Organics (ORO), Diesel Range Organics (DRO), and Extended Range Organics (ERO) by SW-846 Method 8015

A level II data package was requested from ALS. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008 and "Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review" dated January 2010. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

TPH AS ORO, DRO, AND ERO BY SW-846 METHOD 8015

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Prepared	Date Analyzed
BUF-LW01-121213	1401230-01	Liquid	12/12/2013	1/7/2014	1/17/2014 – 1/20/2014

2. Holding Times

The holding time was exceeded by two weeks because it was decided to analyze for TPH following receipt of first set of analyses. Because the sample appears to be pure oil based on the results, the sample does not appear to be compromised because of the holding time exceedance. No qualification was applied.

3. Surrogate Results

The surrogates were not recovered due to the high concentration of target analytes in the samples. No qualification was required.

4. Overall Assessment

The TPH data are acceptable for use based on the information received.

ATTACHMENT

ALS ENVIRONMENTAL
RESULTS SUMMARY

21-Jan-2014

Lisa Graczyk
Weston Solutions, Inc
20 North Wacker Drive
Suite 1210
Chicago, IL 60606

Re: **20405.016.001.2252.00/Buffum MKE Site** Work Order: **1401230**

Dear Lisa,

ALS Environmental received 1 sample on 09-Jan-2014 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 6.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
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ALS Group USA, Corp

Date: 21-Jan-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: **1401230**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1401230-01	BUF-LW01-121213	Liquid		12/12/13 11:46	01/09/14 13:15	☐

ALS Group USA, Corp

Date: 21-Jan-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
WorkOrder: **1401230**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

ALS Group USA, Corp

Date: *21-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401230
Sample ID: BUF-LW01-121213
Lab ID: 1401230-01
Collection Date: 12/12/13 11:46 AM
Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep Date: **01/17/14**	Analyst: **IT**
DRO (C10-C28)	**810,000**		**0.00020**	**mg/L**	1	01/17/14
ERO (C8-C40)	**1,000,000**		**0.00080**	**mg/L**	2	01/20/14 09:09 PM
ORO (C28-C40)	**400,000**		**0.00020**	**mg/L**	1	01/17/14
Surr: 4-Terphenyl-d14	*0*		*21-90*	*%REC*	1	01/17/14
Surr: 4-Terphenyl-d14	*0*		*21-90*	*%REC*	2	01/20/14 09:09 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Environmental

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Chain of Custody Form

Page ____ of ____

COC ID: 13683

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ALS Project Manager: TBB | ALS Work Order #: 1401230

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	BUFFUM MKE SITE	A	DRO/ORO
Work Order		Project Number		B	
Company Name	WESTON SOLUTIONS	Bill To Company		C	
Send Report To	LISA GORALCZYK	Invoice Attn		D	
Address		Address		E	
				F	
City/State/Zip	CHICAGO, IL	City/State/Zip		G	
Phone		Phone		H	
Fax		Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BUF-LW01-121213	12/12/13	1146	LIQ	8	1	X					FROM 1312802-07					
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign

Shipment Method

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Relinquished by: T.B.	Date: 01/09/14	Time: 1315	Received by (Laboratory):
Logged by (Laboratory): DES	Date: 1/9/14	Time: 1430	Checked by (Laboratory): TBB

Notes:

Cooler ID	Cooler Temp
	4.0°C

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Date ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WESTON - CHI** Date/Time Received: **09-Jan-14 13:15**

Work Order: **1401230** Received by: **DS**

Checklist completed by Tom Bramish (eSignature) 09-Jan-14 (Date) Reviewed by: Tom Bramish (eSignature) 09-Jan-14 (Date)

Matrices: liquid
Carrier name: ALSHN

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4 C		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	01/09/14 3:35:41 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

21-Jan-2014

Lisa Graczyk
Weston Solutions, Inc
20 North Wacker Drive
Suite 1210
Chicago, IL 60606

Re: **20405.016.001.2252.00/Buffum MKE Site** Work Order: **1401230**

Dear Lisa,

ALS Environmental received 1 sample on 09-Jan-2014 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 6.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager

Certificate No: MN 532786

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ALS Group USA, Corp

Date: 21-Jan-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: **1401230**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1401230-01	BUF-LW01-121213	Liquid		12/12/13 11:46	01/09/14 13:15	☐

ALS Group USA, Corp

Date: 21-Jan-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
WorkOrder: **1401230**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

ALS Group USA, Corp

Date: *21-Jan-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401230
Sample ID: BUF-LW01-121213
Lab ID: 1401230-01
Collection Date: 12/12/13 11:46 AM
Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep Date: **01/17/14**	Analyst: **IT**
DRO (C10-C28)	**810,000**		**0.00020**	**mg/L**	1	01/17/14
ERO (C8-C40)	**1,000,000**		**0.00080**	**mg/L**	2	01/20/14 09:09 PM
ORO (C28-C40)	**400,000**		**0.00020**	**mg/L**	1	01/17/14
Surr: 4-Terphenyl-d14	*0*		*21-90*	*%REC*	1	01/17/14
Surr: 4-Terphenyl-d14	*0*		*21-90*	*%REC*	2	01/20/14 09:09 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Environmental

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Chain of Custody Form

Page ____ of ____

COC ID: 13683

Houston, TX +1 281 530 5656 | Spring City, PA +1 610 948 4903 | South Charleston, WV +1 304 356 3168 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

ALS Project Manager: TBB | ALS Work Order #: 1401230

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	BUFFUM MKE SITE	A	DRO/ORO
Work Order		Project Number		B	
Company Name	WESTON SOLUTIONS	Bill To Company		C	
Send Report To	LISA GORALCZYK	Invoice Attn		D	
Address		Address		E	
				F	
City/State/Zip	CHICAGO, IL	City/State/Zip		G	
Phone		Phone		H	
Fax		Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BUF-LW01-121213	12/12/13	1146	LIQ	8	1	X					FROM 1312802-07					
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign

Shipment Method

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Relinquished by: T.B.	Date: 01/09/14	Time: 1315	Received by (Laboratory):
Logged by (Laboratory): DES	Date: 1/9/14	Time: 1430	Checked by (Laboratory): TBB

Notes:

Cooler ID	Cooler Temp
	4.0°C

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Date ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WESTON - CHI** Date/Time Received: **09-Jan-14 13:15**

Work Order: **1401230** Received by: **DS**

Checklist completed by Tom Bramish (eSignature) 09-Jan-14 (Date) Reviewed by: Tom Bramish (eSignature) 09-Jan-14 (Date)

Matrices: liquid
Carrier name: ALSHN

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4 C		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	01/09/14 3:35:41 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

BUFFUM MKE SITE
MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN
DATA VALIDATION REPORT

Date: February 6, 2014
Laboratory: ALS Environmental (ALS), Holland, Michigan
Laboratory Project #: 1401980
Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)
Weston Analytical Work Order #/TDD #: 20405.016.001.2252.77/ S05-0001-1310-003

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for six paint chip samples collected for the Buffum MKE Site that were analyzed for the following parameters and U.S. Environmental Protection Agency methods:

- Polychlorinated Biphenyls (PCB) by SW-846 Method 8082
- Lead by SW-846 Method 6020A

A level II data package was requested from ALS. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008 and "Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review" dated January 2010. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

Data Validation Report
Buffum MKE Site
ALS Environmental
Laboratory Project #: 1401980

PCBs by SW-846 METHOD 8082

1. Samples

The following table summarizes the samples for which this data validation was conducted.

Samples	Lab ID	Matrix	Date Collected	Date Prepared	Date Analyzed
BUF-PC06-012314	1401980-01	Paint Chip	1/23/2014	1/29/2014	1/30/2014
BUF-PC07-012314	1401980-02	Paint Chip	1/23/2014	1/29/2014	1/30/2014
BUF-PC08-012314	1401980-03	Paint Chip	1/23/2014	1/29/2014	1/30/2014
BUF-PC09-012314	1401980-04	Paint Chip	1/23/2014	1/29/2014	1/30/2014
BUF-PC10-012314	1401980-05	Paint Chip	1/23/2014	1/29/2014	1/30/2014
BUF-PC11-012314	1401980-06	Paint Chip	1/23/2014	1/29/2014	1/30/2014

2. Holding Times

The sample was analyzed within the required holding time limit of 14 days from sample collection to extraction and 40 days from extraction to analysis.

3. Blanks

A method blanks was analyzed with the PCB analyses. The method blank was free of target compound contamination above the reporting limit.

4. Surrogates

The surrogate recoveries were within quality control (QC) limits.

5. Laboratory Control Sample (LCS) Results

The LCS recoveries were within the laboratory-established QC limits.

6. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results

A site-specific MS and MSD were not analyzed. The MS and MSD that were analyzed had acceptable recoveries and relative percent differences (RPD).

7. Overall Assessment

The PCB data are acceptable for use based on the information received.

Data Validation Report
Buffum MKE Site
ALS Environmental
Laboratory Project #: 1401980

LEAD BY SW-846 METHOD 6020A

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BUF-PC06-012314	1401980-01	Paint Chip	1/23/2014	1/31/2014
BUF-PC07-012314	1401980-02	Paint Chip	1/23/2014	1/31/2014
BUF-PC08-012314	1401980-03	Paint Chip	1/23/2014	1/31/2014
BUF-PC09-012314	1401980-04	Paint Chip	1/23/2014	1/31/2014
BUF-PC10-012314	1401980-05	Paint Chip	1/23/2014	1/31/2014
BUF-PC11-012314	1401980-06	Paint Chip	1/23/2014	1/31/2014

2. Holding Times

The samples were analyzed within the required holding time limit of 180 days from sample collection to analysis.

3. Blank Results

A method blank was analyzed with the lead analyses and was free of target analyte contamination above the reporting limits.

4. LCS Results

The LCS recoveries were within the laboratory-established QC limits.

5. MS and MSD Results

A site-specific MS and MSD were not analyzed. The MS and MSD that were analyzed had acceptable recoveries and relative percent differences (RPD).

6. Overall Assessment

The metals data are acceptable for use based on the information received.

ATTACHMENT

ALS ENVIRONMENTAL
RESULTS SUMMARY

04-Feb-2014

Lisa Graczyk
Weston Solutions, Inc
20 North Wacker Drive
Suite 1210
Chicago, IL 60606

Re: **20405.016.001.2252.00/Buffum MKE Site** Work Order: **1401980**

Dear Lisa,

ALS Environmental received 6 samples on 24-Jan-2014 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 13.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
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RIGHT SOLUTIONS RIGHT PARTNER

ALS Group USA, Corp

Date: 04-Feb-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: **1401980**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1401980-01	BUF-PC06-012314	Solid		01/23/14 16:12	01/24/14 14:00	☐
1401980-02	BUF-PC07-012314	Solid		01/23/14 16:16	01/24/14 14:00	☐
1401980-03	BUF-PC08-012314	Solid		01/23/14 16:20	01/24/14 14:00	☐
1401980-04	BUF-PC09-012314	Solid		01/23/14 16:23	01/24/14 14:00	☐
1401980-05	BUF-PC10-012314	Solid		01/23/14 16:33	01/24/14 14:00	☐
1401980-06	BUF-PC11-012314	Solid		01/23/14 16:34	01/24/14 14:00	☐

ALS Group USA, Corp

Date: 04-Feb-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
WorkOrder: **1401980**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/Kg	Milligrams per Kilogram

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC06-012314
Lab ID: 1401980-01
Collection Date: 01/23/14 04:12 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1221	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1232	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1242	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1248	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1254	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1260	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Surr: Decachlorobiphenyl	*85.1*		*40-140*	*%REC*	1	01/30/14 02:01 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **ML**
Lead	**100**		**1.7**	**mg/Kg**	5	01/31/14 05:26 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC07-012314
Lab ID: 1401980-02
Collection Date: 01/23/14 04:16 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1221	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1232	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1242	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1248	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1254	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1260	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Surr: Decachlorobiphenyl	*90.1*		*40-140*	*%REC*	1	01/30/14 02:17 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **ML**
Lead	**30**		**1.5**	**mg/Kg**	5	01/31/14 05:32 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC08-012314
Lab ID: 1401980-03
Collection Date: 01/23/14 04:20 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Aroclor 1221	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Aroclor 1232	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Aroclor 1242	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Aroclor 1248	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Aroclor 1254	**0.30**		**0.26**	**mg/Kg**	1	01/30/14 02:33 PM
Aroclor 1260	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Surr: Decachlorobiphenyl	*86.1*		*40-140*	*%REC*	1	01/30/14 02:33 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **ML**
Lead	**49**		**1.8**	**mg/Kg**	5	01/31/14 05:38 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC09-012314
Lab ID: 1401980-04
Collection Date: 01/23/14 04:23 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1221	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1232	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1242	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1248	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1254	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1260	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Surr: Decachlorobiphenyl	*88.1*		*40-140*	*%REC*	1	01/30/14 02:49 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **RH**
Lead	**2,100**		**18**	**mg/Kg**	50	01/31/14 12:44 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC10-012314
Lab ID: 1401980-05
Collection Date: 01/23/14 04:33 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		0.63	mg/Kg	1	01/30/14 03:05 PM
Aroclor 1221	ND		0.63	mg/Kg	1	01/30/14 03:05 PM
Aroclor 1232	ND		0.63	mg/Kg	1	01/30/14 03:05 PM
Aroclor 1242	ND		0.63	mg/Kg	1	01/30/14 03:05 PM
Aroclor 1248	ND		0.63	mg/Kg	1	01/30/14 03:05 PM
Aroclor 1254	**0.86**		**0.63**	**mg/Kg**	1	01/30/14 03:05 PM
Aroclor 1260	**0.85**		**0.63**	**mg/Kg**	1	01/30/14 03:05 PM
Surr: Decachlorobiphenyl	*86.1*		*40-140*	*%REC*	1	01/30/14 03:05 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **ML**
Lead	**29**		**1.6**	**mg/Kg**	5	01/31/14 05:49 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC11-012314
Lab ID: 1401980-06
Collection Date: 01/23/14 04:34 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		0.25	mg/Kg	1	01/30/14 03:21 PM
Aroclor 1221	ND		0.25	mg/Kg	1	01/30/14 03:21 PM
Aroclor 1232	ND		0.25	mg/Kg	1	01/30/14 03:21 PM
Aroclor 1242	ND		0.25	mg/Kg	1	01/30/14 03:21 PM
Aroclor 1248	ND		0.25	mg/Kg	1	01/30/14 03:21 PM
Aroclor 1254	**0.32**		**0.25**	**mg/Kg**	1	01/30/14 03:21 PM
Aroclor 1260	**0.34**		**0.25**	**mg/Kg**	1	01/30/14 03:21 PM
Surr: Decachlorobiphenyl	*89.1*		*40-140*	*%REC*	1	01/30/14 03:21 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **ML**
Lead	**43**		**1.7**	**mg/Kg**	5	01/31/14 07:30 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 04-Feb-14

Client: Weston Solutions, Inc
Work Order: 1401980
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **55339** Instrument ID **GC12** Method: **SW8082**

MBLK Sample ID: **PBLKS1-55339-55339** Units: **µg/Kg** Analysis Date: **01/30/14 11:51 AM**

Client ID: Run ID: **GC12_140130A** SeqNo: **2628648** Prep Date: **01/29/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	ND	83								
Aroclor 1221	ND	83								
Aroclor 1232	ND	83								
Aroclor 1242	ND	83								
Aroclor 1248	ND	83								
Aroclor 1254	ND	83								
Aroclor 1260	ND	83								
Surr: Decachlorobiphenyl	*22.67*	0	*33.3*	0	*68.1*	*40-140*	0			

LCS Sample ID: **PLCSS1-55339-55339** Units: **µg/Kg** Analysis Date: **01/30/14 12:07 PM**

Client ID: Run ID: **GC12_140130A** SeqNo: **2628649** Prep Date: **01/29/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	915.3	83	833	0	110	50-130	0			
Aroclor 1260	927.7	83	833	0	111	50-130	0			
Surr: Decachlorobiphenyl	*25.67*	0	*33.3*	0	*77.1*	*40-140*	0			

MS Sample ID: **14011073-01B MS** Units: **µg/Kg** Analysis Date: **01/30/14 12:40 PM**

Client ID: Run ID: **GC12_140130A** SeqNo: **2628651** Prep Date: **01/29/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	822	82	823	0	99.9	40-140	0			
Aroclor 1260	859.8	82	823	0	104	40-140	0			
Surr: Decachlorobiphenyl	*23.05*	0	*32.9*	0	*70.1*	*40-140*	0			

MSD Sample ID: **14011073-01B MSD** Units: **µg/Kg** Analysis Date: **01/30/14 12:56 PM**

Client ID: Run ID: **GC12_140130A** SeqNo: **2628652** Prep Date: **01/29/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	898	83	825.7	0	109	40-140	822	8.84	50	
Aroclor 1260	906.3	83	825.7	0	110	40-140	859.8	5.26	50	
Surr: Decachlorobiphenyl	*25.44*	0	*33.01*	0	*77.1*	*40-140*	23.05	*9.85*	*50*	

The following samples were analyzed in this batch:

1401980-01A	1401980-02A	1401980-03A
1401980-04A	1401980-05A	1401980-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401980
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **55377** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-55377-55377** Units: **mg/Kg** Analysis Date: **01/30/14 02:43 PM**

Client ID: Run ID: **ICPMS1_140130A** SeqNo: **2628654** Prep Date: **01/30/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	ND	0.25								

LCS Sample ID: **LCS-55377-55377** Units: **mg/Kg** Analysis Date: **01/30/14 02:53 PM**

Client ID: Run ID: **ICPMS1_140130A** SeqNo: **2628655** Prep Date: **01/30/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.869	0.25	5	0	97.4	80-120	0			

MS Sample ID: **14011115-03BMS** Units: **mg/Kg** Analysis Date: **01/30/14 03:16 PM**

Client ID: Run ID: **ICPMS1_140130A** SeqNo: **2628659** Prep Date: **01/30/14** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	13.19	1.8	7.246	7.66	76.3	75-125	0			

MSD Sample ID: **14011115-03BMSD** Units: **mg/Kg** Analysis Date: **01/30/14 03:22 PM**

Client ID: Run ID: **ICPMS1_140130A** SeqNo: **2628660** Prep Date: **01/30/14** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	15.31	1.8	7.364	7.66	104	75-125	13.19	14.9	25	

The following samples were analyzed in this batch:

1401980-01A	1401980-02A	1401980-03A
1401980-04A	1401980-05A	1401980-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

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Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 94534

ALS Project Manager: TBS | ALS Work Order #: 1401980

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Buffum MKE Site	A	PCB
Work Order	20405.012.001.2252.00	Project Number	20405.016.001.2252.00	B	Lead.
Company Name	Weston Solutions, Inc	Bill To Company	Weston Solutions, Inc	C	
Send Report To	Lisa Graczyk	Invoice Attn	Lisa Graczyk	D	
Address	20 North Wacker Drive Suite 1210	Address	20 North Wacker Drive Suite 1210	E F	
City/State/Zip	Chicago, IL 60606	City/State/Zip	Chicago, IL 60606	G	
Phone	(312) 424-3300	Phone	(312) 424-3300	H	
Fax	(312) 424-3330	Fax	(312) 424-3330	I	
e-Mail Address	lgraczyk@ces-dynamac.com	e-Mail Address	m.stollenwerk@westonsolutions.com		

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BUF-PC06-012314	01-23-14	1612	PaintChip	None	1	X	X									
2	BUF-PC07-012314	01-23-14	1616	PaintChip	None	1	X	X									
3	BUF-PC08-012314	01-23-14	1620	PaintChip	None	1	X	X									
4	BUF-PC09-012314	01-23-14	1623	PaintChip	None	1	X	X									
5	BUF-PC10-012314	01-23-14	1633	PaintChip	None	1	X	X									
6	BUF-PC11-012314	01-23-14	1634	PaintChip	None	1	X	X									
7																	
8																	
9																	
10																	

Sampler(s) (Please Print & Sign): Martin D. Stollenwerk | Shipment Method: Pick up | Required Turnaround Time: (Check Box) ☒ Std 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other _____ | Results Due Date:

Relinquished by:	Date: 01/23/14	Time: 1730	Received by:	Notes: Rec'd 1/24/14 1400	
Relinquished by:	Date: 1/24/14	Time: 2100	Received by (Laboratory):	Cooler ID	Cooler Temp.
Logged by (Laboratory): DES	Date: 1/24/14	Time: 1415	Checked by (Laboratory): TBS		1.0°C

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other _____
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WESTON - CHI** Date/Time Received: **24-Jan-14 14:00**

Work Order: **1401980** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 24-Jan-14 (Date) Reviewed by: Tom Bramish (eSignature) 24-Jan-14 (Date)

Matrices: Solid

Carrier name: ALSHN

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.0 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	1/24/2014 2:16:38 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

04-Feb-2014

Lisa Graczyk
Weston Solutions, Inc
20 North Wacker Drive
Suite 1210
Chicago, IL 60606

Re: **20405.016.001.2252.00/Buffum MKE Site** Work Order: **1401980**

Dear Lisa,

ALS Environmental received 6 samples on 24-Jan-2014 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 13.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
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ALS Group USA, Corp

Date: 04-Feb-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: **1401980**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1401980-01	BUF-PC06-012314	Solid		01/23/14 16:12	01/24/14 14:00	☐
1401980-02	BUF-PC07-012314	Solid		01/23/14 16:16	01/24/14 14:00	☐
1401980-03	BUF-PC08-012314	Solid		01/23/14 16:20	01/24/14 14:00	☐
1401980-04	BUF-PC09-012314	Solid		01/23/14 16:23	01/24/14 14:00	☐
1401980-05	BUF-PC10-012314	Solid		01/23/14 16:33	01/24/14 14:00	☐
1401980-06	BUF-PC11-012314	Solid		01/23/14 16:34	01/24/14 14:00	☐

ALS Group USA, Corp

Date: 04-Feb-14

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
WorkOrder: **1401980**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/Kg	Milligrams per Kilogram

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC06-012314
Lab ID: 1401980-01
Collection Date: 01/23/14 04:12 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1221	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1232	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1242	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1248	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1254	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Aroclor 1260	ND		0.73	mg/Kg	1	01/30/14 02:01 PM
Surr: Decachlorobiphenyl	*85.1*		*40-140*	*%REC*	1	01/30/14 02:01 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **ML**
Lead	**100**		**1.7**	**mg/Kg**	5	01/31/14 05:26 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC07-012314
Lab ID: 1401980-02
Collection Date: 01/23/14 04:16 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1221	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1232	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1242	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1248	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1254	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Aroclor 1260	ND		0.33	mg/Kg	1	01/30/14 02:17 PM
Surr: Decachlorobiphenyl	*90.1*		*40-140*	*%REC*	1	01/30/14 02:17 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **ML**
Lead	**30**		**1.5**	**mg/Kg**	5	01/31/14 05:32 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC08-012314
Lab ID: 1401980-03
Collection Date: 01/23/14 04:20 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Aroclor 1221	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Aroclor 1232	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Aroclor 1242	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Aroclor 1248	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Aroclor 1254	**0.30**		**0.26**	**mg/Kg**	1	01/30/14 02:33 PM
Aroclor 1260	ND		0.26	mg/Kg	1	01/30/14 02:33 PM
Surr: Decachlorobiphenyl	*86.1*		*40-140*	*%REC*	1	01/30/14 02:33 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **ML**
Lead	**49**		**1.8**	**mg/Kg**	5	01/31/14 05:38 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC09-012314
Lab ID: 1401980-04
Collection Date: 01/23/14 04:23 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1221	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1232	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1242	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1248	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1254	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Aroclor 1260	ND		1.3	mg/Kg	1	01/30/14 02:49 PM
Surr: Decachlorobiphenyl	*88.1*		*40-140*	*%REC*	1	01/30/14 02:49 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **RH**
Lead	**2,100**		**18**	**mg/Kg**	50	01/31/14 12:44 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC10-012314
Lab ID: 1401980-05
Collection Date: 01/23/14 04:33 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		0.63	mg/Kg	1	01/30/14 03:05 PM
Aroclor 1221	ND		0.63	mg/Kg	1	01/30/14 03:05 PM
Aroclor 1232	ND		0.63	mg/Kg	1	01/30/14 03:05 PM
Aroclor 1242	ND		0.63	mg/Kg	1	01/30/14 03:05 PM
Aroclor 1248	ND		0.63	mg/Kg	1	01/30/14 03:05 PM
Aroclor 1254	**0.86**		**0.63**	**mg/Kg**	1	01/30/14 03:05 PM
Aroclor 1260	**0.85**		**0.63**	**mg/Kg**	1	01/30/14 03:05 PM
Surr: Decachlorobiphenyl	*86.1*		*40-140*	*%REC*	1	01/30/14 03:05 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **ML**
Lead	**29**		**1.6**	**mg/Kg**	5	01/31/14 05:49 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *04-Feb-14*

Client: Weston Solutions, Inc
Project: 20405.016.001.2252.00/Buffum MKE Site
Work Order: 1401980
Sample ID: BUF-PC11-012314
Lab ID: 1401980-06
Collection Date: 01/23/14 04:34 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep: SW3541 / 1/29/14	Analyst: **JD**
Aroclor 1016	ND		0.25	mg/Kg	1	01/30/14 03:21 PM
Aroclor 1221	ND		0.25	mg/Kg	1	01/30/14 03:21 PM
Aroclor 1232	ND		0.25	mg/Kg	1	01/30/14 03:21 PM
Aroclor 1242	ND		0.25	mg/Kg	1	01/30/14 03:21 PM
Aroclor 1248	ND		0.25	mg/Kg	1	01/30/14 03:21 PM
Aroclor 1254	**0.32**		**0.25**	**mg/Kg**	1	01/30/14 03:21 PM
Aroclor 1260	**0.34**		**0.25**	**mg/Kg**	1	01/30/14 03:21 PM
Surr: Decachlorobiphenyl	*89.1*		*40-140*	*%REC*	1	01/30/14 03:21 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 1/30/14	Analyst: **ML**
Lead	**43**		**1.7**	**mg/Kg**	5	01/31/14 07:30 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 04-Feb-14

Client: Weston Solutions, Inc
Work Order: 1401980
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **55339** Instrument ID **GC12** Method: **SW8082**

MBLK Sample ID: **PBLKS1-55339-55339** Units: **µg/Kg** Analysis Date: **01/30/14 11:51 AM**

Client ID: Run ID: **GC12_140130A** SeqNo: **2628648** Prep Date: **01/29/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	ND	83								
Aroclor 1221	ND	83								
Aroclor 1232	ND	83								
Aroclor 1242	ND	83								
Aroclor 1248	ND	83								
Aroclor 1254	ND	83								
Aroclor 1260	ND	83								
Surr: Decachlorobiphenyl	*22.67*	0	*33.3*	0	*68.1*	*40-140*	0			

LCS Sample ID: **PLCSS1-55339-55339** Units: **µg/Kg** Analysis Date: **01/30/14 12:07 PM**

Client ID: Run ID: **GC12_140130A** SeqNo: **2628649** Prep Date: **01/29/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	915.3	83	833	0	110	50-130	0			
Aroclor 1260	927.7	83	833	0	111	50-130	0			
Surr: Decachlorobiphenyl	*25.67*	0	*33.3*	0	*77.1*	*40-140*	0			

MS Sample ID: **14011073-01B MS** Units: **µg/Kg** Analysis Date: **01/30/14 12:40 PM**

Client ID: Run ID: **GC12_140130A** SeqNo: **2628651** Prep Date: **01/29/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	822	82	823	0	99.9	40-140	0			
Aroclor 1260	859.8	82	823	0	104	40-140	0			
Surr: Decachlorobiphenyl	*23.05*	0	*32.9*	0	*70.1*	*40-140*	0			

MSD Sample ID: **14011073-01B MSD** Units: **µg/Kg** Analysis Date: **01/30/14 12:56 PM**

Client ID: Run ID: **GC12_140130A** SeqNo: **2628652** Prep Date: **01/29/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	898	83	825.7	0	109	40-140	822	8.84	50	
Aroclor 1260	906.3	83	825.7	0	110	40-140	859.8	5.26	50	
Surr: Decachlorobiphenyl	*25.44*	0	*33.01*	0	*77.1*	*40-140*	23.05	*9.85*	*50*	

The following samples were analyzed in this batch:

1401980-01A	1401980-02A	1401980-03A
1401980-04A	1401980-05A	1401980-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Weston Solutions, Inc
Work Order: 1401980
Project: 20405.016.001.2252.00/Buffum MKE Site

QC BATCH REPORT

Batch ID: **55377** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-55377-55377** Units: **mg/Kg** Analysis Date: **01/30/14 02:43 PM**

Client ID: Run ID: **ICPMS1_140130A** SeqNo: **2628654** Prep Date: **01/30/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	ND	0.25								

LCS Sample ID: **LCS-55377-55377** Units: **mg/Kg** Analysis Date: **01/30/14 02:53 PM**

Client ID: Run ID: **ICPMS1_140130A** SeqNo: **2628655** Prep Date: **01/30/14** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.869	0.25	5	0	97.4	80-120	0			

MS Sample ID: **14011115-03BMS** Units: **mg/Kg** Analysis Date: **01/30/14 03:16 PM**

Client ID: Run ID: **ICPMS1_140130A** SeqNo: **2628659** Prep Date: **01/30/14** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	13.19	1.8	7.246	7.66	76.3	75-125	0			

MSD Sample ID: **14011115-03BMSD** Units: **mg/Kg** Analysis Date: **01/30/14 03:22 PM**

Client ID: Run ID: **ICPMS1_140130A** SeqNo: **2628660** Prep Date: **01/30/14** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	15.31	1.8	7.364	7.66	104	75-125	13.19	14.9	25	

The following samples were analyzed in this batch:

1401980-01A	1401980-02A	1401980-03A
1401980-04A	1401980-05A	1401980-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511 | Houston, TX +1 281 530 5656 | Spring City, PA +1 610 948 4903 | South Charleston, WV +1 304 356 3168
Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 94534

ALS Project Manager: TBS | ALS Work Order #: 1401980

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Buffum MKE Site	A	PCB
Work Order	20405.012.001.2252.00	Project Number	20405.016.001.2252.00	B	Lead.
Company Name	Weston Solutions, Inc	Bill To Company	Weston Solutions, Inc	C	
Send Report To	Lisa Graczyk	Invoice Attn	Lisa Graczyk	D	
Address	20 North Wacker Drive Suite 1210	Address	20 North Wacker Drive Suite 1210	E F	
City/State/Zip	Chicago, IL 60606	City/State/Zip	Chicago, IL 60606	G	
Phone	(312) 424-3300	Phone	(312) 424-3300	H	
Fax	(312) 424-3330	Fax	(312) 424-3330	I	
e-Mail Address	lgraczyk@ces-dynamac.com	e-Mail Address	m.stollenwerk@westonsolutions.com		

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BUF-PC06-012314	01-23-14	1612	PaintChip	None	1	X	X									
2	BUF-PC07-012314	01-23-14	1616	PaintChip	None	1	X	X									
3	BUF-PC08-012314	01-23-14	1620	PaintChip	None	1	X	X									
4	BUF-PC09-012314	01-23-14	1623	PaintChip	None	1	X	X									
5	BUF-PC10-012314	01-23-14	1633	PaintChip	None	1	X	X									
6	BUF-PC11-012314	01-23-14	1634	PaintChip	None	1	X	X									
7																	
8																	
9																	
10																	

Sampler(s) (Please Print & Sign): Martin D. Stollenwerk | Shipment Method: Pick up | Required Turnaround Time: (Check Box) ☒ Std 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other _____ | Results Due Date:

Relinquished by:	Date: 01/23/14	Time: 1730	Received by:	Notes: Rec'd 1/24/14 1400	
Relinquished by:	Date: 1/24/14	Time: 2100	Received by (Laboratory):	Cooler ID	Cooler Temp.
Logged by (Laboratory): DES	Date: 1/24/14	Time: 1415	Checked by (Laboratory): TBS		1.0°C

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other _____
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WESTON - CHI** Date/Time Received: **24-Jan-14 14:00**

Work Order: **1401980** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 24-Jan-14 (Date) Reviewed by: Tom Bramish (eSignature) 24-Jan-14 (Date)

Matrices: Solid

Carrier name: ALSHN

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.0 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	1/24/2014 2:16:38 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

BUFFUM MKE SITE
MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN
DATA VALIDATION REPORT

Date: January 16, 2014
Laboratory: Pace Analytical Services (Pace), Minneapolis, MN
Laboratory Project #: 10252494
Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)
Weston Analytical Work Order #/TDD #: 20405.016.001.2252.77/ S05-0001-1310-003

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation of two wipe samples collected for the Buffum MKE Site that were analyzed for dioxin/furans U.S. Environmental Protection Agency (U.S. EPA) SW-846 method 8290.

A Level II data package was requested from Pace. The data validation was conducted in general accordance with the EPA "Contract Laboratory Program National Functional Guidance for Chlorinated Dibenzo-p-Dioxins and Chlorinated Dibenzofurans Data Review" dated September 2005. The attachment contains the results summary data sheets with any hand-written qualifiers applied during data validation.

DIOXIN/FURANS BY EPA SW-846 METHOD 8290

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab Id	Matrix	Date Collected	Date Analyzed
BUF-WP01-121213	10252494001	Wipe	12/12/2013	12/30/2013
BUF-WP02-121213	10252494002	Wipe	12/12/2013	12/30/2013

2. Holding Times

The samples were analyzed within the required holding time limit of 30 days from sample collection to extraction and 45 days from extraction to analysis.

3. Internal Standard Recoveries

The percent recoveries of the internal standards were within the quality control (QC) limits specified in the method of 40 to 135 percent.

3. Blanks

A method blank was analyzed as required and was free of target compound contamination above the reporting limit.

4. Laboratory Control Sample (LCS) Results

The LCS recovery was within quality control (QC) limits.

5. Overall Assessment

Pace flagged the 2,3,7,8-TCDF results with a "P" to indicate that there were interfering substances which impacted the determination of this compound and reported the concentrations as an Estimated Maximum Possible Concentration (EMPC). The EMPC should be used as the sample concentration for 2,3,7,8-TCDF and is considered estimated.

The dioxin/furan results are acceptable for use as qualified based on the information received.

ATTACHMENT

PACE ANALYTICAL SERVICES
RESULTS SUMMARY

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Lisa Graczyk
Weston Solutions Inc OH
6779 Engle Road
Middleburg Heights OH 44130

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

Pace Project #: 10252494
Sample Receipt Date: 12/14/2013
Client Project #: Buffum Street
Client Sub PO #: 0084573
State Cert #: 4150

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed by:

December 31, 2013

Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

ACCREDITED IN ACCORDANCE WITH nelac

Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

Report Prepared Date:
December 31, 2013

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on two samples submitted by a representative of Weston Solutions. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. Sample preparation utilized microwave assisted extraction followed by the method-specified cleanup procedures. The reporting limits were set to correspond to the lowest calibration points.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 45-78%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, interfering substances impacted the determinations of PCDF congeners. The affected values were flagged "P" where polychlorinated diphenyl ethers were present.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not contribute significantly to the levels reported for the field samples.

A laboratory spike sample was also prepared with the sample batch using clean wipes that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 73-109%, indicating a high degree of accuracy for these determinations. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
Alabama	40770	Mississippi	MN00064
Alaska	MN00064	Montana	92
Arizona	AZ0014	Nebraska	
Arkansas	88-0680	Nevada	MN_00064_200
California	01155CA	New Jersey (NE	MN002
Colorado	MN00064	New Mexico	MN00064
Connecticut	PH-0256	New York (NEL	11647
EPA Region 5	WD-15J	North Carolina	27700
EPA Region 8	8TMS-Q	North Dakota	R-036
Florida (NELAP	E87605	Ohio	4150
Georgia (DNR)	959	Oklahoma	D9922
Guam	959	Oregon (ELAP)	MN200001-005
Hawaii	SLD	Oregon (OREL	MN300001-001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennesee	2818
Iowa	368	Tennessee	02818
Kansas	E-10167	Texas	T104704192-08
Kentucky	90062	Utah (NELAP)	PAM
Louisiana	03086	Virginia	00251
Maine	2007029	Washington	C755
Maryland	322	West Virginia	9952C
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-Q

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

Pace Analytical®
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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1124

10252494

Page: of

1460556

Section A Required Client Information:

Company: Weston Solutions
Address: 750 E Bunker Ct
Suite 500
Email To: m.dunn@westonsolutions.com
Phone: 512 585 0005 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Marita Stallenwerk
Copy To: Lisa Gracyzk
Purchase Order No.:
Project Name: Buffum Street
Project Number:

Section C Invoice Information:

Attention:
Company Name: SAME
Address: SAME
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): Dioxins	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	BUF-WP01-121213	WP	G	12/12/13	10:11				1									X		001
2	BUF-WP02-121213	WP	G	12/12/13	12:14				1									X		002
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
				AA/pace	12/14/13	1020	5.9	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE: Mike Castillo
PRINT Name of SAMPLER: Mike Castillo
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY): 12/12/13

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 07Nov2013 Page 1 of 1
	Document No.: **F-MN-L-213-rev.08**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Weston Solutions

Project #: WO#: 10252494

10252494

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 7974 0138 9540

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermom. Used: ☐ 80512447 ☑ B88A912167504 ☐ 72337080 ☐ B88A9132521491

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 5.7 **Cooler Temp Corrected (°C):** 5.9

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** AJA 12/14/13

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☐ Yes	☑ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL, WI PC	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☑ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water) DOC	☐ Yes	☑ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: **Date:** 12/17/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Weston Solutions Inc OH

Client's Sample ID	BUF-WP01-121213		
Lab Sample ID	10252494001		
Filename	F131230B_08		
Injected By	BAL		
Total Amount Extracted	1.00 Sample	Matrix	Wipe
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	12/12/2013 10:11
ICAL ID	F131125	Received	12/14/2013 10:20
CCal Filename(s)	F131230B_01 & F131230B_12	Extracted	12/26/2013 17:45
Method Blank ID	BLANK-38809	Analyzed	12/30/2013 20:30

Native Isomers	Conc ng/S	EMPC ng/S	RL ng/S		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	0.15	0.010	P	2,3,7,8-TCDF-13C	2.00	51
Total TCDF	1.200	-----	0.010		2,3,7,8-TCDD-13C	2.00	58
					1,2,3,7,8-PeCDF-13C	2.00	53
2,3,7,8-TCDD	ND	-----	0.010		2,3,4,7,8-PeCDF-13C	2.00	54
Total TCDD	0.044	-----	0.010		1,2,3,7,8-PeCDD-13C	2.00	62
					1,2,3,4,7,8-HxCDF-13C	2.00	51
1,2,3,7,8-PeCDF	0.085	-----	0.050		1,2,3,6,7,8-HxCDF-13C	2.00	58
2,3,4,7,8-PeCDF	0.092	-----	0.050		2,3,4,6,7,8-HxCDF-13C	2.00	56
Total PeCDF	0.790	-----	0.050		1,2,3,7,8,9-HxCDF-13C	2.00	54
					1,2,3,4,7,8-HxCDD-13C	2.00	50
1,2,3,7,8-PeCDD	ND	-----	0.050		1,2,3,6,7,8-HxCDD-13C	2.00	53
Total PeCDD	ND	-----	0.050		1,2,3,4,6,7,8-HpCDF-13C	2.00	50
					1,2,3,4,7,8,9-HpCDF-13C	2.00	54
1,2,3,4,7,8-HxCDF	0.099	-----	0.050		1,2,3,4,6,7,8-HpCDD-13C	2.00	58
1,2,3,6,7,8-HxCDF	0.067	-----	0.050		OCDD-13C	4.00	45
2,3,4,6,7,8-HxCDF	0.074	-----	0.050				
1,2,3,7,8,9-HxCDF	ND	-----	0.050		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.530	-----	0.050		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.050		2,3,7,8-TCDD-37Cl4	0.20	81
1,2,3,6,7,8-HxCDD	ND	-----	0.050				
1,2,3,7,8,9-HxCDD	ND	-----	0.050				
Total HxCDD	ND	-----	0.050				
1,2,3,4,6,7,8-HpCDF	0.190	-----	0.050		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.050		Equivalence: 0.092 ng/S		
Total HpCDF	0.190	-----	0.050		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	0.060	-----	0.050				
Total HpCDD	0.120	-----	0.050				
OCDF	0.130	-----	0.100				
OCDD	0.160	-----	0.100				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

P = PCDE Interference

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Weston Solutions Inc OH

Client's Sample ID	BUF-WP02-121213		
Lab Sample ID	10252494002		
Filename	F131230B_09		
Injected By	BAL		
Total Amount Extracted	1.00 Sample	Matrix	Wipe
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	12/12/2013 12:14
ICAL ID	F131125	Received	12/14/2013 10:20
CCal Filename(s)	F131230B_01 & F131230B_12	Extracted	12/26/2013 17:45
Method Blank ID	BLANK-38809	Analyzed	12/30/2013 21:17

Native Isomers	Conc ng/S	EMPC ng/S	RL ng/S		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	0.52	0.010	P	2,3,7,8-TCDF-13C	2.00	65
Total TCDF	4.100	-----	0.010		2,3,7,8-TCDD-13C	2.00	75
					1,2,3,7,8-PeCDF-13C	2.00	69
2,3,7,8-TCDD	ND	-----	0.010		2,3,4,7,8-PeCDF-13C	2.00	67
Total TCDD	0.280	-----	0.010		1,2,3,7,8-PeCDD-13C	2.00	77
					1,2,3,4,7,8-HxCDF-13C	2.00	67
1,2,3,7,8-PeCDF	0.390	-----	0.050		1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	0.360	-----	0.050		2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	3.900	-----	0.050		1,2,3,7,8,9-HxCDF-13C	2.00	70
					1,2,3,4,7,8-HxCDD-13C	2.00	67
1,2,3,7,8-PeCDD	ND	-----	0.050		1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	0.220	-----	0.050		1,2,3,4,6,7,8-HpCDF-13C	2.00	66
					1,2,3,4,7,8,9-HpCDF-13C	2.00	70
1,2,3,4,7,8-HxCDF	0.250	-----	0.050		1,2,3,4,6,7,8-HpCDD-13C	2.00	78
1,2,3,6,7,8-HxCDF	0.140	-----	0.050		OCDD-13C	4.00	60
2,3,4,6,7,8-HxCDF	0.098	-----	0.050				
1,2,3,7,8,9-HxCDF	ND	-----	0.050		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	1.300	-----	0.050		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.050		2,3,7,8-TCDD-37Cl4	0.20	70
1,2,3,6,7,8-HxCDD	ND	-----	0.050				
1,2,3,7,8,9-HxCDD	ND	-----	0.050				
Total HxCDD	0.140	-----	0.050				
1,2,3,4,6,7,8-HpCDF	0.200	-----	0.050		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.050		Equivalence: 0.30 ng/S		
Total HpCDF	0.200	-----	0.050		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	0.050				
Total HpCDD	ND	-----	0.050				
OCDF	0.100	-----	0.100				
OCDD	ND	-----	0.100				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

P = PCDE Interference

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-38809	Matrix	Solid/Wipe
Filename	F131230B_06	Dilution	NA
Total Amount Extracted	1.00 Sample	Extracted	12/26/2013 17:45
ICAL ID	F131125	Analyzed	12/30/2013 18:57
CCal Filename(s)	F131230B_01 & F131230B_12	Injected By	BAL

Native Isomers	**Conc** ng/S	**EMPC** ng/S	**RL** ng/S	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	0.010	2,3,7,8-TCDF-13C	2.00	58
Total TCDF	ND	-----	0.010	2,3,7,8-TCDD-13C	2.00	69
				1,2,3,7,8-PeCDF-13C	2.00	64
2,3,7,8-TCDD	ND	-----	0.010	2,3,4,7,8-PeCDF-13C	2.00	63
Total TCDD	ND	-----	0.010	1,2,3,7,8-PeCDD-13C	2.00	72
				1,2,3,4,7,8-HxCDF-13C	2.00	65
1,2,3,7,8-PeCDF	ND	-----	0.050	1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	ND	-----	0.050	2,3,4,6,7,8-HxCDF-13C	2.00	71
Total PeCDF	ND	-----	0.050	1,2,3,7,8,9-HxCDF-13C	2.00	68
				1,2,3,4,7,8-HxCDD-13C	2.00	62
1,2,3,7,8-PeCDD	ND	-----	0.050	1,2,3,6,7,8-HxCDD-13C	2.00	67
Total PeCDD	ND	-----	0.050	1,2,3,4,6,7,8-HpCDF-13C	2.00	64
				1,2,3,4,7,8,9-HpCDF-13C	2.00	70
1,2,3,4,7,8-HxCDF	ND	-----	0.050	1,2,3,4,6,7,8-HpCDD-13C	2.00	71
1,2,3,6,7,8-HxCDF	ND	-----	0.050	OCDD-13C	4.00	60
2,3,4,6,7,8-HxCDF	ND	-----	0.050			
1,2,3,7,8,9-HxCDF	ND	-----	0.050	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.050	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.050	2,3,7,8-TCDD-37Cl4	0.20	80
1,2,3,6,7,8-HxCDD	ND	-----	0.050			
1,2,3,7,8,9-HxCDD	ND	-----	0.050			
Total HxCDD	ND	-----	0.050			
1,2,3,4,6,7,8-HpCDF	ND	-----	0.050	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.050	Equivalence: 0.00 ng/S		
Total HpCDF	ND	-----	0.050	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	0.050			
Total HpCDD	ND	-----	0.050			
OCDF	ND	-----	0.100			
OCDD	ND	-----	0.100			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-38810		
Filename	F131230B_11	Matrix	Solid/Wipe
Total Amount Extracted	10.1 g	Dilution	NA
ICAL ID	F131125	Extracted	12/26/2013 17:45
CCal Filename(s)	F131230B_01 & F131230B_12	Analyzed	12/30/2013 22:52
Method Blank ID	BLANK-38809	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.18	91	2,3,7,8-TCDF-13C	2.0	67
Total TCDF				2,3,7,8-TCDD-13C	2.0	79
				1,2,3,7,8-PeCDF-13C	2.0	76
2,3,7,8-TCDD	0.20	0.15	73	2,3,4,7,8-PeCDF-13C	2.0	77
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	88
				1,2,3,4,7,8-HxCDF-13C	2.0	72
1,2,3,7,8-PeCDF	1.0	0.93	93	1,2,3,6,7,8-HxCDF-13C	2.0	83
2,3,4,7,8-PeCDF	1.0	0.90	90	2,3,4,6,7,8-HxCDF-13C	2.0	79
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	76
				1,2,3,4,7,8-HxCDD-13C	2.0	73
1,2,3,7,8-PeCDD	1.0	0.82	82	1,2,3,6,7,8-HxCDD-13C	2.0	73
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	72
				1,2,3,4,7,8,9-HpCDF-13C	2.0	77
1,2,3,4,7,8-HxCDF	1.0	0.93	93	1,2,3,4,6,7,8-HpCDD-13C	2.0	81
1,2,3,6,7,8-HxCDF	1.0	0.87	87	OCDD-13C	4.0	68
2,3,4,6,7,8-HxCDF	1.0	0.85	85			
1,2,3,7,8,9-HxCDF	1.0	0.89	89	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	0.88	88	2,3,7,8-TCDD-37Cl4	0.20	82
1,2,3,6,7,8-HxCDD	1.0	1.1	109			
1,2,3,7,8,9-HxCDD	1.0	0.99	99			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	0.91	91			
1,2,3,4,7,8,9-HpCDF	1.0	0.81	81			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.85	85			
Total HpCDD						
OCDF	2.0	1.9	93			
OCDD	2.0	1.8	89			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Lisa Graczyk
Weston Solutions Inc OH
6779 Engle Road
Middleburg Heights OH 44130

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

Pace Project #: 10252494
Sample Receipt Date: 12/14/2013
Client Project #: Buffum Street
Client Sub PO #: 0084573
State Cert #: 4150

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed by:

December 31, 2013

Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

ACCREDITED IN ACCORDANCE WITH nelac

Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

Report Prepared Date:
December 31, 2013

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on two samples submitted by a representative of Weston Solutions. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. Sample preparation utilized microwave assisted extraction followed by the method-specified cleanup procedures. The reporting limits were set to correspond to the lowest calibration points.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 45-78%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, interfering substances impacted the determinations of PCDF congeners. The affected values were flagged "P" where polychlorinated diphenyl ethers were present.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not contribute significantly to the levels reported for the field samples.

A laboratory spike sample was also prepared with the sample batch using clean wipes that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 73-109%, indicating a high degree of accuracy for these determinations. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
Alabama	40770	Mississippi	MN00064
Alaska	MN00064	Montana	92
Arizona	AZ0014	Nebraska	
Arkansas	88-0680	Nevada	MN_00064_200
California	01155CA	New Jersey (NE	MN002
Colorado	MN00064	New Mexico	MN00064
Connecticut	PH-0256	New York (NEL	11647
EPA Region 5	WD-15J	North Carolina	27700
EPA Region 8	8TMS-Q	North Dakota	R-036
Florida (NELAP	E87605	Ohio	4150
Georgia (DNR)	959	Oklahoma	D9922
Guam	959	Oregon (ELAP)	MN200001-005
Hawaii	SLD	Oregon (OREL	MN300001-001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennesee	2818
Iowa	368	Tennessee	02818
Kansas	E-10167	Texas	T104704192-08
Kentucky	90062	Utah (NELAP)	PAM
Louisiana	03086	Virginia	00251
Maine	2007029	Washington	C755
Maryland	322	West Virginia	9952C
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-Q

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1124

10252494

Page: of

1460556

Section A Required Client Information:

Company: Weston Solutions
Address: 750 E Bunker Ct
Suite 500
Email To: m.dunn@westonsolutions.com
Phone: 512 585 0005 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Marita Stallenwerk
Copy To: Lisa Gracyzk
Purchase Order No.:
Project Name: Buffum Street
Project Number:

Section C Invoice Information:

Attention:
Company Name: SAME
Address: SAME
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): Dioxins	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	BUF-WP01-121213	WP	G	12/12/13	10:11				1									X		001
2	BUF-WP02-121213	WP	G	12/12/13	12:14				1									X		002
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
				AA/pace	12/14/13	1020	5.9	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE: Mike Castillo
PRINT Name of SAMPLER: Mike Castillo
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY): 12/12/13

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 07Nov2013 Page 1 of 1
	Document No.: **F-MN-L-213-rev.08**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Weston Solutions

Project #: WO#: 10252494

10252494

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 7974 0138 9540

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermom. Used: ☐ 80512447 ☑ B88A912167504 ☐ 72337080 ☐ B88A9132521491

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 5.7 **Cooler Temp Corrected (°C):** 5.9

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** AJA 12/14/13

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☐ Yes	☑ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL, WI PC	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☑ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water) DOC	☐ Yes	☑ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: **Date:** 12/17/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Weston Solutions Inc OH

Client's Sample ID	BUF-WP01-121213		
Lab Sample ID	10252494001		
Filename	F131230B_08		
Injected By	BAL		
Total Amount Extracted	1.00 Sample	Matrix	Wipe
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	12/12/2013 10:11
ICAL ID	F131125	Received	12/14/2013 10:20
CCal Filename(s)	F131230B_01 & F131230B_12	Extracted	12/26/2013 17:45
Method Blank ID	BLANK-38809	Analyzed	12/30/2013 20:30

Native Isomers	Conc ng/S	EMPC ng/S	RL ng/S		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	0.15	0.010	P	2,3,7,8-TCDF-13C	2.00	51
Total TCDF	1.200	-----	0.010		2,3,7,8-TCDD-13C	2.00	58
					1,2,3,7,8-PeCDF-13C	2.00	53
2,3,7,8-TCDD	ND	-----	0.010		2,3,4,7,8-PeCDF-13C	2.00	54
Total TCDD	0.044	-----	0.010		1,2,3,7,8-PeCDD-13C	2.00	62
					1,2,3,4,7,8-HxCDF-13C	2.00	51
1,2,3,7,8-PeCDF	0.085	-----	0.050		1,2,3,6,7,8-HxCDF-13C	2.00	58
2,3,4,7,8-PeCDF	0.092	-----	0.050		2,3,4,6,7,8-HxCDF-13C	2.00	56
Total PeCDF	0.790	-----	0.050		1,2,3,7,8,9-HxCDF-13C	2.00	54
					1,2,3,4,7,8-HxCDD-13C	2.00	50
1,2,3,7,8-PeCDD	ND	-----	0.050		1,2,3,6,7,8-HxCDD-13C	2.00	53
Total PeCDD	ND	-----	0.050		1,2,3,4,6,7,8-HpCDF-13C	2.00	50
					1,2,3,4,7,8,9-HpCDF-13C	2.00	54
1,2,3,4,7,8-HxCDF	0.099	-----	0.050		1,2,3,4,6,7,8-HpCDD-13C	2.00	58
1,2,3,6,7,8-HxCDF	0.067	-----	0.050		OCDD-13C	4.00	45
2,3,4,6,7,8-HxCDF	0.074	-----	0.050				
1,2,3,7,8,9-HxCDF	ND	-----	0.050		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.530	-----	0.050		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.050		2,3,7,8-TCDD-37Cl4	0.20	81
1,2,3,6,7,8-HxCDD	ND	-----	0.050				
1,2,3,7,8,9-HxCDD	ND	-----	0.050				
Total HxCDD	ND	-----	0.050				
1,2,3,4,6,7,8-HpCDF	0.190	-----	0.050		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.050		Equivalence: 0.092 ng/S		
Total HpCDF	0.190	-----	0.050		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	0.060	-----	0.050				
Total HpCDD	0.120	-----	0.050				
OCDF	0.130	-----	0.100				
OCDD	0.160	-----	0.100				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

P = PCDE Interference

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Weston Solutions Inc OH

Client's Sample ID	BUF-WP02-121213		
Lab Sample ID	10252494002		
Filename	F131230B_09		
Injected By	BAL		
Total Amount Extracted	1.00 Sample	Matrix	Wipe
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	12/12/2013 12:14
ICAL ID	F131125	Received	12/14/2013 10:20
CCal Filename(s)	F131230B_01 & F131230B_12	Extracted	12/26/2013 17:45
Method Blank ID	BLANK-38809	Analyzed	12/30/2013 21:17

Native Isomers	Conc ng/S	EMPC ng/S	RL ng/S		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	0.52	0.010	P	2,3,7,8-TCDF-13C	2.00	65
Total TCDF	4.100	-----	0.010		2,3,7,8-TCDD-13C	2.00	75
					1,2,3,7,8-PeCDF-13C	2.00	69
2,3,7,8-TCDD	ND	-----	0.010		2,3,4,7,8-PeCDF-13C	2.00	67
Total TCDD	0.280	-----	0.010		1,2,3,7,8-PeCDD-13C	2.00	77
					1,2,3,4,7,8-HxCDF-13C	2.00	67
1,2,3,7,8-PeCDF	0.390	-----	0.050		1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	0.360	-----	0.050		2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	3.900	-----	0.050		1,2,3,7,8,9-HxCDF-13C	2.00	70
					1,2,3,4,7,8-HxCDD-13C	2.00	67
1,2,3,7,8-PeCDD	ND	-----	0.050		1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	0.220	-----	0.050		1,2,3,4,6,7,8-HpCDF-13C	2.00	66
					1,2,3,4,7,8,9-HpCDF-13C	2.00	70
1,2,3,4,7,8-HxCDF	0.250	-----	0.050		1,2,3,4,6,7,8-HpCDD-13C	2.00	78
1,2,3,6,7,8-HxCDF	0.140	-----	0.050		OCDD-13C	4.00	60
2,3,4,6,7,8-HxCDF	0.098	-----	0.050				
1,2,3,7,8,9-HxCDF	ND	-----	0.050		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	1.300	-----	0.050		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.050		2,3,7,8-TCDD-37Cl4	0.20	70
1,2,3,6,7,8-HxCDD	ND	-----	0.050				
1,2,3,7,8,9-HxCDD	ND	-----	0.050				
Total HxCDD	0.140	-----	0.050				
1,2,3,4,6,7,8-HpCDF	0.200	-----	0.050		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.050		Equivalence: 0.30 ng/S		
Total HpCDF	0.200	-----	0.050		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	0.050				
Total HpCDD	ND	-----	0.050				
OCDF	0.100	-----	0.100				
OCDD	ND	-----	0.100				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
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ND = Not Detected
NA = Not Applicable
NC = Not Calculated

P = PCDE Interference

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-38809	Matrix	Solid/Wipe
Filename	F131230B_06	Dilution	NA
Total Amount Extracted	1.00 Sample	Extracted	12/26/2013 17:45
ICAL ID	F131125	Analyzed	12/30/2013 18:57
CCal Filename(s)	F131230B_01 & F131230B_12	Injected By	BAL

Native Isomers	**Conc** ng/S	**EMPC** ng/S	**RL** ng/S	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	0.010	2,3,7,8-TCDF-13C	2.00	58
Total TCDF	ND	-----	0.010	2,3,7,8-TCDD-13C	2.00	69
				1,2,3,7,8-PeCDF-13C	2.00	64
2,3,7,8-TCDD	ND	-----	0.010	2,3,4,7,8-PeCDF-13C	2.00	63
Total TCDD	ND	-----	0.010	1,2,3,7,8-PeCDD-13C	2.00	72
				1,2,3,4,7,8-HxCDF-13C	2.00	65
1,2,3,7,8-PeCDF	ND	-----	0.050	1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	ND	-----	0.050	2,3,4,6,7,8-HxCDF-13C	2.00	71
Total PeCDF	ND	-----	0.050	1,2,3,7,8,9-HxCDF-13C	2.00	68
				1,2,3,4,7,8-HxCDD-13C	2.00	62
1,2,3,7,8-PeCDD	ND	-----	0.050	1,2,3,6,7,8-HxCDD-13C	2.00	67
Total PeCDD	ND	-----	0.050	1,2,3,4,6,7,8-HpCDF-13C	2.00	64
				1,2,3,4,7,8,9-HpCDF-13C	2.00	70
1,2,3,4,7,8-HxCDF	ND	-----	0.050	1,2,3,4,6,7,8-HpCDD-13C	2.00	71
1,2,3,6,7,8-HxCDF	ND	-----	0.050	OCDD-13C	4.00	60
2,3,4,6,7,8-HxCDF	ND	-----	0.050			
1,2,3,7,8,9-HxCDF	ND	-----	0.050	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.050	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.050	2,3,7,8-TCDD-37Cl4	0.20	80
1,2,3,6,7,8-HxCDD	ND	-----	0.050			
1,2,3,7,8,9-HxCDD	ND	-----	0.050			
Total HxCDD	ND	-----	0.050			
1,2,3,4,6,7,8-HpCDF	ND	-----	0.050	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.050	Equivalence: 0.00 ng/S		
Total HpCDF	ND	-----	0.050	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	0.050			
Total HpCDD	ND	-----	0.050			
OCDF	ND	-----	0.100			
OCDD	ND	-----	0.100			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

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Minneapolis, MN 55414

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Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-38810		
Filename	F131230B_11	Matrix	Solid/Wipe
Total Amount Extracted	10.1 g	Dilution	NA
ICAL ID	F131125	Extracted	12/26/2013 17:45
CCal Filename(s)	F131230B_01 & F131230B_12	Analyzed	12/30/2013 22:52
Method Blank ID	BLANK-38809	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.18	91	2,3,7,8-TCDF-13C	2.0	67
Total TCDF				2,3,7,8-TCDD-13C	2.0	79
				1,2,3,7,8-PeCDF-13C	2.0	76
2,3,7,8-TCDD	0.20	0.15	73	2,3,4,7,8-PeCDF-13C	2.0	77
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	88
				1,2,3,4,7,8-HxCDF-13C	2.0	72
1,2,3,7,8-PeCDF	1.0	0.93	93	1,2,3,6,7,8-HxCDF-13C	2.0	83
2,3,4,7,8-PeCDF	1.0	0.90	90	2,3,4,6,7,8-HxCDF-13C	2.0	79
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	76
				1,2,3,4,7,8-HxCDD-13C	2.0	73
1,2,3,7,8-PeCDD	1.0	0.82	82	1,2,3,6,7,8-HxCDD-13C	2.0	73
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	72
				1,2,3,4,7,8,9-HpCDF-13C	2.0	77
1,2,3,4,7,8-HxCDF	1.0	0.93	93	1,2,3,4,6,7,8-HpCDD-13C	2.0	81
1,2,3,6,7,8-HxCDF	1.0	0.87	87	OCDD-13C	4.0	68
2,3,4,6,7,8-HxCDF	1.0	0.85	85			
1,2,3,7,8,9-HxCDF	1.0	0.89	89	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	0.88	88	2,3,7,8-TCDD-37Cl4	0.20	82
1,2,3,6,7,8-HxCDD	1.0	1.1	109			
1,2,3,7,8,9-HxCDD	1.0	0.99	99			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	0.91	91			
1,2,3,4,7,8,9-HpCDF	1.0	0.81	81			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.85	85			
Total HpCDD						
OCDF	2.0	1.9	93			
OCDD	2.0	1.8	89			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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EMSL Order:	161319764
CustomerID:	WSOL72
CustomerPO:	0084572
ProjectID:	20405.016.001.225

Attn: **Marita Stollenwerk**
Weston Solutions, Inc.
20 North Wacker Drive
Suite 2035
Chicago, IL 60606

Phone:	(312) 424-3300
Fax:	(312) 424-3330
Received:	12/16/13 1:45 PM
Analysis Date:	12/31/2013
Collected:	12/12/2013

Project: **Buffum Street MKE**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
BUF-ACM-03A-121213 *161319764-0005*		Black Fibrous Homogeneous	60%	Cellulose	40%	Non-fibrous (other)		**None Detected**
BUF-ACM-03B-121213 *161319764-0006*		Black Fibrous Homogeneous	60%	Cellulose	40%	Non-fibrous (other)		**None Detected**
BUF-ACM-03C-121213 *161319764-0007*		Black Non-Fibrous Homogeneous	20%	Cellulose	80%	Non-fibrous (other)		**None Detected**
BUF-ACM-04A-121213 *161319764-0008*		Gray/White Fibrous Homogeneous	20% 60%	Cellulose Min. Wool	15% 5%	Perlite Non-fibrous (other)		**None Detected**
BUF-ACM-04B-121213 *161319764-0009*		Gray/White Fibrous Homogeneous	20% 60%	Cellulose Min. Wool	15% 5%	Perlite Non-fibrous (other)		**None Detected**
BUF-ACM-04C-121213 *161319764-0010*		Gray/White Fibrous Homogeneous	20% 60%	Cellulose Min. Wool	15% 5%	Perlite Non-fibrous (other)		**None Detected**
BUF-ACM-05A-121213-Floor Tile *161319764-0011*		Brown Non-Fibrous Homogeneous			97%	Non-fibrous (other)	**3%**	**Chrysotile**

Analyst(s)

Molly Elkins (4)
Ross Matlock (10)

Richard Harding, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial report from 02/13/2014 11:55:18

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Received:	12/16/13 1:45 PM
Analysis Date:	12/31/2013
Collected:	12/12/2013

Project: **Buffum Street MKE**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
BUF-ACM-05A-121213-Mastic *161319764-0011A*		Black Non-Fibrous Homogeneous		98% Non-fibrous (other)	**2% Chrysotile**
BUF-ACM-05B-121213 *161319764-0012*					**Stop Positive (Not Analyzed)**
BUF-ACM-05C-121213 *161319764-0013*					**Stop Positive (Not Analyzed)**
BUF-ACM-06A-121213 *161319764-0014*		Gray/Green Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (other)	**None Detected**
			Inseparable paint / coating layer included in analysis		
BUF-ACM-06B-121213 *161319764-0015*		Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (other)	**None Detected**
BUF-ACM-06C-121213 *161319764-0016*		Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (other)	**None Detected**
BUF-ACM-07A-121213 *161319764-0017*		Gray/White Non-Fibrous Homogeneous	<1% Hair	20% Quartz 80% Non-fibrous (other)	**None Detected**
			Inseparable paint / coating layer included in analysis		

Analyst(s)

Molly Elkins (4)
Ross Matlock (10)

Richard Harding, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial report from 02/13/2014 11:55:18

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ProjectID:	20405.016.001.225

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Phone:	(312) 424-3300
Fax:	(312) 424-3330
Received:	12/16/13 1:45 PM
Analysis Date:	12/31/2013
Collected:	12/12/2013

Project: **Buffum Street MKE**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
BUF-ACM-07B-121213 *161319764-0018*		Gray/White Non-Fibrous Homogeneous	<1%	Hair	20% 80%	Quartz Non-fibrous (other)	**None Detected**
			Inseparable paint / coating layer included in analysis				
BUF-ACM-07C-121213 *161319764-0019*		Gray Non-Fibrous Homogeneous	2%	Glass	15% 83%	Quartz Non-fibrous (other)	**None Detected**
			Inseparable paint / coating layer included in analysis				

Analyst(s)

Molly Elkins (4)
Ross Matlock (10)

Richard Harding, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial report from 02/13/2014 11:55:18

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Phone:	(312) 424-3300
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Received:	12/16/13 1:45 PM
Analysis Date:	12/31/2013
Collected:	12/12/2013

Project: **Buffum Street MKE**

Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos	
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**%**	**Type**
BUF-ACM01-121213 *161319764-0003*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25%**	**Chrysotile**
BUF-ACM02-121213 *161319764-0004*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25%**	**Chrysotile**

Analyst(s)

Jadda Moffett (2)

Richard Harding, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN

Initial report from 02/13/2014 11:55:18

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EMSL Order:	161319764
CustomerID:	WSOL72
CustomerPO:	0084572
ProjectID:	20405.016.001.225

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Received:	12/16/13 1:45 PM
Analysis Date:	12/19/2013
Collected:	12/12/2013

Project: **Buffum Street MKE**

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm²)	CONCENTRATION (str/cm²)	COMMENTS
BUF-WP01-121213 *161319764-0001*	100	Chrysotile	50	989	49500	
BUF-WP02-121213 *161319764-0002*	100	Chrysotile	53	9890	524000	

Analyst(s)

Richard Harding (2)

Richard Harding, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN

Initial report from 02/13/2014 11:55:18